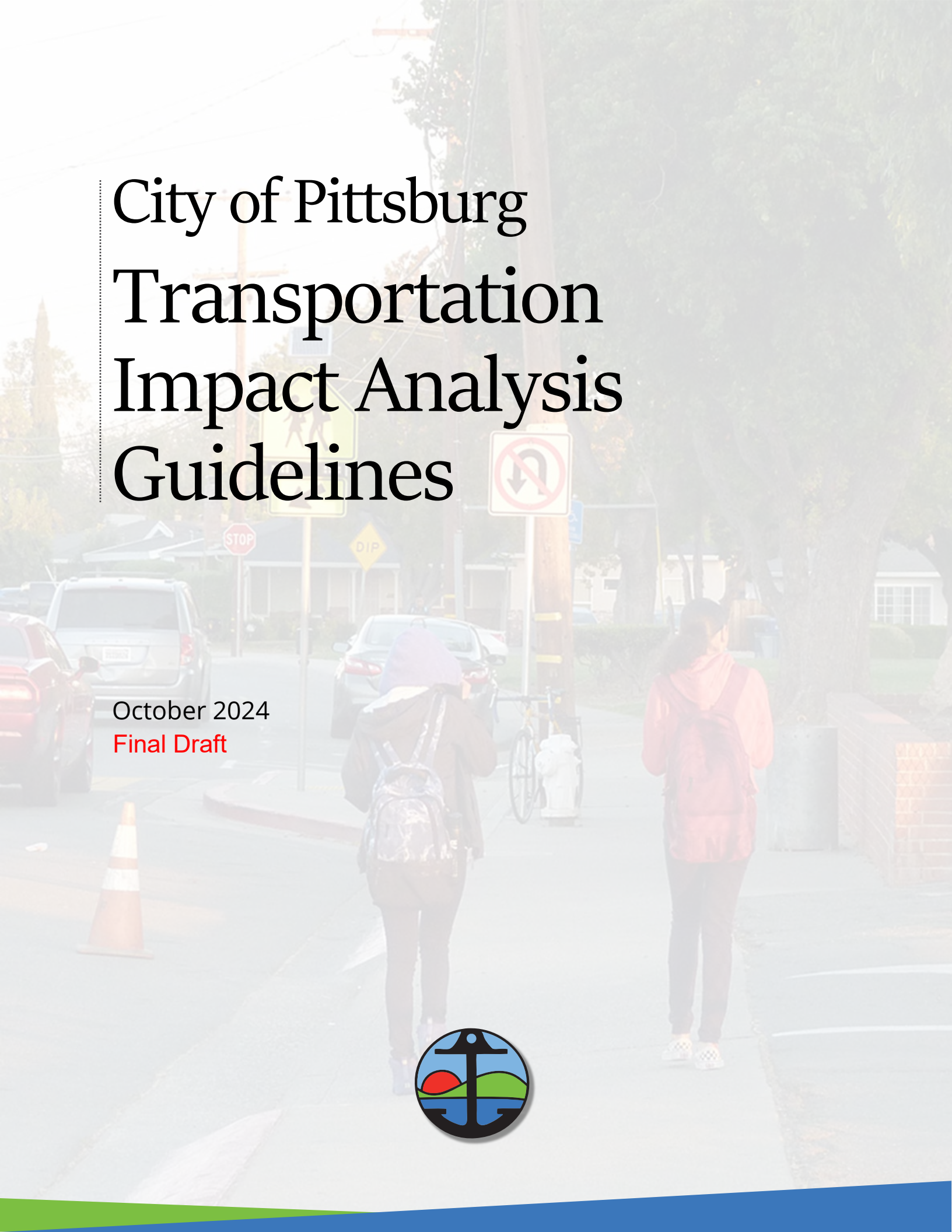

City of Pittsburg

Transportation Impact Analysis Guidelines

October 2024

Final Draft

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1. Introduction

The purpose of these Transportation Impact Analysis (TIA) Guidelines is to establish general procedures and requirements for the preparation of transportation impact studies for development projects within the City of Pittsburg. In general, they are designed for use by transportation engineering and California Environmental Quality Act (CEQA) professionals because of their technical contents. The term "guideline" is important in that the City recognizes that every project and study context is unique. The guidelines are intended as a checklist for study preparers to be sure that all required study items are included. They establish a uniform approach, methodology, and tool set to evaluate the effects of land use decisions and related transportation projects on the city transportation system. They are not intended to eliminate professional judgment or creativity. However, the need for and final scope of a TIA shall be determined by the City of Pittsburg. This is intended to be a "living document" and will be updated periodically to reflect newly acquired data and relevant policies.

The primary objectives of these guidelines are to provide:

- Guidance in determining if and when a Transportation Impact Analysis is needed;
- Consistency and uniformity in the identification of transportation impacts of proposed land uses;
- An early guidance to establish assumptions, data requirements, study scenarios and analysis methodologies prior to beginning the TIA; and
- Early coordination during the planning phases of a project to facilitate the preparation of a TIA.

These guidelines are intended to ensure that a TIA will address the potential effects of a proposed development on the transportation system of the city, giving equal attention to all modes of travel, in accordance with the goals of the City of Pittsburg's General Plan. Note that these are only guidelines, and the information provided herein does not constitute a complete scope of work for any particular transportation analysis. The guidelines provide a broad overview of analysis procedures, while a tailored scope of work is required to match the size and complexity of transportation issues associated with a particular project. The City Engineer, under the authority of the Public Works Director and recommendations from the Traffic Engineer, will make the final decision on the need for a transportation study.

1.1 SB 743 and the Updated CEQA Guidelines

Senate Bill 743 (SB 743), signed by the Governor in 2013, changed the way transportation impacts are identified. Specifically, the legislation directed the Office of Planning and Research (OPR) to consider different metrics for identifying transportation impacts under the California Environmental

Quality Act. 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, as of 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 public 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.

1.2 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.

For the past several decades, the preparation of a TIA within the City of Pittsburg 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 TIA 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 (e.g. Level of Service assessments).

The purpose of this TIA Guidelines document is to provide instructions for analyzing the potential transportation impacts of proposed development projects, for purposes of both the CEQA and non-CEQA transportation evaluations. 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 Pittsburg may modify the TIA requirements based on the unique characteristics of a particular project.

1.2.1 Non-CEQA Analysis

SB 743 does not prevent a city from continuing to analyze delay or Level of Service (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 of Pittsburg's General Plan 2040 provides for the following policies relating to the calculation and assessment of intersection LOS:

- Levels of Service shall be calculated using the latest version of the Transportation Research Board's Highway Capacity Manual available at the time the analysis is prepared.
- The City shall strive to maintain LOS D for motor vehicle traffic as the minimum acceptable service standard for all signalized and stop controlled intersections during peak periods. In the designated Downtown core, LOS E would be considered as an acceptable service standard to account for the more urban, pedestrian-oriented character of the area.

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. 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.

2. Developing the Scope of Work

A transportation impact analysis will be required by the City to assess the transportation effects of development projects on the existing and/or planned street system under the conditions described below.

2.1 Transportation Impact Analysis

1. Projects that do not meet any of the Vehicle Miles Traveled screening criteria outlined in section 5.2.2 of these guidelines,
2. When project-generated traffic is expected to be greater than 100 vehicle trips during the morning or evening peak hour,
3. When project-generated traffic is expected to be greater than 1,000 vehicle trips per day, or
4. When a project includes a General Plan Amendment (GPA) that changes the land use and is expected to generate greater than 50 vehicle trips during the morning or evening peak hour.

2.2 Focused Transportation Impact Analysis

The City may require a focused transportation analysis in lieu of a full transportation analysis under any of the following circumstances:

- When project traffic will affect an intersection or roadway segment where there are known traffic concerns in the vicinity of the project site.
- Any project that contains a “drive through” function.
- When the project will substantially change the off-site transportation system or result in diversion of traffic to other routes, including physical changes such as street closures or access restrictions, lane reductions, new traffic signals or stop signs, disruption of sidewalk or bikeway continuity or safety, relocation or obstruction of transit stops, etc.
- When the project produces between 50 to 100 morning or evening peak hour trips.
- When the project is within 1,000 feet of a freeway on-ramp.
- When the proposed project may be presumed to have a less-than-significant VMT impact through screening criteria, but the presumption needs to be verified.

The scope of the focused traffic analysis would be reviewed by City staff, but at minimum should show that the project would not result in any significant effect on any transportation facility or mode.

3. Transportation Impact Study Format

The content and level of analysis necessary to evaluate a project will vary and are dependent on the scope of land use proposal and location within the city. All transportation impact studies will be generally organized and contain the information provided in the following outline. Additional study elements may be required by the City Traffic Engineer.

1. Executive Summary
    a. Project Description and Analysis Parameters
    b. Key Findings and Recommendations
        i. CEQA Findings
        ii. Non-CEQA Findings and Recommendations
2. Introduction
    a. Study Purpose
    b. Project Description
    c. Site Location and Study Area Boundaries
    d. Analysis Scenarios
    e. Analysis Methods
    f. Regulatory Setting – Applicable Plans and Policies
    g. Significance Criteria
3. Existing Conditions
    a. Existing Roadway System
    b. Existing Pedestrian Facilities
    c. Existing Bicycle Facilities
    d. Existing Transit Service
    e. Existing Traffic Counts
    f. Existing Operations Assessment
4. Project Characteristics
    a. Project Description
    b. Project Trip Generation
    c. Project Trips Distribution and Assignment
5. Existing with Project Conditions
    a. Existing with Project Traffic Volumes
    b. Analysis of Existing with Project Conditions

6. Near-Term Traffic Conditions
    a. Approved and Pending Near-Term Projects
    b. Near-Term Traffic Forecasts
    c. Near-Term Roadway Assumptions
    d. Analysis of Near-Term Conditions
7. Cumulative Traffic Conditions
    a. Cumulative Traffic Forecasts
    b. Cumulative Roadway Assumptions
    c. Analysis of Cumulative Conditions
8. Site Plan Review
    a. Vehicular Circulation
    b. Bicycle and Pedestrian Facilities
    c. Emergency Vehicle Access
    d. Transit Facilities
    e. Construction Traffic Assessment
    f. Parking
        i. City Code Requirements
        ii. Parking Demand
9. Environmental Assessment
    a. Vehicle Miles Traveled
    b. Pedestrian System Impacts
    c. Bicycle System Impacts
    d. Transit System Impacts
    e. Emergency Vehicle Access Impacts
    f. Vehicular Circulation/Hazardous Features
10. Summary of Findings
11. Appendix
    a. Traffic Counts
    b. Intersection Operations Calculations
    c. Traffic Signal Warrant Calculations

4. Non-CEQA Assessment

4.1 Level of Service Analysis

When evaluating the effects of development projects on the performance of the City of Pittsburg's transportation facilities, the City applies operational standards to ensure the levels of growth and development provided in the City of Pittsburg's General Plan Land Use Element are sufficiently accommodated.

4.1.1 LOS Analysis Methodologies

The method used for evaluating LOS at signalized and unsignalized intersections shall be the method defined in the latest version of the Transportation Research Board's *Highway Capacity Manual* (HCM), unless directed otherwise by the City. This method bases intersection operations on the average vehicular control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay. The average delay for intersections should be calculated using the latest version of Synchro analysis software, unless directed otherwise by the City.

Roundabout intersections should be analyzed using the latest version of the SIDRA software. Freeway mainline segment LOS and ramp junction LOS shall be analyzed using the latest HCM operational analysis consistent with Caltrans' Traffic Impact Analysis Guidelines.

4.1.2 Multimodal Transportation Service Objectives

As necessary, projects shall evaluate their effects on the appropriate Multimodal Transportation Service Objectives (MTSO) as defined in the latest version of CCTA's technical guidance. For freeway segments, the *East County Action Plan for Routes of Regional Significance,* CCTA has established the delay index as the Multimodal Transportation Service Objective for State Route 4 (SR 4) through Pittsburg. The delay index is the ratio of travel time on a facility divided by the travel times that occur during non-congested free-flow periods. Should the delay index exceed 2.5 during either the AM or PM peak period, freeway operations would be considered deficient. This would equate to peak hour travel taking 2.5 times as long as off-peak travel or an average travel speed below 26 miles per hour assuming a non-congested free-flow speed of 65 miles per hour. The number of vehicles traveling in the high-occupancy vehicle (HOV) lane is also an MTSO.

4.1.3 Selection of Study Intersections

The scope of the transportation analysis shall include the following intersections:

- All intersections adjacent to the project site;
- All signalized or all-way stop controlled intersections that operate at LOS E or F to which the project would add 30 or more peak hour trips;
- All signalized or all-way stop controlled intersections to which the project would add 50 or more peak hour trips; and
- All side-street stop-controlled intersection(s) where 50 or more peak hour trips are added by the project to any individual movement other than the major-street through movement.

Study intersections should be selected without consideration of jurisdictional boundaries. Additional study intersections may be selected after City staff has reviewed the trip generation, distribution, and assignment of a proposed project.

Study intersections should also include arterial and ramp intersections along defined Routes of Regional Significance, as appropriate. When the proposed project adds more than 50 net new vehicle trips to a freeway ramp, the project should be evaluated against the freeway multi-modal transportation service objectives (MTSOs) provided *East County Action Plan for Routes of Regional Significance*.

4.1.4 Traffic Counting Protocol

Traffic counts for shall be conducted as follows:

1. Three-hour peak period transportation counts of vehicles, pedestrians, and bicyclists are required for all study intersections. Typical analysis will include both weekday morning (6a.m. – 9a.m.) and evening (4p.m. – 7p.m.) peak periods. Counts shall be recorded at 5-minute or 15-minute intervals, tallied by turning movement for vehicles and bicyclists and by crossing leg for pedestrians.

2. At saturated intersections, traffic demand shall be based on the arrival counts, queue lengths, and departure volumes. Typical intersection vehicle counts yield only the departure volumes through an intersection. For saturated intersections, departure volumes do not reflect actual demand because of growing queues on the intersection approaches, and thus the need for arrival counts.

3. During Fair Weather – Counts should be conducted in fair weather, without rain, flooding, heavy winds, or other adverse weather conditions that could disrupt the flow of traffic.

4. Counts shall be conducted on a Tuesday, Wednesday, or Thursday of a non-holiday week when public schools are in session.

5. Typical School Day – Counts should be taken on typical school days avoiding half days, late start days and early-dismissal days whenever possible.

6. No Major Road Closings – If temporary road closings have occurred that affect traffic flow at the count location, the count should be postponed until the road is re-opened. If the road closing is to be for an extended period, and a count needs to be conducted, the count results should be annotated to reflect the road closure conditions.

7. No Construction Activity – Counts should not be conducted in the presence of construction activity that could disrupt the arrival or departure of traffic at the count location.

8. No Incidents or Accidents – If an incident or accident has occurred in the vicinity of the count location, or if such an event occurs during the count, the count should be discarded, and repeated at a later date.

4.1.4.1 Field Observations

The transportation consultant should observe each study intersection during peak hours of analysis and document their field observations. This should the following:

- Do field observations of delay match calculated delay
- Freeway ramp effects on local streets, including ramp meter spillback
- Uneven lane demand and usage
- Presence and effect of on-street parking
- Pedestrian and bicycle safety issues
- Transit routes and location of transit stops
- Cut-through traffic in neighborhoods
- Sight distance issues
- Intersection saturation that may explain low peak period traffic counts
- Queuing and storage length
- Issues affecting transit operations
- Truck routes

For study locations where saturated conditions exist, the consultant should note the corresponding traffic queue lengths at the beginning and end of each 15-minute interval.

4.2 Level of Service Policies

Although not a CEQA metric, intersection levels of service are required to be assessed for General Plan compliance and to identify potential transportation improvements that could be implemented

as part of the project to improve the overall operations of the transportation system for all travel modes. The City of Pittsburg's General Plan 2040 provides for the following policies relating to the calculation and assessment of intersection LOS:

- Levels of Service shall be calculated using the latest version of the Transportation Research Board's Highway Capacity Manual available at the time the analysis is prepared.
- The City shall strive to maintain LOS D for motor vehicle traffic as the minimum acceptable service standard for all signalized and stop controlled intersections during peak periods. In the designated Downtown core, LOS E would be considered as an acceptable service standard to account for the more urban, pedestrian-oriented character of the area.

The project could have a noticeable effect on local and regional travel if it would cause an increase in traffic which is substantial in relation to the traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, or delay and congestion at intersections), or change the condition of an existing street (e.g., street closures, changing direction of travel) in a manner that would substantially change access or traffic load and capacity of the street system.

Recommendations will be designed to enhance mobility for all travel modes, including transit vehicles, without degrading or precluding the provision of planned bicycle, pedestrian, and transit facilities.

For the Caltrans freeway facilities, the operational standards and significance criteria are established by the Contra Costa Transportation Authority (CCTA) acting as the designated Congestion Management Agency (CMA) representing the jurisdictions of Contra Costa County. As the acting CMA, the CCTA establishes the traffic LOS standards for all state highway facilities in Contra Costa County, which supersede the general Caltrans operational standard for all state highways.[1]

4.2.1 Operational Improvements

The traffic analysis must recommend appropriate treatments for the transportation system to offset operational deficiencies that are found to have exceeded operational standards for the City of Pittsburg. Furthermore, as appropriate, the traffic analysis must disclose any secondary operational deficiencies that the proposed treatments could generate. For example, the secondary operational deficiency generated by adding approach lanes to an intersection could include an increase in pedestrian crossing time. The project should pay their proportionate share of improvements that would provide acceptable operations or participate in the East Contra Costa Regional Fee and Finance Authority (ECCRFFA) regional fee program if improvements that would result in acceptable operations at the location are added to the fee program. A reimbursement agreement could be

[1] *2013 Contra Costa Congestion Management Plan*, Contra Costa County Authority, Walnut Creek, CA, 94598, December 19, 2013.

established with the City of Pittsburg to collect proportionate shares from other developments that would benefit from the improvement.

4.3 Analysis Scenarios

The transportation operations analysis shall include, as a minimum, consideration of the following scenarios:

1. **Existing Conditions** – This scenario evaluates transportation facilities based on volumes, lane geometry and traffic controls at the time of analysis.
2. **Existing plus Project Conditions** – Existing Conditions with the addition of traffic form the proposed project.
3. **Near-term Conditions** – Existing Conditions with the addition of trips added by the buildout of approved and planned projects in the study area expected to be complete in the next 5 to 10 years.
4. **Near-term plus Project Conditions** – Near-term Conditions with the addition of traffic from the proposed project.
5. **Cumulative Conditions** (Year 2040)– This scenario evaluates horizon year conditions with the implementation of all approved land use changes and any development that is consistent with the General Plan and expected to occur within the time frame of the project. It will also include transportation projects programmed for implementation prior to the horizon year and any programmed capital improvements. Unless otherwise directed by the City, cumulative forecasts should be developed using the latest available version of the CCTA travel demand model. Currently the CCTA travel demand model has a horizon year of 2040.
6. **Cumulative plus Project Conditions** – Cumulative Conditions with the addition of traffic from the proposed project.

4.4 Project Assessment

The TIA should include a detailed description of the project, including factors which quantify traffic generation, (e.g., dwelling units, square feet of office space, persons to be employed, restaurant seats). A detailed site plan shall be provided that includes access, circulation, parking, and loading as applicable. The project description should include the following information:

1. Location of the project site, address, and cross streets; information regarding the project site's lot area, existing and proposed zoning.
2. Existing and proposed total gross square footage for each land use type and the number of units for residential uses, including the net changes for each type of use.
3. Existing and proposed estimated number of employees and/or dwelling units by type of use, including net changes.
4. Existing and proposed number of off-street parking spaces and whether any on-street or off-street parking spaces will be removed.

5. Existing and proposed number of off-street and on-street freight loading spaces as well as any proposed changes affecting on-street loading spaces.
6. Detailed plans showing vehicular and pedestrian site access, including location of curb cuts for both existing and proposed uses, and internal vehicular circulation, presented in standard architectural or engineering scale.
7. Figure identifying parking spaces, the proposed egress and ingress to the parking garage or lot, the circulation pattern within the parking facility and the number and location of parking spaces for the disabled (accessible parking spaces).
8. Figure showing the location, dimensions and access to the off-street freight loading spaces as well as the on-site location for trash and garbage storage.
9. Identification of the location, number, type of bicycle parking spaces provided, and proposed primary access.

4.4.1 Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Trip generation estimates shall be developed using the latest version of the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. Trips should be calculated using the weighted average rates or rates from the regression equations as determined according to the guidelines in the ITE *Trip Generation Manual*.

Special consideration should be given for ITE rates based on antiquated data or a small sample, which may require use of other data sources or additional data collection to determine the appropriate trip generation. (Local trip generation surveys may be required if the project site is not compatible with any ITE land use codes, the land use code has fewer than five data points, the project size does not fall within the range of ITE study site, or standard deviation is greater than 110 percent of the weighted average rate).

Other trip generation rates may be approved by the City due to unique characteristics of a proposed project. In cases where the published ITE trip generation rates are based on very limited data, rates shall be verified through alternative source documents or local peak-period field observations of similar uses. When ITE data is not available or if the available ITE categories are inadequate for a specific project, trips may be determined using other references such as the San Diego Association of Governments (SANDAG) publications and other reputable sources. Appropriate supporting information is required for the use of these other non-ITE or SANDAG data sources.

New rates may be determined from similar land uses in the community for uses not updated or included in the ITE *Trip Generation Manual* or other acceptable data sources, subject to receipt of documentation acceptable to City staff. Local trip generation studies should follow the procedures prescribed in the ITE *Trip Generation Manual*.

4.4.1.1 Other Trip Generation Adjustments

The City may consider the following adjustments to trip generation if appropriate:

1. Existing trips generated by uses at the project site to be removed are already included in existing transportation counts and thus may be subtracted from the total project trip generation. A trip generation survey of the existing site is generally required for claiming this trip reduction and the results of the survey shall determine the reduction; however, ITE Trip Generation analysis may be substituted for a survey subject to the approval of City transportation staff. If the existing and proposed site differs by land uses and/or access points, existing trips shall be distributed and reassigned separately to the network as both positive and negative trips.
2. Pass-by, diverted, and linked trips are created by intermediate stops on a through trip. Pass-by trips are existing trips that enter the project site and then exit in the same direction of travel. They are attracted to the land use – typically service stations, fast food restaurants, and convenience stores – from an adjacent roadway with direct access to the project site. Diverted and linked trips are existing trips on nearby roadways that will divert from their existing routes to access the project site, typically larger retail development. These trips change existing through movements to turning movements or vice versa at nearby intersections. The latest edition of the ITE Trip Generation Handbook shall be used as the starting point to determine these reductions. Pass-by trip reductions shall only be applied to shopping centers greater than 10,000 square feet, service stations, fast food restaurants, and convenience stores. Use of this reduction requires justification of the percent reduction based on existing volumes and an analysis of turning movements to and from the project driveways.

4.4.2 Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. A figure illustrating the percentage of peak hour project-generated traffic going to and from various destinations along the transportation network shall be included in the TIA. Trip distribution shall be based on the proposed land use, existing travel patterns, site access to major corridors, relative locations of complementary land uses, and model runs of the Contra Costa Transportation Authority travel demand model. Typically, CCTA model runs should only be used for a general trip distribution to and from the north, south, east, and west. Project trips should then be manually assigned to the driveways, intersections, and roadway segments according to the trip distribution, and account for any turning movement restrictions or other relevant roadway characteristics including relative level of congestion on available route options. The model should not be relied on for project trip assignment.

A preliminary trip distribution pattern should be submitted in the proposed project scope for review and approval by City staff. Trip distribution may be further refined after consultation with City staff, even after a transportation analysis work scope is agreed upon.

A figure illustrating the assignment of peak hour project-only trips at the driveways, study intersections, and roadway segments based on the trip distribution shall be included in the TIA. If the trip distribution is different between existing, near-term, and cumulative conditions, a figure shall be provided for each different trip distribution and/or assignment with supporting discussion and justification. All assumptions shall have proper citation and justification for their use in the TIA. The trip distribution and assignment assumptions shall be submitted with the work scope for review and approval of the City Traffic Engineer, which the consultant should obtain before proceeding with subsequent traffic analysis.

4.5 Other Analyses

The following assessments should be included in the TIA as appropriate and directed by City staff.

4.5.1 Site Plan Review

The TIA will review and evaluate the site plan for the proposed project to ensure safe and efficient circulation of vehicles, bicycles, and pedestrians through the project site and on the roadways adjacent to the project site. The site plan review section will include evaluations of the following:

1. Site access and interface with roadway network including adequacy of turn-pocket lengths, driveway throat lengths, sight distance and level of service
2. Vehicular circulation and internal intersection operations
3. Emergency vehicle access and circulation
4. Pedestrian access and circulation within and adjacent to the site
5. Bicycle access and circulation within and adjacent to the site
6. Transit and shuttle vehicle circulation within and adjacent to the site
7. Pedestrian access to and from transit stops
8. Truck circulation and loading dock access
9. Level of parking supply in relation to code requirements and expected demand
10. Construction traffic evaluation and phasing
11. Bicycle parking

5. CEQA Assessment

5.1 CEQA Significance Criteria

A project would have a significant effect on the environment if it would:

1. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including public transit, roadway, bicycle, and pedestrian facilities.
2. Conflict with 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.

CEQA Guidelines section 15064.3, subdivision (b) details the requirements regarding the implementation of SB 743 and the use of VMT in the assessment of transportation impacts.

5.2 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 from continuing to analyze delay or LOS as part of other plans (i.e., the general plan), studies, or ongoing network monitoring. These guidelines provide technical guidance regarding the assessment of VMT, thresholds of significance, and mitigation measures for land development and transportation projects within the City of Pittsburg.

5.2.1 VMT Thresholds of Significance

The following are thresholds of significance related to substantial additional VMT:

- For residential projects, a project would cause substantial additional VMT if it exceeds existing countywide household VMT per capita minus 15 percent.
- For office projects, a project would cause substantial additional VMT if it exceeds the existing countywide VMT per employee minus 15 percent.
- For regional retail projects a project would cause substantial additional VMT if it exceeds the baseline Bay Area total VMT per service population minus 15 percent.
- Mixed-use projects – shall be divided into their individual constituent parts and evaluated against their individual components' standards.

Additional guidance is provided in below regarding review of other types of land uses.

5.2.2 Project VMT Screening

The following screening criteria may be used to identify types, characteristics, and/or locations of land use projects that would not exceed these VMT thresholds of significance. If a project or components of the project meet any of the below screening criteria, then it is presumed VMT impacts would be less than significant for the project or component of the project and a detailed VMT analysis is not required. It should be noted that City staff can deny the use of screening criteria if substantial evidence suggests that the project is not appropriate for screening.

There are three key screening criteria for projects: project type, project location in a low-VMT area, and project location near transit stations. A project only needs to meet one of the three screening criteria to "screen out". Projects that do not meet any of the identified screening criteria are required to conduct a detailed VMT assessment.

5.2.2.1 Screening Criteria 1: Project Type

Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, the following types of projects should be expected to cause a less-than-significant impact under CEQA and would not require further VMT analysis.

- Small Projects: Small projects generate or attract fewer than 110 trips per day. Based on research for small project triggers, this may equate to non-residential projects of 10,000 square feet or less and single-family residential projects of 10 units or less, or otherwise generating less than 836 VMT per day.
- CEQA Exemption: Any project that is exempt from CEQA is not required to conduct a VMT analysis.
- Small Scale, Local-Serving Retail: Local-serving retail projects are defined as projects of less than 50,000 square feet in size on the basis that they attract trips that would otherwise travel longer distances. Local-serving retail generally improves the convenience of shopping and other activities close to home and has the effect of reducing vehicle travel.
- Small and Active Transportation Projects: Screened transportation projects are transit projects, bicycle and pedestrian projects, and roadway projects that do not result in an increase in vehicle capacity.
- Public services: Police stations, fire stations, public utilities, and parks do not generally generate VMT. Instead, these land uses are often built in response to development from other land uses (e.g., office and residential). Therefore, these land uses can be presumed to have less-than-significant impacts on VMT. However, this presumption would not apply if the project is sited in a location that would require employees or visitors to travel substantial distances and the project is not located within ½ mile of a major transit stop or does not meet the small project screening criterion.

5.2.2.2 Screening Criteria 2: Low VMT Area Screening

Residential and employment-generating projects located within a low-VMT generating area of the city (i.e., lower than baseline 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. For this screening, CCTA's Travel Demand Model shall be utilized to compare the project's characteristics to land uses currently in the low-VMT area and for individual traffic analysis zones (TAZs). TAZs are geographic polygons like Census block groups used to represent areas of homogenous travel behavior. 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).

A low VMT area is defined as follows:

- For housing projects: TAZs that have a baseline home-based VMT per capita that is 85% or less of the existing countywide average.
- For employment-generating projects: TAZs that have baseline home-work VMT per worker that is 85% or less of the existing countywide average.

To identify if the project is in a low VMT-generating area, the analyst may review the screening maps provided as **Figure 1** (residential project mapping) and **Figure 2** (employment-generating project mapping) attached to this document. Additionally, as noted above, the analyst must identify if the project is consistent with the existing land use (e.g., if the project is proposing single-family housing, there should be existing single-family housing of approximately the same density) within that TAZ and use professional judgement that there is nothing unique about the about the project that would otherwise be misrepresented utilizing the data from the travel demand model.

5.2.2.3 Screening Criteria 3: Proximity to Transit

Projects located within a Transit Priority Area (TPA)[2] may be presumed to have a less than significant impact absent substantial evidence to the contrary. This includes residential, retail, office projects, or

[2] 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).

mixed-use projects proposed within half mile of an existing major transit stop or an existing stop along a high-quality transit corridor. In Pittsburg, the existing BART Stations (Pittsburg/Bay Point and Pittsburg Center) are major transit stops and the 381 Eastbound and 381 Westbound Tri-Delta Transit Bus Routes are a high quality transit corridor. This presumption would not apply, however, if project-specific or location-specific information indicates that the project will still generate significant levels of VMT. For example, the presumption might 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/Plan Bay Area;
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units; or
5. Has a retail component that is greater than 50,000 square feet.

Projects in proximity to an existing major transit stop or an existing stop along a high-quality transit corridor that do not satisfy all these criteria should prepare a detailed VMT analysis.

5.2.3 VMT Assessment for Non-Screened Development

Projects not screened through the steps above should complete a VMT analysis and forecasting through the CCTA model to determine if they have a significant VMT impact. This analysis shall include "projected generated VMT" and "project effect VMT" estimates for the project TAZ(s) under the following scenarios:

- **Baseline Conditions** – This data is available from the CCTA travel demand model; analysts should use caution to ensure that the baseline values calculated are reflective of values at the time that the Notice of Preparation for a project is released (consistent with guidance from OPR). The screening maps also provide the baseline VMT per service population in the City of Pittsburg.

- **Baseline Plus Project** – The project land use would be added to the project TAZ or a separate TAZ would be created to contain the project land uses. A full base year model run would be performed and VMT changes must be isolated for the project TAZ and across the

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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.

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.

The screening maps provide an estimate of the Baseline plus project conditions. This data could be presented in lieu of results from the full model run if the project land use is well represented in the TAZ (adding more employment to an employment center area). However, it is recommended that a base year plus project run always be performed as a check for reasonableness and consistency with the cumulative year results.

- **Cumulative No Project**– This data is available from the CCTA travel demand model. The cumulative year shall be confirmed with City staff prior to beginning the cumulative analysis.

- **Cumulative Plus Project** – The project land use would either be added to the project TAZ or a separate TAZ would be created to contain the project land uses. The addition of project land uses may need to be accompanied by a reallocation of a similar amount of land use from other TAZs; especially if the proposed project is significant in size such that it could change other future developments. Land use projects are often represented in the assumed growth of the cumulative year population and employment. It may be appropriate to remove land use growth that represents the project from the cumulative year model to represent the cumulative no project scenario. If project land uses are simply added to the cumulative no project scenario, then the analysis should reflect this limitation in the methodology and acknowledge that the analysis may overestimate the project's effect on VMT.

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

Both "plus project" scenarios noted above will summarize different types of VMT: (1) project generated VMT per service population, home based VMT per resident for residential, and home-based-work VMT per worker for employment uses and comparing those back to the appropriate benchmark noted in the thresholds of significance, and (2) the project effect on VMT, comparing how the project changes VMT compared to the no project condition.

Project-generated VMT shall be extracted from the travel demand forecasting model using the origin-destination trip matrix and shall multiply that matrix by the final assignment skims. The project-effect on VMT shall be estimated using the appropriate boundary and extracting the total link-level VMT for both the no project and with project condition.

5.2.4 VMT Mitigation Measures

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

1. Modify the project's design features and/or land uses to reduce project trips or reduce trip length.
2. Moving the proposed development to a more travel-efficient area (i.e. area with access to high quality transit, or other transportation solutions that reduce the length/number of trips).
3. Implement Transportation Demand Management (TDM) measures to reduce VMT generated by the project.

Of the strategies included within these general categories, only a subset of the strategies is likely to be effective in a suburban setting such as Pittsburg. Proposed projects shall utilize the latest version of the California Air Pollution Control Officers Association ("CAPCOA") Quantifying Greenhouse Gas Mitigation Measures document to estimate the maximum feasible VMT mitigation. However, it should be noted that most of the data used to develop the CAPCOA mitigation strategies are based on projects from urban or relatively dense suburban areas. The effectiveness of VMT mitigations will vary from project to project based on the surrounding land use context, the combination of its uses, and the availability of alternative transportation modes. The proposed project's transportation impact analysis must quantifiably demonstrate, through the use of reliable calculation tools, proposed VMT mitigations will result in the estimated reductions when applied to the project. In the event a proposed project's characteristics render most or all the aforementioned mitigation strategies infeasible or ineffective, City staff will consider other mitigations options.

The following VMT mitigation strategies should be considered by projects for the mitigation of VMT impacts within the City.

Land Use

T-2: Increase Job Density – This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of jobs compared to the average job density in the U.S. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing job density results in shorter and fewer trips by single-occupancy vehicles and thus a reduction in GHG emissions.

T-3: Provide Transit-Oriented Development – This measure would reduce project VMT in the study area relative to the same project sited in a non-transit-oriented development (TOD) location. TOD refers to projects built in compact, walkable areas that have easy access to public transit, ideally in a location with a mix of uses, including housing, retail offices, and community facilities. Project site residents, employees, and visitors would have easy access to high-quality public transit, thereby encouraging transit ridership and reducing the number of single occupancy vehicle trips and associated GHG emissions.

T-17: Improve Street Connectivity – This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of vehicle intersections compared to the average intersection density in the U.S. Increased vehicle intersection density is a proxy for street connectivity improvements, which help to facilitate a greater number of shorter trips and thus a reduction in GHG emissions.

Trip Reduction Programs

T-5: Implement Commute Trip Reduction Program (Voluntary) – This measure will implement a voluntary commute trip reduction (CTR) program with employers. CTR programs discourage single occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions. Voluntary implementation elements are described in this measure.

T-6: Implement Commute Trip Reduction Program (Mandatory Implementation and Monitoring) – This measure will implement a mandatory CTR program with employers. CTR programs discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing VMT and GHG emissions.

T-7: Implement Commute Trip Reduction Marketing – This measure will implement a marketing strategy to promote the project site employer's CTR program. 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.

T-8: Provide Ridesharing Program – This measure will implement a ridesharing program and establish a permanent transportation management association with funding requirements for employers. This strategy includes measures such as designating a proportion of parking spaces exclusive to ride sharing vehicles, providing adequate loading, and unloading areas for passengers of ride-sharing vehicles and generating a web site or message board for ride coordination. The focus of this strategy is to increase the vehicle occupancy by ride sharing between people driving similar trips, which will result in fewer cars, and thus a decrease in VMT.

T-9: Implement Subsidized or Discounted Transit Program – Employees Only – This measure will provide subsidized or discounted, or free transit passes for employees and/or residents. 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.

T-9-A: Implement Subsidized or Discounted Transit Program – Employees and Residents – This measure will provide subsidized or discounted, or free transit passes for employees and residents. 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.

T-10: Provide End-of-Trip Bicycle Facilities – This measure will install and maintain end-of-trip facilities for employee 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.

T-11: Provide Employer-Sponsored Vanpool – 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. This strategy is appropriate for office, industrial, and mixed-use projects. In some cases, this can be employed as a community strategy with employers within a particular area pooling resources to provide shuttles to transit. The mode shift from long-distance, single-occupied vehicles to shared vehicles reduces overall commute VMT, thereby reducing GHG emissions.

T-12: Price Workplace Parking – This measure will price onsite parking at workplaces. Because free employee parking is a common benefit, charging employees to park onsite increases the cost of choosing to drive to work, so employees consider alternative modes. It may include explicitly charging for parking for its employees, implementing above market rate pricing, validating parking only for invited guests, not providing employee parking and transportation allowances, and educating employees about available alternatives. This is expected to reduce single-occupancy vehicle commute trips, resulting in decreased VMT, thereby reducing associated GHG emissions.

T-13: Implement Employee Parking Cash-Out – This measure will require project employers to offer employee parking cash-out. 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. 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.

T-23: Community-Based Travel Planning – This measure will target residences in the plan/community with community-based travel planning (CBTP). CBTP is a residential based approach to outreach that provides households with customized information, incentives, and support to encourage the use of transportation alternatives in place of single occupancy vehicles, thereby reducing VMT and associated GHG emissions.

Parking or Road Pricing/Management

T-15: Limit Residential Parking Supply – This measure will reduce the total parking supply available at a residential 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.

T-16: Unbundle Residential Parking Costs from Property Cost – This strategy separates parking costs from property costs removing the burden from those who do not utilize parking spaces and requiring those who wish to do so to purchase parking spaces at an additional cost. On the assumption that parking costs are passed through to the vehicle owners/drivers utilizing the parking spaces, this measure results in decreased vehicle ownership and, therefore, a reduction in VMT and GHG emissions.

T-24: Implement Market Price Public Parking (On-Street) – This measure will price all on-street parking in a given community, with a focus on parking near central business districts, employment centers, and retail centers. Increasing the cost of parking increases the total cost of driving to a location, incentivizing shifts to other modes and thus decreasing total VMT to and from the priced areas. This VMT reduction results in a corresponding reduction in GHG emissions.

Neighborhood Design

T-18: Provide Pedestrian Network Improvements – This strategy focuses on creating a pedestrian network and connecting projects to nearby destinations via pedestrian pathways. Projects in the City of Pittsburg range in size, so the emphasis of this strategy for smaller projects would likely be the construction of network improvements that connect the project sites directly to nearby destinations. For larger projects, this strategy could focus on the development of a robust pedestrian network within the project itself or closing gaps that could connect the project to other areas. This strategy could also include improvements that improve the safety outcomes for people walking, especially walking to/from transit stops. Alternatively, implementation could occur through an impact fee program or benefit/assessment district based on local or regional plans. Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive. This mode shift results in a reduction in VMT and GHG emissions.

T-19-A: Construct or Improve Bike Facility – This measure will construct or improve a single bicycle lane facility (only Class I, II, or IV) that connects to a larger existing bikeway network. Providing bicycle infrastructure helps to improve biking conditions within an area. This encourages a mode shift on the roadway parallel to the bicycle facility from vehicles to bicycles, displacing VMT and thus reducing GHG emissions. When constructing or improving a bicycle facility, a best practice is to consider local or state bike lane width standards. A variation of this measure is provided as T-18-B, Construct or Improve Bike Boulevard.

T-19-B: Construct or Improve Bike Boulevard – Construct or improve a single bicycle boulevard that connects to a larger existing bikeway network. Bicycle boulevards are a designation within Class III Bikeway that create safe, low-stress connections for people biking and walking on streets. This encourages a mode shift from vehicles to bicycles, displacing VMT and thus reducing GHG emissions. A variation of this measure is provided as T-18-A, Construct or Improve Bike Facility, which is for Class I, II, or IV bicycle infrastructure.

T-20: Expand Bikeway Network – This measure will increase the length of a city or community bikeway network. A bicycle network is an interconnected system of bike lanes, bike paths, bike routes, and cycle tracks. Providing bicycle infrastructure with markings and signage on appropriately sized roads with vehicle traffic traveling at safe speeds helps to improve biking conditions (e.g., safety and convenience). In addition, expanded bikeway networks can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership. This encourages a mode shift from vehicles to bicycles, displacing VMT and thus reducing GHG emissions. When expanding a bicycle network, a best practice is to consider bike lane width standards from local agencies, state agencies, or the National Association of City Transportation Officials' Urban Bikeway Design Guide.

T-21-A: Implement Conventional Carshare Program – This measure will increase carshare access in the user's community by deploying conventional 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. A variation of this measure, electric carsharing, is described in Measure T-20-B, Implement Electric Carshare Program.

T-21-B: Implement Electric Carshare Program – This measure will increase carshare access in the user's community by deploying 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. This also encourages a mode shift from internal combustion engine vehicles to electric vehicles, displacing the emissions-intensive fossil fuel energy with less emissions-intensive electricity. Electric carshare vehicles require more staffing support compared to conventional carshare programs for shuttling electric vehicles to and from charging points. A variation of this measure, conventional carsharing, is described in Measure T-20-A, Implement Conventional Carshare Program.

T-22-A: Implement Pedal (Non-Electric) Bikeshare Program – This measure will establish a bikeshare program. Bikeshare programs provide users with on-demand access to bikes for short-term rentals. This encourages a mode shift from vehicles to bicycles, displacing VMT and thus reducing GHG emissions. Variations of this measure are described in Measure T-21-B, Implement Electric Bikeshare Program, and Measure T-21-C, Implement Scootershare Program.

T-22-B: Implement Electric Bikeshare Programs – This measure will establish an electric bikeshare program. Electric bikeshare programs provide users with on-demand access to electric pedal assist bikes for short-term rentals. This encourages a mode shift from vehicles to electric bicycles, displacing VMT and reducing GHG emissions. Variations of this measure are described in Measure T-21-A, Implement Pedal (Non-Electric) Bikeshare Program, and Measure T-21-C, Implement Scootershare Program.

T-22-C: Implement Scootershare Program – This measure will establish a scootershare program. Scootershare programs provide users with on-demand access to electric scooters for short-term rentals. This encourages a mode shift from vehicles to scooters, displacing VMT and thus reducing GHG emissions. Variations of this measure are described in Measure T-21-A, Implement Pedal (Non-Electric) Bikeshare Program, and Measure T-21-B, Implement Electric Bikeshare Program.

Transit

T-25: Extend Transit Network Coverage or Hours – This measure will expand the local transit network by either adding or modifying existing transit service or extending the operation hours to enhance the service near the project site. Starting services earlier in the morning and/or extending services to late-night hours can accommodate the commuting times of alternative-shift workers. This will encourage the use of transit and therefore reduce VMT and associated GHG emissions.

T-26: Increase Transit Service Frequency – This measure will increase transit frequency on one or more transit lines serving the plan/community. Increased transit frequency reduces waiting and overall travel times, which improves the user experience and increases the attractiveness of transit service. This results in a mode shift from single occupancy vehicles to transit, which reduces VMT and associated GHG emissions.

T-27: Implement Transit-Supportive Roadway Treatments – This measure will implement transit-supportive treatments on the transit routes serving the plan/community. Transit-supportive treatments incorporate a mix of roadway infrastructure improvements and/or traffic signal modifications to improve transit travel times and reliability. This results in a mode shift from single occupancy vehicles to transit, which reduces VMT and the associated GHG emissions.

T-28: Provide Bus Rapid Transit – This measure will convert an existing bus route to a bus rapid transit (BRT) system. BRT includes the following additional components, compared to traditional bus service: exclusive right-of-way (e.g., busways, queue jumping lanes) at congested intersections, increased limited-stop service (e.g., express service), intelligent transportation technology (e.g., transit signal priority, automatic vehicle location systems), advanced technology vehicles (e.g., articulated buses, low-floor buses), enhanced station design, efficient fare-payment smart cards or smartphone apps, branding of the system, and use of vehicle guidance systems. BRT can increase the transit mode share in a community due to improved travel times, service frequencies, and the unique components of the BRT system. This mode shift reduces VMT and the associated GHG emissions.

T-29: Reduce Transit Fares – This measure will reduce transit fares on the transit lines serving the plan/community. A reduction in transit fares creates incentives to shift travel to transit from single-occupancy vehicles and other traveling modes, which reduces VMT and associated GHG emissions. This measure differs from Measure T-8, Implement Subsidized or Discounted Transit Program,

which can be offered through employer-based benefits programs in which the employer fully or partially pays the employee's cost of transit.

Clean Vehicles and Fuels

T-30: Use Cleaner-Fuel Vehicles – This measure requires use of cleaner-fuel vehicles (electric vehicles, natural gas and propane vehicles, and vehicles powered by biofuels) in lieu of similar vehicles powered by gasoline or diesel fuel.

The above list should not be considered exhaustive, and projects can propose other TDM measures if appropriate and desired.

5.2.4.1 VMT Mitigation Measure Effectiveness

An important consideration when combining TDM measures is whether a maximum VMT reduction should be applied based on the land use context. The CAPCOA methodology identifies VMT reduction maximums based on community types tied to land use context. The caps are applied at each step of the VMT reduction calculation (i.e., at the strategy scale, the combined strategy scale, and the global scale). However, these caps are not based on research related to the effectiveness of VMT reduction strategies in different land use contexts. The cap differences are largely based on VMT generation differences within different land use contexts and serves as a proxy for potential limits on VMT reduction strategy effectiveness. For suburban jurisdictions such as Pittsburg, CAPCOA identifies a global VMT reduction maximum of 15 percent. **Table 1** presents a summary of the maximum allowable reductions we recommend for individual VMT mitigation measures based on the available research and the City's local context. For projects adjacent to the existing BART stations (Pittsburg/Bay Point and Pittsburg Center) or a high-quality transit corridor, a higher VMT reduction is likely to be realized. However, it is not expected that projects located adjacent to a BART station or high-quality transit corridor would result in a VMT impact that would need to be mitigated.

Table 1: VMT Mitigation Measure Reduction Caps

Mitigation Measure	Maximum Allowable Reduction
Land Use	
T-2: Increase Job Density	30.0%
T-3: Provide Transit-Oriented Development	31.0%
T-17: Improve Street Connectivity	30.0%
Trip Reduction Programs	
T-5: Implement Commute Trip Reduction Program (Voluntary)	4.0%
T-6: Implement Commute Trip Reduction Program (Mandatory Implementation and Monitoring)	26.0%
T-7: Implement Commute Trip Reduction Marketing	4.0%

T-8: Provide Ridesharing Program	8.0%
T-9: Implement Subsidized or Discounted Transit Program – Employees Only	5.5%
T-9-A: Implement Subsidized or Discounted Transit Program – Employees and Residents	5.5%
T-10: Provide End-of-Trip Bicycle Facilities	4.4%
T-11: Provide Employer-Sponsored Van pool	8.1%
T-12: Price Workplace Parking	20.0%
T-13: Implement Employee Parking Cash-Out	12.0%
T-23: Community-Based Travel Planning	2.3%
Parking and Road Pricing/Management	
T-15: Limit Residential Parking Supply	13.7%
T-16: Unbundle Residential Parking Costs from Property Cost	15.7%
T-24: Implement Market Price Public Parking (On-Street)	30.0%
Neighborhood Design	
T-18: Provide Pedestrian Network Improvements	6.4%
T-19-A: Construct or Improve Bike Facility	0.8%
T-19-B: Construct or Improve Bike Boulevard	0.2%
T-20: Expand Bikeway Network	0.5%
T-21-A: Implement Conventional Carshare Program	0.15%
T-21-B: Implement Electric Carshare Program	0.18%
T-22-A: Implement Pedal (Non-Electric) Bikeshare Program	0.02%
T-22-B: Implement Electric Bikeshare Programs	0.06%
T-22-C: Implement Scootershare Program	0.07%
Transit	
T-25: Extend Transit Network Coverage or Hours	4.6%
T-26: Increase Transit Service Frequency	11.3%
T-27: Implement Transit-Supportive Roadway Treatments	0.6%
T-28: Provide Bus Rapid Transit	13.8%
T-29: Reduce Transit Fares	1.2%

Each of the TDM measures described above can be combined with others to increase the effectiveness of VMT mitigation; however, the interaction between the various TDM measures is

complex and sometimes counter intuitive. Generally, with each additional measure implemented, a VMT reduction is achieved, but the incremental benefit of VMT reduction may diminish. To quantify the VMT reduction that results from combining TDM measures, the analyst must consider multiplicative dampening as outlined in the CAPCOA documentation.

5.3 Other Environmental Considerations

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. TIAs should include a Multimodal Operations Analysis (MOA) to assess these environmental considerations and establish priorities for bicycles, pedestrians, transit, and other non-vehicular users. The City will determine if a proposed project reasonably and substantially affects the facilities or operations of the multimodal network and provide a list of required elements to be included in the MOA. The MOA should include the following elements.

Transit System

A description of the existing and planned transit facilities and services in the study area should be provided. The transit system evaluation will include an analysis of transit stops within the project area. Key items within the assessment should include transit operation efficiency and transit-rider amenities related to safety and comfort. The MOA should evaluate and incorporate transit improvements to existing stops located along the project frontage and/or within the site's vicinity. This should include, but is not limited to:

- Bus stops and amenities
- Sidewalk widths and ADA access
- Pedestrian crossings at intersections
- Potential improvements to reduce transit delays and improve service.

Bicycle System

A description of the existing and planned bicycle facilities in the study area should be provided. Assessments of bicycle safety in the study area should be conducted utilizing five-year collision data near the project site and site observations. The five-year collision data will include collisions that occurred on all dates and times throughout the full year. Site observations are to be recorded during typical operating conditions relative to site location and context, including but not limited to commute hours, midday peak, school hours, and other periods recommended by the City. Summaries will include but are not limited to primary collision factors, direction of travel, compliance issues, near misses, travel pattern behaviors, and other considerations recommended by the City

Pedestrian System

A description of the existing and planned pedestrian facilities in the study area should be provided. The pedestrian system assessment will include an analysis of existing uncontrolled crossings using the Federal Highway Administration's (FHWA) "Guide for Improving Pedestrian Safety at Uncontrolled Crossings". The section will include all locations within walking distance of the project area (approximately ½ mile) and any extents identified by the City. The TIA will use the guidance provided by FHWA to analyze locations where crossing opportunities would support pedestrian activity in the project area. The evaluation will include an inventory of the roadway network, existing pedestrian crossings, and recommendations for new crossings that will link paths, close gaps, and form complete networks of pedestrian-supportive infrastructure. It will include an analysis of the project's access points with recommendations for crossing locations that support safe access for pedestrians approaching from all directions.

Significance Criteria

In the assessment of transit, bicycle and pedestrian network, the following standards of significance shall be used.

Transit System – The project would create a significant impact related to transit service if the following criteria is met:

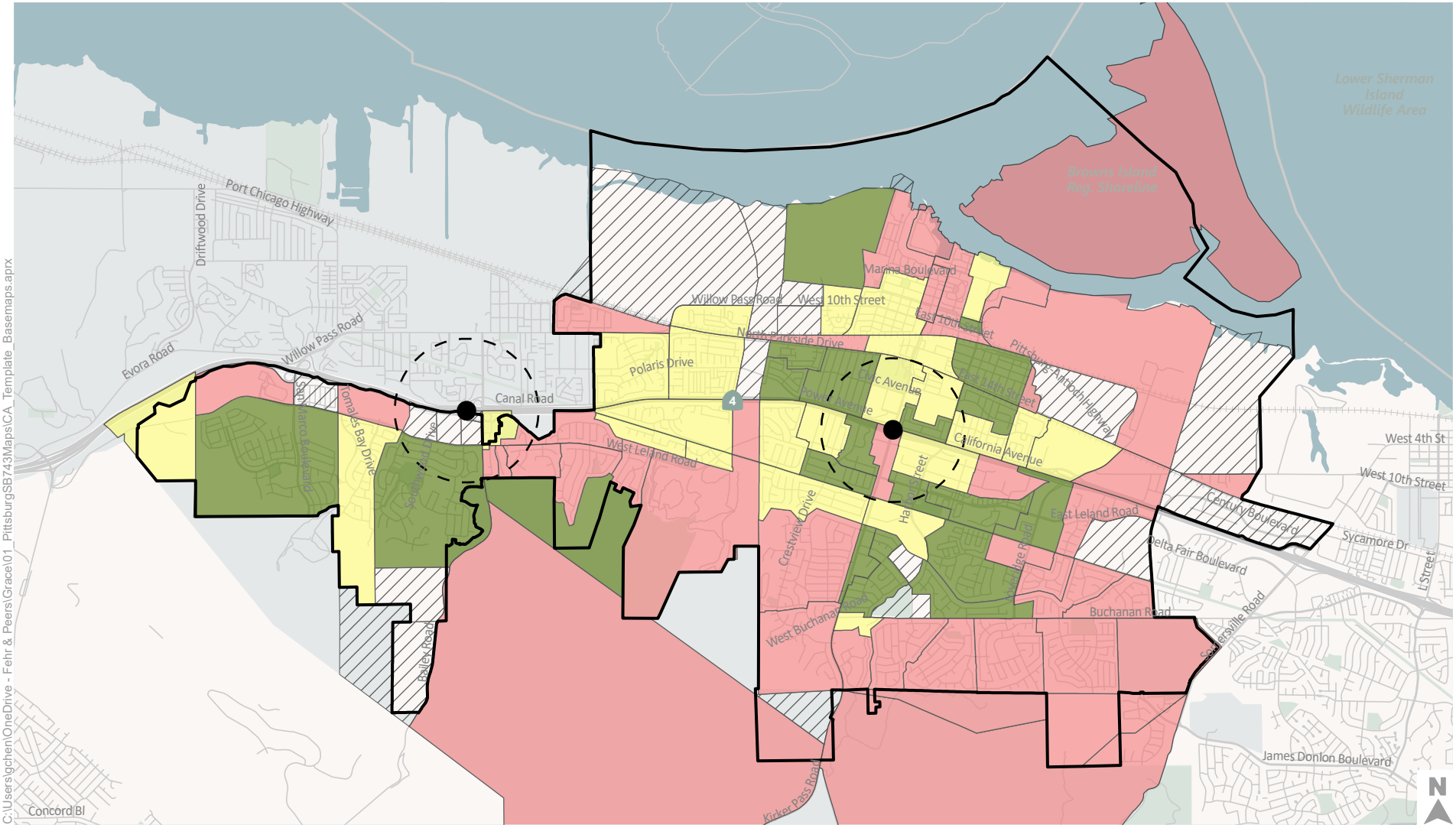
1. The project interferes with existing transit facilities or precludes the construction of planned transit facilities.

Bicycle System – The project would create a significant impact related to the bicycle system if any of the following criteria are met:

1. Disrupt existing bicycle facilities; or
2. Interfere with planned bicycle facilities; or
3. Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards.

Pedestrian System – The project would create a significant impact related to the pedestrian system if any of the following criteria are met:

1. Disrupt existing pedestrian facilities; or
2. Interfere with planned pedestrian facilities; or
3. Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.



Contra Costa County-Wide Average Home-Based VMT per Resident: 17.6

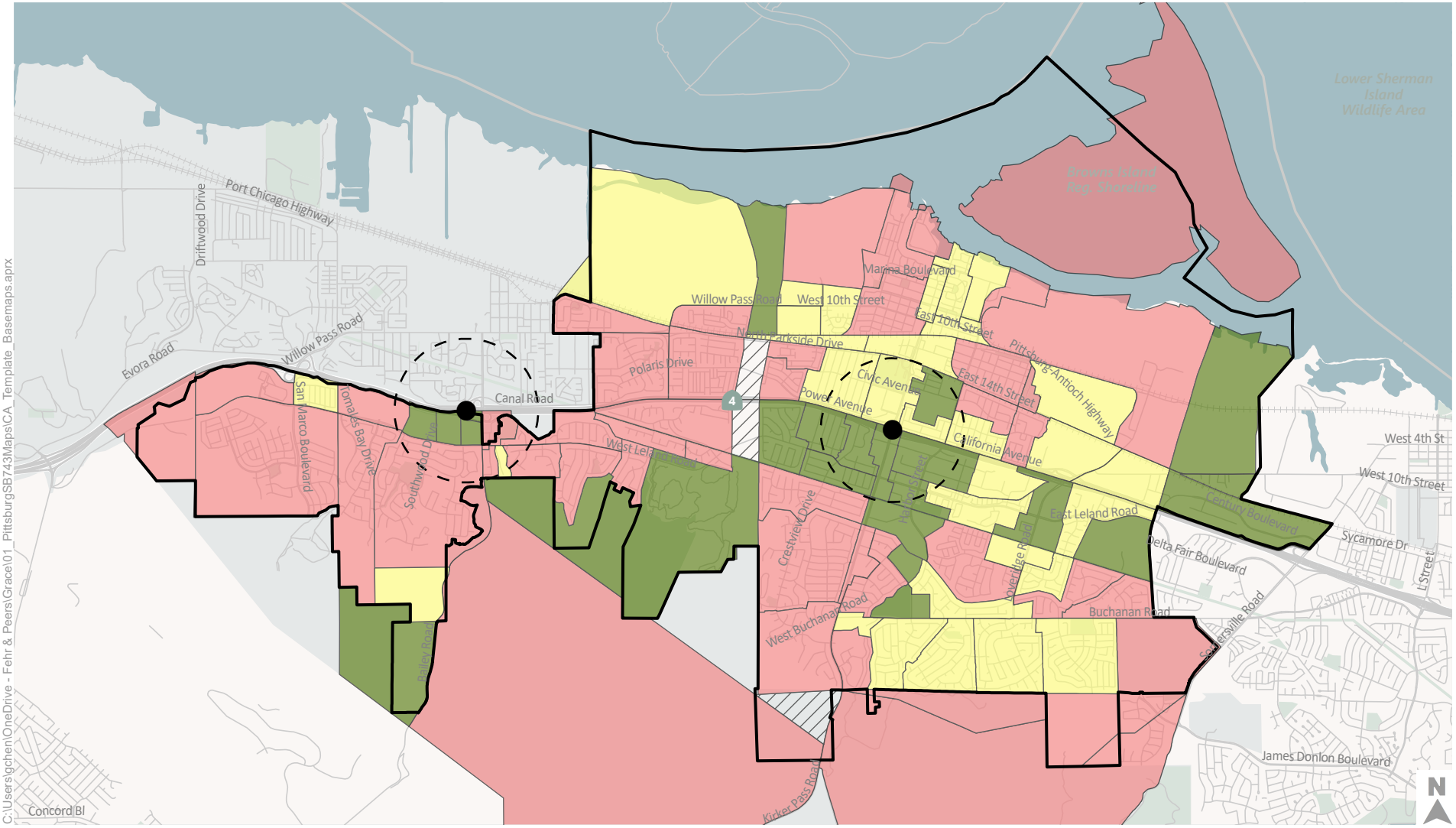
- 15% below Contra Costa County Average
- Between 15% - 0% below Contra Costa County Average
- Above Contra Costa County Average
- TAZ with no Residents
- City Boundary
- 0.5-mile BART Station Buffer

Figure 1

City of Pittsburg SB743 Implementation

Source: CCTA Travel Demand Model

City of Pittsburg - Home-Based Vehicle-Miles Traveled Per Resident (2022)



Contra Costa County-Wide Average Commute VMT per Worker: 14.9

- 15% Below
- Between 15% - 0% below Contra Costa County Average
- Above Contra Costa County Average
- TAZ with no Employees
- City Boundary
- 0.5-mile BART Station Buffer

Figure 2

City of Pittsburg SB743 Implementation

Source: CCTA Travel Demand Model

City of Pittsburg - Commute Vehicle-Miles Traveled Per Worker (2022)