

AGENDA



VALLEJO PLANNING COMMISSION REGULAR MEETING – 7:00 P.M. COUNCIL CHAMBERS

555 Santa Clara Street, Vallejo, California

Peggy Cohen-Thompson,
Chair
Jamar Stamps, Vice Chair
Diosdado "J.R." Matulac
Charles Palmares
Melissa Bowman
Donald Douglass
Eric Blind

December 5, 2022

NOTICE: Members of the public will be able to participate in-person or remotely via Zoom. City Hall and the Council Chambers will be open to members of the public 30 minutes prior to the start of the meeting.

VIEW THE MEETING:

There are four different ways you can view this public meeting:

- In Person
- Watch Vallejo local channel 28
- Stream from the City website: www.cityofvallejo.net/Streaming
- Join the Zoom webinar: <https://ZoomRegular.Cityofvallejo.net>

IMPORTANT NOTICE

This AGENDA contains a brief general description of each item to be considered. The posting of the recommended actions does not indicate what action may be taken. If comments come to the Planning Commission without prior notice for an item not listed on the AGENDA, no specific answers or responses should be expected at this meeting per State law.

Pursuant to Government Code Section 54954.3 of the Brown Act, members of the public shall be afforded the opportunity to speak on any agenda item of interest to them after being recognized by the presiding officer. Members of the public wishing to be so recognized are requested to submit a completed speaker card to the Secretary of the Planning Commission prior to the consideration of the item or raise their hand via ZOOM: (<https://ZoomRegular.Cityofvallejo.net>) or by phone: Dial (669) 900-6833. Enter Meeting ID: 914 0075 0676#. Press * 9 to digitally raise your hand from the phone. For additional instructions on how to speak remotely during public comment, please visit www.cityofvallejo.net/publiccomment. In person speakers will be recognized first.

This AGENDA contains a brief general description of each item to be considered. The posting of the recommended actions does not indicate what action may be taken. If comments come to the Planning Commission without prior notice and are not listed on the AGENDA, no specific answers or response should be expected at this meeting per State law.

Notice of Availability of Public Records: All public records relating to an open session item, which are not exempt from disclosure pursuant to the Public Records Act, that are distributed to a majority of the Planning Commission will be available on the City of Vallejo website at www.cityofvallejo.net subject to staff's ability to post the documents prior to the meeting.

Disclosure Requirements: Government Code Section 84308 (d) sets forth disclosure requirements which apply to persons who actively support or oppose projects in which they have a "financial interest", as that term is defined by the Political Reform Act of 1974. If you fall within that category, and if you (or your agent) have made a contribution of \$250 or more to any commissioner within the last twelve months to be used in a federal, state or local election, you must disclose the fact of that contribution in a statement to the Commission.

Appeal Rights: The applicant or any party adversely affected by the decision of the Planning Commission may, within ten days after the rendition of the decision of the Planning Commission, by filing a written appeal with the Director of Planning and Development Services. Such written appeal shall state the reason or reasons for the appeal and why the applicant believes he or she is adversely affected by the decision of the Planning Commission. Such appeal shall not be timely filed unless it is actually received by Director of Planning and Development Services or designee no later than the close of business on the tenth calendar day after the rendition of the decision of the Planning Commission. If such date falls on a weekend or City holiday, then the deadline shall be extended until the next regular business day.



The Council Chambers in City Hall is ADA compliant. Devices for the hearing impaired are available from the City Clerk. Requests for disability related modifications or accommodations, aids or services may be made by a person with a disability to the City Clerk's office no less than 72 hours prior to the meeting as required by Section 202 of the Americans with Disabilities Act of 1990 and the federal rules and regulations adopted in implementation thereof.

If you have any questions regarding any of the following agenda items, please call the assigned planner or project manager at (707) 648-4326.

1. CALL TO ORDER

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

4. CONSENT CALENDAR AND APPROVAL OF AGENDA

Upon motion of any Commissioner, all items placed upon the consent calendar may be acted upon collectively, and each shall be deemed to have received the action recommended by the Secretary or City Attorney; except that if any Commissioner objects to the placement of an item on the consent calendar, or if any member of the public wishes to address the Commission on any such item, the item shall be removed from the consent calendar and shall be heard and acted upon in its proper place on the agenda as designated by the Presiding Officer.

After making changes in the agenda, if any, as permitted under these rules of order and procedure, the Commission shall approve the agenda which shall constitute the agenda of business to be considered at the meeting. The motion offered to approve the agenda shall include the adoption of the consent calendar.

A. APPROVAL OF MINUTES – September 19, 2022 Regular Meeting Minutes

B. OTHER CONSENT ITEMS - None

5. REPORT OF THE CITY COUNCIL LIASION

The City Council Liaison may, from time to time, wish to make announcements and report on items of activity that may be of interest to the Commission and the general public.

6. COMMUNITY FORUM

The Presiding Officer shall announce that members of the public have the opportunity to directly address the Commission on items of interest to the public that are within the subject matter jurisdiction of the Commission and not on the current agenda. Up to fifteen (15) minutes shall be set aside for the community forum and each speaker shall be allocated up to three (3) minutes, unless time is extended by the Presiding Officer with the Commission's consent. Items of business listed on the agenda shall not be further discussed under the community forum. Anyone desiring to address the Commission may indicate such interest in one of the two ways listed below:

1. Any interested members of the public desiring to communicate with the Planning Commission for this item may approach the podium to speak when the Presiding Officer opens the Community Forum and indicate that they would like to do so.

*2. Any interested members of the public desiring to communicate with the Planning Commission for this item may do so via ZOOM:(<https://ZoomRegular.Cityofvallejo.net>), or by phone: Dial (669) 900-6833. Enter Meeting ID: 914 0075 0676#. Press * 9 to digitally raise your hand from the phone. For additional instructions on how to speak remotely during public comment, please visit, www.cityofvallejo.net/publiccomment. Please know that in-person speakers will be recognized first.*

7. PUBLIC HEARING – None

8. ACTION ITEMS – None

9. WRITTEN COMMUNICATIONS

Written communications from the public will be received and filed. Written communications regarding items on the agenda will be noted at the time the item is considered.

10. REGULAR REPORTS

A. SECRETARY'S REPORT

The Secretary may, from time to time, report on items that may be of interest to the Commission and general public.

B. CITY ATTORNEY'S REPORT

The City Attorney may, from time to time, report on items that may be of interest to the Commission and general public.

C. REPORT OF THE PRESIDING OFFICER AND MEMBERS OF THE PLANNING COMMISSION

The Presiding Officer and any Commissioner may, from time to time, wish to make certain announcements, request information from staff, and to report on items of activity that may be of interest to the Commission and the general public.

D. REPORT OF THE SUBCOMMITTEES

11. OTHER AGENDA ITEMS

A. Presentation of Parking and Transportation Demand Management (PTDM) Plan and In-lieu Fee Program related to Potential Future Funding of City Infrastructure Projects to Reduce Vehicle Miles Travelled (VMT) and Contribute to Safety and Multimodal Accessibility.

B. Discussion of Future Agenda Items

- a. Phase 2 Zoning Code Updates
- b. Housing, Safety and Environmental Justice Elements
- c. Overview of new State housing laws

12. ADJOURNMENT

I, Jasmine Thibeaux, Planning & Development Services Executive Secretary, do hereby certify that I have caused a true copy of the above notice and agenda to be delivered to each of the members of the Vallejo Planning Commission, at the time and in the manner prescribed by law and that this agenda was posted at City Hall, 555 Santa Clara Street, CA at 5:00 p.m. Thursday, November 28, 2022

Jasmine Thibeaux

Dated November 28, 2022

Jasmine Thibeaux

**CITY OF VALLEJO PLANNING COMMISSION
REGULAR MEETING MINUTES
COUNCIL CHAMBERS
September 19, 2022**

1. CALL TO ORDER

The meeting was called to order by Chairman Cohen-Thompson at 7:02 p.m.

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

Present: Chair Cohen-Thompson, Vice-Chair Stamps, Commissioners Matulac, Palmares, Blind, Douglass, Bowman

Absent:

Staff present: Planning Manager Kavanaugh-Lynch, Director Christina Ratcliffe, Laura Zagaroli

4. CONSENT CALENDAR AND APPROVAL OF AGENDA

Action: Moved by Commissioner Bowman, second by Commissioner Matulac, the Commission approved the consent calendar and agenda with the following vote:

VOTE:

AYES: Chair Cohen-Thompson, Vice-Chair Stamps, Commissioners Matulac, Palmares Bowman, Douglass, Blind

NOES: None

ABSENT: None

ABSTAIN: None

A. APPROVAL OF MINUTES– May 2, 2022 and July 18, 2022 Minutes

Action: Moved by Commissioner Blind, second by Commissioner Douglas, the Commission approved the minutes with the following vote:

VOTE:

AYES: Chair Cohen-Thompson, Vice-Chair Stamps, Commissioners Matulac, Palmares Bowman, Douglass, Blind

NOES: None

ABSENT: None

ABSTAIN: None

B. OTHER CONSENT ITEMS - None

5. REPORT OF THE CITY COUNCIL LIASION - None

6. COMMUNITY FORUM – No Speakers

7. PUBLIC HEARING - None

8. ACTION ITEMS

A. General Plan Conformance Review for New Project, PW9728: Sacramento Street Road Diet Phase II Project - To Add into Fiscal Year 2022-2023 Capital Improvement Program.

Planning Manager Kavanaugh- Lynch introduced the Director of Public Works, Melissa Tigbao and Transportation Program Superintendent, Mark Helmbrecht.

Mr. Helmbrecht gave a presentation and answered questions from the Commissioners.

A recess from 7:07 to 7:17pm was taken to allow some Planning Commissioners to look over materials.

Chair Cohen-Thompson opened the Public Hearing. There were no speakers.

Chair Cohen-Thompson closed the public hearing.

Commissioners shared recommendations in support of complete streets, elevated walkways, and buffered bike lanes whenever possible. They also supported graphics when trying to describe transportation terms.

Action: Moved by Vice-Chair Stamps, second by Commissioner Matulac, the Commission approved the action item with the following vote:

VOTE:

AYES: Chair Cohen-Thompson, Vice-Chair Stamps, Commissioners Matulac, Palmares Bowman, Douglass, Blind

NOES: None

ABSENT: None

ABSTAIN: None

9. WRITTEN COMMUNICATIONS

Planning Manager Kavanaugh-Lynch noted that the PC received a letter from the Toxic Substances Control Board.

10. REGULAR REPORTS

A. SECRETARY'S REPORT – Planning Manager Kavanaugh-Lynch noted that upcoming meetings will focus on Zoning Code Amendments to further clarify the new Code.

B. CITY ATTORNEY'S REPORT - None

C. REPORT OF THE PRESIDING OFFICER AND MEMBERS OF THE PLANNING COMMISSION

- i. Vice Chair Stamps noted that he will not be able to attend the next meeting due to a conflict.

- ii. Commissioner Matulac noted that work undertaken by the City in District two is almost complete.
- iii. Chair Cohen-Thompson noted that Adaptive Reuse is good way to describe the repurposing of a structure.
- iv. Commissioner Blind thanked staff for the training opportunities that have been offered.

D. REPORT OF THE SUBCOMMITTEES – None

11. OTHER AGENDA ITEMS – None

12. INFORMATIONAL ITEMS – None

13. ADJOURNMENT

Action: Moved by Commissioner Matulac, second by Commissioner Bowman, the Commission adjourned the meeting with the following vote:

VOTE:

AYES: Chair Cohen-Thompson, Vice-Chair Stamps, Commissioners Matulac, Palmares Bowman, Douglass, Blind

NOES: None

ABSENT: None

ABSTAIN: None

Chair Cohen-Thompson adjourned the meeting at 7:32 p.m.

Peggy Cohen-Thompson, CHAIRPERSON

ATTEST:

Manager Kavanaugh-Lynch
SECRETARY



**STAFF REPORT
CITY OF VALLEJO
PLANNING COMMISSION**

I. PROJECT INFORMATION

DATE OF MEETING: December 5, 2022 Item No. 11-A

PREPARED BY: Margaret Kavanaugh-Lynch, Planning Manager

PROJECT LOCATION: Citywide

REQUESTED ACTION: Receive Presentation

PROJECT SUMMARY: Presentation of Parking and Transportation Demand Management (PTDM) Plan and In-Lieu Fee Program created as a result of a Caltrans Sustainable Transportation Planning Grant. No action will be taken at this meeting.

RECOMMENDATION: Receive presentation.

II. PROJECT DESCRIPTION

A. Background

Vehicle Miles Traveled and Greenhouse Gas Emissions

Vehicle Miles Traveled

Prior to 2013, the City of Vallejo, like most California cities, determined transportation impacts by measuring automobile delay or congestion with a reporting system called Level of Service (LOS). If a project worsened congestion beyond a certain level, then the project would have to mitigate its impact by implementing measures to lessen congestion. That mitigation often came in the form of adding more lanes of travel. While this could temporarily reduce congestion, it ultimately attracted more cars and congestion while also worsening conditions for pedestrians and bicyclists.

To reflect California's commitment to reducing vehicle emissions that contribute to climate change and pose public health risks, the State enacted SB743. Passed in 2013, this law mandates that congestion will no longer be used to measure transportation impacts. Measuring a project's effect on Vehicle Miles Traveled (VMT) is now the recommended method. VMT is a calculation of every vehicle trip taken by a person multiplied by the projected length of each trip. While total VMT is projected to increase in Vallejo as its population grows, VMT per person must decrease over time in order to meet State air quality and sustainability goals.

SB 743 also changed the way transportation impacts are identified in the California Environmental Quality Act (CEQA). It directed the Office of Planning and Research (OPR) to consider different metrics for identifying transportation impacts under CEQA. OPR

finalized updates to the CEQA Guidelines in December 2018. The updated Guidelines state that, as of July 2020, all lead agencies must use VMT as the new transportation metric for identifying environmental impacts of land use projects. In response to these Guidelines, the City of Vallejo implemented the *City of Vallejo CEQA Transportation Impact Analysis Guidelines* for use in CEQA impact analysis in October of 2020. (Attachment 4, included for reference only.)

Greenhouse Gas Emissions

Gases that trap heat in the atmosphere are called greenhouse gases. The greenhouse effect is a natural process by which some of the radiant heat from the Sun is captured in the lower atmosphere of the Earth, thus maintaining the temperature, and making Earth habitable. Naturally occurring greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Certain human activities however, add to the levels of most of these naturally occurring gases. The most common greenhouse gases, and those which are identified in AB32 are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The Bay Area's transportation sector alone contributes [40 percent of the CO₂e¹ GHG emissions²](#).

Caltrans Sustainable Transportation Planning Grant

As noted in [Plan Bay Area 2050](#), the Bay Area is projected to experience significant growth in population and jobs through 2050 (despite the significant near-term impacts of the global pandemic and associated economic recession). Without interventions, the projected growth, exacerbated by challenges in housing production and affordability, will result in increasing VMT and associated impacts, including increased greenhouse gas (GHG) emissions, air quality risks, congestion, and traffic-related injuries and deaths. Additional work needs to be completed in order to address the goal of meeting greenhouse gas emission reduction targets established by the State through SB 375. To provide tools to help local jurisdictions develop these policies and plans, MTC, in partnership with the City of Richmond and the City of Vallejo, was awarded a Caltrans Sustainable Transportation Planning Grant.

A core element of MTC's strategy to accommodate growth in the region while limiting VMT and GHG emissions is the Priority Development Area (PDA) land use strategy. PDAs are the focal points of the region's future development, and also qualify local jurisdictions for help from MTC's Technical Assistance Program to support planning for the PDAs. A subset of these PDAs are designated as Connected Community PDAs, areas with basic bus service. The requirements for Connected Community PDAs to invest in VMT-reducing measures work toward that goal of creating alternatives to driving in areas which, unlike Transit-Rich PDAs, do not already have high-quality transit services. Vallejo has multiple Connected Community PDAs including Carquinez Heights, Central Corridor East, Central Corridor West, Solano 360, and Sonoma Boulevard.

MTC identified two sets of policies and plans that cities and counties can pick to develop to meet the requirements:

¹ CO₂e (also written as carbon dioxide equivalent, CO₂ equivalent or CO₂eq) is a metric measure that is used to compare emissions from various greenhouse gases on the basis of their GWP by converting amounts of other gases to the equivalent amount of CO₂.

² Legislative Analyst's Office - Assessing California's Climate Policies—Transportation. December 21, 2018

As part of the grant, the City of Vallejo was tasked with “Option A”:

1. A Development Parking and TDM (PTDM) Plan Framework: Framework for assessing and planning VMT mitigation (e.g., vehicle trip caps, reduced parking requirements, fee mitigations) as part of the review and permitting process for new residential and commercial developments.
2. VMT Mitigation Transportation Impact Fee Study: Analysis to develop mitigation impact fees that would fund multimodal transportation projects for new housing and commercial developments for those projects which cannot fully mitigate their VMT impacts.

The City of Richmond was tasked with “Option B”:

3. Road Safety Plan: Roadway collision data collection and analysis to prioritize safety countermeasures and investments, particularly for active transportation modes (human-powered modes of transit, e.g.: biking, walking, rolling).
4. Bicycle and Pedestrian Infrastructure Action Plan: Plan focused on identifying and prioritizing short-term, actionable bicycle and pedestrian infrastructure projects.

Together, this VMT-Reduction Planning Toolkit (Toolkit) is intended to help cities and counties with Connected Community PDAs and other local jurisdictions interested in aligning their planning efforts with VMT and GHG reduction. Cities and counties with Connected Community PDAs must have either Option A or Option B in place by 2025.

For the City of Vallejo, the Plan (Attachment 1) and In-Lieu Fee Program (Attachment 2) could fulfill the designation requirements for Connected Community Priority Development Areas set by MTC. If adopted, these documents will apply to all development in Vallejo (with limitations as outlined the Plan and In- Lieu Fee Program) in order to maximize the benefits of a more multimodal transportation system city-wide that promotes a shift to more sustainable modes of travel.

CONCLUSION / STAFF RECOMMENDATION

The purpose of this presentation is to receive an overview of the Parking and Transportation Demand Management (PTDM) Plan and In-Lieu Fee Program created as a result of a Caltrans Sustainable Transportation Planning Grant. No action will be taken at this meeting.

Possible future actions include adding some or all Toolkit measures as an Amendment to the General Plan along with an appropriate level of environmental review, which is anticipated to be an Environmental Impact Report under CEQA. Staff will be researching additional grant possibilities to fund the CEQA analysis that would be required to amend the General Plan to include some or all of the components of VMT-Reduction Planning Toolkit and will return to the Planning Commission at a future date.

ATTACHMENTS

1. Parking and Transportation Demand Management (PTDM) Plan

2. In-Lieu Fee for Vehicle Miles of Travel (VMT) Reduction Report
3. Implementation Plan and Program Update Methods for Vallejo In-Lieu Fee for VMT Reduction
4. City of Vallejo CEQA Transportation Impact Analysis Guidelines - October 2020



Parking and Transportation Demand Management Plan for VMT Mitigation

Draft-Final Report

FEHR  PEERS

October 2022

Prepared for:
City of Vallejo

Parking and Transportation Demand Management Plan for VMT Mitigation

Draft-Final Report

Prepared for:
City of Vallejo

October 2022

OK21-0422

FEHR  PEERS

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Section 1. Introduction

The Purpose of the Parking and Transportation Demand Management (PTDM) Plan

This Plan is intended to provide the City of Vallejo and developers of land use projects in the city with measures that can reduce vehicle trips and vehicle miles traveled (VMT) generated by new development. The Plan is part of a two-pronged approach to reduce vehicle miles traveled in Vallejo, with the second part being an In-Lieu Fee for VMT Reduction to be paid by land developers to fund off-site improvements in the city that would help existing and future residents, employees, and visitors travel by non-auto modes. Together, the Plan and Fee will fulfill the designation requirements for Connected Community Priority Development Areas set by the Metropolitan Transportation Commission (MTC), which will in turn facilitate development in these areas as described further below. These documents will apply to all development in Vallejo (with limitations as outlined below) in order to maximize the benefits of a more multimodal transportation system that promotes a shift to more sustainable modes of travel.

This Plan provides the following information:

Section 1 – Introduction

- An overview of Connected Community Priority Development Areas
- An overview of Vallejo's VMT analysis guidelines and significance thresholds

Section 2 – Parking and TDM Measures Toolbox

- An overview of how these measures work to reduce VMT, including the efficacy of combinations of measures
- Site-Specific measures which apply to on-site development
- Off-site/citywide measures which could be funded by the In-Lieu Fee for VMT Reduction

Section 3 – Policy Implementation

- Implementing the PTDM Plan
- Implementing the In-Lieu Fee for VMT Reduction
- City Parking Policies
- Implementation Costs

MTC's Connected Community PDA Requirements

As part of MTC-ABAG's Regional Growth Framework, cities and counties can nominate eligible areas as Priority Development Areas (PDAs). PDAs are the focal points of the region's future development, and also qualify local jurisdictions for help from MTC's Technical Assistance Program to support planning for the PDAs. PDAs are nominated by the local jurisdiction and must be located in existing urban areas and be planned for significant housing growth and/or housing and employment growth as reflected by the local jurisdiction's general plan or zoning ordinance. A subset of these PDAs are designated as Connected Community PDAs, areas with basic bus service, and require the adoption of two policies to reduce VMT.

Vallejo has multiple Connected Community PDAs that require the City to adopt at least two VMT-reducing policies—Carquinez Heights, Central Corridor East, Central Corridor West, Solano 360, and Sonoma Boulevard.

MTC's intent behind establishing PDAs and prioritizing development in them is to maximize the amount of new development in areas with non-auto travel options. The requirements for Connected Community PDAs to invest in VMT-reducing measures work toward that goal of creating alternatives to driving in areas which, unlike Transit-Rich PDAs, do not already have high-quality transit services.

This PTDM Plan, along with a separate In-Lieu Fee for VMT Reduction, constitute the two VMT-reduction policies that will allow the City to comply with the MTC requirements for Vallejo's Connected Community PDAs.

VMT Analysis in Vallejo

SB 743, signed by the governor in 2013, has changed the way transportation impacts are identified. Specifically, the legislation directed the Office of Planning and Research (OPR) to consider different metrics for identifying transportation impacts under the California Environmental Quality Act (CEQA). OPR finalized updates to the CEQA Guidelines in December 2018; the updated Guidelines identify vehicle miles traveled (VMT) as the preferred transportation impact metric. The updated Guidelines state that, as of July 2020, all lead agencies must use VMT as the new transportation metric for identifying environmental impacts of land use projects.

The City of Vallejo has adopted VMT analysis methodology, metrics, and significance thresholds for use in CEQA impact analysis (*City of Vallejo CEQA Transportation Impact Analysis Guidelines*, October 2020). This document requires assessing home-based VMT per resident for residential uses, home-based-work VMT per employee for employment uses, and project-specific metrics for other use types. It states that a project which generates VMT per resident or VMT per employee at a rate higher than the citywide average would be considered a significant impact under CEQA.

For purposes of SB 743 compliance, the Guidelines call for a VMT analysis to be conducted for land use projects that have the potential to increase the average VMT per service population, resident, or employee, depending on the project type (service population is residents plus employees). In addition to



assessing the project's VMT efficiency, the project's effect on total citywide VMT is also calculated to assess how the project may change VMT within the city as it interacts with other city land uses. The analytical procedures are documented below.

The Guidelines also prescribe significance thresholds, which are intended to hold new development VMT generation at or below citywide VMT generation levels for the baseline and cumulative scenarios. This is expected to result in declining VMT over time, as compared to a business-as-usual condition with no VMT limits. The thresholds balance the City's priorities with respect to competing objectives including Vallejo's geographic and transportation context, greenhouse gas reduction goals, interest in achieving the state's greenhouse gas reduction goals, and General Plan 2040 goals and policies related to land use mix, economic development, and housing provision. These thresholds are as follows:

Threshold 1: Project Generated VMT (Residential and Office/Industrial Projects) – Baseline

Project-generated Residential Tour VMT per resident (for residential projects), Home-Based-Work Tour VMT per employee (for office/industrial projects) or Total VMT per service population (for mixed-use projects) is no higher than the baseline citywide Residential Tour VMT per resident, Home-Based-Work Tour VMT per employee, or Total VMT per service population.

Threshold 2: Project Generated VMT (Residential and Office/Industrial Projects) – Cumulative

Project-generated Residential Tour VMT per resident (for residential projects), Home-Based-Work Tour VMT per employee (for office/industrial projects), or Total VMT per service population (for mixed-use projects) is no higher than the cumulative citywide Residential Tour VMT per resident, Home-Based-Work Tour VMT per employee, or Total VMT per service population. This threshold does not apply if it can be demonstrated that VMT rates are declining at the time of the analysis.

Threshold 3: Project's Effect on VMT (Residential and Office/Industrial Projects) – Cumulative

The Project reduces or has no effect on the citywide total VMT under cumulative conditions.

Threshold 4: Project-Generated VMT and Project's Effect on VMT (Other Project Types)

VMT thresholds for other project types (for example, institutional, destination hotel, or cultural projects) would be developed using considerations unique to the individual project. The thresholds will incorporate the principles of Thresholds 1–3, i.e., projects that are not expected to generate VMT above a relevant baseline level and/or are not expected to increase VMT in the cumulative condition would be considered to have a less than significant impact with respect to VMT.

The Guidelines also provide criteria that can be used to screen certain project types from a full VMT analysis, including local-serving retail uses less than 50,000 square feet; the basis for this screening is that uses expected to serve a local community are likely to reduce trip lengths relative to conditions without the new local-serving use.

Section 2. Parking and TDM Measures Toolbox

As noted above, the purpose of this Plan is to provide developers and Vallejo City staff guidance on how parking policies and TDM measures can be incorporated into projects to reduce their VMT effects. There are four primary mechanisms by which these tools work:

1. **Site-Specific Traditional TDM Programs:** Developers, property managers, or employers adopt and implement employee benefits and marketing programs that lead residents, workers, and visitors to choose to travel by walking, biking, transit, or carpooling.
2. **Site-Specific On-Site Infrastructure:** Developers and project sponsors agree to make physical changes to their projects to support non-auto modes. This may include providing bicycle parking and infrastructure, as well as overall site design to prioritize and create a pleasant experience for pedestrians approaching the site.
3. **Off-Site Investments:** In many cases, the most efficient ways to reduce VMT involve structural or operational improvements to a community's streets and transit systems. These measures must be implemented through a funding mechanism such as a VMT mitigation fee or, in some instances, by having project sponsors directly fund an improvement.
4. **Parking Policy:** By removing parking minimums, approving projects with less parking than is typical in an area, or by having a project charge for parking, individuals will be encouraged to choose other modes to save money or avoid the inconvenience of parking.

Based on the mechanism or type of measure, different parties are ultimately responsible for delivering and implementing the measure. While traditional TDM programs may be administered by an employer, or consortium of employers, cities or Transportation Management Associations (TMAs) may also offer them. In contrast, while off-site investments may be funded by individual projects, they require active involvement from cities and/or transportation agencies to fully implement.

This Plan consolidates all these measures into a single "toolbox" that describes what they entail, who is ultimately responsible for implementation, the mechanism of action, how effective they are at reducing VMT, and which other measures they may complement.

It is noted that the City should consider developing parking management programs for its PDAs to proactively address potential issues that can arise when individual development site parking supplies are limited. Such programs can work together with site-specific parking and TDM measures to optimize the provision and use of the overall parking supply.



VTM Reduction Efficacy

As discussed in the introduction, the PTDM Plan is intended to provide a tool for project sponsors to reduce the VMT effects of their project. The Plan also provides guidance and evidence about the efficacy of individual measures and combinations of measures. Quantitative reductions are largely taken from the 2021 *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* ("CAPCOA Handbook"). The CAPCOA Handbook was developed specifically to provide robust evidence of TDM effectiveness such that its use is appropriate for calculating mitigation in a CEQA context; while some TDM measures may provide additional non-quantifiable benefits, this Plan focuses on those with specific reduction potentials. In each case, the range of reductions presented in this Plan is customized to reflect the Vallejo context when possible.

In addition, each measure presents two reduction numbers: a typical reduction (using the CAPCOA Handbook methodology) and a potential reduction, based on a variety of other sources such as case studies and the previous edition of the CAPCOA Handbook. For most CEQA purposes, use of a typical reduction is preferred; however, with a robust monitoring program capable of ensuring a given performance level, using a more aggressive reduction estimate may be appropriate.

Grouping Measures

TDM is an umbrella term that is often used to refer to a wide range of policies and programs. Many of these programs act in concert with one another, increasing the potential effectiveness of the entire "package" of parking and TDM programs. In this parking and TDM toolbox, we have grouped measures into umbrella actions designed as packages. In most cases, these measures have room for customization and providing additional detail as to implementation requirements.

Site-Specific Measures (TDM Ordinance)

Measures discussed below are largely developer-driven, and create the backbone of a potential VMT mitigation strategy for an individual project. Following assessment of a project's anticipated VMT per capita, the measures discussed in this section can be added either to the project description or to a TDM-based mitigation measure. If projects are able to achieve a reduction in VMT to less-than-significant levels based on these programs alone, that conclusion can be reflected in the project's environmental review. In addition, many of these programs can (once implemented) help contribute to a culture of shifting away from vehicular travel.

Ongoing TDM Programs

Strategy Mechanism: Traditional TDM Programs

Responsible Implementing Party: Property Managers / Employers

Typical VMT Reduction: Up to 20 percent of commute VMT / up to 5 percent of VMT for all other uses.

Commute Trip Reduction Marketing (CAPCOA Handbook Measure T7)

This measure requires a property manager, employer, or TMA to implement a marketing strategy to promote commute trip reduction programs and benefits. Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond driving such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions.

To gain credit for this measure, the applicant must ensure the following components will be implemented at project occupancy:

- Designation of a transportation coordinator, a single individual or team responsible for managing and promoting the suite of TDM programs available at the project.
- Provision of either on-site or online information about available transportation options and programs, including elements such as transit maps and schedules, links to ridesharing resources, information about commute benefits, information on park-and-ride facilities, casual carpool locations, and bicycle maps.
- On-site or online transit pass sales, publicized widely among project employees and residents.
- Participation and promotion of guaranteed ride home programs, such as the one offered by Solano Mobility (<https://www.solanomobility.org/commuter/>).

Project applicants must also provide a plan to ensure ongoing compliance, particularly when the project will be managed by another entity after completion. If all requirements are met, there is an expected **4 percent reduction in home-based work VMT**. For similar programs targeting all residential trips, see measure T-23: Community Based Travel Planning.

Provide Ridesharing Program (CAPCOA Handbook Measure T-8)

Ridesharing encourages carpooled vehicle trips in place of single-occupied vehicle trips, thereby reducing the number of trips, VMT, and GHG emissions. The primary barrier to ridesharing is identifying individuals with similar schedules and commutes; as such, ridesharing programs should, at a minimum, provide a platform for matching individuals interested in sharing rides. These platforms, whether they be online or app-based, are more effective with more participants, as it increases the pool of potential matches. Solano Mobility provides ridesharing services (see link above).

To facilitate the creation of a large enough pool of rideshare participants, the project must promote a ridesharing program and either a) establish a permanent transportation management association with funding required by employer tenants; b) require the property or all employer tenants participate in and contribute financially to an existing transportation management association; or c) be adopted by an employer with at least 1,000 employees. In addition, employers should offer incentives to carpool participants, such as providing a one-time gas card for new carpools, or offering preferential parking.

If fully implemented to the standards above, a robust ridesharing program can achieve a **4 percent reduction in home-based work VMT**.



Implement Subsidized or Discounted Transit Program (CAPCOA Handbook Measure T-9)

This measure provides subsidized, discounted, or free transit passes for employees and/or residents of the project. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving, increasing the total number of transit trips and decreasing vehicle trips. This decrease in vehicle trips results in reduced VMT and thus a reduction in GHG emissions.

The effectiveness of subsidized transit programs is directly tied to the quality of the transit network, including the number of destinations accessible via transit from the project site within a reasonable amount of time. Services that have travel times closer to those achievable in a personal vehicle will be more efficient with subsidies, as travel time is the primary deciding factor in most people's mode choice, even when subsidies are provided.

Based on Vallejo's existing transit mode share, 2.3 percent of trips made by residents are made via transit. This increases to 4.2 percent of commute trips made by residents, likely reflecting that commute trips occur when there is a higher level of transit service, and that transit trips may be more time-competitive and/or cost-competitive, particularly to San Francisco.

However, among commute trips made by people working in Vallejo, the transit mode share is only 2.4 percent, reflecting that most workers in Vallejo live in Solano, Contra Costa, and Napa counties, where fewer transit options exist.

Based on these existing transit mode shares, project sponsors proposing provision of 100 percent transit subsidies (up to the IRS commuter benefits maximum of \$280 per month) may claim a reduction in VMT of **0.50 percent**. The relatively low efficacy of this measure reflects the current state of transit service, which is non-time competitive with driving; investments in transit service via an impact fee program, or pricing measures disincentivizing parking, are more likely to result in increased transit use than a subsidy program without either of those elements in place.

Provide Employer Sponsored Vanpool / Point-to-Point Shuttles (CAPCOA Handbook Measure T-11)

This measure will implement an employer-sponsored vanpool service. Vanpooling is a flexible form of public transportation that provides groups of 5 to 15 people with a cost-effective and convenient rideshare option for commuting, generally through leasing of a high-occupancy van from an appropriate vanpooling vendor, with the employer paying all leasing and gasoline costs. The mode shift from long-distance, single-occupied vehicles to shared vehicles reduces overall commute VMT, thereby reducing GHG emissions. This is especially effective because vanpool participants tend to have extremely long commutes.

However, vanpool formation and maintenance is extremely difficult, as it requires at least six to seven individuals to have the same schedule and be willing to arrive and leave work at the same time each day, as well as one of those individuals to accept the responsibility of acting as the vehicle's driver. This inconvenience is why vanpools are often most effective with the longest-distance commuters.

A variant of vanpooling is the point-to-point employee shuttle, such as the “tech buses” employed by Silicon Valley employers. These remove the burden of requiring a volunteer employee driver, but provide the same point-to-point long-distance benefits of a vanpool.

A reasonable vanpool mode share for most employers is around one to two percent of all employees, due to the difficulties of formation and maintenance discussed above. The methods set forth in the CAPCOA handbook would ideally be used to calculate potential benefits; however, with a 1.5 percent adoption rate, project sponsors may claim a **3.4 percent reduction** in home-based work VMT. This equates roughly to one regular vanpool per 400 employees, and the assumption that vanpool participants have commutes roughly 2.5 times longer than typical employees. In Vallejo’s case, to qualify for the full level of VMT reductions, the vanpool should be traveling to and from home locations such as Fremont, Santa Rosa, Dublin, and Brentwood.

Price Workplace Parking (CAPCOA Handbook Measure T-12)

This measure will price onsite parking at workplaces. Because free employee parking is a common benefit, charging employees to park on-site increases the cost of choosing to drive to work. This is expected to reduce single-occupancy vehicle commute trips, resulting in decreased VMT, thereby reducing associated GHG emissions.

Calculating the effectiveness of workplace parking pricing in Vallejo poses some challenges due to the overwhelming prevalence of free parking under current conditions, and the lack of available alternatives (such as robust transit service). In urbanized areas, increasing the price of parking could result in up to a 20 percent reduction in parking at that facility; however, research indicates that pricing is around half as effective if no appropriate modal substitutes are available. Ergo, we suggest that employers may achieve **up to a 10 percent reduction in commute VMT** for implementing priced parking for all employees. We also suggest a minimum parking rate of \$5 per day, to roughly coincide with the local cost of a day pass on SolTrans.

Implement Employee Parking Cashout (CAPCOA Handbook Measure T-13)

Parking cash-out is when employers provide employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to or greater than the cost of the parking space. It is required under state law for employers of a certain size; however, this requirement only applies when the employer pays a parking provider to lease the spaces. Providing cash-out in instances where parking is provided for free by the building, or where the employer owns the facility, instead operates as a sort of reverse parking pricing. This encourages employees to use other modes of travel instead of single occupancy vehicles. This mode shift results in people driving less and thereby reduces VMT and GHG emissions.

As discussed above, parking in Vallejo is currently free at most employer locations, and there are limited alternative modes of transportation. Ergo, we estimate employers may achieve only a **6.0 percent reduction** with parking cash-out. Note also that this measure cannot be implemented alongside parking pricing.



Unbundle Residential Parking Costs (CAPCOA Handbook Measure T-16)

This measure is designed to require that residential projects charge for parking separately from rent, or, in the case of condominium units, have parking that is not deeded to the unit. By unbundling residential parking costs from the cost of the home, the costs of vehicle ownership are more salient, and residents are more likely to reduce vehicle ownership (e.g., from two household vehicles to one, or from one to zero).

The effectiveness of unbundling residential parking largely relies on the monthly cost of that parking relative to average cost of owning and operating a vehicle. Because priced parking is uncommon in Vallejo, a modest (relative to residential parking costs in more dense urban communities) monthly charge of 30–50 dollars per month may be the highest the market can bear. At such rates, developers can estimate a reduction of **1.6 percent (\$30/month)** or **2.6 percent (\$50/month)** to all household VMT. Higher levels of reduction may be possible with higher parking rates at the discretion of the City.

Community-Based Travel Planning (CAPCOA Handbook Measure T-23)

This measure helps promote non-vehicle transportation options to residents, rather than to employees (as is the case with most TDM programs). Modeled after programs such as SmartTrips in Oregon, community-based travel planning targets households that have newly moved, and provides intensive outreach and support in trying new modes of travel. This may include vouchers for free transit rides to establish familiarity with the transit system, customized notes on local transit routes, and direct outreach by a member of a local transportation agency or TMA tasked with providing one-on-one information. This requires establishing a transportation coordinator or contributing to a TMA, and working with a more formal program. If such programs are offered, a developer may achieve up to a **2.3 percent reduction** to all household VMT associated with the project.

On-Site Infrastructure Elements Supporting Active Transportation and a “Car-Light” Lifestyle

Strategy Mechanism: On-Site Infrastructure

Responsible Implementing Party: Project Developers

VMT Reduction Potential: Up to 15.5 percent of project-generated VMT (up to 2 percent without reduced parking)

There are three primary measures listed in CAPCOA that relate to on-site design measures, as well as several “best practice” options that may not result in quantifiable VMT reductions at the scale of a single project. Ultimately, measures in this category involve changes in site design, but have minimal ongoing costs.

Provide End-of-Trip Bicycle Facilities (CAPCOA Handbook Measure T-10)

This measure will install and maintain end-of-trip facilities for employee, resident, or visitor use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers. The provision and maintenance of secure bike parking and related facilities encourages commuting by bicycle, thereby

reducing VMT and GHG emissions. Secure, long-term bicycle parking should include bicycle lockers or attended parking areas, located conveniently for cyclists (e.g., ideally near the primary entrance to the building, rather than within a parking structure).

For all land uses, provision of convenient, secure bicycle parking results in up to a **0.4 percent reduction** in VMT. At employment-based uses, adding showers, lockers, and other similar facilities may increase this to a **1.8 percent reduction** to commute trips only.

Implement Carshare Program / Provide Carshare Parking (CAPCOA Handbook Measure T-21)

This measure will increase carshare access in the project area by deploying conventional or electric carshare vehicles. Carsharing offers people convenient access to a vehicle for personal or commuting purposes. This helps encourage transportation alternatives and reduces vehicle ownership, thereby avoiding VMT and associated GHG emissions. Carshare programs may be either round-trip (e.g., ZipCar) or one-way (e.g., Gig) in nature. Project sponsors should identify a carshare partner during development of the project description, and provide space for vehicles on-site. Generally, carshare members drive less than non-members; and presence of carshare can facilitate a “car-light” lifestyle. This can be particularly useful in cases where unbundled parking pricing is introduced. Projects may achieve up to a **0.2 percent reduction in VMT** by providing carshare spaces at appropriate locations.

Limit Parking Supply (CAPCOA Handbook Measure T-15)

This measure will reduce the total parking supply available at a project or site. Limiting the amount of parking available creates scarcity and adds additional time and inconvenience to trips made by private auto, thus disincentivizing driving as a mode of travel. Reducing the convenience of driving results in a shift to other modes and decreased VMT and thus a reduction in GHG emissions. Evidence of the effects of reduced parking supply is strongest for residential developments, where VMT reduction scales with the ratio of provided parking to estimated parking demand (calculated through tools such as the Urban Land Institute *Shared Parking Manual* or the ITE *Parking Generation Handbook*). Sites that provide zero parking can achieve a **13.7 percent reduction** in total VMT; similarly, sites providing 50 percent of estimated parking demand can achieve a **6.9 percent reduction** in total VMT. Other reduction ratios scale accordingly.

In implementing this measure, it is vital to ensure that there is not a readily available supply of free on-street or off-site parking in the immediate vicinity. This can be managed through either time-based parking restrictions, metered parking, or by implementing a residential parking permit program. It is recommended that the application of this measure should be limited to PDAs or sites with high quality transit access.

Off-Site Infrastructure Investments (In-Lieu Fee for VMT Mitigation)

While the measures discussed above are developer-driven, and capable of being implemented at the scale of a single project, many of the most effective long-term VMT mitigation measures must be implemented at the community scale. These measures have the added benefit of not only providing



support to employees or residents of new construction, but benefitting the entire population, thereby helping to lower the VMT produced by current residents and employees. Such measures would be funded by the In-Lieu Fee for VMT Mitigation.

Fund and Construct a Safe, Low Stress Network for Bicycles and Pedestrians

Strategy Mechanism: Off-Site Investments

Responsible Implementing Party: City of Vallejo; Caltrans (*when on state facility*)

VMT Reduction Potential: Up to 2.3 percent of all VMT generated by land use within one half-mile of constructed facilities

Expand Active Transportation Network in Accordance with the Solano County Active Transportation Plan

Improvements to the bicycle and pedestrian network reduce VMT by providing safe, comfortable facilities for active transportation. These improvements tend to be most effective at shifting short, non-work-related trips. Generally, facilities that have greater separation from high volume vehicle facilities are more welcoming to a wider range of cyclists; and new projects that connect facilities crossing these “high stress” areas can have an outsized effect on the transportation network.

In the *CAPCOA Handbook*, four individual measures are described, each with a separate methodology to calculate potential reductions.

T-18: Provide Pedestrian Network Improvements: This measure uses the completeness of the sidewalk network to calculate a VMT reduction. Vallejo currently has around 515 miles of sidewalk, with a total of 727 miles of potential sidewalk coverage (see the *Solano County Active Transportation Plan*, 2021). If Vallejo were to fully complete its sidewalk network, there is potential for a 2.1% reduction to citywide VMT.

T-19-A and T-19-B: Construct or Improve Bicycle Facility/Bicycle Boulevard: This measure calculates avoided VMT based on a singular bicycle facility. While this may be useful for calculating VMT reduction contributions for funding of a single facility, it is less useful in assessing the potential total VMT reduction under a comprehensive VMT mitigation plan. As such, T-20 is more appropriate for establishing VMT mitigation standards.

T-20: Expand Bikeway Network: This measure calculates a VMT reduction based on the overall expansion of a citywide bicycle network, such as that presented in the Solano County Active Transportation Plan. Completion of the 67.8 miles of Class I, II, and IV bicycle facilities listed in Vallejo’s portion of the Solano County ATP is expected to increase overall bicycle mode share from 2.3 percent of all trips to 3.7 percent of all trips, resulting in a 0.26 percent reduction in VMT. While this may seem small, this reduction applies to all VMT generated by land use within the City of Vallejo, and not only that associated with new projects.

Using the CAPCOA Handbook methods, intensive investment in the active transportation network (roughly 280 miles of bicycle facilities and sidewalk recommended in the Solano County Active

Transportation Plan) would result in around a 2.3 percent reduction in total citywide VMT, or around 0.08 percent per ten miles of facility. Reductions to VMT should include all VMT generated by land use within one half-mile of the proposed facilities.

Potential for Transformative Change: While the CAPCOA Handbook estimates a modest reduction in VMT (albeit throughout an entire community) for infrastructure changes, it estimates these reductions based on existing bicycle and pedestrian mode share. Should Vallejo develop in a denser and more transit-oriented, mixed-use pattern over time, these measures may become more effective. Benchmarks for potentially transformative change due to walking and bicycling may be reached by comparing Vallejo's existing conditions to those in other urban contexts. The highest potential for growth in active transportation is through walking; Vallejo has a pedestrian mode share across all trips of only 3.1 percent, compared to the Solano County average of 6.0 percent, and the MTC regional average of 14 percent.

Provide Infrastructure to Support Transit Use

Strategy Mechanism: Off-Site Improvements

Responsible Implementing Party: City of Vallejo

VMT Reduction Potential: Up to 1.6% of all citywide VMT

Transit ridership is typically low in places such as Vallejo: suburban/semi-rural cities within larger metropolitan areas have been largely designed for the automobile outside of a centralized downtown area. In addition, due to the general auto-oriented nature of Solano, Napa, and Contra Costa counties, there are few clear corridors for providing high frequency transit service via bus; and, where such corridors exist, buses have difficulty competing with vehicles on travel time and flexibility.

Comprehensive transit investments may realistically have the potential to reduce VMT by around **1.6 percent** citywide; however, this level of reduction will require concentrated investments such as the following:

- Increasing frequencies of core transit services between key destinations by 200–300 percent (e.g., increasing frequency from one bus per hour to four buses per hour)
- Providing roadway improvements to decrease transit travel times relative to driving
- Introducing strategic BRT service and/or bus-only lanes

Determining the precise VMT reduction potential for individual improvements varies based on the markets served by a route, the scale of changes, and the larger urban context. In addition, most transit service improvements must occur via SolTrans or the Napa Vine service, rather than through City actions directly. However, City actions may be appropriate to improve the overall utility for transit users through key investments such as the following:

- Coordinating Park & Ride facilities for ferries and express buses
- Investing in comfort-based improvements to transit stops, such as installation of seating and shelters



- Dedicating street space for bus-only lanes, queue jump lanes, or future BRT service
- Provision of community or project-based shuttle service

Community-Level TDM Programs for Workers and Residents

Strategy Mechanism: Traditional TDM Programs

Responsible Implementing Party: City of Vallejo / Citywide TMA

VMT Reduction Potential: Up to 20 percent of commute VMT at participating employers

While new developments will be subject to the TDM ordinance and the requirements listed in the Site-Specific Measures, incentive programs designed to make walking, biking, and transit use more appealing can be applied among existing employers as well. Each of the programs listed under *Agree to Ongoing TDM Program for New Development* could be adopted by existing employers. Promoting these programs can occur most readily through a centralized transportation management agency or county program. The best existing candidate to administer such services is Solano Mobility. Funding additional staff support, transportation subsidies, and innovative programs through Solano Mobility can help spread programs among existing businesses who employ more than 30,000 people within the City of Vallejo.

Increase Access to Active Transportation

Strategy Mechanism: Off-Site Improvements

Responsible Implementing Party: City of Vallejo

VMT Reduction Potential: Up to 0.1% of all citywide VMT

While providing a safe, low stress network is the primary way to encourage active transportation, for trips longer than a half-mile, bicycling or some other form of wheeled transportation is often preferred. However, many individuals may not have direct access to or a place to store a bicycle, electric bicycle, or scooter. These strategies are designed to provide additional access to these mobility devices among people of many ages, abilities, and incomes.

T-22: Bikeshare/Scootershare

Bikeshare and scootershare are both variations on a theme that allows for individuals to travel “in-between” distances (often 0.5 to 2 miles) without requiring their own bicycle or scooter. Both dockless and docked versions exist, and promotion of these programs can help close last-mile gaps to transit, or replace short vehicle trips. Because they often replace short trips, the direct VMT replacement rate can be somewhat low; however, full implementation of a bikeshare or scootershare system could result in a **0.06 percent reduction** across all VMT citywide.

Free E-Bike Program

In addition to bikeshare programs, cities and organizations are experimenting in providing electric bicycles free-of-charge, or heavily subsidized, to low-income families, as a way of encouraging active transportation and improving overall mobility and access to resources. These programs have found that

households provided with an e-bike produce **1.2 to 5.5 less total VMT per day**. More studies are needed, and this measure has not yet been included in the CAPCOA Handbook; however, it shows promise if implemented at the community level.



Section 3. Policy Implementation

The prior chapter discussed the various TDM tools at the disposal of both project developers and the City of Vallejo. However, ensuring that these programs are implemented and funded, and that site-based design changes are feasible and supported by the city, will require a number of policy changes. This chapter details the overall vision for making policy changes to allow key VMT mitigation strategies, guiding project sponsors in selecting and implementing appropriate TDM programs, and adopting new policies to manage the overall mitigation process.

Generally, the City will need to adopt guidance on how developers may select site-specific TDM measures (including potential additional requirements to include TDM programs not included in the CAPCOA Handbook); update citywide parking policies to allow for reduced parking supply and encourage unbundled parking; and establish monitoring criteria to ensure program success.

TDM Ordinance Adoption and Site-Specific Measures

While the TDM Measures Toolbox presented in Chapter Two provides formal options and guidance on which project-based measures are most useful in reducing and mitigating VMT impacts under CEQA, the City can further formalize and document its preferred measures through adoption of a Transportation Demand Management Ordinance, which is also a requirement under the Connected Community PDA designation.

Several cities and regions have, or are planning to, pass such ordinances or other formal guidance. This allows for a standardized approach to TDM for all new development; certain measures can also be applied to existing employers, if desired. A TDM Ordinance also offers the opportunity for the City to include additional requirements that may improve the comfort of non-auto users even if they do not have quantifiable VMT benefits. Such requirements may include orienting a building to provide priority access to pedestrians (e.g., by having the primary entrance near the sidewalk rather than set back behind a surface parking facility), provide additional bicycle parking, or provide funding for off-site improvements through direct contributions (rather than through a VMT mitigation fee). It can also help address how to prorate future fees if a project's TDM plan is not sufficient to reduce a VMT impact to less than significant under CEQA.

The most effective way to ensure that a project's TDM plan can achieve a VMT reduction is to allow flexibility in which tools a project uses, but still hold the project responsible for achieving a set performance target, often based on monitoring daily trips or vehicle mode share as a proxy for VMT.

Preparing TDM Plans for New Development

TDM plans must, at a minimum, describe a commitment toward implementing all required measures, specify selection of optional measures, and detail how the measures will be implemented. While applicants may adjust their plans between the preliminary and final versions, the TDM Plan should strive

to provide a specific, actionable path forward to achieve required performance target. Applicants should be encouraged to match the scale of their TDM Plan to the scale of the project; larger projects (such as those generating more than 1,000 daily vehicle trips) are expected to provide a more thorough analysis of travel behavior and improvement measures.

Recommended contents of a TDM Plan include the following:

- Baseline VMT rates and Vehicle Trip Reduction Targets (see “Setting Performance Targets” below)
- Completed list of measures from TDM toolbox that can achieve said targets
- Summary of existing transit, bicycle, and pedestrian conditions near the project site
- A site plan identifying paths of pedestrian and bicycle access in relation to potential conflict points (driveways, loading docks, etc.)
- Identification of the nearest shuttle stop or other transit facilities, and documentation of the proposed shuttle operator (if applicable)
- Identification of proposed offsite improvements and description of how these improvements would support mode shift (if applicable)
- Identification of the proposed TDM coordinator, or description of how the TDM coordinator role will be fulfilled
- Acknowledgement of City’s required monitoring practices

Setting Performance Targets

As discussed in the CAPCOA Handbook, in many cases, VMT reductions can be translated to vehicle trip reductions on a one-to-one basis; the exception is in instances where the measure primarily converts trips that are very different from a typical trip length, as in the case of bicycle-promoting measures (which target very short trips) and vanpool programs (which target very long trips). The CAPCOA Handbook can be used to assess which individual measures require additional modification to their quantification to assess vehicle trips rather than VMT. **Appendix A** contains a table showing typical conversion rates by measure. For all non-office and non-industrial projects, trip counts are the preferred means of assessing compliance.

Because most employment-based land uses generate trips that are not captured in the home-based work per capita VMT rates, a mode share survey may be more appropriate to capture compliance. Because mode shares are presented as a rate, they provide a better comparison to per capita VMT rates than total trips to and from a project.

A project may set its mode share rate as follows:

1. Establish baseline mode share or trip generation.

Baseline daily vehicle trips should be calculated using either rates derived in the project’s environmental study / transportation impact study, or using the most recent edition of ITE’s *Trip Generation*.



For office and industrial projects, baseline mode share should be taken from the same source material as baseline VMT; in most cases, this will be via extraction from the Solano County Transportation Demand Forecasting Model. For residential projects, Census or CHTS data may be used instead.

While many jurisdictions track drive alone trips only, shared ride trips (i.e., carpools, vehicle trips with friends and family, etc.) are a very high proportion of all VMT generated in Vallejo. As such, this step should include calculation of a weighted vehicle mode share that includes drivers of shared rides, but not passengers. This can be accomplished as follows:

$$\text{Vehicle Mode Share} = (\% \text{Drive Alone}) + (\% \text{Shared Ride}) / (\text{Average Occupancy of Shared Rides})$$

For projects without access to specific model data, the following Vallejo-wide mode share may be used as a baseline:

Table 1: Vallejo Travel Mode Shares

Mode	Vallejo Workers ¹ (Home-Based Work Trips)	Vallejo Residents ² (All Home-Based Trips)
Drive Alone	76%	47%
Shared Ride	11%	45%
Transit	1%	2%
Walk or Bike	3%	5%
Work From Home	8%	N/A
Other	1%	1%
Weighted Average Vehicle Mode Share (Drive Alone + Shared Ride / 2.5)	81%	65%
Example Target with 15% Reduction	69%	55%

1. American Community Survey 2020, 5-Year Average; Table B08601: Means of Transportation to Work by Workplace Geography

2. California Household Travel Survey 2012

- 2. Establish target VMT reductions.** Establish a targeted VMT reduction, typically a level of reduction capable of achieving a less-than-significant impact based on the land use and location.
- 3. Translate VMT reduction to vehicle trip reduction.** Using the table in **Appendix A**, translate the VMT reductions of core measures to vehicle mode share reductions. Combine those reductions, and apply to the baseline daily vehicle trips or baseline vehicle mode share to reach a target for the project.

Monitoring Outcomes

Once a target vehicle mode share is established, projects may then proceed to implement TDM plans with appropriate flexibility. Regular monitoring can help determine if a plan is in or out of compliance with its goals, and provide feedback to the property manager and/or employer on what changes may be necessary to reach compliance. The City may set the number of years projects are subject to monitoring, and should apply this requirement consistently for all projects. A minimum of three years is recommended in this Plan.

For all non-office and non-industrial projects, monitoring should occur via annual 24-hour vehicle trip counts at all project driveways. Counts should occur over at least a three-day period, and capture activity during a typical weekday (i.e., during a week without holidays, when schools are in session, and without severe weather). The vehicle count during the most active 24-hour period should be compared to the project's vehicle trip target to assess compliance.

For office, industrial, and other employment-based projects, a mode share survey should be conducted once each year. This survey should, at a minimum, ask about an individual's commute activity during the past week, how they traveled to work each day, and, if they carpooled, whether they were the driver or the passenger. The findings should be used to calculate a weighted average vehicle mode share and compared to the project's target.

Consequences for Sites Out of Compliance

If a site misses its vehicle trip or vehicle mode share target for up to two years, that project must submit documentation of what additional TDM measures they plan to put into place. On the third year of noncompliance, the site will be required to pay penalties into the In-Lieu Fee for VMT Reduction fund, at an amount to be determined by the City based on the degree to which the site is missing its targets. The City may choose to require monitoring and compliance checking for a period of longer than three years, if desired.

Citywide Parking Policies and Requirements

As noted in the discussion of the toolbox measures above, reducing parking supply and charging for parking are two of the most effective ways to reduce overall VMT. Locations with limited, paid parking consistently have noticeably lower rates of VMT generation compared to locations with abundant, free parking.

Vallejo's current off-street parking requirements (discussed in the *Existing Conditions Memorandum* prepared on November 19, 2021) are generally set at levels lower than other suburban, auto-oriented jurisdictions for key land uses such as residential, office, and restaurants. In addition, conditional approval of lower rates of parking supply is allowed when developers can demonstrate measures are in place to reduce parking demand.



Parking is unique as a TDM tool; however, while parking demand may be reduced due to the presence of other TDM measures, a reduction in parking supply is itself a way to manage and mitigate VMT generation. Because of this complex interplay between parking supply, parking demand, and vehicle trips, parking is best managed through having easy-to-follow guidance on what supply is allowable and preferable, introducing policy changes that encourage best practices in parking management, and leveraging TDM requirements and citywide programs to create an environment with ample options other than driving and parking.

This final point is core to managing introduction of new parking policies and reducing the supply of parking at future developments: while limited, priced parking is highly effective at creating mode shift, it is ineffective if a site does not have readily available alternative means of access. Generally, this means proximity to high-quality transit; location in or near walkable neighborhoods with substantial density; or last-mile connections and incentives to regional transit. An isolated site with no transit service is unlikely to be successful without either parking or substantial shuttle investments, as an example.

Encourage new residential development to unbundle parking

Providing requirements or strong incentives to developers to unbundle parking at residential locations can directly influence vehicle ownership rates among project residents, particularly among households that may opt to have one vehicle instead of two, or two instead of three. While zero-vehicle households may be uncommon in the city currently, the difference in VMT generation between a one and two vehicle household is substantial, and can contribute directly to VMT reduction. This also allows for project developers to price housing more affordably for zero- or one-car households relative to households with two or three vehicles.

Downsides of unbundled parking may be that if parking is available on public streets near the development, there can be overflow of individuals parking on-street rather than paying for parking. This can be managed through implementation of residential parking districts or other neighborhood parking management measures, if the problem becomes widespread or troublesome to existing residents.

Adopt Parking Maximums

Requiring caps on the total parking that can be provided by new development is an alternate way to exert downward pressure on parking supply. However, in evolving suburban environments, the development market makes its own determination on what will “sell,” and imposing parking maximums that are significantly lower than market parking demand will likely suppress development interest as opposed to fostering low-VMT-generating development. As the land use and transportation context in Vallejo evolves over time, parking maximums may become a viable policy tool, and Vallejo should periodically review potential code changes with this in mind.

Section 4. Implementation Costs

Implementation of this PTDM Plan and the associated In-Lieu Fee for VMT Mitigation will incur costs to developers and the City. Key costs are described below.

Developer Costs

Complying with this PTDM Plan will incur the following costs to developers:

- Reviewing the PTDM Plan, determining the appropriate measures to apply to the particular project, assessing the VMT reduction associated with the measures, setting performance targets, and securing City approval for the proposed Project PTDM Plan
- Implementing the measures (operational costs and capital costs)
- Monitoring costs
- Payment of the In-Lieu Fee for VMT Reduction (when necessary)

City Costs

Administering this PTDM Plan will incur the following costs to the City:

- Preparing the ordinance codifying the PTDM Plan
- Applying the requirements of the PTDM Plan during the development review process
- Conducting post-approval monitoring, or reviewing self-administered monitoring reports by project developers
- Periodically amending or updating the PTDM Plan to respond to changes in the development environment and transportation characteristics in Vallejo



Appendix A:

VMT Reduction Measures Overview

Appendix A

VMT Reduction Measures: Applicability, Core Elements, VMT Reduction Potential, and Cost

TDM Toolbox Measure	Types of Projects	Core Elements	VMT Reduction Percentage	Vehicle Trip Reduction Percentage	Typical Costs to Implement
Ongoing TDM Programs for New Development					
T-7: Commute Trip Reduction Marketing	Employment-based	*Thoughtful marketing strategy *Readily available commute information *Designated TDM Coordinator *Guaranteed Ride Home	4%	4%	Cost of 0.25 - 1.0 full time employees, including benefits; typically \$25,000 - \$100,000 per annum
T-8: Provide Ridesharing Program	Employment-based	*Participation in a TMA with ride-matching program *Preferential parking policies for carpools *Promotions and incentives such as gas cards at carpool formation	4%	4%	Cost of TMA dues, or portion of cost of TDM coordinator noted in measure T-7
T-9: Implement Subsidized or Discounted Transit Program	Residential, School, Employment-based	*Location within 1/2 mile of major transit stop or high quality transit corridor *Participation in Commuter Benefits Program *Easy to sign up for incentives	0.1% for each \$50/month in subsidy, up to 0.5%	0.1% for each \$50/month in subsidy, up to 0.5%	\$2,000 - \$12,000 annually per 100 employees/ students/ residents
T-11: Provide Employer Sponsored Vanpool / Point-to-Point Shuttles	Employment-based	*Coordinate logistics of vanpool program *Cover vanpool fares for riders through commute benefits program *Promote and facilitate vanpool creation	2.3% reduction per 1.0 percent of employees participating, up to 3.4%	0.8% reduction per 1.0 percent of employees participating, up to 1.2%	\$15,000 - \$20,000 per vanpool per year
T-12: Price Workplace Parking	Employment-based	*Location within 1/2 mile of transit service *Priced at least \$5 per day *On-street parking nearby is not readily available	10%	10%	Revenue positive
T-13: Implement Employee Parking Cashout	Employment-based	*Parking is provided as benefit *On-street parking nearby is not readily available *Participants pledge to not drive to work	6%	6%	Revenue neutral



Appendix A

VTM Reduction Measures: Applicability, Core Elements, VMT Reduction Potential, and Cost

TDM Toolbox Measure	Types of Projects	Core Elements	VMT Reduction Percentage	Vehicle Trip Reduction Percentage	Typical Costs to Implement
T-16: Unbundle Residential Parking Costs	Residential	*On-street parking nearby is not readily available *All parking is priced at a rate at least \$30 per month	1.6% to 2.6%	1.6% to 2.6%	Revenue positive
T-23: Community-Based Travel Planning	Residential, Retail, School	*Proactive outreach to all households in service area or project *Program Coordinator designated as lead in promoting non-auto transportation	2.3%	2.3%	Cost of 0.25 - 1.0 full time employees, including benefits; typically \$25,000 - \$100,000 per annum
On-Site Infrastructure Elements Supporting Active Transportation and a "Car-Light" Lifestyle					
T-10: Provide End-of-Trip Bicycle Facilities	All Projects	*Provision of secure bicycle parking in the form of lockers, a locked storage room, or an attended storage facility *(For non-residential): Provision of lockers, showers, and changing rooms	0.4% for parking only 1.8% for parking + enhanced facilities	0.4% for parking only 1.8% for parking + enhanced facilities	\$1,000 - \$1,500 per bike locker Capital costs to construct facilities
T-21A: Implement Carshare Program / Provide Carshare Parking	All Projects	*Dedicate parking for carshare vehicles *Identify carshare partner	0.2%	0.2%	Opportunity cost of dedicated parking space
Reduce Parking Supply	Residential	*On-street parking nearby is not readily available	6.9% for 50 percent reduction from baseline demand 13.7% for no on-site parking	6.9% - 13.7%	Revenue neutral



Appendix A

VTM Reduction Measures: Applicability, Core Elements, VMT Reduction Potential, and Cost

TDM Toolbox Measure	Types of Projects	Core Elements	VMT Reduction Percentage	Vehicle Trip Reduction Percentage	Typical Costs to Implement
Fund and Construct a Safe, Low Stress Network for Bicycles and Pedestrians					
T-18: Provide Pedestrian Network Improvements:	All Projects	Completion of one or more projects identified in the Solano County Active Transportation Plan	0.08% reduction in VMT for every ten miles of improved sidewalk or bicycle facility. Reduction applies to all VMT generated by land use within 1/2 mile of facility.	0.5% reduction in vehicle trips for each ten miles of improved sidewalk or bicycle facility. Reduction applies to all trips generated by land use within 1/2 mile of facility.	Costs range widely depending on project funded
T-19-A and T-19-B: Construct or Improve Bicycle Facility/Bicycle Boulevard	All Projects				
T-20: Expand Bikeway Network	All Projects				
Provide Infrastructure to Support Transit Use					
Increase Transit Frequency	All Projects in PDAs	Increase the frequency of transit service by providing funding for more operators and vehicles	Up to 1.6% (with 300% increase in frequency) to VMT within areas served by transit line	Up to 1.6% (with 300% increase in frequency) to trips within areas served by transit line	Typically \$100,000 - \$200,000 annually for operation of additional vehicle
Increase Transit Coverage	All Projects	Expand transit service to areas without access to it, or expand to later/earlier hours.	Up to 0.6% (with double amount of route miles) to VMT within areas served by transit	Up to 0.6% (with double amount of route miles) to trips within areas served by transit	Typically \$100,000 - \$200,000 annually for operation of additional vehicle



Appendix A

VTM Reduction Measures: Applicability, Core Elements, VMT Reduction Potential, and Cost

TDM Toolbox Measure	Types of Projects	Core Elements	VMT Reduction Percentage	Vehicle Trip Reduction Percentage	Typical Costs to Implement
Community-Level TDM Programs for Workers and Residents					
T-23: Community-Based Travel Planning	Residential, Retail, School	*Proactive outreach to all households in service area or project *Program Coordinator designated as lead in promoting non-auto transportation	2.3%	2.3%	Cost of 0.25 - 1.0 full time employees, including benefits; typically \$25,000 - \$100,000 per annum
Increase Access to Active Transportation					
T-22: Bikeshare/Scootershare	All Projects in PDAs	Fund and implement program providing e-bikes or scooters available on demand. Ideally pursue a "dockless" system.	0.05% reduction among residents/ employees in bikeshare service area	0.3% reduction among residents/ employees in bikeshare service area	Varies based on vendor. Typically provided in partnership with bikeshare company or group.
Free E-Bike Program	All Projects	Provide e-bikes free of charge to households pledging to reduce vehicle trips			\$2,000 / bike





Vallejo In-Lieu Fee for VMT Reduction

Draft-Final Report

FEHR  PEERS

October 2022

Prepared for:
City of Vallejo

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I. Introduction

The Vallejo In-Lieu Fee for Vehicle Miles of Travel (VMT) Reduction (In-Lieu Fee) is intended to provide the City of Vallejo and developers of land use projects in the city with a method of funding city infrastructure projects that will reduce the growth of VMT and contribute to safety and multimodal accessibility co-benefits in the city. The In-Lieu Fee is part of a two-pronged approach to reduce VMT in Vallejo, with the second part being a Parking and TDM Plan that describes measures developers can incorporate into new development projects to reduce VMT generation by encouraging the use of alternatives to the single-occupant vehicle. Together, the In-Lieu Fee and the Parking and TDM Plan (PTDM Plan) will fulfill the requirements for Connected Community Priority Development Areas (PDAs) set by the Metropolitan Transportation Commission (MTC). It is anticipated that these mechanisms will apply to all development in Vallejo (with limitations as outlined below) to maximize the benefits of a more multimodal transportation system that promotes a shift to more sustainable modes of travel.

Please see the PTDM Plan for more information on the Connected Community PDA program requirements and on Vallejo's VMT analysis guidelines and significance thresholds.

The following report is divided into the following sections.

- II. Fee Structure and Application**
- III. Fee Capital Improvement Program**
- IV. VMT Reduction with Capital Improvement Program**
- V. Fee Calculation**
- VI. Monitoring and Reporting**

II. Fee Structure and Application

In-Lieu Fee Definition

Local agencies may charge development impact fees pursuant to the *Mitigation Fee Act* (California Government Code §66000 et seq.) to finance the cost of public facilities or services needed to serve or mitigate the effects of development. Alternatively, agencies may establish “in-lieu” fee programs that provide a mechanism for applicants to offset their significant impacts through payment of a fee. There is no state statute outlining specific requirements for in-lieu fee programs; such programs are developed by agencies to promote the public welfare and satisfy regulatory requirements through compensatory mitigation mechanisms. The City of Vallejo proposes to establish an In-Lieu Fee for VMT Reduction that would fund facilities to promote the use of active travel modes thereby contributing to VMT reduction and associated public welfare benefits such as better public health due to greater walking and bicycling, more travel choices at lower costs, and less air pollution and greenhouse gas (GHG) emissions. Because this fee is proposed to be paid only by developments that cannot otherwise demonstrate compliance with the City’s VMT thresholds, and because methods to establish a direct relationship between a development’s VMT generation and the VMT reduction provided by the Fee-funded facilities have not been widely developed and tested within Vallejo, the City has developed this In-Lieu Fee using some of the concepts commonly applied in impact fees to help guide decisions about the program’s structure. This document provides information about the purpose of the fee program, what types of projects will be funded through the program, what level of VMT reductions are anticipated, and how fee levels could be set for the different types of developments that are likely to occur in the City.

What Projects Would Pay the Fee

Development projects that meet the following criteria would pay the In-Lieu Fee to contribute towards the City’s VMT and public welfare goals:

- Projects that:
 - 1) do not screen out from further VMT analysis as provided for in the *City of Vallejo CEQA Transportation Impact Analysis Guidelines* (October 2020) (TIA Guidelines), and
 - 2) are determined to generate VMT at a rate that exceeds the citywide average, using the methodology described in the TIA Guidelines, and
 - 3) are not able to apply site-specific strategies required per the PTDM Plan sufficient to reduce the project’s VMT below the citywide average.



Fee Exemptions

Projects that are exempt from CEQA requirements would not pay the In-Lieu Fee, because these projects would not be subject to VMT impact analysis. The City may choose to exempt other development projects from the In-Lieu Fee based on unique project characteristics or project goals that provide other public welfare benefits that outweigh the benefits of VMT reduction. It is noted that development within the Downtown Ferry Terminal/Transit Center Transit Priority Area (TPA) would typically be expected to screen out from conducting VMT analysis (i.e., would be presumed to have a less-than-significant impact with respect to VMT), due to the level of transit service available in this area, as described in the TIA Guidelines. Therefore, projects located in the TPA would not pay the In-Lieu Fee.

III. Fee Capital Improvement Program

The VMT In-Lieu Fee will fund selected bicycle and pedestrian projects identified in the Solano County Active Transportation Plan (ATP). The selected projects are shown in **Table 1**. Projects were selected for inclusion in the In-Lieu Fee based on the following criteria:

- Bicycle projects ranked as high priority, near-term projects in the ATP that are located either in the downtown or on a Vallejo General Plan high-priority corridor, and that are not already funded and scheduled for implementation
- Pedestrian projects ranked as priority sidewalk gap closures in the ATP

The ATP provides planning level cost estimates for these projects, in 2020 dollars. The selected bicycle projects have a total estimated cost of \$1,675,000. The selected pedestrian projects have a total estimated cost of \$25,800,800. Because it would be infeasible to set the VMT fee at a level sufficient to fund the full cost of these projects, the In-Lieu Fee Capital Improvement Plan cost includes all of the bicycle projects and funding equivalent to 25 percent of the cost estimate (in 2020 dollars) for the pedestrian projects, for a total CIP program cost of \$8,125,200. The City Public Works Department will allocate In-Lieu Fee funding to projects as part of its regular infrastructure planning and management activities. Projects may be prioritized based on coordination with roadway maintenance projects or other infrastructure projects, availability of grant funding, and other considerations. The In-Lieu Fee will thus facilitate earlier implementation of projects than might otherwise be possible.



Table 1: VMT In-Lieu Fee Capital Improvement Program

Corridor Name	From	To	Treatment	Length	Cost
<i>Bicycle Projects from Countywide ATP¹</i>					
Couch Street	Sonoma Boulevard	Broadway Street	Class IV Separated Bikeway	0.89	\$327,491
Curtola Parkway	Solano Avenue	Marin Street	Class IV Separated Bikeway	0.54	\$199,670
Mare Island Way	Marin Street	Georgia Street	Class IV Separated Bikeway	0.46	\$169,370
Solano Avenue	Curtola Parkway	Georgia Street	Class II Buffered Bicycle Lane	0.45	\$140,615
Solano Avenue	Georgia Street	Tuolumne Street	Class IV Separated Bikeway	0.12	\$46,191
Solano Avenue	Tuolumne Street	Florida Street	Class IV Separated Bikeway	0.33	\$123,128
Tennessee Street	Mare Island Way	Sonoma Boulevard	Class IV Separated Bikeway	0.53	\$197,179
Tennessee Street	Sonoma Boulevard	Mariposa Street	Class IV Separated Bikeway	1.27	\$471,353
Total Cost (rounded)					\$1,675,000
<i>Pedestrian Projects from Countywide ATP¹</i>					
Mare Island Drive, Maine Street, Georgia Street			Sidewalk Gap Closure	0.81	\$800,063
Alameda Street, Solano Avenue, Amador Street, 5th Street			Sidewalk Gap Closure	7.93	\$7,850,438
Solano Avenue, Georgia Street, Benicia Road, Springs Road, Maple Avenue			Sidewalk Gap Closure	17.32	\$17,150,250
Total Cost (rounded)					\$25,800,800
Cost Allocated to In-Lieu Fee CIP (25% of 2020 cost estimate)					\$6,450,200
Total In-Lieu Fee CIP Cost					\$8,125,200

Note:

(1) Refer to Solano County ATP Appendix A – Vallejo for project details. All costs in 2020 dollars.

Source: Solano County Active Transportation Plan (2020).

IV. VMT Reduction with Fee Capital Improvement Program

To establish the VMT reduction potential of the projects in the In-Lieu Fee CIP, calculations were performed in accordance with methods presented in the *Quantification Methodology for the California Transportation Commission Active Transportation Program*, prepared by the California Air Resources Board.

To calculate effectiveness from bicycle facilities projects, the following formula was used, in accordance with the Existing Methodology put forth in the 2019 *Quantifying Reductions in Vehicle Miles Traveled from New Bike Paths, Lanes, and Cycle Tracks Summary Report* prepared by the California Air Resources Board. This formula includes several constants which are documented in the published *Quantification Methodology for the California Transportation Commission Active Transportation Program*.

$$\text{Annual Auto VMT Reduced} = (D) * (ADT) * (A + C) * (L)$$

Where:

D	=	Days of use per year (309 in Solano County, California)
ADT	=	Average daily vehicle traffic volumes on roadway parallel to facility
A	=	Adjustment Factor (based on facility type, length, and location)
C	=	Activity Center Credit (based on access to key destinations)
L	=	Average bicycle trip length (2.1 miles in the San Francisco Bay Area)

Reductions were calculated using daily traffic counts conducted in 2014 for the Vallejo General Plan Update and were calculated for each segment of each project. **Appendix A** contains the detailed calculations.



To calculate effectiveness from pedestrian facility projects, the methodology presented in the 2021 *Handbook for Quantifying Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*, prepared by the California Air Pollution Control Officers Association (CAPCOA) was applied. The appendix contains the detailed calculations.

$$\text{Annual Auto VMT Reduced} = (C / B - 1) * (D)$$

Where:

- B = Existing sidewalk length in study area (515 miles in Vallejo)
- C = Sidewalk length in area after implementation of measure
- D = Elasticity of household VMT with respect to sidewalk coverage (-0.05)

The VMT reduction estimates are shown in **Table 2**. The total annual VMT reduction associated with the projects is 721,900 VMT.

Table 2: VMT Reduction Estimates

Corridor Name	From	To	Treatment	Length	Annual VMT Reduction
<i>Bicycle Projects from Countywide ATP</i>					
Couch Street	Sonoma Boulevard	Broadway Street	Class IV Separated Bikeway	0.89	79,145
Curtola Parkway	Solano Avenue	Marin Street	Class IV Separated Bikeway	0.54	50,425
Mare Island Way	Marin Street	Georgia Street	Class IV Separated Bikeway	0.46	60,678
Solano Avenue	Curtola Parkway	Georgia Street	Class II Buffered Bicycle Lane	0.45	9,124
Solano Avenue	Georgia Street	Tuolumne Street	Class IV Separated Bikeway	0.12	14,050
Solano Avenue	Tuolumne Street	Florida Street	Class IV Separated Bikeway	0.33	14,050
Tennessee Street	Mare Island Way	Sonoma Boulevard	Class IV Separated Bikeway	0.53	24,063
Tennessee Street	Sonoma Boulevard	Mariposa Street	Class IV Separated Bikeway	1.27	56,761
Bicycle Project Annual VMT Reduction (rounded)					308,300
<i>Pedestrian Projects from Countywide ATP</i>					
Mare Island Drive, Maine Street, Georgia Street			Sidewalk Gap Closure	0.81	51,188
Alameda Street, Solano Ave, Amador Street, 5th Street			Sidewalk Gap Closure	7.93	502,268

Corridor Name	From	To	Treatment	Length	Annual VMT Reduction
Solano Ave, Georgia Street, Benicia Road, Springs Road, Maple Ave			Sidewalk Gap Closure	17.32	1,097,266
Pedestrian Project Annual VMT Reduction (25% of Pedestrian Projects) (rounded)					412,700
Total Annual VMT Reduction with Proposed In-Lieu Fee CIP					721,900

Source: Fehr & Peers, October 2022.



V. Fee Calculation

Fee Period

The In-Lieu Fee planning period is assumed to be 15 years. This period was selected to allow a reasonably foreseeable development projection, which in turn provides a reasonable basis for estimating the fee levels required to fund the Capital Improvement Program. It is assumed that the In-Lieu Fee would be updated regularly to account for changes in development forecasts and changes in the CIP project list. Thus, setting a longer time period would introduce unnecessary uncertainty.

Development Projections

The development forecast is based on discussions with City staff, current planning efforts for Mare Island and the Solano 360 site, and the current State Regional Housing Needs Allocation for Vallejo, all focused on a projection of development that is reasonably foreseeable over the next 15 years. The forecast includes the following components:

- Projects that have begun the City entitlement process
- Development of the Connolly Corridor neighborhood on Mare Island, including a 200-room hotel, multi-family housing, retail and office space
- Development of the additional housing units needed to meet the City's current RHNA allocation of 2,900 housing units, after accounting for the projects above
- Development of a 250-room hotel and 225,000 square feet of retail space on the Solano 360 site

The resulting development projections are shown in **Table 3**. The forecasts include a total of 2,900 housing units, 280,000 square feet of retail space, 61,000 square feet of office space, and three hotels.

Table 3: Development Projections

Development Project	Residential (DUs)			Non-Residential (KSF)				
	Single Family	Multi Family	Total	Retail	Office	Hotel ¹	Industrial ²	Total
480 Fairgrounds Drive		127	127					0
Solano Ranch Mixed Use Project ²		264	264		32.14	80		112.14
78 Springs Road		24	24					0
148 East Lincoln Road		21	21	10				10
Waterstone Phase2A/2B (Bordoni)	185		185					0
5180 Sonoma Boulevard.		418	418					0
4300 Sonoma Boulevard		288	288					0
1700 Fairgrounds Drive		23	23					0

Development Project	Residential (DUs)			Non-Residential (KSF)				
	Single Family	Multi Family	Total	Retail	Office	Hotel ¹	Industrial ²	Total
900 Fairgrounds Drive (Solano 360)		500	500					
Solano 360 ³				225		200		425
Mare Island Connolly Corridor		373	373	45.073	28.6	160		234
Additional residential to meet RHNA		677	677					
Total	185	2,715	2,900	280.07	60.74	440	-	780.81

DU=dwelling unit; KSF=thousands of square feet

(1) Hotels are listed in thousands of square feet, using 0.8 KSF/room.

(2) No industrial development is currently anticipated in the 15-year VMT fee window.

(3) Assumes 50% build-out of the current Solano 360 plan for retail and full build-out of the planned hotel. Note that the 500 residential units on the Solano 360 site are included in the City's entitlement project list.

Source: City of Vallejo; Fehr & Peers, October 2022.

Development VMT Generation

Daily VMT rates for the anticipated new development were estimated using daily vehicle trip generation rates in the Institute of Transportation Engineers *Trip Generation* (11th Edition), and average trip lengths for Vallejo derived from the California Household Travel Survey trip lengths by trip purpose and National Cooperative Highway Research Program Reports 365 and 716, which describe trip purpose breakdowns for different land use types. The daily VMT rates are shown in **Table 4**.

Table 4: Daily VMT Rates by Use Type

ITE Code	Land Use	Unit	Daily Trip Generation	Average Trip Length (miles)	Daily VMT/Unit
Residential Uses					
215	Single-Family Attached	DU	7.2	9.7	69.8
221	Multi-Family (mid-rise)	DU	4.54	9.7	44.0
Office Uses					
710	General Office Building	KSF	10.84	11.8	128.2
Industrial Uses					
110	General Light Industrial	KSF	4.87	11.8	57.6
Retail Uses					
821	Shopping Plaza (40-150k, no supermarket)	KSF	67.52	9.0	605.7
Hotel					
310	Hotel	Rooms	7.99	9.0	71.7

Source: ITE *Trip Generation*, 11th Edition; NCHRP 365; NCHRP 716; California Household Travel Survey; Fehr & Peers, October 2022.



As shown in **Table 5**, the projected new development is estimated to generate 349,311 daily VMT.

Table 5: Development VMT Generation Estimate

ITE Code	Land Use	Unit	Amount of New Development	Daily VMT Rate	Daily VMT
Residential Uses					
215	Single-Family Attached	DU	185	69.8	12,921
221	Multi-Family (MR)	DU	2,715	44.0	119,568
Office Uses					
710	General Office Building	KSF	61	128.2	7,819
Industrial Uses					
110	General Light Industrial	KSF	0	57.6	-
Retail Uses					
821	Shopping Plaza	KSF	280	606.7	169,584
Hotel					
	Hotel	Rooms	550	71.7	39,419
Total					349,311

Source: Fehr & Peers, October 2022.

Dwelling Unit Equivalents

Dwelling unit equivalents are used to provide a normalized basis for allocating the In-Lieu Fee CIP cost across development types and calculate fees per development unit. **Table 6** shows the DUE calculations. The calculations incorporate the VMT generation rate of each development type. In traditional traffic impact fee calculations, which are generally based on peak hour vehicle trip generation, a factor representing the portion of trips that are considered “new” trips, i.e., trips not made by drivers passing by a land use or diverting from a primary trip to travel to/from a land use, is sometimes applied. These portions are derived from trip characteristics studies performed by the Institute of Transportation Engineers and San Diego Association of Governments. However, there is no known precedent for determining appropriate factors to represent this characteristic relative to VMT generation. Therefore, the “% New VMT” factors are currently set at 100% in this draft report.

The Adjusted Daily VMT rate is then compared to the single-family residential VMT rate, and the proportional adjusted VMT rate is the resulting DUE (the single-family residential VMT rate is set at 1.0).

Table 6: VMT-Based Dwelling Unit Equivalents

ITE Code	Land Use	Unit	Weekday VMT	% New VMT ¹	Adjusted New VMT	Dwelling Unit Equivalents
Residential Uses						
215	Single-Family Attached	DU	69.84	100%	69.84	1.00
221	Multi-Family (MR)	DU	44.04	100%	44.04	0.63
Office Uses						
710	General Office Building	KSF	128.18	100%	128.18	1.84
Industrial Uses						
110	General Light Industrial	KSF	57.59	100%	57.59	0.82
Retail Uses						
821	Shopping Plaza	KSF	605.66	100%	605.66	8.67
Hotel						
310	Hotel	Rooms	71.67	100%	71.67	1.03

1. For the purpose of this draft report, all VMT is considered new VMT, for all uses.
Source: Fehr & Peers, October 2022.

Fee Calculations

The In-Lieu Fees are calculated by allocating the total CIP cost across the total of all development units, incorporating the DUE factors to calculate the actual fee for each development type. The calculation is as follows:

Total Development Units = Development Amount X DUE Factor, summed for all development

- $E = B \times C$

Single Family Residential Fee per DU = CIP Cost/All Development Units:

- $G \text{ (Single-Family)} = A / E \text{ (Total)}$

Multi-Family Residential Fee per DU= Single-Family Residential Fee X Multi-Family Residential DUE

- $G \text{ (Multi-Family)} = G \text{ (Single Family)} \times B \text{ (Multi-family)}$

Non-Residential Use Fees per Square Foot = Single-Family Residential Fee X Non-Residential Use DUE / 1,000:

- $G \text{ (Non-Residential Use)} = G \text{ (Single-Family)} \times B \text{ (Non-Residential Use)}$

Note that for these calculations, the hotel use is converted to thousands of square feet.

The resulting In-Lieu Fees are shown in **Table 7**.



Table 7: VMT-Based In-Lieu Fee Calculations

Item	Development DUEs				Fee (G)	Per Unit
	Use DUE (B)	Use Amount (DU or KSF) (C)	Total Development Units (E)	% of Total Development units (F)		
In-Lieu Fee CIP Cost (A)						
\$8,125,200						
Land Uses						
SF Residential	1.00	185.00	185.00	4%	\$1,662	DU
MF Residential	0.63	2715.00	1,711.96	35%	\$1,048	DU
Retail	8.67	280.00	2,428.07	50%	\$14.41	SF
Office	1.84	61.00	111.95	2%	\$3.05	SF
Industrial	0.82	0.00	-	0%	\$1.37	SF
Hotel ¹	1.03	440.00 ¹	451.51	9%	\$1.71	SF
Total DUEs			4,888.49			

(1) Hotel use converted to KSF at 0.8 KSF per room for fee calculation.

Source: Fehr & Peers, October 2022.

Economic Analysis

An evaluation of the effect of the In-Lieu Fee on development costs in Vallejo, considering other fees imposed on development, expected development project types and construction costs, was prepared by Economic and Planning Systems. This work is included in **Appendix B**. Note that the economic evaluation considered somewhat higher fees than those presented in Table 7, due to a higher CIP cost that was originally included in the Draft In-Lieu Fee for VMT Reduction. The CIP cost was subsequently reduced to remove certain projects that are already planned and funded.

VI. Monitoring and Reporting

In-lieu fees are not subject to the statutory monitoring and reporting requirements of AB 1600-compliant fees. However, to facilitate efficient implementation and administration of this In-Lieu Fee, it is recommended that an annual report documenting the following key data be prepared:

- Funds collected
- Funds spent, including breakdown by individual infrastructure project
- Fee escalation based on the relevant escalation source
- Changes to the project list due to completion of projects or removal of projects from the In-Lieu Fee CIP for other reasons



Appendix A:

VMT Reduction Estimate Calculations

Appendix A.1: Bicycle Facility VMT Reductions

Project	722A	727B	727C	725C	725D	725E	745A	745D
Facility Type	Class IV	Class IV	Class IV	Class II	Class IV	Class IV	Class IV	Class IV
Facility Length	0.89	0.54	0.46	0.45	0.12	0.33	0.53	1.27
Relevant Parallel Roadway	Sonoma Blvd	Curtola Parkway	Mare Island Way	Georgia St	Georgia St	Georgia St	Tennessee Street	Tennessee Street
Parallel Roadway ADT	18,000	17,400	13,800	7,400	7,400	7,400	17,200	14,200
Activity Centers Nearby	7 or more	7 or more	7 or more	Less than 3	Less than 3	Less than 3	Less than 3	4 to 6
D (Days of Use Per Year)	309	309	309	309	309	309	309	309
ADT	18,000	17,400	13,800	7,400	7,400	7,400	17,200	14,200
Adjustment Factor - Facility Type	1.54	1.54	1.54	1	1.54	1.54	1.54	1.54
Adjustment Factor - Length & Location	0.0014	0.0014	0.0014	0.0019	0.0019	0.0019	0.0014	0.002
Activity Center Credit	0.003	0.0015	0.003	0	0	0	0	0.002
Bike Trip Length	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Reduction	79,145	50,425	60,678	9,124	14,050	14,050	24,063	56,761

Destination Credits		
# of Destinations	Within 1/2 mile	Within 1/4 mile
Less than 3	0	0
3	0.0005	0.001
4 to 6	0.001	0.002
7 or more	0.0015	0.003

Growth Factor Adjustment	
Facility Type	Adjustment
Class I	1.54
Class IV	1.54
Class II	1
Class II to Class IV Conversion	0.54

Active Transportation Adjustment Factors		
ADT	Facility Length	Adj. Factor (Vallejo)
< 12,000	1 mile or less	0.0019
< 12,000	1.1 to 2 miles	0.0029
< 12,000	More than 2 miles	0.0038
12,001 to 24,000	1 mile or less	0.0014
12,001 to 24,000	1.1 to 2 miles	0.002
12,001 to 24,000	More than 2 miles	0.0027
24,001 to 30,000	1 mile or less	0.001
24,001 to 30,000	1.1 to 2 miles	0.0014
24,001 to 30,000	More than 2 miles	0.0019

Appendix A.2 - Pedestrian Facility VMT Reductions

Current Citywide Sidewalk Miles	515
Current Citywide VMT (Annual)*	652,399,905

Project	SW Miles Added	% Increase	% Decrease in Citywide VMT	Total Decrease in Citywide VMT
VL.SG.12	0.81	0.2%	0.0078%	51,188
VL.SG.6	7.93	1.5%	0.0770%	502,268
VL.SG.7	17.32	3.4%	0.1682%	1,097,266

* Source: 2008 Vallejo Climate Action Plan

Appendix B:

Economic Analysis

DRAFT APPENDIX B: TECHNICAL MEMORANDUM

To: Ellen Poling, Senior Associate, Fehr & Peers

From: Teifion Rice-Evans and Luke Foelsch, Economic & Planning Systems, Inc. (EPS)

Subject: Vallejo VMT In-Lieu Fee Development Feasibility Analysis; EPS #211011

Date: September 2nd, 2022

The Economics of Land Use



Economic & Planning Systems, Inc. (EPS), as a subconsultant to Fehr & Peers, Inc. (F&P), has evaluated the potential effects of the proposed In-Lieu Fee on development feasibility in Vallejo. The purpose of this memorandum is to support City policymakers, staff, and F&P as they consider the adoption and setting of a new In-Lieu Fee for VMT reduction (In-Lieu Fee).

The EPS evaluation considers the extent to which the potential additional In-Lieu Fees on single-family, multifamily, office, and retail development are expected to substantially change the development economics of a "typical development." As with all such evaluations, it is important to recognize that this is a planning-level analysis that provides broad conclusions about typical development feasibility impacts but that: (1) not all projects are the same, so there will be individual examples where project-specific effects will be different from the overall conclusion provided; (2) any new or increased fee placed on new development will add to development costs and thereby create an additional hurdle to development even if modest in the broad picture of development economics; and, (3) broader economic and real estate market cycles will typically have a larger effect on development feasibility than fee adjustments.

Finally, it is important to recognize that the proposed VMT In-Lieu Fee is being developed due to CEQA requirements to consider VMT impacts. Because the In-Lieu Fee would only apply to projects that do not screen out, generate more VMT than the City average, and cannot fully rely on site-specific strategies, the number of projects paying the fee may be modest. Furthermore, without the In-Lieu Fee, it is possible that projects would be required to mitigate in other, potentially more costly ways. If that were the case, the In-Lieu Fee might be the more feasible mitigation option, even while increasing development costs.

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Summary of Findings

This section provides a summary of findings, reflecting the development economics analysis and fee comparisons provided below as well as broader real estate trends pertinent to the different land uses evaluated.

With the exception of the In-Lieu Fee on retail development, other types of new development in the City will generally be able to absorb the new In-Lieu Fees.

The new In-Lieu Fee will increase development costs on all development projects to which it applies. The scale of the increases and the general economics of development of single-family and multifamily development suggest that these types of projects could absorb these additional costs. For office development, while market conditions are more challenging and the fee increase is larger than for residential development, the In-Lieu Fee is still likely appropriate as proposed. For retail development, however, the fee increase is substantial. While the overall transportation fee in the City of Vallejo will now be similar to that for high-trip uses in Fairfield (e.g., fast food) and all retail in the City of Vacaville, this level of increase is expected to alter and constrain plans for retail development in the City.

Single-Family Residential Development: New single-family development in the City of Vallejo will generally be able to absorb the additional In-Lieu Fee.

At \$2,009 per single-family unit, the In-Lieu Fee is expected to increase overall development impact fees on single-family development by 2.9 percent to about \$71,600 per unit. It will also take the overall fee burden (fee as a percent of total current development value) from 10.5 percent to 10.8 percent. These are modest changes in terms of the overall economics of single-family detached development. The additional In-Lieu Fee still maintains Vallejo's overall transportation fees on single-family development below those in the cities of Vacaville and Fairfield, with Vallejo's aggregate citywide single-family development impact fees similar to those for both Vacaville and Fairfield.

The broader context for single-family development in Solano County and the City of Vallejo, where sites are available, is generally positive with relatively strong demand for single-family homes spurred in part by the pandemic and its enduring changes in housing preferences. Recent increases in interest rates will constrain this demand somewhat, though, in general, when not in recession, the economics for single-family development in the City are expected to remain strong.

Multifamily Residential Development: While the City has seen less multifamily development in the past and it is a less market-tested product than single-family, proposed new multifamily development should typically be able to absorb the modest additional In-Lieu Fee.

At \$1,227 per multifamily unit, the In-Lieu fee is expected to increase overall development impact fees on multifamily development by 3.3 percent. It will also take the overall fee burden (fee as a percent of total current development value) from 8.6 percent to 8.8 percent. These are relatively modest changes in terms of the overall economics of multifamily development. Even with the addition of the In-Lieu Fee, the transportation-related fee burden (and the aggregate impact fee burden) on development in Vallejo is still below the levels charged in Vacaville and Fairfield.

As noted in the F&P Report, the 15-year development projection includes about 2,000 multifamily units in 10 identified projects along with an additional RHNA-associated 700 units. This is a substantial development pipeline reflecting developers' assessment of strong prospects for new multifamily development. While multifamily development can bring higher costs and more complex economics than single-family development, the modest In-Lieu Fee should not significantly change the prospects for this wave of new proposed development.

Office Development: The additional In-Lieu Fee, while moderate in scale, will add costs to a product type where the economics of development are already challenging. Nevertheless, the potential benefits for CEQA review/mitigation might still make the fee manageable and relatively cost-effective.

At \$3.69 per square foot, the additional In-Lieu Fee is expected to almost double the existing transportation fee and increase overall development impact fees on office development by about 20 percent. It will also take the overall fee burden (fee as a percent of total current development value) from 5.5 percent to 6.7 percent. These are larger increases than for residential development, though are relatively moderate in terms of the overall costs of office development.

The City of Vallejo has not historically been a large office market and the pandemic has also constrained demand for office space in many locations. The 15-year development projection for Vallejo also includes a relatively modest 60,000 square feet of office. That said, it is expected that there may be opportunities for additional medical and other office development in the future. Given that other dynamics will likely be more important to new office development (e.g., the need for build-to-suit medical office development by hospitals) and that the In-Lieu Fee may provide a CEQA streamlining benefit, an additional fee at the proposed fee level should still be manageable for most new office developments.

Retail Development: Due to the considerable VMT generated by retail uses, additional In-Lieu Fees are significant, increasing retail development costs substantially and likely constraining retail development.

At \$17.42 per square foot, the additional fee will increase the overall transportation-related fees five-fold and will more than double the current aggregate development impact fees on new retail development. It will also take the overall fee burden (fee as a percent of total current development value) from 4.7 percent to 9.5 percent (a high cost-burden percentage for non-residential development). This level of increase in overall transportation fees does leave the Vallejo transportation and aggregate retail fees similar to those recently adopted in the City of Vacaville and similar to those for high-trip generation in retail (e.g., fast food) in the City of Fairfield. They are, however, substantially higher than the fees placed on general commercial/ retail uses in the City of Fairfield.

The high VMT In-Lieu Fees on retail development are a logical outcome of the substantial VMT generation by retail development. From a development feasibility basis, however, fee increases of this scale are likely to affect plans for future retail development in the City. With much of the retail sector continuing to contract in the wake of the continued shift to internet sales, substantial new fees will exacerbate challenges for many types of new retail development. If possible, a moderated and/or phased fee increase is recommended for the types of retail development the City is seeking to encourage.

Vallejo Development Impact Fee Overview

New development in the City of Vallejo is currently subject to fees charged by the City, the County, the Greater Vallejo Recreation District, the Vallejo Unified School District, and the Vallejo Flood & Wastewater District. Per the City of Vallejo Master Fee Schedule for Fiscal Year 2022-2023, the total development fees for the four land use types examined in this analysis are listed in **Table 1** below.

Table 1 Current Permit and Fee Levels in the City of Vallejo

Current Development Permit/Fee Items	Single-Family		Multifamily		Retail		Office	
	Per DU		Per DU		Per Sq. Ft.		Per Sq. Ft.	
<u>City</u>								
Transportation Impact Mitigation Fee	\$8,480	12%	\$4,768	13%	\$4.00	24%	\$4.00	23%
Excise Tax	\$5,893	8%	\$5,893	16%	\$0.49	3%	\$0.49	3%
Water Meter, Backflow, & Capacity Charges	\$14,499	21%	\$2,278	6%	\$4.34	26%	\$4.56	26%
<u>Other Jurisdictions</u>								
GVRD Park Fee	\$15,631	22%	\$10,710	29%	-		-	
Solano County Public Facilities Fees	\$9,263	13%	\$6,662	18%	\$1.02	6%	\$1.36	8%
Vallejo City Unified School District Fees ¹	\$4,928	7%	\$1,904	5%	\$0.36	2%	\$0.36	2%
Sanitary Sewer	\$4,025	6%	\$4,025	11%	\$3.11	18%	\$3.11	18%
Storm Drain ²	<u>\$6,850</u>	<u>10%</u>	<u>\$686</u>	<u>2%</u>	<u>\$3.59</u>	<u>21%</u>	<u>\$3.59</u>	<u>21%</u>
Total Current Permit/Fee Burden	\$69,569	100%	\$36,925	100%	\$16.91	100%	\$17.47	100%

[1] Vallejo City Unified School District Fees are charged on a per-square-foot basis for residential uses. This analysis utilizes prototype unit sizes of 2,200 square feet for Single-Family residential and 850 square feet for Multifamily residential.

[2] The Vallejo Flood & Wastewater District's Storm Drain fee is charged to multifamily and commercial uses on a per-acre basis. The values shown in this table represent these per-acre fees translated to the specified per-DU or per-Sq.Ft. basis per the prototype developments utilized for this analysis.

Source: City of Vallejo Master Fee Schedule Fiscal Year 2022-2023; Economic & Planning Systems

As shown, the current development impact fee charged per single-family unit is about \$70,000, per multifamily unit is \$37,000, per square foot of retail is \$17, and per square foot of office is \$17.50. Of these total fee levels, the City's current Transportation Impact Mitigation Fee represents 12-13 percent of the total fee burden for residential developments and 23-24 percent of the total fee burden for retail and office developments.

Due to CEQA requirements, the City is now working with F&P to develop a two-pronged approach to reduce VMT in Vallejo. One part of this approach is the adoption of a VMT In-Lieu Fee that is described in the F&P Report. **Table 2** shows how the current development impact fee picture would change with the addition of the VMT In-Lieu fee.

Table 2 Existing and Proposed New Fees by Land Use

Item	Single-Family Per DU	Multifamily Per DU	Retail Per Sq. Ft.	Office Per Sq. Ft.
Proposed VMT Mitigation Fee	\$2,009	\$1,227	\$17.42	\$3.69
Total Permits/Fees before VMT Fee	\$69,569	\$36,925	\$16.91	\$17.47
Total Permits/Fees with VMT Fee	\$71,578	\$38,152	\$34.33	\$21.16
<i>Percent Increase with Fee</i>	2.9%	3.3%	103.0%	21.1%
Transportation Fee before VMT Fee	\$8,480	\$4,768	\$4.00	\$4.00
Transportation Fee with VMT Fee	\$10,489	\$5,995	\$21.42	\$7.69
<i>Percent Increase with Fee</i>	23.7%	25.7%	435.5%	92.3%

Source: City of Vallejo Master Fee Schedule Fiscal Year 2022-2023; Fehr & Peers; Economic & Planning Systems

Table 2 demonstrates how the proposed new VMT In-Lieu Fee would affect overall fee levels and the overall transportation fee component for developments in the City of Vallejo. The new fee would represent a modest increase to fee levels for residential uses but a more substantial increase for commercial uses. The fees on Single-Family units would increase by \$2,009, which equates to a three percent increase in the total fee burden and a 24 percent increase in the transportation fee level. The fee level for Multifamily units would increase by \$1,227, a three percent increase in the total fee amount and a 26 percent increase in the transportation fee amount.

The VMT In-Lieu fee would represent a much larger percentage increase to fees on Retail and Office developments. At \$17.42 per square foot, the new total fee burden on Retail development would be 103 percent higher than its current level, and the transportation fee burden would be over 430 percent higher. For Office developments, the \$3.69 per-square-foot VMT In-Lieu fee would constitute a 21 percent increase in the total fee level and a 92 percent increase in the current transportation fee component.

Development Impact Fee Comparisons

Comparisons with neighboring jurisdictions can help place potential fee increases in a regional/ market context. EPS compared both the City of Vallejo's current fee levels as well as fee levels with the additional VMT in-lieu fee with current fees in the City of Vacaville and Fairfield. The focus is on single-family, multifamily, and commercial/ general retail uses and a specified set of development parameters to get as close to an "apples-to-apples" comparison between cities as possible. Because the City of Fairfield differentiates its transportation fees between general commercial/ retail and high trip generation retail uses, two commercial examples were included for the City of Fairfield.

No plan area or processing fees were included in the comparisons. It is also worth noting that the City of Vacaville recently completed a 2022 comprehensive update to its full fee schedule, while the City of Fairfield recently evaluated and updated its new maximum transportation fees though may choose to charge fees below those maxima.

Table 3 shows the comparison for single-family development. As shown, the City of Vallejo’s current aggregate fee per single-family unit is similar and slightly below those of the City of Vacaville and the City of Fairfield. With the inclusion of the new VMT in-lieu fee, the City of Vallejo’s fees end up slightly above those in Fairfield and slightly below those in Vacaville. Comparing transportation fees alone, the City of Vallejo’s transportation-related fees on single-family development remain well below those in the cities of Vacaville and Fairfield even after the addition of the VMT in-lieu fee.

Table 3 Single-Family Unit Fee Comparison

<u>Citywide Impact Fees¹</u> (charged by City/County/Special Districts)	<u>Vallejo</u> Existing	<u>Vallejo</u> w/ VMT In-Lieu	<u>Vacaville</u> (Updated 2022)	<u>Fairfield</u> (Updated 2022)
<u>Development Impact Fees per Unit</u>				
Traffic Impact Fees/ In-Lieu Fees	\$8,480	\$10,489	\$15,048	\$15,079
Sewer Fees	\$4,025	\$4,025	\$10,205	\$6,281
Water Fees ²	\$14,499	\$14,499	\$12,863	\$7,676
Drainage	\$6,850	\$6,850	\$426	-
Parks ³	\$15,631	\$15,631	\$10,561	\$11,053
Fire/Police	-	-	\$2,250	-
Habitat/Greenbelt Preservation	-	-	\$445	-
Other Facilities/General Fees/One-Time Taxes	\$5,893	\$5,893	\$1,255	\$9,978
Countywide Fees	\$9,263	\$9,263	\$9,263	\$9,263
School Fees	<u>\$4,928</u>	<u>\$4,928</u>	<u>\$9,792</u>	<u>\$12,000</u>
TOTAL FEES PER UNIT	\$69,569	\$71,578	\$72,108	\$71,330

* Prototype unit specifications are 2,200 square feet with a 450 square foot garage, four bedrooms, two bathrooms, and a 5.5 unit-per-acre density.

[1] These fees do not include area fees or planning/processing fees.

[2] Assumes either 0.75 inch meter or 1-inch meter for single family residential units.

[3] Some cities (Fairfield) also require parkland dedication or equivalent under Quimby Act specifications.

Source: City of Vallejo; City of Vacaville; City of Fairfield; Economic & Planning Systems

Table 4 shows the comparison for multifamily development. As shown, the current City of Vallejo’s fees per unit are below those of the City of Vacaville and the City of Fairfield. With the inclusion of the new VMT in-lieu fee, the City of Vallejo’s fees remain below those for Vacaville and Fairfield. Comparing transportation fees alone, the City of Vallejo’s transportation-related fees on multifamily development remain well below those in the cities of Vacaville and Fairfield even after the addition of the VMT in-lieu fee.

Table 4 Multifamily Unit Fee Comparison

Citywide Impact Fees¹ (charged by City/County/Special Districts)	Vallejo Existing	Vallejo w/ VMT In-Lieu	Vacaville (Updated 2022)	Fairfield (Updated 2022)
<u>Development Impact Fees per Unit</u>				
Traffic	\$4,768	\$5,995	\$8,513	\$8,444
Sewer	\$4,025	\$4,025	\$6,803	\$3,781
Water ²	\$2,278	\$2,278	\$8,160	\$8,870
Drainage	\$686	\$686	\$162	-
Parks	\$10,710	\$10,710	\$7,191	\$5,943
Fire / Police	-	-	\$1,532	-
Habitat / Greenbelt Preservation	-	-	\$303	-
Other Facilities/ General Fees/One-Time Taxes	\$5,893	\$5,893	\$855	\$6,940
County-Wide Fees	\$6,662	\$6,662	\$6,662	\$6,662
School Fees	<u>\$1,904</u>	<u>\$1,904</u>	<u>\$3,468</u>	<u>\$4,250</u>
TOTAL FEES PER UNIT	\$36,925	\$38,152	\$43,649	\$44,891

* Prototype unit specifications are an 850-square foot unit within a 200-unit complex on a five-acre lot.

[1] These fees do not include area fees or planning/processing fees.

[2] Assumes one 2-inch meter for every 20 multifamily residential units.

Source: City of Vallejo; City of Vacaville; City of Fairfield; Economic & Planning Systems

Table 5 shows the comparison for commercial/ general retail development. As shown, the current City of Vallejo's total fee per building square foot is currently well below those in the City of Vacaville. Vallejo's fees are similar to those currently charged in the City of Fairfield on general retail, though are below those charged in the City of Fairfield for high trip generation (e.g., fast food restaurant establishments). With the inclusion of the new VMT in-lieu fee, the City of Vallejo's fees end up being somewhat above those in the City of Vacaville and those for high-trip generation retail in the City of Fairfield. They are also substantially above those for general retail in the City of Fairfield. Comparing transportation fees alone, the City of Vallejo's current transportation-related fees on commercial development are well below fees in other jurisdictions. The addition of the VMT in-lieu fee substantially increases the transportation fees in Vallejo and makes them similar to those in the City of Vacaville and those for high-trip generation uses in the City of Fairfield.

Table 5 Commercial / General Retail Square Foot Fee Comparison

Citywide Impact Fees¹ (charged by City/ County/Special Districts)	Vallejo Existing	Vallejo w/ VMT In-Lieu	Vacaville (Updated 2022)	Fairfield Gen. Commercial (Updated 2022)	Fairfield High- Trip Retail (Updated 2022)
Dev. Impact Fees per Sq. Ft.					
Traffic	\$4.00	\$21.42	\$19.45	\$7.51	\$20.05
Sewer	\$3.11	\$3.11	\$4.25	\$0.55	\$0.55
Water ²	\$4.34	\$4.34	\$5.00	\$3.01	\$3.01
Drainage	\$3.59	\$3.59	\$0.35	-	-
Fire/Police	-	-	\$0.56	-	-
Other Facilities/ General Fees/One-Time Taxes	\$0.49	\$0.49	\$0.36	\$6.13	\$6.13
Countywide Fee	\$1.02	\$1.02	\$1.02	\$1.02	\$1.02
School	<u>\$0.36</u>	<u>\$0.36</u>	<u>\$0.66</u>	<u>\$0.61</u>	<u>\$0.61</u>
TOTAL FEES PER SQ. FT.	\$16.91	\$34.33	\$31.65	\$18.83	\$31.37

* Prototype unit specifications are a 65,340-square foot building on a five-acre lot.

[1] These fees do not include area fees or planning/processing fees.

[2] Assumes two 2-inch meters.

Source: City of Vallejo; City of Vacaville; City of Fairfield; Economic & Planning Systems

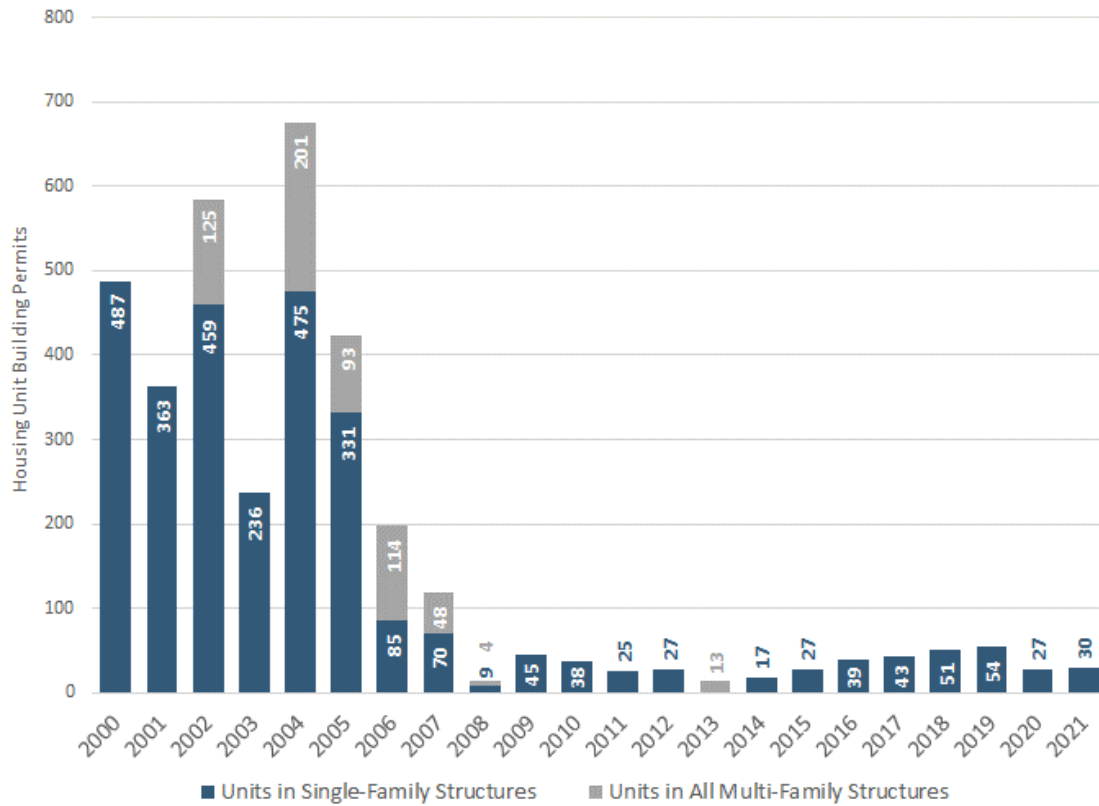
Residential Feasibility Analysis

This section examines how the proposed VMT In-Lieu fee might affect the feasibility of residential development in Vallejo – specifically single-family and multifamily use types.

Figure 1 shows residential building permit activity in Vallejo over the past twenty years. Historically, the City has attracted substantial single-family development activity subject to cycles in the real estate market as shown by the impact of the Great Recession. At the same time, the level of multifamily development has historically been limited. As demand for residential development has re-strengthened for single-family and multifamily uses, the City of Vallejo has opportunities to attract both types of development going forward.

Multifamily development appears poised to make a return to Vallejo, with 180 pipeline units according to CoStar Group data, and with another two thousand pipeline units currently under review per City staff. Hundreds more single-family units are also anticipated in the coming years, collectively signaling an influx of residential development on the horizon. The following section examines more focused feasibility considerations via prototype pro formas for both single-family and multifamily developments, and how the proposed VMT In-Lieu fee might affect their viability.

Figure 1 Vallejo Residential Building Permits by Type (2000-2021)



Source: SOCDs Permits Database; Economic & Planning Systems

Single-Family Development Feasibility

Applying market data, actual City fee levels, and standard market assumptions to a single-family development prototype, **Table 6** indicates the overall development economics and expected viability of a prototypical single-family development project in Vallejo. The prototype utilized is a 10-acre, 50-unit site with 2,750-square-foot homes selling at an average of \$660,000 per unit. The pro forma combines these program assumptions with market data retrieved from industry-standard sources such as Redfin and Marshall & Swift to show the development economics of this product type.

Table 6 Vallejo Single-Family Development Feasibility Pro Forma

Item	Assumption	Total	Per Unit	Pct. Of Value
DEVELOPMENT PROGRAM ASSUMPTIONS¹				
Site (Gross Square Feet)		435,600	8,712	N/A
Residential Units		50	N/A	N/A
Gross Building Area (Square Feet)	2,750 SF per Unit	137,500	2,750	N/A
Net Area (Square Feet)	80% of GBA	110,000	2,200	N/A
Parking Spaces	<i>Integrated Garage</i>			
BUILDING VALUE				
Market Value²	\$300 per SF (Net Area)	\$33,000,000	\$660,000	N/A
DEVELOPMENT COSTS, LAND VALUES, AND RETURN				
<u>DIRECT COSTS</u>				
Basic Site Work/ Lot Improvements ³	\$30,000 Per Lot	\$1,500,000	\$30,000	5%
Direct Construction Cost ⁴	\$138 Cost/SF (GBA)	<u>\$18,975,000</u>	<u>\$379,500</u>	<u>58%</u>
Direct Cost Total		\$20,475,000	\$409,500	62%
<u>INDIRECT COSTS³</u>				
Permits and Fees⁵	\$69,569 per Unit	\$3,478,446	\$69,569	11%
Other Soft Costs ⁶	19.0% of Direct Const. Cost	<u>\$3,605,250</u>	<u>\$72,105</u>	<u>11%</u>
Indirect Cost Total		\$7,083,696	\$141,674	21%
TOTAL COSTS	\$200.43 per SF (GBA)	\$27,558,696	\$551,174	84%
Developer Return Requirement	10.0% of Market Value	\$3,300,000	\$66,000	10%
Residual Land Value	\$15.57 per SF (GBA) \$214,000 per site acre	\$2,141,305	\$42,826	6%
TOTAL COST/RETURN	\$240.00 per SF (GBA)	\$33,000,000	\$660,000	100%

[1] Program assumptions represent average values for a prototypical single-family development in Vallejo.

[2] Market value per square foot assumption per Redfin data. Represents averaged sale prices for both recently built homes in Vallejo as well as recently sold homes in Vallejo.

[3] EPS professional assumption congruent with other projects performed in nearby jurisdictions.

[4] Construction cost assumption via Marshall & Swift CoreLogic cost estimator for single-family residences built in Vallejo.

[5] Per **Table 1**.

[6] The Other Soft Costs item consists of Architecture and Engineering, Taxes and Insurance, Financing, Marketing/Leasing, and Developer Fee.

Source: Redfin; Marshall & Swift; Economic & Planning Systems

The market value is applied to the overall square footage to arrive at an estimate of total development value, \$33 million for all 50 units in this example, from which the estimated total cost of development (~\$27.6 million) is subtracted. A hurdle developer return requirement of 10 percent is applied, and the remaining difference between this and the total market value indicates the amount a developer could pay for land and still meet the hurdle return – also known as the Residual Land Value (RLV). In the **Table 6** example, the calculated RLV is \$214,000 per acre. A positive residual land value indicates potential feasibility. Based on available information on potential land costs and recognizing uncertainties in development costs and other parameters, this pro forma, as a whole,

indicates a feasible development project under current market conditions. It is important to note that this exercise utilizes a theoretical prototype development and actual results may vary given that actual development inputs will vary in reality and recent challenges posed by increasing costs, supply-chain issues, and labor issues can affect outcomes.

Table 7 summarizes the primary development metrics derived from the single-family pro forma shown in **Table 6**, and shows how the proposed VMT In-Lieu Fee, if charged to the same prototype project, would alter the development metrics.

Table 7 Single-Family Unit Development Metrics with Proposed Fee

Item	Per Unit	
	Value	Pct. Of Dev. Val.
Development Value	\$660,000	100%
<u>Current Levels</u>		
Transportation Fee	\$8,480	1.3%
<u>Other Fees</u>	<u>\$61,089</u>	<u>9.3%</u>
Total Fee Burden	\$69,569	10.5%
Other Costs	<u>\$547,605</u>	<u>83.0%</u>
Overall Dev. Cost	\$617,174	93.5%
Residual Land Value	\$42,826	6.5%
<u>Proposed Levels</u>¹		
Transportation Fee ²	\$10,489	1.6%
<u>Other Fees</u>	<u>\$61,089</u>	<u>9.3%</u>
Total Fee Burden	\$71,578	10.8%
Other Costs	<u>\$547,605</u>	<u>83.0%</u>
Overall Dev. Cost	\$619,183	93.8%
Residual Land Value	\$40,817	6.2%

[1] Values shown here derived using the same pro forma shown in **Table 6** but with the proposed VMT In-Lieu Fee added to the costs.

[2] Represents the proposed \$2,009 per-unit VMT In-Lieu Fee added to the current \$8,480 per-unit transportation impact mitigation fee.

Source: Economic & Planning Systems

As shown above, under Vallejo's current fee levels, the prototype single-family development would be charged about \$70,000 per unit in permits and fees, with \$8,480 of that going toward the City's transportation impact mitigation fee. With the proposed VMT In-Lieu Fee of \$2,009 added to this per-unit fee burden, the prototype single-family development would be charged \$71,578 per unit, with \$10,489 of that going toward transportation-related fees. As previously explained, the RLV represents the amount that a developer would be able to pay for the land given the value and cost estimates utilized. As **Table 7** demonstrates, the addition of the VMT In-Lieu Fee to this pro forma reduces the RLV per unit from \$42,826 to \$40,817 – put simply, an increase in the cost to develop the land will decrease the amount a developer would be willing to pay for the land with all other things being equal.

Because land prices can be “sticky” (i.e., not easy to move downwards), the developer may look to pass the additional fee costs on to the consumer by increasing the sale price of each single-family development within market-imposed constraints. By increasing the market value of the development, the added costs could be fully absorbed, thereby retaining the original RLV. By solving for this value utilizing the same pro forma approach, EPS estimates that in order to fully absorb the cost of the new VMT In-Lieu Fee and maintain the same land value, the sale price of each single-family unit would have to increase from \$660,000 to \$662,232, a 0.34 percent increase. This percentage increase in sale price is modest, further indicating the likely ability of the single-family residential product type to maintain feasibility even with the addition of the proposed VMT In-Lieu Fee.

Multifamily Development Feasibility

The general method utilized for calculating the development feasibility of a prototype multifamily residential product type is the same as the single-family method utilized previously, with a few differences in a few of the specific calculations. Applying market data, actual City fee levels, and industry-standard market assumptions to a prototype multifamily development program, **Table 8** indicates the development economics of a multifamily development project in Vallejo. The prototype utilized is a 2.5-acre, 150-unit site with 1,000-square-foot rental units renting at an average of \$3.50 per square foot per month. The pro forma combines these program assumptions with market data retrieved from industry-standard sources such as CoStar Group and Marshall & Swift to provide an estimate of the feasibility of this product type.

The net operating income of the development is estimated by subtracting vacancies and operating expenses from the gross potential rent, with the resulting net operating income being divided by a 5.5 percent yield rate to arrive at a supportable development cost of \$65 million for the whole development, or about \$430,000 per unit. This indicates that a developer could invest this level of funding per unit and be expected to meet the hurdle 5.5 percent return/yield. Subtracting estimates of the direct and indirect costs (including fees) (\$63 million) from the supportable development cost indicates the amount the developer could afford to pay for land (RLV) which is \$1.7 million, or \$681,000 per acre.

A positive residual land value indicates potential feasibility. Based on available information on potential land costs and recognizing uncertainties in development costs and other parameters, this pro forma, as a whole, indicates a feasible development project under current market conditions. It is important to note that this exercise utilizes a theoretical prototype development and actual results may vary given that actual development inputs will vary in reality and recent challenges posed by increasing costs, supply-chain issues, and labor issues can affect outcomes.

Table 8 Vallejo Multifamily Development Feasibility Pro Forma

Item	Assumption	Total	Per Unit	Pct. Of Value
DEVELOPMENT PROGRAM ASSUMPTIONS¹				
Site (Gross Square Feet)		108,900	N/A	N/A
Residential Units		150	N/A	N/A
Gross Building Area (Square Feet)	1,000 SF per Unit	150,000	1,000	N/A
Rentable Area (Square Feet)	85% of GBA	127,500	850	N/A
Total Parking Spaces	1.50 per Unit	225	1.5	N/A
Surface Parking Spaces	50% of total parking	113		N/A
Podium Parking Spaces	50% of total parking	113		N/A
BUILDING VALUE				
Gross Potential Rent (GPR) ²	\$3.50 per SF/Month	\$5,355,000	\$35,700	N/A
Losses to Vacancy ³	5.0% of GPR	-\$267,750	-\$1,785	N/A
Other Revenue (Parking)	\$0 per Space/Month	\$0	\$0	N/A
Gross Revenue		\$5,087,250	\$33,915	N/A
Operating Expenses ³	30% of Gross Revenue	-\$1,526,175	-\$10,175	N/A
Net Operating Income (NOI)		\$3,561,075	\$23,741	N/A
Supportable Development Value	5.50% Yield Rate (on NOI)³	\$64,746,818	\$431,645	N/A
DEVELOPMENT COSTS, LAND VALUES, AND RETURN				
<u>DIRECT COSTS</u>				
Basic Site Work ³	\$6.00 per site SF	\$653,400	\$4,356	1%
Building Direct Cost ⁴	\$281 Cost/SF (GBA)	\$42,150,000	\$281,000	65%
Surface Parking Cost ³	\$5,000 per Space	\$562,500	\$3,750	1%
Podium Parking Cost ³	\$45,000 per Space	\$5,062,500	\$33,750	8%
Total Parking Direct Cost	\$25,000 per Space	\$5,625,000	\$37,500	9%
Direct Cost Total		\$48,428,400	\$360,356	83%
<u>INDIRECT COSTS³</u>				
Permits and Fees ⁵	\$36,925 per Unit	\$5,538,805	\$36,925	9%
Other Soft Costs ⁶	19.0% of Direct Costs	\$9,077,250	\$60,515	14%
Indirect Cost Total		\$14,616,055	\$97,440	23%
TOTAL COSTS	\$420.30 per SF (GBA)	\$63,044,455	\$420,296	97%
Residual Land Value	\$11.35 per SF (GBA) \$681,000 per site acre	\$1,702,364	\$11,349	3%
TOTAL COST/RETURN	\$431.65 per SF (GBA)	\$64,746,818	\$431,645	100%

[1] Program assumptions represent average values for a prototypical multifamily development in Vallejo.

[2] Gross potential rent per square foot assumption per CoStar Group data for recently built market rate properties in the surrounding region.

[3] EPS professional assumption congruent with other projects performed in nearby jurisdictions.

[4] Construction cost assumption via Marshall & Swift CoreLogic cost estimator for multifamily residences built in Vallejo.

[5] Per Table 1.

[6] The Other Soft Costs item consists of Architecture and Engineering, Taxes and Insurance, Financing, Marketing/Leasing, and Developer Fee. Total is calculated based on direct construction costs (doesn't include site work).

Table 9 demonstrates that, under Vallejo’s current fee levels, the prototype multifamily development would be charged about \$37,000 per unit in development impact fees, with \$4,768 of that going toward the City’s transportation impact mitigation fee. With the proposed VMT In-Lieu Fee of \$1,227 added to this per-unit fee, the prototype multifamily development would be charged \$38,152 per unit, with \$5,995 of that going toward transportation-related fees. **Table 9** further demonstrates that the addition of the VMT In-Lieu Fee to this pro forma reduces the RLV per unit from \$11,349 to \$10,122, an 11 percent reduction in value.

Table 9 Multifamily Unit Development Metrics with Proposed Fee

Item	Per Unit	
	Value	Pct. Of Dev. Val.
Development Value	\$431,645	100%
<u>Current Levels</u>		
Transportation Fee	\$4,768	1.1%
<u>Other Fees</u>	<u>\$32,157</u>	<u>7.4%</u>
Total Fee Burden	\$36,925	8.6%
Other Costs	<u>\$383,371</u>	<u>88.8%</u>
Overall Dev. Cost	\$420,296	97.4%
Residual Land Value	\$11,349	2.6%
<u>Proposed Levels</u>¹		
Transportation Fee ²	\$5,995	1.4%
<u>Other Fees</u>	<u>\$32,157</u>	<u>7.4%</u>
Total Fee Burden	\$38,152	8.8%
Other Costs	<u>\$383,371</u>	<u>88.8%</u>
Overall Dev. Cost	\$421,523	97.7%
Residual Land Value	\$10,122	2.3%

[1] Values shown here derived using the same pro forma shown in **Table 8** but with the proposed VMT In-Lieu Fee added to the costs.

[2] Represents the proposed \$1,227 per-unit VMT In-Lieu Fee added to the current \$4,768 per-unit transportation impact mitigation fee.

Source: Economic & Planning Systems

In order for the value of the prototype multifamily development to absorb the added cost of the proposed VMT In-Lieu Fee and maintain the initial RLV of \$11,349 per unit, EPS estimates the monthly rent per square foot would need to increase from \$3.50 to \$3.51. This increase of 0.28 percent, comparable to the increase calculated in the single-family section, similarly suggests the general feasibility of multifamily development in Vallejo would not be materially constrained by the introduction of the proposed VMT In-Lieu Fee.

Non-Residential Feasibility Analysis

This analysis focuses on two non-residential development types – retail and office/medical office. Over the past decade or so, the Vallejo market for these development types has been limited - since 2010, the overall office inventory in Vallejo has decreased by 57,000 square feet, and the retail inventory has decreased by 8,000 square feet (per CoStar Group data). Vallejo has seen new construction of these product types over this time period, however, the square footage delivered has been outpaced by the square footage demolished. This trend indicates that the feasibility challenges associated with these uses.

Broader market trends also do not bode well for retail development going forward, with brick-and-mortar retail demand experiencing a steady decline over the past few years with the proliferation of online shopping, further exacerbated by the effects of the COVID-19 pandemic. More specialized retail types, such as highway-oriented businesses (e.g., fast food) and big-box retailers, have shown more resiliency against the recent market downturn than their more traditional counterparts.

Given the variety in particular types and formats of retail and office developments, this analysis examines generalized product types for each to provide an overview of how the proposed VMT In-Lieu Fee might affect the feasibility of these developments in a broad sense. While the particular development economics and assumptions inherent to specialized retail or office types will vary from the more general product type utilized here, the generalized assumptions included here offer the most broadly applicable results.

In general, with regional construction costs continuing to increase and with the rent levels that are currently achievable for commercial real estate in Vallejo, the feasibility of these product types in this region is challenging. In general, for these generalized use types, it is difficult to see how potential revenues can cover development costs and provide a hurdle return on investment. The sections below place the scale of the In-Lieu Fees in the context of current fees and development values for these uses.

Retail Development Feasibility

As previously mentioned, general retail uses do not currently appear feasible in Vallejo, given achievable rents and construction costs. **Table 10** shows the value side of the pro forma, deriving a supportable development cost based on estimated net operating income. The prototype development mix utilized is intended to reflect an average retail product type and consists of a 10,500-square-foot building on a 0.69-acre lot. A monthly per-square-foot rent assumption of \$2.50 (Triple Net) is applied to the overall square footage, from which vacancy losses and operating expenses are subtracted to arrive at an estimated net operating income. This value is divided by the yield rate to produce the estimated supportable development value of \$3.8 million, or \$363 per square foot.

Table 10 Vallejo Retail Development Value Pro Forma

Item	Assumption	Total	Per GBA
DEVELOPMENT PROGRAM ASSUMPTIONS¹			
Site (Gross Square Feet)		30,000	N/A
Gross Building Area (Square Feet)	0.35 Floor Area Ratio (FAR)	10,500	N/A
Rentable Area (Square Feet)	95% of GBA	9,975	N/A
Parking Spaces	4.0 per 1,000 SF	42	N/A
BUILDING VALUE			
Gross Potential Rent (NNN) ²	\$2.50 per SF/Month	\$299,250	\$28.50
Losses to Vacancy ³	1.5% of GPR	<u>-\$4,489</u>	<u>-\$0.43</u>
Gross Revenue		\$294,761	\$28.07
Operating Expenses ³	3.0% of Gross Revenue	-\$8,843	-\$0.84
Net Operating Income (NOI)		\$285,918	\$27.23
Supportable Development Value	7.50% Yield Rate (on NOI)³	\$3,812,246	\$363.07

[1] Program assumptions represent average values for a prototypical retail development in the Vallejo area.

[2] Gross potential rent per square foot assumption based on CoStar Group data for recently built retail properties in the surrounding region.

[3] EPS professional assumption congruent with other projects performed in nearby jurisdictions.

Source: CoStar Group; Economic & Planning Systems

The value side of the pro forma support comparisons with the current transportation-related fees this development would be charged in addition to the proposed new fee.

Table 11 demonstrates this, comparing the existing and proposed fee levels with the development value per square foot derived in **Table 10**. The current fee level that would be charged to a retail development of this type (\$16.91 per square foot) would represent 4.7 percent of the total development value. Adding the proposed VMT In-Lieu Fee would raise the total fee burden on this development to \$34.33, equating to 9.5 percent of development value, more than double the percentage under current fee levels, and a high cost burden for non-residential development.

Table 11 Retail Sq. Ft. Development Metrics with Proposed Fee

Item	Per Sq. Ft.	
	Value	Pct. Of Dev. Val.
Development Value	\$363.07	100%
<u>Current Levels</u>		
Transportation Fee	\$4.00	1.1%
<u>Other Fees</u>	<u>\$12.91</u>	<u>3.6%</u>
Total Fee Burden	\$16.91	4.7%
<u>Proposed Levels</u>		
Transportation Fee ¹	\$21.42	5.9%
<u>Other Fees</u>	<u>\$12.91</u>	<u>3.6%</u>
Total Fee Burden	\$34.33	9.5%

[1] Represents the proposed \$17.42 per-square-foot VMT In-Lieu Fee added to the current \$4.00 per-square-foot transportation impact mitigation fee.

Source: Economic & Planning Systems

Utilizing the pro forma developed for this retail prototype, a sensitivity was run to determine how much the value would need to increase to absorb the addition of the VMT In-Lieu Fee cost without altering the RLV of the development. The initial monthly rent per square foot of \$2.50 used in the pro forma for current conditions would need to increase to \$2.62 for the development to fully absorb the proposed VMT In-Lieu Fee, a five percent increase. While not an exceedingly high increase, the five percent increase in rents required is far higher than the percent increase needed for the residential product types to absorb the proposed fee. With the feasibility of retail development already much more challenging than residential feasibility in Vallejo, the much higher relative burden of the proposed fee would add stress to retail's already unfavorable development economics.

Office/Medical Office Development Feasibility

Similar to retail uses, high construction costs and currently achievable rents in Vallejo point toward the infeasibility of office and medical office development, a conclusion bolstered by the paucity of this development type in the area over recent years. **Table 12** focuses on only the value side of the pro forma, deriving a supportable development value based on net operating income. The prototype development mix utilized is intended to reflect a standardized, general office/medical office product type, and consists of a 20,000-square-foot building on a 1.3-acre lot. A monthly per-square-foot rent assumption of \$3.00 (Full Service) is applied to the overall square footage, from which vacancy losses and operating expenses are subtracted to arrive at an estimated net operating income. This value is divided by the yield rate to produce the estimated supportable development value of \$6.3 million, or \$316 per square foot.

Table 12 Vallejo Office/Medical Office Development Value Pro Forma

Item	Assumption	Total	Per GBA
DEVELOPMENT PROGRAM ASSUMPTIONS¹			
Site (Square Feet)		57,142	N/A
Gross Building Area (Square Feet)	0.35 Floor Area Ratio (FAR)	20,000	N/A
Rentable Area (Square Feet)	90% of GBA	18,000	N/A
Parking Spaces	4.0 per 1,000 SF	80	N/A
BUILDING VALUE			
Gross Potential Rent (FS) ²	\$3.00 per SF/Month	\$647,990	\$32.40
Losses to Vacancy ³	2.5% of GPR	<u>-\$16,200</u>	<u>-\$0.81</u>
Gross Revenue		\$631,791	\$31.59
Operating Expenses ³	25.0% of Gross Revenue	-\$157,948	-\$7.90
Net Operating Income (NOI)		\$473,843	\$23.69
Supportable Development Value	7.5% Yield Rate (on NOI)³	\$6,317,905	\$315.90

[1] Program assumptions represent average values for a prototypical office/medical office development in the Vallejo area.

[2] Gross potential rent per square foot assumption based on CoStar Group data for recently built office properties in the surrounding region.

[3] EPS professional assumption congruent with other projects performed in nearby jurisdictions.

Source: CoStar Group; Economic & Planning Systems

The estimated supportable development value per square foot found above is carried over into **Table 13**, which compares the current and proposed fee levels. The current fee level for an office/medical office development of this type (\$17.47 per square foot) would represent 5.5 percent of the total development value. Adding the proposed VMT In-Lieu Fee would raise the total fee burden on this development to \$21.16, equating to 6.7 percent of development value, a modest increase over current levels.

Table 33 Office/Medical Office Sq. Ft. Development Metrics with Proposed Fee

Item	Per Sq. Ft.	
	Value	Pct. Of Dev. Val.
Development Value	\$315.90	100%
<u>Current Levels</u>		
Transportation Fee	\$4.00	1.3%
<u>Other Fees</u>	<u>\$13.47</u>	<u>4.3%</u>
Total Fee Burden	\$17.47	5.5%
<u>Proposed Levels</u>		
Transportation Fee ¹	\$7.69	2.4%
<u>Other Fees</u>	<u>\$13.47</u>	<u>4.3%</u>
Total Fee Burden	\$21.16	6.7%

[1] Represents the proposed \$3.69 per-square-foot VMT In-Lieu Fee added to the current \$4.00 per-square-foot transportation impact mitigation fee.

Source: Economic & Planning Systems

As with the previous retail section, a sensitivity was run to determine how much the value of the office/medical office prototype would need to increase to absorb the addition of the VMT In-Lieu Fee cost without altering the RLV of the development. The initial monthly rent per square foot of \$3.00 used in the pro forma for current conditions would need to increase to \$3.04 for the development to fully absorb the proposed VMT In-Lieu Fee, a 1.2 percent increase. While this increase is still slightly higher than the ones calculated for the residential product types, it is significantly lower than its analog calculated for the retail use type. The resulting conclusion for this fee level increase is more mixed, representing a modest increase on a use with challenging development economics. Ultimately the viability of the fee level may depend on the relative costs of mitigation VMT impacts through other approaches.

Memorandum

Date: November 14, 2022

To: Margaret Kavanaugh-Lynch, City of Vallejo

From: Julie Morgan and Ellen Poling, Fehr & Peers

Subject: Implementation Plan and Program Update Methods for Vallejo In-Lieu Fee for VMT Reduction

OK21-0422

The City of Vallejo is considering establishing an in-lieu fee program for the purpose of funding city infrastructure projects that will reduce the growth of VMT and contribute to safety and multimodal accessibility. The proposed fee program structure is documented in the report "Vallejo In-Lieu Fee for VMT Reduction," prepared by Fehr & Peers for the City of Vallejo in October 2022 (referred to in this memo as the Fee Report). The City will go through a deliberative process to determine whether to adopt an in-lieu fee for VMT reduction. If the City elects to adopt such a fee program, this memo outlines the steps that could be taken to implement and maintain that program.

Fee Program Implementation

Once the City adopts the fee program through City Council action, there are a series of administrative steps that would be taken to implement the program. These steps would involve:

- Developing a set of administrative guidelines that define how the fee will be applied. The City may already have administrative guidelines that apply to other fees collected by the City and that would apply generally to the VMT fee as well. Related to the VMT fee specifically, examples of topics that should be addressed include but are not limited to:
 - o Definition of the characteristics of a development project that would lead to a determination that the VMT fee applies to that project, and definition of any situations that would be exempt from the VMT fee.
 - o Description of how the VMT fee is to be calculated.
 - o Examples of how the VMT fee would be applied to a few hypothetical projects.
 - o Definition of procedures for appealing the VMT fee calculations and how the City would handle an appeal.



- Establishing a separate fund for the collection and expenditure of VMT fees and applying typical accounting procedures to that fund.
- Incorporating the VMT fee into the City's master fee schedule.
- Training City planning staff on how to apply the VMT fee to development project applications.
- Conducting outreach to development companies with active projects in the City to explain the VMT fee and how it applies.
- Establishing methods for prioritizing the capital improvement projects eligible for funding through the fee program, to guide the expenditure of fee revenues.
- Establishing a procedure for regular reporting of the VMT fee revenues and expenditures.

Fee Program Updates

Any fee program should be periodically updated to ensure that it reflects the most recent available information. It is typically considered good practice to update a fee program approximately every five to seven years, depending on the level of change that may occur for the key program elements. City staff can qualitatively review the program elements listed below and determine whether conditions have changed enough to warrant a more comprehensive and quantitative update. If a comprehensive update is determined to be needed, that could be completed by City staff or through an outside consultant.

Elements of the Vallejo VMT fee program that might change over time and that should be periodically reviewed and updated include:

- the list of capital improvement projects that would be eligible for funding through the fee,
- the calculation of VMT reductions associated with the capital improvements, and
- the projections of future residential and non-residential development in the City.

Capital Improvement Program

The list of capital improvement projects eligible for funding through the fee program should be periodically reviewed and updated. Project definitions may evolve over time as the City completes planning and design work on each project, and the estimated cost for each project may also change.

VMT Reduction Estimates

Estimates of the VMT reduction that could be attributable to each capital improvement project are included in the Fee Report. When the capital improvement program is periodically reviewed, these estimates should also be reviewed and updated to reflect the current definition of each



project, and to incorporate new evidence about the VMT reduction effects of each project to the extent new information becomes available.

Development Projections

The fee program has been structured to reflect a planning period of 15 years, and the fee calculations are based on projections about the amount of residential and non-residential development that is reasonably foreseeable over that timeframe. Those development projections should be periodically reviewed by City staff to ensure that the projections continue to be reasonable and in alignment with local plans.

City of Vallejo CEQA Transportation Impact Analysis Guidelines

Prepared for:
City of Vallejo

July 2020
Revised October 2020

WC19-3631

FEHR  PEERS

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- A. VMT Analysis Process Flowchart
- B. Detailed VMT Forecasting Information
- C. Mitigation Measures

Introduction

SB 743 and the Updated CEQA Guidelines

SB 743, signed by the Governor in 2013, is changing the way transportation impacts are identified. Specifically, the legislation directed the Office of Planning and Research (OPR) to consider different metrics for identifying transportation impacts under the California Environmental Quality Act (CEQA). The OPR finalized updates to the CEQA Guidelines in December 2018; the updated Guidelines identify vehicle miles of travel (VMT) as the preferred transportation impact metric. The updated Guidelines state that, by July 2020, all lead agencies must use VMT as the new transportation metric for identifying impacts of land use projects.

The updated Guidelines include revised Appendix G Checklist questions for transportation impact evaluation. The four questions are:

Would the project:

1. *Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*
2. *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*
3. *Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?*
4. *Result in inadequate emergency access?*

Criteria 2 is the implementation of the SB 743 requirement. CEQA Guidelines section 15064.3(b) reads, in part, as follows:

- (1) *Land Use Projects. Vehicle-miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.*
- (2) *Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.*
- (3) *Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the*

availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

- (4) *Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.*

City of Vallejo SB 743 Implementation Process

In anticipation of the change to the VMT metric, the City of Vallejo initiated and is nearing completion of a SB 743 Implementation Study. The study included the following steps.

- Review of relevant policies related to greenhouse gas reduction, multimodal transportation, and VMT (memorandum dated October 28, 2019).
- Review of potential travel demand models for use in VMT analysis (memorandum dated October 28, 2019).
- Presentation to City Planning Commission on SB 743 background and implementation guidance from OPR and other sources (presentation on January 6, 2020).
- Preparation of methodology and threshold options based on guidance in the Office of Planning and Research's *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) and other research regarding VMT reductions needed to achieve the state's greenhouse gas reduction goals (memorandum dated January 31, 2020).
- Preparation of City staff methodology and threshold recommendations for Planning Commission consideration (memorandum dated April 6, 2020).
- Presentation of City staff-recommended methodology and thresholds (presentation on April 20, 2020).

The Planning Commission expressed support for the City staff-recommended methodology and thresholds, and the recommendation will be considered at the June 23, 2020 City Council Meeting.



As noted in CEQA Guidelines Section 15064.7(b) below, lead agencies are 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).

CEQA Transportation Impact Analysis and City Development Review

One of the fundamental roles of government agencies is the construction and maintenance of public infrastructure facilities including roadways, rail and bus facilities, bicycle and pedestrian infrastructure, water lines, sanitary sewer lines, stormwater treatment facilities, parks, and other public facilities. When private development occurs, it is the responsibility of government to ensure that there are adequate public facilities to serve incremental population and employment growth. For the transportation system, one way to address this issue has been the preparation of a Transportation Impact Analysis (TIA).

For the past several decades, the preparation of a TIA was integrated into the CEQA process, in which the TIA was used primarily to analyze a project's impacts under CEQA. However, with the passage of SB 743, changes to this process are necessary. Specifically, a *Transportation Assessment (TA)* may need to be prepared as a stand-alone document, as part of the project approval process, including information for the decision makers that is not required as part of the CEQA process. A separate *Transportation Impact Analysis (TIA)* would contain the information specifically needed for the CEQA document.

The purpose of this *TIA Guidelines* document is to provide instructions for analyzing the potential transportation impacts of proposed development projects, for purposes of the CEQA evaluation. These guidelines present the recommended methodology that should generally be utilized in the preparation of TIAs. These recommendations are general guidelines and the City of Vallejo may modify the TIA requirements based on the unique characteristics of a particular project.

Can LOS Analysis Still be Conducted as Part of Development Review?

SB 743 does not prevent a city or county from continuing to analyze delay or LOS outside of CEQA review for other transportation planning or analysis purposes (i.e., general plans, impact fee programs, corridor studies, congestion mitigation, or ongoing network monitoring); but these metrics may no longer constitute the sole basis for CEQA impacts.

The City's General Plan 2040 has an advisory standard of LOS E or better, to be considered along with, but not to override, metrics for pedestrian, bicycle, transit and emergency access performance (General Plan Policy MTC-2.5). LOS can continue to be assessed relative to this standard during development review, to promote the City's interest in maintaining and operating a functional roadway network. However, assessment of a development project's effect on intersection level of service must be conducted outside

the CEQA process. The assessment can be performed as part of a General Plan consistency assessment, within a separate Transportation Assessment document. City planning and traffic engineering staff will define the scope and methodology for project-level of service analysis as part of the development review process.

Congestion Management Program Compliance Changes

A key element of SB 743 is the elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. This change is intended to assist in balancing the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.

SB 743 contains amendments to current congestion management law that allows cities and counties to effectively opt-out of the LOS standards that would otherwise apply in areas where Congestion Management Programs (CMPs) are still used (see Government Code Sections 65088.1 and 65088.4). Solano County's Congestion Management Program was recently updated in October 2019. The CMP network in Vallejo includes I-80, SR 37, SR 29 (Sonoma Boulevard), Curtola Parkway, Mare Island Way, and Tennessee Street west of I-80. Three intersections are monitored in the CMP: Tennessee Street/Sonoma Boulevard, Tennessee Street/Mare Island Way, and Curtola Parkway/Sonoma Boulevard. The LOS standard for these intersections is LOS E. The 2019 monitoring indicated all three intersections operated at LOS D or better. However, as noted here, the City of Vallejo may choose to opt out of compliance with the LOS E standard.



VMT Analysis

A key element of SB 743, signed in 2013, is the elimination of automobile delay and LOS as the sole basis of determining CEQA impacts. The most recent CEQA guidelines, released in December 2018, recommend VMT as the most appropriate measure of project transportation impacts. However, SB 743 does not prevent a city or county from continuing to analyze delay or LOS as part of other plans (i.e., the general plan), studies, or ongoing network monitoring.

The following methodology should be used to determine VMT impact thresholds and mitigation requirements for land use project TIAs. These recommendations were developed by City of Vallejo staff with guidance from Fehr & Peers, and are based on the updated *CEQA Guidelines* (December 2018) and the Office of Planning and Research guidance document *Technical Advisory on Analyzing Transportation Impacts in CEQA* (December 2018) (*Technical Advisory*).

Analysis Methodology

For purposes of SB 743 compliance, a VMT analysis should be conducted for land use projects as deemed necessary by the City Planning Manager and Traffic Engineer, and would apply to projects that have the potential to increase the average VMT per service population, resident, or employee, depending on the project type. (Service population is residents plus employees.) Normalizing VMT per service population, resident, or employee essentially provides a transportation efficiency metric. Using this efficiency metric allows the analyst to compare the project to the city as a whole, for purposes of identifying transportation impacts.

In addition to assessing the project's VMT efficiency, the project's effect on total citywide VMT is also calculated, to assess how the project may change VMT within the city as it interacts with other city land uses.

Attachment A provides a flowchart outlining the process described below.

Consistency with the Regional Transportation Plan/Sustainable Communities Strategy

The first step in assessing project impacts is to determine if the project land use is contained within the City of Vallejo residential and non-residential land use allocations in the current Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and if the project is consistent with the City of Vallejo General Plan. As of June 2020, the current RTP/SCS is *Plan Bay Area 2040*, adopted in 2017. If the project is not consistent with the RTP/SCS and/or the General Plan, amendments to those documents would be needed prior to proceeding with the project review.

Project Screening

There are three types of screening that lead agencies can apply 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 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 (if the City requires the project to supply parking);
3. Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the City, with input from the Metropolitan Transportation Commission); or
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Step 2: Low VMT Area Screening

Citywide, Countywide and Regional VMT Averages

Table 1 shows the citywide average VMT metrics as reported by the Solano-Napa Activity Based Travel Demand Model (SNABM). The metrics increase by about 2 percent between 2015 and 2040.

Table 1: City of Vallejo VMT Metrics

Land Use	City of Vallejo Baseline Year (2015)	City of Vallejo Cumulative Year (2040) ¹
Residential (All trips made by resident traced back to residence)	26.0 VMT/resident	26.6 VMT/resident
Office/Employment (All trips part of home-work tours traced back to workplace)	31.5 VMT/employee	32.4 VMT/employee

Source: Solano-Napa Activity Based Travel Demand Model (September 2018 version); Fehr & Peers, October 2020.

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. The City has discretion to measure the half-mile based on a straight radius or walking routes. The straight radius method will maximize the footprint of the TPA and allow for the greatest amount of potential project screening. Using the walking route method will decrease the land area subject to potential TPA screening but will increase the likelihood that development projects located in this area have a less than 1/2 mile walking distance to the transit station. Academic research has demonstrated that walking distance is an important factor that influences the choice to take transit and thereby reduce VMT. For more background on this, see the following article: <http://www.reconnectingamerica.org/assets/Uploads/20111018UCB-ITS-VWP-2011-5.pdf>.

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.' Note that this requirement means that both intersecting routes must have the 15-minute or less frequency of service interval.

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.



For information, the City of Vallejo metrics are compared to countywide and nine-county Bay Area metrics in **Table 2**. In both the 2015 and 2040 model results, Vallejo's residential tour VMT per resident is lower than the Solano County average (10 percent lower in 2015 and 8 percent lower in 2040), but higher than the Bay Area average (11 percent higher in 2015 and 18 percent higher in 2040). Vallejo's employment home-work tour VMT per employee is higher than both the Solano County and Bay Area averages in both 2015 and 2040 (2 percent higher than the Countywide average in 2015 and 5 percent higher in 2040; 31 percent higher than the Bay Area average in 2015 and 41 percent higher in 2040).

The Solano County average residential tour VMT per resident increases by 1 percent between 2015 and 2040, and the employment home-work tour VMT per employee is unchanged.

The Bay Area average residential tour VMT per resident decreases by 3 percent between 2015 and 2040, and the employment home-work tour VMT per employee decreases by 4 percent.

In summary, the SNABM indicates that residential and employment VMT metrics are expected to increase slightly in 2040, relative to baseline conditions, in both Vallejo and Solano County, but that Bay Area VMT metrics will drop. The model further indicates that Vallejo's residential VMT metric is lower than the countywide average, but higher than the Bay Area average; and that Vallejo's employment VMT metric is higher than both the countywide average and the Bay Area average.

Table 2: City of Vallejo VMT Metrics Compared to County and Region

Land Use	Baseline (2015) City of Vallejo	Baseline (2015) Solano County	Baseline (2015) Bay Area	Cumulative (2040) City of Vallejo ¹	Cumulative (2040) Solano County ¹	Cumulative (2040) Bay Area ¹
Residential (All trips made by resident traced back to residence)	26.0 VMT/resident	28.8 VMT/resident	23.4 VMT/resident	26.6 VMT/resident	29.0 VMT/resident	22.6 VMT/resident
Office/Employment (All trips part of home-work tours traced back to workplace)	31.5 VMT/employee	30.9 VMT/employee	24.0 VMT/employee	32.4 VMT/employee	30.9 VMT/employee	23.0 VMT/employee

Source: Solano-Napa Activity Based Travel Demand Model (September 2018 version); Fehr & Peers, October 2020.

Project VMT Screening Based on Low-VMT Area

Residential and office projects located within a low-VMT generating area of the city (i.e., lower than citywide average levels, based on the significance thresholds in this document) 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.

The SNABM was reviewed and found to not provide reasonable traffic analysis zone (TAZ)-level results for purposes of identifying low-VMT areas of the city. Therefore, a project applicant and their analyst may present other data, if feasible, to identify if the project is in a low-VMT generating area. One potential data source would be trip generation and trip length information from a location-based services data vendor, demonstrating that similar uses near the project site generate VMT per service population, per resident, or per employee that is no higher than the citywide average. The analyst should use professional judgement to ensure that there is nothing unique about the project that would otherwise be mis-represented utilizing the vendor data.

Other methods for identifying low-VMT areas of the city may become available in the months and years ahead. Therefore, the City may consider other screening methods, supported by substantial evidence for their use.

For low VMT area screening to be satisfied, the analyst must verify that the project land uses would not alter the existing built environment in such a way as to increase the rate or length of vehicle trips (e.g. the proposed project is consistent with existing land use in the area, the project would be expected to contribute VMT consistent with existing land use in the area, and the project would not significantly alter travel patterns in the area).

Step 3: Project Type Screening

The *Technical Advisory* states that 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 and other activities close to home and has the effect of reducing vehicle travel.

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; however, note that it is recommended that as much substantial evidence as possible be provided for the local-serving nature of a given project:

- Local-serving K-12 public schools
- Local parks
- Day care centers
- Local-serving retail uses less than 50,000 square feet, including:
 - Gas stations
 - Banks
 - Restaurants
 - Shopping centers
- Local-serving hotels (e.g. non-destination hotels)
- 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 facilities)
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Affordable or supportive housing²
- Assisted living facilities
- Senior housing (as defined by HUD)
- Projects generating less than 110 daily vehicle trips³
 - 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
 - 15,000 sq. ft. of light industrial⁴
 - 63,000 sq. ft. of warehousing
 - 79,000 sq. ft. of high cube transload and short-term storage warehouse⁷

Any project that uses the designation of “local-serving” should be able to demonstrate that its users (employees, customers, visitors) would come primarily from within the city limits. The project would therefore not generate new “demand” for the project land uses, but would meet at existing demand that would shorten the distance existing residents, employees, customers, or visitors would need to travel.

VMT Assessment for Non-Screened Development

Projects not screened through the steps above should complete a VMT analysis using the version of the Solano travel demand model available at the time of the project analysis 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 as follows. Thresholds of significance are discussed in the next section.

Attachment B provides more detailed direction on the steps below. Note that the model version used for this guidelines document is the September 2018 version. Future analysis should use the version available from the Solano Transportation Authority at the time of the analysis, as the STA periodically updates its travel demand model. In addition, the STA is developing a Solano County-validated version of the model, and when it is ready for use, it should be reviewed by the City of Vallejo and used for project impact analysis, rather than the Solano-Napa Activity Based Model. Project analysis using updated

² The project must provide 100% of residential units as affordable or supportive housing.

³ 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.

⁴ Threshold may be higher depending on the tenant and the use of the site. This number was estimated using rates from ITE’s *Trip Generation Manual*.

versions of the model should include citywide metrics extracted from the updated model as opposed to those presented in Table 1.

- **Baseline Conditions** – Conditions in the baseline year for the CEQA analysis, which is most often chosen as the time of notice of preparation (NOP) of an environmental document, but may be chosen as the baseline year of the SNABM, if land use and transportation network conditions can be considered largely unchanged between the model baseline year and the date of the NOP. VMT for the project TAZ and citywide total should be calculated.
- **Baseline Plus Project** - The project land use is added to the project TAZ or a separate TAZ may be created to contain the project land uses. A full model run is performed and VMT changes (by metric of choice) is 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 section).
- **Cumulative No Project**– Conditions in the future year travel demand model (current future year is 2040).
- **Cumulative Plus Project** - The project land use is added to the project TAZ or a separate TAZ is created to contain the project land uses. The addition of project land uses may be accompanied by a reallocation of a similar amount of land use from other TAZs throughout the model area (focusing on Solano and Napa Counties), especially if the proposed project is significant in size such that it would potentially reduce the potential for development throughout the rest of the model area. Land use projects will generally not change the cumulative no project control totals for population and employment growth within the model area. 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. A full model run is performed and VMT changes (by metric of choice) 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.

The model output should include total network-based boundary VMT by speed bin, which includes all vehicle trips and trip purposes in a defined boundary⁵ to measure the project effect on VMT. The model output should include the following project-generated VMT: Total Project VMT (all trip purposes) per service population (population plus employment); Residential Tour VMT per resident (for residential projects) and Home-Based-Work Tour VMT per employee (for office/employment uses). The network-

⁵ Network-based VMT is also referred to as boundary method VMT. For most projects, boundary method for the City should be adequate. For projects located near the City limit, an alternative boundary should be considered that captures the true effect the project has on local traffic. This could be determined using average trip length to/from the site or other approach to completely capture changes in VMT.



based boundary VMT is needed as an input for air quality, greenhouse gas (GHG), and energy impact analysis, while the project-generated VMT metrics are used for the transportation impact analysis.

Both “plus project” scenarios noted above will summarize two types of VMT: (1) the project effect on VMT, comparing how the project changes VMT on the boundary network looking at citywide VMT in absolute terms and also per service population, comparing these to the No Project condition, and (2) project-generated VMT per service population, per resident, or per employee, with a comparison to the appropriate benchmark noted in the thresholds of significance.

Project-generated VMT should be extracted from the travel demand forecasting model by combining either the origin-destination (for total VMT) or production-attraction (for the other metrics) trip matrices and congested skims from final assignment. The VMT should be adjusted to reflect trips that extend beyond the model boundary (this is described in more detail in Attachment B). The project’s effect on VMT should be estimated using the regional boundary (recommended region is Solano County) and extracting the total link-level VMT for both the No Project and With Project condition.

If a project is mixed-use (i.e. composed of both residential and retail/office uses) project-generated VMT should be extracted for both the total VMT and VMT per service population (residents and employees).

Significance Thresholds

The City has adopted the following thresholds of significance. These thresholds are intended to hold new development VMT generation at or below citywide VMT generation levels, for the baseline and cumulative scenarios. This is expected to result in declining VMT over time, as compared to a business as usual condition with no VMT limits. The thresholds balance the City’s priorities with respect to competing objectives including Vallejo’s geographic and transportation context, greenhouse gas reduction goals, interest in achieving the state’s greenhouse gas reduction goals, and General Plan 2040 goals and policies related to land use mix, economic development, and housing provision.

Threshold 1: Project Generated VMT (Residential and Office/Industrial Projects) - Baseline

Project-generated Residential Tour VMT per resident (for residential projects), Home-Based-Work Tour VMT per employee (for office/industrial projects) or Total VMT per service population (for mixed-use projects) is no higher than the baseline citywide Residential Tour VMT per resident, Home-Based-Work Tour VMT per employee, or Total VMT per service population.

Threshold 2: Project Generated VMT (Residential and Office/Industrial Projects) - Cumulative

Project-generated Residential Tour VMT per resident (for residential projects), Home-Based-Work Tour VMT per employee (for office/industrial projects), or Total VMT per service population (for mixed-use projects) is no higher than the cumulative citywide Residential Tour VMT per resident, Home-Based-Work Tour VMT per employee, or Total VMT per service population. This threshold does not apply if it can be demonstrated that VMT rates are declining at the time of the analysis.

Threshold 3: Project’s Effect on VMT (Residential and Office/Industrial Projects) -- Cumulative

The Project reduces or has no effect on the citywide total VMT under cumulative conditions.

Threshold 4: Project-Generated VMT and Project's Effect on VMT (Other Project Types)

VMT thresholds for other project types (for example, institutional, destination hotel, or cultural projects) would be developed using considerations unique to the individual project. The thresholds will incorporate the principles of Thresholds 1 – 3, i.e., projects that are not expected to generate VMT above a relevant baseline level and/or are not expected to increase VMT in the cumulative condition would be considered to have a less than significant impact with respect to VMT.

VMT Mitigation 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.
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

As part of the Vallejo SB 743 Implementation Study, key VMT reduction measures that are appropriate to the Vallejo land use, urban form and transportation context were identified. These measures are summarized below, with additional effectiveness estimates and background information provided in **Attachment C**.

Potential VMT Reduction Measures

- Increase transit accessibility: provide transit stops, fund or contribute to shuttle service, provide transit subsidies to project residents or employees, or other actions that increase the ability of residents or employees to use transit
- Provide pedestrian network improvements: eliminate sidewalk gaps which create barriers to off-site activity centers, or enhance the width or design of existing off-site sidewalks or paths
- Provide bicycle network improvements: eliminate bike facility gaps, add new bike lanes, protected bike lanes, or off-street multi-use paths connecting to key off-site activity centers
- Provide traffic calming measures: construct off-site traffic calming measures which slow auto traffic and create a more comfortable walking and bicycling environment
- Implement a car-sharing program: provide car sharing within a project, or contribute funding to an off-site car sharing site, reducing the need for site employees to commute by car or the need for site residents to own a car
- "Un-bundle" private parking: lease parking separately from office space or residential units within a project site, thus encouraging site users to consider the independent value of the parking and potentially reducing car use
- Implement market-rate public parking: price all public parking within a particular area (downtown, for example) to encourage "park once" behavior, reducing automobile circulation



- Increase transit service frequency: contribute funding to allow transit agencies to provide shorter headways and improve transit trip speed and reliability
- Encourage telecommuting and alternative work schedules: provide telecommuting incentives to reduce employee commuting by automobile

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

Potential Future Changes to City VMT Evaluation Methodology

An alternative approach to assessing VMT impacts is to conduct a CEQA analysis of the VMT associated with the City's General Plan, and use that evaluation to support analysis of individual projects subsequent to the General Plan-level evaluation. This approach acknowledges that the City of Vallejo General Plan land use allocations and associated VMT have already been planned for and determined to be acceptable by the City. It also allows the City to set a citywide VMT reduction target and threshold of significance, and plan VMT reduction strategies and programs in a more holistic, effective, and equitable manner than would be possible using project-by-project impact evaluations. It would also provide opportunities for streamlined review of projects under CEQA Guidelines section 15183.

The City of Vallejo intends to prepare an updated General Plan and EIR as described above. When that process is complete, this guideline document will be revised to reflect the new citywide VMT thresholds of significance, VMT reduction targets, VMT reduction policies and TDM measures, and analysis methodology for individual project level reviews

Analysis for Other Appendix G Checklist Criteria

As noted in the Introduction, the updated CEQA Guidelines Appendix G Checklist contains three additional criteria beyond the VMT evaluation criteria discussed in the preceding section. They are listed below.

Would the project:

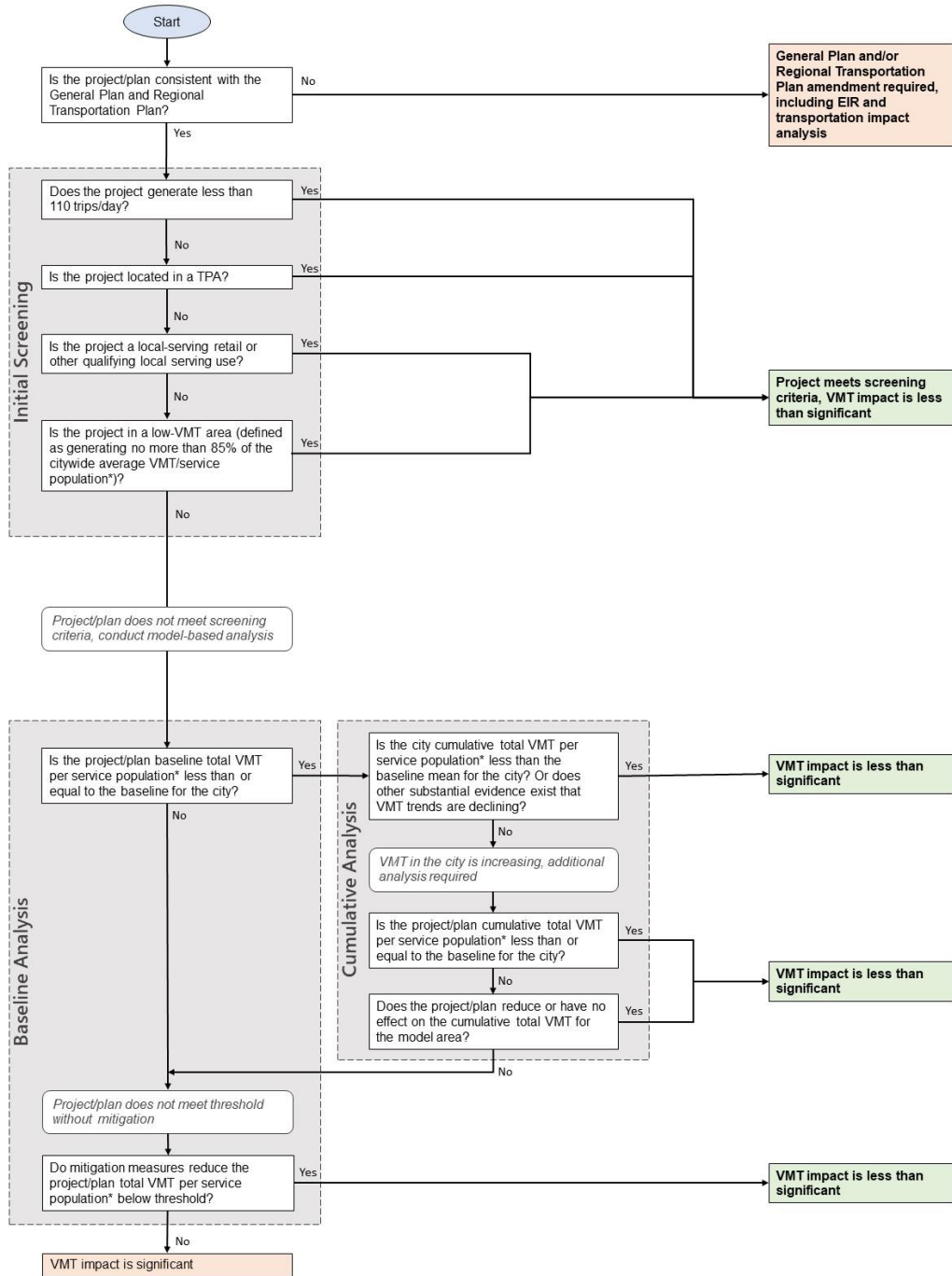
- 1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*
- 3. Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?*
- 4. Result in inadequate emergency access?*

TIAs should address these three questions, considering the unique characteristics of the project, including its location, size, design, use mix, transportation and urban form context, and other relevant details.



Attachments

A. VMT Analysis Process Flowchart



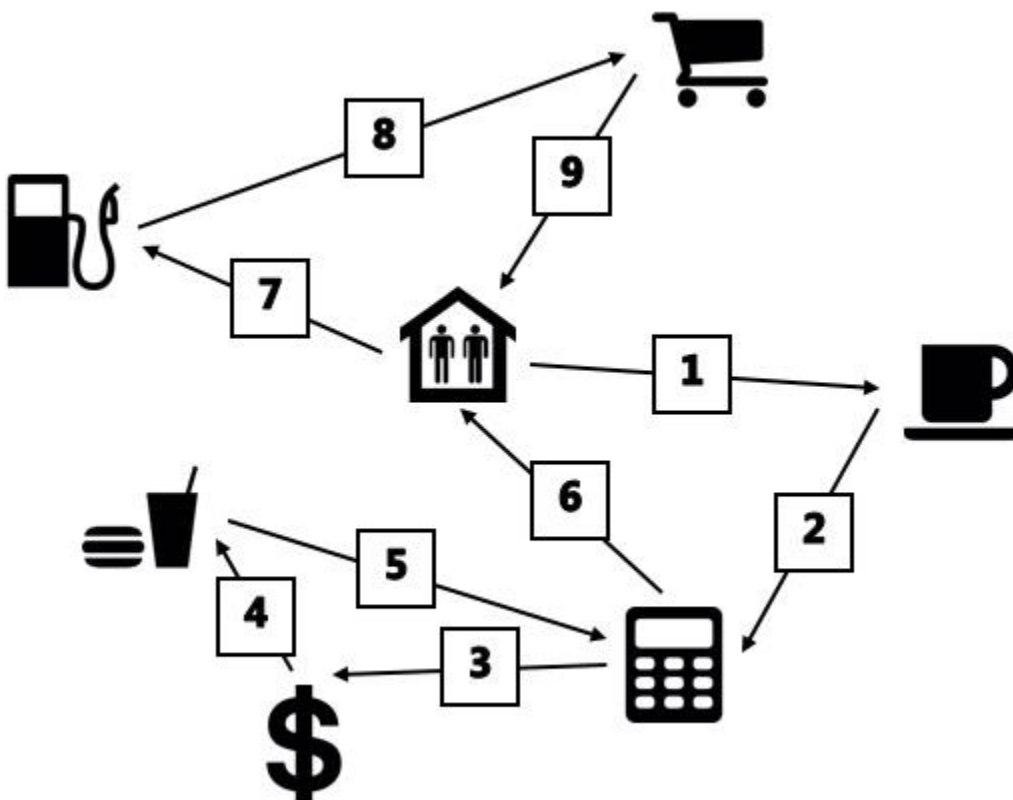
* "Service population" = employees + residents. For single-use residential projects, the service population is residents; for single-use employment projects (such as office uses), the service population is employees.

B. Detailed VMT Forecasting Information

Overview

Travel demand models generate daily person trip-ends for each TAZ across various trip purposes (Home-Based-Work, Home-Based-Other, and Non-Home-Based, for example) based on population, household, and employment variables. Travel demand models are simplifications of reality and as such, TAZs often contain a large amount of population, households, and employment. Travel models do not tie trip generation to individual land uses but instead aggregate all up to the TAZ level. This can create challenges for complying with the SB743 guidance because the thresholds are tied to specific land use categories and their behavior. The following methodology addresses this particular challenge among others.

To better understand the trips used in each metric, consider the following daily vehicle trip tour for an individual residential worker in TAZ. Note that each TAZ would have many individual residential workers and thus the calculations would be a sum of these individual calculations:



These nine daily vehicle trips include a variety of trip purposes: home-based work (HBW), home-based other (HBO), work-based other (WBO), and other-based other (OBO). WBO and OBO trips are often grouped into a non-home based (NHB) category. The table below categorizes the nine daily trips into trip purposes.

Trip	Tour	Origin	Destination	Purpose	Distance
1	Work	Residence	Coffee Shop	HBO	2 miles
2	Work	Coffee Shop	Work	WBO (NHB)	10 miles
3	Work	Work	ATM	WBO (NHB)	1 mile
4	Work	ATM	Sandwich Shop	OBO (NHB)	1 mile
5	Work	Sandwich Shop	Work	WBO (NHB)	1 mile
6	Work	Work	Residence	HBW	11 miles
7	Home	Residence	Grocery Store	HBO	3 miles
8	Home	Grocery Store	Gas Station	OBO (NHB)	1 mile
9	Home	Gas Station	Residence	HBO	2 miles

The SNABM is an activity-based model that uses links an individual's trips into "tours." Therefore it is straightforward to calculate VMT associated with residential or work locations based on the type of "tour." The table below describes the calculation for the partial VMT metrics.

Description	Trips	VMT	Comments
Residential Tour	1-9	32 miles	Includes all trips by a resident
Home-Work Tour	1, 2, 6	23 miles	Includes all trips part of a home-work tour

The Total VMT calculation (all trip purposes for both resident and worker) is more easily calculated using the final origin-destination vehicle matrices and summing all origin and destination trip ends for each TAZ. The Total VMT calculation includes all trips, all trip purposes, for any interaction with the TAZ regardless of whether they are a resident or worker of the TAZ.

Each of these metrics need to be adjusted to account for the length of trips that get truncated at the travel model boundary. Adjusting the length of trips leaving a model boundary requires appending extra distance at the model gateway zone (or external centroid) connector based on calculations from a parent travel demand model, such as the California Statewide Travel Demand Model (CSTDm). This process results in new gateway distances that are weighted based on the amount and location of external travel origins and destinations. The calculations would need to address the distance of trips outside of travel model boundary; in the case of the SNABM this is the nine county Bay Area.

Detailed VMT Calculation Instructions

The following outlines the process used to estimate City of Vallejo VMT Metrics via the Solano-Napa Activity-Based Model (SNABM).

1. Adapted MTC's "Core Summaries" R script that was used for MTC Travel Model 1 to work for SNABM (script available upon request). The script takes approximately 5-15 minutes to run after a

complete SNABM model run and summarizes the large trip and tour list files used in SNABM for use in further VMT summaries

2. Output of script is collection of files in new "core_summaries" and "updated_output" folders within model scenario folder (see below)

2015_SNABM > core_summaries				
Name	Date modified	Type	Size	
 AutoTripsVMT_perD.csv	7/22/2020 7:47 AM	CSV File	22,240 KB	
 AutoTripsVMT_perHome.csv	7/22/2020 7:47 AM	CSV File	24,454 KB	
 AutoTripsVMT_perO.csv	7/22/2020 7:47 AM	CSV File	22,082 KB	
 AutoTripsVMT_personsHome.csv	7/22/2020 7:47 AM	CSV File	46 KB	
 AutoTripsVMT_personsWork.csv	7/22/2020 7:47 AM	CSV File	279 KB	
 AutoTripsVMT_perWork.csv	7/22/2020 7:47 AM	CSV File	14,266 KB	

2015_SNABM > updated_output				
Name	Date modified	Type	Size	
 households.rdata	7/22/2020 7:46 AM	R Workspace	13,212 KB	
 persons.rdata	7/22/2020 7:46 AM	R Workspace	18,932 KB	
 tours.rdata	7/22/2020 7:46 AM	R Workspace	18,918 KB	
 trips.rdata	7/22/2020 7:45 AM	R Workspace	44,063 KB	

3. The files needed to calculate Residential and Office/Employment VMT metrics are the following:
 - a. AutoTripsVMT_personHome.csv – summarizes population for each TAZ as output from the population synthesizer
 - b. AutoTripsVMT_perHome.csv – summarizes all VMT made by resident tied back to residence TAZ, sorted by tour purpose and trip purpose
 - c. AutoTripsVMT_personsWork.csv – summarizes workers/employees for each TAZ as output from the population synthesizer
 - d. AutoTripsVMT_perwork.csv – summarizes all VMT made by workers tied back to workplace TAZ, sorted by tour purpose and trip purpose. Note that WorkLocation = 0 means VMT made by non-workers

4. Summarizing Residential VMT Metric
 - a. Defined as all trips/VMT by resident traced back to the residence location
 - b. To summarize by TAZ: sum of all VMT records on 'AutoTripsVMT_perHome.csv' by TAZ divided by sum of all population records on 'AutoTripsVMT_personsHome.csv' by TAZ
 - c. To summarize by jurisdiction (place/county/etc): sum of all VMT records on 'AutoTripsVMT_perHome.csv' by TAZs corresponding to jurisdiction divided by sum of all population records on 'AutoTripsVMT_personHome.csv' by TAZs corresponding to jurisdiction
 - d. To summarize by region: same process as jurisdiction describe above, except including all TAZs in Bay Area counties
5. Summarizing Office/Employment VMT Metric
 - a. Defined as all trips part of home-work tour traced back to the workplace location
 - b. To summarize by TAZ: sum of VMT records with home-work tour purposes (see below) on 'AutoTripsVMT_perWork.csv' by TAZ divided by sum of all worker records on 'AutoTrips_VMT_personsWork.csv' by TAZ
 - i. Home-work tour purposes defined as 'work_low', 'work_med', 'work_high', and 'work_very high'
 - c. To summarize by jurisdiction (place/county/etc): sum of VMT records with home-work tour purposes (see below) on 'AutoTripsVMT_perWork.csv' by TAZs corresponding to jurisdiction divided by sum of all worker records on 'AutoTrips_VMT_personsWork.csv' by TAZs corresponding to jurisdiction
 - d. To summarize by region: same process as jurisdiction describe above, except including all TAZs in Bay Area counties
6. Adjust VMT metrics to account for length of trips that get truncated at travel model boundary
 - a. Ran the California Statewide Travel Demand Model (CSTDm) to estimate amount of extra distance to append to trips leaving the SNABM model area
 - b. Select zone of SNABM model area zones within CSTDm and calculation of trip lengths outside of SNABM model area for IX/XI trips by gateway.
 - c. Apply this average extra distance by gateway to SNABM model estimate of IX/XI trips and summarize "extra" VMT per TAZ (on top of the VMT already summarized within the model boundaries)
 - i. Thus the TAZs with more IX/XI trips (e.g. near a model boundary) would get more extra distance than a TAZ with fewer IX/XI trips (e.g. within the core Bay Area)
 - d. End product is "extra" VMT to add to the VMT metrics calculated in previous steps

C. Mitigation Measures

A list of mitigation measures which are considered appropriate for Vallejo's geographic and transportation context is provided in the following pages. Potential effectiveness in reducing VMT, along with the basis for the effectiveness finding, is also given. More information on the effectiveness estimates is provided in the Technical Memorandum *VMT Analysis Methodology and Significance Thresholds for City of Vallejo Transportation Impact Assessment: Summary and Next Steps* (April 6, 2020).

For each project mitigation evaluation, the analyst should consider the potential effectiveness for the specific project being evaluated, including its location within Vallejo, multi-modal transportation network and services available to the project, project transportation amenities and proposed improvements to the surrounding network, and other relevant characteristics.

Attachment C

Mitigation Measures:

VTM Reduction Strategies Based on Vallejo's Land Use and Transportation 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
Land Use/Location	3.1.1	LUT-1 Increase Density	0.8% - 30% VMT reduction due to increase in density	Adequate	Increasing residential density is associated with lower VMT per capita. Increased residential density in areas with high jobs access may have a greater VMT change than increases in regions with lower jobs access. The range of reductions is based on a range of elasticities from -0.04 to -0.22. The low end of the reductions represents a -0.04 elasticity of demand in response to a 10% increase in residential units or employment density and a -0.22 elasticity in response to 50% increase to residential/employment density.	0.4% -10.75%	Primary sources: Boarnet, M. and Handy, S. (2014). Impacts of Residential Density 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 Secondary source: Stevens, M. (2017). Does Compact Development Make People Drive Less? Journal of the American Planning Association, 83(1), 7-18.
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%28%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."

TDM STRATEGY EVALUATION

Relevant Strategies for Implementation in Vallejo 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
Land Use/ Location	3.1.5	LUT-5 Increase Transit Accessibility	0.5%-24.6% reduce in VMT due to locating a project near high-quality transit	Adequate	1] VMT reduction when transit station is provided within 1/2 mile of development (compared to VMT for sites located outside 1/2 mile radius of transit). Locating high density development within 1/2 mile of transit will facilitate the use of transit by people traveling to or from the Project site. The use of transit results in a mode shift and therefore reduced VMT. 2] Reduction in vehicle trips due to implementing TOD. A project with a residential/commercial center designed around a rail or bus station, is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features: • A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly 1/4 mile from stop to edge of development), and/or • A rail station located within a 20 minute walk (or roughly 1/2 mile from station to edge of development) • Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations • Neighborhood designed for walking and cycling	1] 0%-5.8% 2] 0%-7.3%	1] Lund, H. et al. (2004). Travel Characteristics of Transit-Oriented Development in California. Oakland, CA: Bay Area Rapid Transit District, Metropolitan Transportation Commission, and Caltrans. Tal, G. et al. (2013). Policy Brief on the Impacts of Transit Access (Distance to Transit) Based on a Review of the Empirical Literature. California Air Resources Board. Retrieved from: https://www.arb.ca.gov/cc/sb375/policies/transitaccess/transit_access_brief120313.pdf 2] Zamir, K. R. et al. (2014). Effects of Transit-Oriented Development on Trip Generation, Distribution, and Mode Share in Washington, D.C., and Baltimore, Maryland. Transportation Research Record: Journal of the Transportation Research Board. 2413, 45–53. DOI: 10.3141/2413-05
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.

TDM STRATEGY EVALUATION

Relevant Strategies for Implementation in Vallejo 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
Parking Pricing	3.3.3	PDT-3 Implement Market Price Public Parking	2.8%-5.5% VMT reduction due to "park once" behavior and disincentive to driving	Adequate	Implement a pricing strategy for parking by pricing all central business district/employment center/retail center on-street parking. It will be priced to encourage park once" behavior. The benefit of this measure above that of paid parking at the project only is that it deters parking spillover from project supplied parking to other public parking nearby, which undermine the vehicle miles traveled (VMT) benefits of project pricing. It may also generate sufficient area-wide mode shifts to justify increased transit service to the area. VMT reduction applies to VMT from visitor/customer trips only. Reductions higher than top end of range from CAPCOA report apply only in conditions with highly constrained on-street parking supply and lack of comparably-priced off-street	2.8%-14.5%	Clinch, J.P. and Kelly, J.A. (2003). Temporal Variance Of Revealed Preference On-Street Parking Price Elasticity. Dublin: Department of Environmental Studies, University College Dublin. Retrieved from: http://www.ucd.ie/gpep/research/workingpapers/2004/04-02.pdf . Cited in Victoria Transport Policy Institute (2017). Transportation Elasticities: How Prices and Other Factors Affect Travel Behavior. Retrieved from: http://www.vtpi.org/tdm/tdm11.htm Hensher, D. and King, J. (2001). Parking Demand and Responsiveness to Supply, Price and Location in Sydney Central Business District. Transportation Research A. 35(3), 177-196. Millard-Ball, A. et al. (2013). Is the curb 80% full or 20% empty? Assessing the impacts of San Francisco's parking pricing experiment. Transportation Research Part A. 63(2014), 76-92. Shoup, D. (2011). The High Cost of Free Parking. APA Planners Press. p. 290. Cited in Pierce, G. and Shoup, D. (2013). Getting the Prices Right. Journal of the American Planning Association. 79(1), 67-81.
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
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

NOTES:

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