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IE DISTRIBUTION CENTER #14 VEHICLE MILES TRAVELED (VMT) ANALYSIS

Ms. Tracy Zinn,

Urban Crossroads, Inc. is pleased to provide the following Vehicle Miles Traveled (VMT) Analysis for the IE Distribution Center #14 development (**Project**), which is located which is located at 5355 E. Airport Drive in the City of Ontario.

PROJECT OVERVIEW

It is our understanding that the Project consists of a single 270,377 square foot warehouse building. The proposed Project has been evaluated assuming a mix of warehousing (243,303 square feet or 90% of the total square footage) and high-cube cold storage use (27,034 square feet or 10% of the total square footage). The Project site is currently occupied and operating as a grain processing company and corn storage and distribution facility within warehousing space totaling 41,780 square feet. There are two driveways on Airport Drive. A preliminary site plan for the proposed Project is shown in Exhibit 1.

EXHIBIT 1: PRELIMINARY SITE PLAN

BACKGROUND

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which require all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) (**Technical Advisory**) (1). Based on the Technical Advisory, the City of Ontario has developed and adopted their own VMT methodologies and thresholds, which were adopted by City Council in June 2020 (**City Guidelines**) (2). This VMT analysis has been developed based on the adopted City Guidelines.

VMT SCREENING

City Guidelines identify Projects that meet certain VMT screening criteria may be presumed to result in a less than significant transportation impact. It is our understanding the City of Ontario utilizes the San Bernardino County Transportation Authority (SBCTA) VMT Screening Tool (**Screening Tool**). The Screening Tool allows users to select an assessor's parcel number (APN) to determine if a project's location meets one or more of the screening thresholds for land use projects identified in the City Guidelines. The City Guidelines lists the following VMT screening criteria:

- Transit Priority Area (TPA) Screening
- Low VMT Area Screening
- Project Type Screening

A land use project need only meet one of the above screening criteria to result in a less than significant impact.

STEP 1: TPA SCREENING

Consistent with guidance identified in the City Guidelines, projects located within a Transit Priority Area (TPA) (i.e., within ½ mile of an existing "major transit stop"[1] or an existing stop along a "high-quality transit corridor"[2]) may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, the presumption may not be appropriate if a project:

- Has a Floor Area Ratio (FAR) of less than 0.75;

[1] 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.").
[2] 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.").

- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate or high-income residential units.

The Screening Tool was utilized to locate the Project site and its proximity to a TPA. Results, as shown in Attachment A, the Project Site is not located within ½ mile of an existing major transit stop or along a high-quality transit corridor.

TPA screening criteria is not met.

STEP 2: LOW VMT AREA SCREENING

The City Guidelines state that projects may be presumed to have a less than significant VMT impact if located in an already low VMT generating traffic analysis zones (TAZs) that generates a VMT per service population that does not exceed the Citywide average under General Plan Buildout condition VMT per service population. The Screening Tool uses the sub-regional San Bernardino Transportation Analysis Model (SBTAM) to measure VMT performance within individual TAZ's within the region. The Project's physical location based on parcel number is selected in the Screening Tool to determine the TAZ in which the Project will reside. The Project's TAZs VMT per service population was compared to Citywide average buildout VMT per service population. The parcel containing the proposed Project was selected and the Screening Tool was run for origin-destination (OD) VMT per service population. The Project is not located within a low VMT generating zone (See Attachment A).

Low VMT Area screening criteria is not met.

STEP 3: PROJECT TYPE SCREENING

The City Guidelines identify that local serving retail less than 50,000 square feet or other local serving essential services (e.g., day care centers, public schools, medical/dental office buildings, etc.) are presumed to have a less than significant impact absent substantial evidence to the contrary. The Project, as intended, does not contain any local serving uses.

Additionally, the City Guidelines state that small projects generating net new trips fewer than 110 daily vehicle trips may be presumed to have a less than significant impact, subject to discretionary approval by the City.

EXISTING TRAFFIC

The Project site is currently occupied and operating as a grain processing company and corn storage and distribution facility within warehousing space totaling 41,780 square feet. In an effort to understand the existing traffic associated with the current use, traffic counts were collected at the driveways on Tuesday, March 1, 20220 through Thursday, March 3, 2022. Table 1 summarizes the trip generation by day and the average existing trip generation based on the count data

collected over two days. As shown in Table 1, the existing site currently generates an average of 316 vehicle trips per day.

TABLE 1: EXISTING TRIP GENERATION SUMMARY

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Average Existing Trip Generation							
Passenger Cars:	11	7	18	0	1	1	209
2-axle Trucks:	2	2	4	0	0	0	17
3-axle Trucks:	0	0	0	0	0	0	6
4+-axle Trucks:	3	4	8	1	0	1	84
Total Truck Trips:	6	6	12	1	0	1	107
Total Trips[1]	**17**	**13**	**30**	**1**	**1**	**2**	**316**

[1] Total Trips = Passenger Cars + Truck Trips.

PROPOSED PROJECT

It is our understanding that the Project consists of a single 270,377 square foot warehouse building. In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) was used for the proposed uses. Table 3 summarizes the trip generation rates. For purposes of this assessment, the following land uses and vehicle mixes have been utilized:

- ITE land use code 150 (Warehousing) has been used to derive site specific trip generation estimates for up to 243,303 square feet (90% of the total square footage). A warehouse is primarily devoted to the storage of materials but may also include office and maintenance areas. The vehicle mix has been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 16.7%; 3-Axle = 20.7%; 4+-Axle = 62.6%.
- ITE land use code 157 (High-Cube Cold Storage Warehouse) has been used to derive site specific trip generation estimates for up to 27,034 square feet (10% of the total square footage). High-cube cold storage warehouses include warehouses characterized by the storage and/or consolidation of manufactured goods (and to a lesser extent, raw materials) prior to their distribution to retail locations or other warehouses. High-cube cold storage warehouses are facilities typified by temperature-controlled environments for frozen food or other perishable products. The High-Cube Cold Storage Warehouse vehicle mix has been obtained from the ITE's Trip Generation Manual. The truck percentages were further broken down by axle type per the following SCAQMD recommended truck mix: 2-Axle = 34.7%; 3-Axle = 11.0%; 4+-Axle = 54.3%.

TABLE 3: TRIP GENERATION RATES

Land Use	Units[2]	ITE LU Code	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicle Trip Generation Rates									
Warehousing[1,3]	TSF	150	0.131	0.039	0.170	0.050	0.130	0.180	1.710
Passenger Cars			0.120	0.030	0.150	0.034	0.116	0.150	1.110
2-Axle Trucks			0.002	0.001	0.003	0.003	0.002	0.005	0.100
3-Axle Trucks			0.002	0.002	0.004	0.003	0.003	0.006	0.124
4+-Axle Trucks			0.007	0.006	0.013	0.010	0.009	0.019	0.376
High-Cube Cold Storage Warehouse[1,3]	TSF	157	0.085	0.025	0.110	0.034	0.086	0.120	2.120
Passenger Cars			0.076	0.004	0.080	0.019	0.071	0.090	1.370
2-Axle Trucks			0.003	0.007	0.010	0.005	0.005	0.010	0.260
3-Axle Trucks			0.001	0.002	0.003	0.002	0.001	0.003	0.083
4+-Axle Trucks			0.005	0.011	0.016	0.008	0.008	0.016	0.407

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).

[2] TSF = thousand square feet

[3] Truck Mix: South Coast Air Quality Management District's (SCAQMD) recommended truck mix, by axle type.
Normalized % - Without Cold Storage: 16.7% 2-Axle trucks, 20.7% 3-Axle trucks, 62.6% 4-Axle trucks.
Normalized % - With Cold Storage: 34.7% 2-Axle trucks, 11.0% 3-Axle trucks, 54.3% 4-Axle trucks.

The trip generation summary illustrating daily trip generation estimates for the proposed Project are summarized on Table 4. The proposed Project is anticipated to generate 476 daily vehicle trips.

TABLE 4: PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Units[1]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Actual Vehicles:									
Warehousing	243.339	TSF							
Passenger Cars:			29	7	36	8	28	36	270
2-axle Trucks:			0	0	0	1	0	1	24
3-axle Trucks:			0	1	1	1	1	2	30
4+-axle Trucks:			2	1	3	2	2	4	92
Total Truck Trips (Actual Vehicles):			2	2	4	4	3	7	146
Warehousing Trips (Actual Vehicles)[2]			31	9	40	12	31	43	416
High-Cube Cold Storage	27.038	TSF							
Passenger Cars:			2	0	2	1	2	3	38
2-axle Trucks:			0	0	0	0	0	0	8
3-axle Trucks:			0	0	0	0	0	0	2
4+-axle Trucks:			0	0	0	0	0	0	12
Total Truck Trips (Actual Vehicles):			0	0	0	0	0	0	22
Cold Storage Trips (Actual Vehicles)[2]			2	0	2	1	2	3	60
Passenger Cars			31	7	38	9	30	39	308
Trucks			2	2	4	4	3	7	168
Total Project Trips (Actual Vehicles)[2]			**33**	**9**	**42**	**13**	**33**	**46**	**476**

[1] TSF = thousand square feet

[2] Total Trips = Passenger Cars + Truck Trips.

TRIP GENERATION COMPARISON

Table 5 shows the trip generation comparison between the existing use and proposed Project and identifies the resulting net new trips. As shown, the Project is anticipated to generate 160 net new average daily trips.

TABLE 5: TRIP GENERATION COMPARISON

	AM Peak Hour			PM Peak Hour			
Land Use	In	Out	Total	In	Out	Total	Daily
Actual Vehicles:							
Existing Use							
Passenger Cars:	11	7	18	0	1	1	209
Trucks:	6	6	12	1	0	1	107
Existing Trips (Actual Vehicles)[2]	**17**	**13**	**30**	**1**	**1**	**2**	**316**
Proposed Project							
Passenger Cars:	31	7	38	9	30	39	308
Trucks:	2	2	4	4	3	7	168
Total Project Trips (Actual Vehicles)[2]	**33**	**9**	**42**	**13**	**33**	**46**	**476**
Passenger Cars:	20	0	20	9	29	38	99
Trucks:	-4	-4	-8	3	3	6	61
Net New Project Trips (Actual Vehicles)[2]	**16**	**-4**	**12**	**12**	**32**	**44**	**160**

[1] TSF = thousand square feet

[2] Total Trips = Passenger Cars + Truck Trips.

The Project is anticipated to generate 160 net new daily vehicle trips. Therefore, the Project generates daily vehicle trips exceeding the 110 daily vehicle trip threshold.

Project Type screening criteria is not met.

As the Project was not found to meet any of the aforementioned VMT screening criteria, a project level VMT analysis is prepared to assess the Project's potential impact to VMT.

VMT ANALYSIS

VMT MODELING

The City Guidelines identify the San Bernardino Transportation Analysis Model (**SBTAM**) as the appropriate tool for conducting VMT analysis for land use projects in the City of Ontario, as it considers interaction between different land uses based on socio-economic data, such as population, households, and employment. Consistent with The City of Ontario Plan (TOP) The City has recently adopted an updated version of SBTAM also referred to as The Ontario Plan (**TOP**) model. This model contains updated roadway network and socio-economic data within the city

and includes a base year of 2019 and a General Plan Buildout of 2050. Outside of the City of Ontario, the model assumes datasets consistent with the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS). Urban Crossroads has obtained the newly adopted TOP model from the City of Ontario.

VMT METRIC AND SIGNIFICANCE THRESHOLD

City Guidelines identify the efficiency based metric VMT per service population (i.e., population and employees) as the measure of potential impact within the City of Ontario. VMT per service population is an efficiency metric that allows a project's VMT to be compared to the remainder of the City. Projects found to increase the average VMT per service population within the City may be deemed to have a significant impact. More specifically, City Guidelines identify the following impact threshold for project level VMT analyses:

- A significant impact would occur if the project VMT per Service Population exceeds the Citywide average for Service Population under General Plan Buildout Conditions.

The City of Ontario's average VMT per service population under General Plan Buildout Conditions was calculated using the TOP 2050 model. Table 6 identifies a summary for the City of Ontario's Citywide average VMT per service population.

TABLE 6: CITYWIDE VMT PER SERVICE POPULATION

Ontario	Buildout
Service Population	706,494
VMT	19,508,184
VMT per Service Population	27.61

As shown in Table 6, the City of Ontario's VMT per service population for General Plan Buildout (2050) conditions has been calculated as **27.61 VMT per service population**.

PROJECT LAND USE CONVERSION

In order to evaluate Project VMT, standard land use information must first be converted into a SBTAM compatible dataset. The SBTAM model utilizes socio-economic data (SED) (e.g., population, households, employment, etc.) instead of land use information for the purposes of vehicle trip estimation. Project land use information such as building square footage must first be converted to SED for input into SBTAM. Adjustments in SED have been made to the appropriate TAZ 53699101 within the SBTAM model to reflect the Project's proposed land uses (i.e., warehouse). Table 7 summarizes the employment estimates for the Project. It should be noted that the employment estimates are consistent with the employment density factors identified in the Southern California Association of Governments (SCAG) Employment Density Study (October 2001) (3).

TABLE 7: EMPLOYMENT ESTIMATES

Land Use	Quantity (SF)	Employment Density Factor[3]	Estimated Employees
Warehouse	270,337	1 employee per 1,195 SF	226

PROJECT TOTAL VMT CALCULATION

Consistent with City Guidelines and standard VMT calculation methods, total VMT is calculated from SBTAM's OD trip matrices and then divided by a project's service population to derive the VMT efficiency metric VMT per service population.

Table 8 presents project-generated total VMT calculated as the total of passenger car, light-duty, medium-duty, and heavy-duty truck trips. Total trips by vehicle type are then multiplied by the average trip length for each vehicle type. The average trip length for heavy, medium, and light duty trucks used for this analysis was obtained from the South Coast Air Quality Management District (SCAQMD) documents for the implementation of the Facility-Based Mobile Source Measures (FBMSMs) adopted in the 2016 Air Quality Management Plan (AQMP). SCAQMD's "Preliminary Warehouse Emission Calculations" cites 39.9-mile trip length for heavy-duty trucks and 14.2-mile trip length for medium and light duty trucks based on SCAG 2016 Regional Transportation Plan (RTP).

TABLE 8: TOTAL VMT

	Base Year (2019)	Buildout Year (2050)	Baseline (2022)
Automobile VMT	4,337	3,939	4,299
Truck VMT	3,278	4,085	3,357
Total VMT	7,616	8,025	7,655

Table 9 presents the calculation of VMT per service population, which is simply the product of total VMT for the Project divided by the Project's service population or in this case the number of Project employees.

TABLE 9: PROJECT VMT PER SERVICE POPULATION

	Base Year (2019)	Buildout Year (2050)	Baseline (2022)
Service Population[4]	226	226	226
VMT	7,616	8,025	7,655
VMT per service population	33.67	35.47	33.84

Table 10 identifies the comparison between Project's baseline and cumulative VMT per service population to the City's impact threshold. The City of Ontario has identified a VMT per service population significance threshold of 27.61, which is the City of Ontario's General Plan Buildout with the TOP model. As shown below, the Project would exceed the City's VMT per service

[3] SCAG Employment Density Study; Table II-B
[4] Since the Project does not have a residential component, the service population consists entirely of employment.

population impact threshold for both the baseline conditions by 22.56%-28.47%, respectively. The Project VMT impact is therefore considered potentially significant.

TABLE 10: PROJECT COMPARISON TO CITY OF ONTARIO VMT THRESHOLD

	Baseline	Buildout Year
Impact Threshold	27.61	27.61
Project	33.84	35.47
Percent Change	+22.56%	+28.47%
Potentially Significant?	Yes	Yes

PROJECT'S CUMULATIVE EFFECT ON VMT

The City Guidelines, consistent with the Technical Advisory, states that cumulative impacts on VMT "… metrics such as VMT per capita or VMT per employee, i.e., metrics framed in terms of efficiency (as recommended below for use on residential and office projects), cannot be summed because they employ a denominator. A project that falls below an efficiency-based threshold that is aligned with long-term goals and relevant plans has no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa. This is similar to the analysis typically conducted for greenhouse gas emissions, air quality impacts, and impact that utilize plan compliance as a threshold of significance."[5] As the Project is consistent with the RTP/SCS and is found to have a potentially significant impact at the project level. The Project is also considered to have a potentially significant cumulative impact as well.

VMT REDUCTION STRATEGIES

Transportation Demand Management (TDM) strategies in the form of commute trip reduction program measures have been reviewed for the purpose of reducing Project related VMT impacts (i.e., commute trips) determined to be potentially significant. The level of effectiveness of each trip reduction measure has been determined based on the Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity (CAPCOA, 2021) (**2021 Handbook**). As the future building tenants are not known for the Project, the effectiveness of each commute trip reduction measures may be limited. In addition to specific tenancy considerations, locational context is also a major factor relevant to the potential application and effectiveness of TDM measures. The three locational contexts identified by the 2021 Handbook are suburban, urban, and rural.[6] The locational context of the Project is characteristically suburban.

Under the most favorable circumstances and ideal conditions a project can realize a maximum reduction of 45% in commute VMT through implementation of the trip reduction program measures listed below.[7] However, ideal conditions are rarely realized as variables such as a

[5] OPR's Technical Advisory; Page 6
[6] 2021 Handbook; Page 43
[7] 2021 Handbook; Page 61

projects locational context limitation (i.e., non-urban areas). Additionally, to achieve ideal conditions a project must achieve one hundred percent employee participation and maximum employee eligibility, which are not generally expected. The proposed Project would require a minimum reduction of 25.58% to achieve a less than significant impact. The 2021 Handbook lists the following trip reduction measures. These measures can be implemented individually or grouped together to create either a voluntary or mandatory commute trip reduction (CTR) program.

- T-7 – Implement Commute Trip Reduction Marketing
- T-8 – Provide Ridesharing Program
- T-10 – Provide End-of-Trip Facilities

Other regional transportation measures that may reduce VMT include but are not limited to improving/increasing access to transit, increasing access to common goods and service, or orientating land uses towards alternative transportation. These regional transportation measures may be infeasible at the project level but will generally be implemented as the surrounding communities develop. There is no means, however, to quantify any VMT reductions that could result from implementation. Additionally, the effectiveness of the CTR program measures listed above have potential to reduce the Project VMT are dependent on as yet unknown building tenant(s); and as noted above, VMT reductions from various CTR measures cannot be guaranteed.

CONCLUSION

Based on the results of this analysis the following findings are made:

- The Project's was evaluated against screening criteria as outlined in the City Guidelines. The Project was not found to meet any available screening criteria, and a model based VMT analysis was performed.
- The Project's VMT analysis found the Project to exceed the City's VMT per employee threshold by 22.56% in baseline conditions and 28.47% in buildout conditions. The Project is determined to have a potentially significant transportation impact.
- Since the future tenants are unknown at this time, implementation of the feasible TDM measures discussed above cannot be guaranteed to reduce the Project generated VMT per employee; the Project's VMT impact is considered significant and unavoidable.

If you have any questions, please contact me directly at aso@urbanxroads.com.

Respectfully submitted,

URBAN CROSSROADS, INC.

Alexander So
Senior Associate

REFERENCES

1. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA.* State of California : s.n., December 2018.
2. **City of Ontario.** *SB 743 VMT Thresholds.* City of Ontario : s.n., June 2020.
3. **Southern California Association of Governments.** *Employment Density Study.* October 2001.

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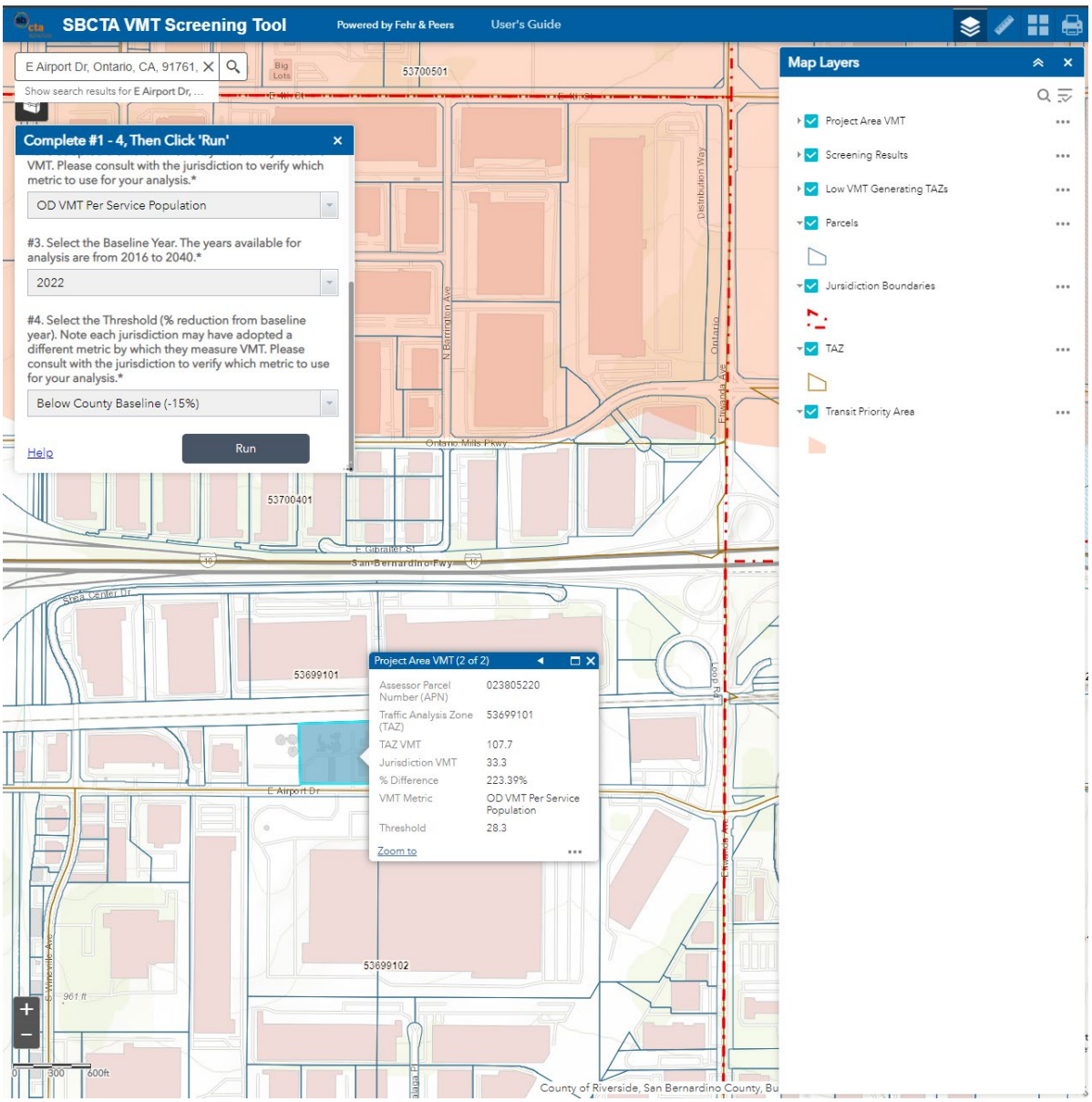
ATTACHMENT A

SBCTA SCREENING TOOL


SBCTA VMT Screening Tool
Powered by Fehr & Peers
User's Guide
E Airport Dr, Ontario, CA, 91761,
Show search results for E Airport Dr, ...
Complete #1 - 4, Then Click 'Run'
VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
OD VMT Per Service Population
#3. Select the Baseline Year. The years available for analysis are from 2016 to 2040.*
2022
#4. Select the Threshold (% reduction from baseline year). Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*
Below County Baseline (-15%)
Help
Run
Map Layers
Project Area VMT
Screening Results
Low VMT Generating TAZs
Parcels
Jurisdiction Boundaries
TAZ
Transit Priority Area
Project Area VMT (2 of 2)
Assessor Parcel Number (APN) 023805220
Traffic Analysis Zone (TAZ) 53699101
TAZ VMT 107.7
Jurisdiction VMT 33.3
% Difference 223.39%
VMT Metric OD VMT Per Service Population
Threshold 28.3
Zoom to
53700501
53700401
53699101
53699102
E Airport Dr
Ontario Mills Pkwy
San Bernardino Fwy
961 ft
0 300 600ft
County of Riverside, San Bernardino County, Bu