APPENDIX F
VMT Assessments

Michael Baker INTERNATIONAL

Technical Memorandum

To: Kendall Brekke, City of Lancaster
Jocelyn Swain, City of Lancaster

From: Carla Dietrich, Michael Baker International

CC: Frances Yau, Michael Baker International

Date: May 6, 2024

Subject: Lancaster Eastside Annexation Project – Solar Project Scoping

1. Introduction

Michael Baker International (Michael Baker) is under contract with the City of Lancaster, California (City) to identify the required project-related transportation studies for the proposed Lancaster Eastside Annexation Project and Solar Project (Project). The transportation studies considered include a Vehicle Miles Traveled (VMT) Assessment and a Local Transportation Assessment (Level of Service Operational Assessment). Per the City's request, the Project evaluations include two components:

1) A programmatic analysis of the annexation of an approximately 638-acre area in unincorporated Los Angeles County into City limits and pre-zoning the area as RR-2.5 (Rural Residential, 1 du/ac); and
2) A project-level analysis of the proposed solar facility project on the northern portion of the project site, which would require a Conditional Use Permit under the proposed RR-2.5 zone.

This memorandum focuses on the solar facility project component. A separate memorandum will be prepared to document the annexation programmatic level VMT assessment. The project description provided in this memorandum includes information regarding the annexation area for information purposes.

2. Project Information

Project Description

The Project site consists of two areas within unincorporated Los Angeles County:

1) An approximately 638-acre area referred to as the "annexation area".
2) An approximately 288-acre area within the annexation area referred to as the "solar facility site".

The solar facility site consists of three parcels (Assessor's Parcel Numbers [APNs] 3384-001-001, -002, and -003) in the northern portion of the annexation area, generally bound by East Avenue I to the north, 60th Street East to the east, East Lancaster Boulevard to the south, and 50th Street East to the west. **Exhibit 1** shows the regional Project location and **Exhibit 2** is the Site Vicinity. Both exhibits are contained in **Attachment A**. Additionally, **Table 1** summarizes key Project information.

Project Site Access

Regional access is provided via the Antelope Valley Freeway (State Route 14 [SR-14]), which provides primary regional connectivity between the City and the greater Los Angeles area. Local access is provided via East Avenue I, East Lancaster Boulevard, East Avenue J, 60th Street East, and 50th Street East.

Table 1: Project Information Summary

Item	Description	
	Annexation Area	**Solar Facility Project Area**
Project Location	The annexation area is generally bound by East Avenue I to the north, 60th Street East to the east, East Avenue J to the south, and 50th Street East to the west.	The L-shaped solar facility site consists of three parcels (Assessor's Parcel Numbers [APNs] 3384-001-001, -002, and -003) in the northern portion of the annexation area, generally bound by East Avenue I to the north, 60th Street East to the east, East Lancaster Boulevard to the south, and 50th Street East to the west.
Existing Land Uses	Mostly consists of vacant, disturbed desert habitat and agricultural fields (both active and abandoned)	
Acreage	Approximately 638 acres	Approximately 288 acres within the annexation area
Existing Zoning	No current City zoning designation for the Project site; however, the areas to the south within Lancaster are zoned Rural Residential (RR-2.5).	
Nearby Land Uses	• North: Rural residential, vacant land, and agricultural (both active and abandoned fields) uses • East: Agricultural (both active and abandoned fields) uses • South: Agricultural (both active and abandoned fields) uses • West: Vacant land uses are located to the west of the Project site across 50th Street East; Residential uses are located further west	
Access	• Regional access: Antelope Valley Freeway (State Route 14 [SR-14]) • Local access: East Avenue I, East Lancaster Boulevard, East Avenue J, 60th Street East, and 50th Street East	
Proposed Use	The annexation area has a General Plan land use designation of NU (0.4-2.0 du/ac), which is consistent with the allowed density under the proposed RR-2.5 pre-zone (1 du/2.5 acres or 0.4 du/ac).	The solar facility is proposed on an approximately 288-acre, L-shaped site encompassing three parcels in the northern half of the annexation area. Under the proposed RR-2.5 zone, commercial solar electrical generation facilities are conditionally permitted. Thus, the solar facility would require a Conditional Use Permit (CUP).
Anticipated Opening Year	--	2030

3. Methodology & Guidelines

Guidelines

The following guidelines have been utilized in the analysis:

- **Local Transportation Assessment Guidelines**, City of Lancaster Department of Public Works, January 5, 2021 (City Guidelines)

This memorandum includes the solar project trip generation analysis, VMT screening analysis, and recommended next steps for the solar facility project based on the analysis findings.

4. Solar Project – Trip Generation Analysis

The average daily trips associated with the solar facility project during operations are summarized in **Table 2.** The site trips were estimated using site-specific operational information provided by City staff and the site operator instead of the Institute of Transportation Engineer's (ITE) Trip Generation Manual since the manual does not include average trip rates for solar developments. As shown 24 daily trips are estimated based on the following anticipated site characteristics:

- 1 - 2 vehicles (work trucks) per week assumed for routine and as-needed maintenance. A conservative estimate condition assumed with both routine and as-needed maintenance occurring during the same day.
- Panel cleaning to take place twice per year (at most). Panel cleaning crew assumed to be up to 10 individuals using 10 work trucks. No in/out activity assumed throughout day.

Table 2: Solar Project Trip Generation

Time Period	Daily Site Generated Trips (Conservative Estimate During Operations)									
	Number of Vehicles									
	Routine Maintenance			As-Needed Maintenance			Panel Cleaning			Total
	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	
24-Hour Period	2	1	1	2	1	1	20	10	10	24

Note: Represents a conservative estimate daily condition when maintenance and panel cleaning both occur during the same day.

5. Solar Project – Local Transportation Assessment Requirement

The City Guidelines state that a Local Transportation Assessment is required if a project is anticipated to generate net new trips of 100 or more during any peak hour, or 1,000 for any 24-hour period during the work week. A Local Transportation Assessment is not required since the solar project is anticipated to generate 24 daily trips, which is less than the 1,000-trip threshold.

6. Solar Project – VMT Assessment Requirement

City Guidelines were used to evaluate the need for a VMT assessment for the solar project. Land use projects that meet one or more of the screening thresholds documented in the City Guidelines can be presumed to result in a less than significant transportation impact under CEQA. These criteria include size, location, proximity to transit, or trip-making potential. **Table 3** documents the VMT screening criteria along with the detailed Project-specific evaluation for the solar project. As shown, the solar project meets the Project Size category, therefore it can be presumed to result in a less than significant transportation impact under CEQA.

Table 3: VMT Screening

Screening Category	Project Requirements to Meet Screening Criteria	Solar Project Assessment
Project Size	A project that generates 110 or fewer daily trips.	The solar project is anticipated to generate 24 daily project trips under a conservative estimate, which is less than the 110-trip threshold; therefore, the Project meets the Project Size screening criteria.
Locally Serving Retail	A project that has locally serving retail uses that are 50,000 square feet or less, including specialty retail, shopping center, grocery store, pharmacy, financial services/banks, fitness center or health club, restaurant, and café. If the project contains other land uses, those uses need to be considered under other applicable screening criteria.	Not Applicable
Project Located in a Low VMT Area	A residential or office project that is located in a TAZ that is already 15% below the AVPA Baseline VMT.	Not Applicable
Transit Proximity	A multifamily residential project providing higher density housing or a commercial project in an area already zoned for commercial use that is located within a ½ mile of the Metrolink station or within a ½ mile of a bus stop with service frequency of 15 minutes or less during commute periods.	Not Applicable
Affordable Housing	A residential project that provides affordable housing units; if part of a larger development, only those units that meet the definition of affordable housing satisfy the screening criteria.	Not Applicable
Transportation Facilities	Transportation projects that promote non-auto travel, improve safety, or improve traffic operations at current bottlenecks, such as transit, bicycle and pedestrian facilities, intersection traffic control (e.g., traffic signals or roundabouts), or widening at intersections to provide new turn lanes.	Not Applicable

Screening Criteria Source: City of Lancaster Department of Public Works **Local Transportation Assessment Guidelines** (January 5, 2021).

7. Summary

This technical memorandum evaluated the need for a Local Transportation Assessment and VMT assessment for the solar project component of the Lancaster Annexation project. As stated, this assessment applied only to the solar project. The following summarizes the findings:

1) **Solar Project Local Transportation Assessment Requirement** – A local Transportation Assessment is not required for the solar project since the estimated 24 average daily trips are less than the 1,000-trip threshold.
2) **Solar Project VMT Assessment Requirement** – The solar project meets the Project Size screening category as the 24 average trips per day are less than the 110-trip threshold. Therefore, a VMT assessment is not required as the solar project can be presumed to result in a less than significant transportation impact under CEQA.

Attachment A – Project Location & Site Vicinity Exhibits

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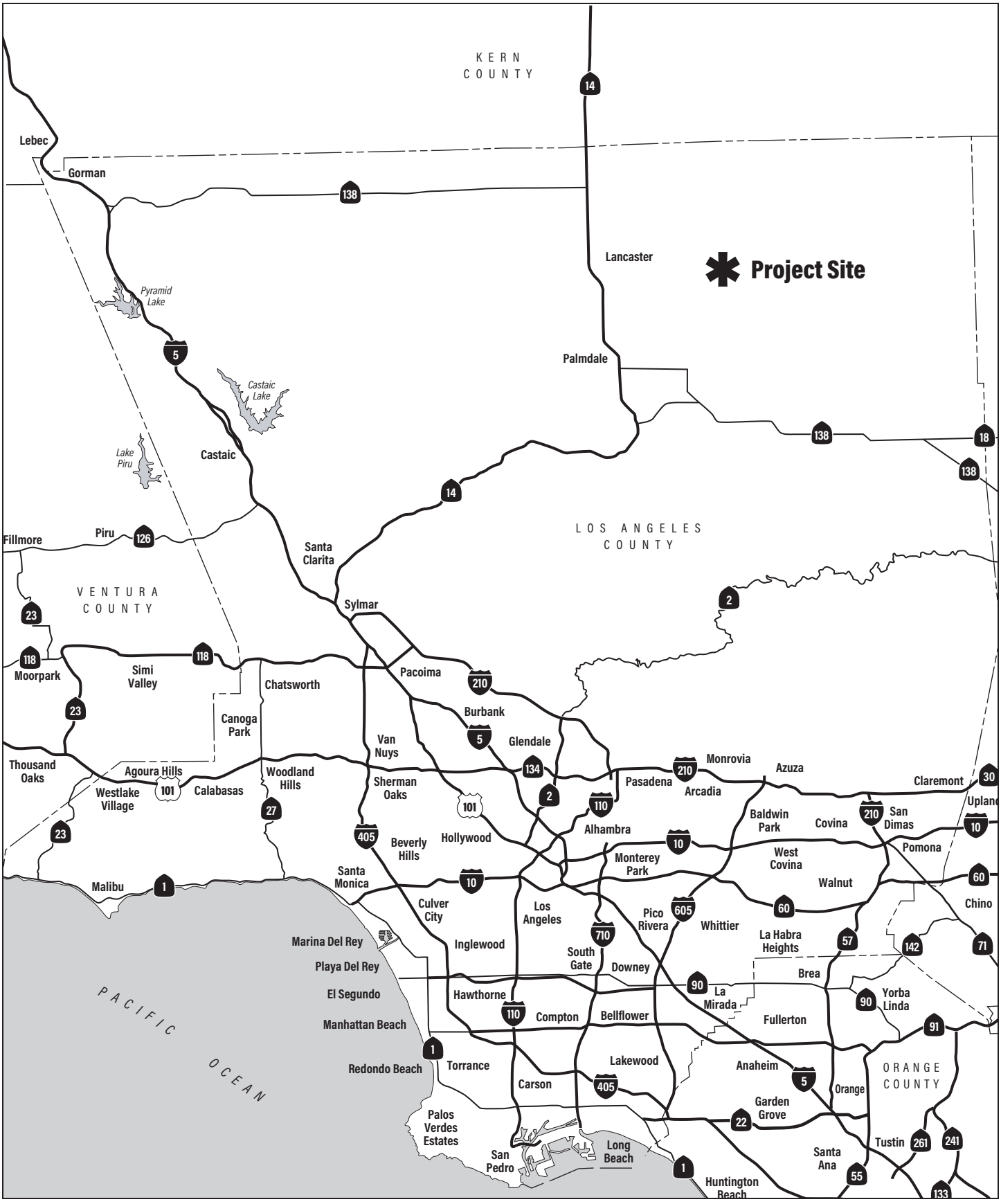

LANCASTER EASTSIDE ANNEXATION PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Regional Vicinity

Exhibit 1

Michael Baker INTERNATIONAL

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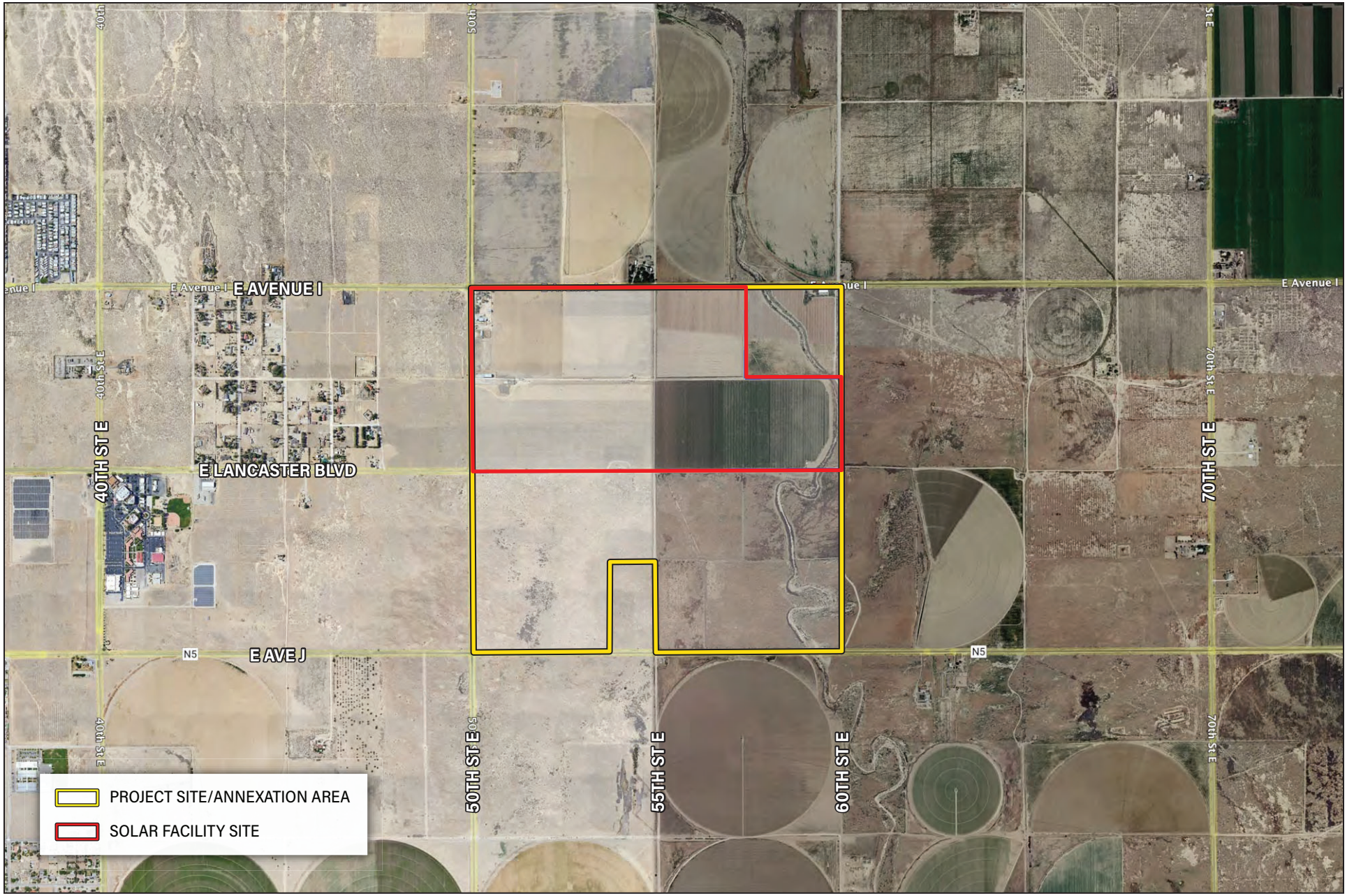

Source: Google Earth Pro, November 2023

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LANCASTER EASTSIDE ANNEXATION PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Site Vicinity

Exhibit 2

Michael Baker
INTERNATIONAL

Technical Memorandum

To: Kendall Brekke, City of Lancaster
Jocelyn Swain, City of Lancaster

From: Carla Dietrich, Michael Baker International

CC: Frances Yau, Michael Baker International

Date: June 12, 2024

Subject: Lancaster Eastside Annexation Project – Annexation Area VMT Assessment

1. Introduction

Michael Baker International (Michael Baker) is under contract with the City of Lancaster, California (City) to conduct the required project-related transportation studies for the proposed Lancaster Eastside Annexation Project and Solar Project (Project). Per the City's request, the Project evaluations include two components:

1) Annexation Project – A programmatic analysis of the annexation of an approximately 638-acre area in unincorporated Los Angeles County into City limits and pre-zoning the area as RR-2.5 (Rural Residential, 1 du/ac); and
2) Solar Project – A project-level analysis of the proposed solar facility project on the northern portion of the project site, which would require a Conditional Use Permit under the proposed RR-2.5 zone.

This memorandum focuses on the Annexation Project, specifically the vehicle miles traveled (VMT) assessment in support of the California Environmental Quality Act (CEQA) process. A separate memorandum has been prepared to document the solar facility project-level analysis requirements. The Project description provided in this memorandum includes information regarding the solar facility project for information purposes.

2. Project Information

Project Description

The Project site consists of two areas within unincorporated Los Angeles County:

1) An approximately 638-acre area referred to as the "annexation area".
2) An approximately 288-acre area within the annexation area referred to as the "solar facility site".

The annexation area is generally bound by East Avenue I to the north, 60th Street East to the east, East Avenue J to the south, and 50th Street East to the west. **Exhibit 1** shows the regional Project location and **Exhibit 2** is the Site Vicinity. Both exhibits are contained in **Attachment A**. Additionally, **Table 1** summarizes key Project information.

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Access	• Regional access: Antelope Valley Freeway (State Route 14 [SR-14]) • Local access: East Avenue I, East Lancaster Boulevard, East Avenue J, 60th Street East, and 50th Street East	
Proposed Use	The annexation area has a General Plan land use designation of NU (0.4-2.0 du/ac), which is consistent with the allowed density under the proposed RR-2.5 pre-zone (1 du/2.5 acres or 0.4 du/ac).	The solar facility is proposed on an approximately 288-acre, L-shaped site encompassing three parcels in the northern half of the annexation area. Under the proposed RR-2.5 zone, commercial solar electrical generation facilities are conditionally permitted. Thus, the solar facility would require a Conditional Use Permit (CUP).
Anticipated Opening Year	--	2030

Project Site Access

Regional access to the Project area is provided via the Antelope Valley Freeway (State Route 14 [SR-14]), which provides primary regional connectivity between the City and the greater Los Angeles area. Local access is provided via East Avenue I, East Lancaster Boulevard, East Avenue J, 60th Street East, and 50th Street East.

3. Methodology & Guidelines

The following documents have been utilized in the analysis:

- **Local Transportation Assessment Guidelines**, City of Lancaster Department of Public Works, January 5, 2021 (City Guidelines)
- **Technical Advisory on Evaluating Transportation Impacts in CEQA**, Governor's Office of Planning and Research (OPR), December 2018 (OPR Technical Advisory)
- **Vehicle Miles Traveled Mitigation Program, Program Environmental Impact Report,** Michael Baker International for the City of Lancaster, August 2022 (Mitigation Program EIR)

The City Guidelines were the primary resource used in the VMT assessment, in particular VMT calculation guidelines and threshold requirements. The OPR Technical Advisory was a secondary assessment resource. The Mitigation Program EIR was referenced to evaluate potential mitigation options.

4. VMT Assessment Methodology

This section describes the proposed modeling assumptions, inputs, and methodology to evaluate VMT for the Annexation Project. The VMT analysis was conducted using 2016 Southern California Association of Governments Regional Transportation Plan / Sustainable Communities Strategies (SCAG RTP/SCS) travel model (model).

Modeling Year (2040)

The SCAG RTP/SCS model's base year is 2016 and horizon year is 2040. This programmatic analysis of the annexation area was conducted using the 2040 model. For an analysis year of 2040, the Baseline socioeconomic data (SED) was obtained from the 2040 model dataset.

Modeling Methodology

The travel demand forecasting model uses traffic analysis zones (TAZ), which contains SED and other model inputs. The key land use inputs used in calculating VMT include population, number of households, and types of employment. The SCAG RTP model uses a two-tier traffic analysis zone (TAZ) system – Tier 1 zones and Tier 2 zones. Two or more Tier 2 zones make up a Tier 1 zone. The model utilizes Tier 2 zone system for modeling steps such as trip generation, trip distribution, and mode choice while it uses Tier 1 zone system for assignment purposes.

The Annexation Project area consists of an unincorporated area bounded by East Avenue I to the north, East Avenue J to the south, 50th Street East to the west and 60th Street East to the east. This area falls under Tier 2 TAZ 20334600 and Tier 1 TAZ 20334000. The Tier 1 zone covers the area between East Avenue E to the North, East Avenue J to the South, 50th Street East to the West, and 90th Street East to the East. The Tier 2 zone is bounded by East Avenue H to the North, East Avenue J to the South, 50th Street East to the West and 70th Street East to the East. **Exhibit 3** in **Attachment A** shows the area TAZ map.

Model Network

The SCAG RTP/SCS model is a mode-choice model which includes both roadway and transit network assumptions in the model. The RTP roadway network was used for this analysis, and no changes to roadway or transit network were made.

Model Runs and Convergence

Model runs were conducted for 2040 conditions for both without and with the Annexation Project with the above discussed SED and networks. Consistent to standard modeling practice, each model was run such that at least five loops were run or until a convergence of 0.01 (i.e., 1.0%) was achieved.

Analysis Scenarios

The analysis scenarios included in this assessment are described below in **Table 2**. Without Project and With Project refer to the Annexation Project land use change evaluation.

Table 2: Analysis Scenarios

Scenario	Boundary	Project Condition	Description
Baseline Condition	Without Annexation Area	Without Project	Identification of total future year Citywide VMT that assumes the annexed area would be located outside of the City and would remain consistent with the current County zoning (Agriculture).
Without Project Condition	With Annexation Area	Without Project	Future year model run to determine the Citywide VMT with the annexed area included in the calculation, but without the annexation land use change. Land use remains consistent with County zoning (Agriculture).
With Project Condition	With Annexation Area	With Project	Future year model run to determine the Citywide VMT with the annexed area included in the calculation of the Citywide VMT and the land use change from agriculture to the proposed residential (RR-2.5) zoning.

Model Socioeconomic Data

The model consists of both residential (households and population) and non-residential land uses (employment by type/category) as inputs. For households, the travel model uses household characteristics such as household income, household size, and household workers etc., to determine the household travel patterns.

The following SED related assumptions and characteristics were utilized and identified in the analysis:

- *Average Household Size* – Average household size from 2016 SCAG RTP/SCS model was reviewed along with the type of existing and proposed dwelling unit types. The average household size was based on the average household size for the adjacent TAZs in the area.
- *Household Income & Other* – Income, education, and other characteristics were based on the default model inputs for the parent zone.
- *Year 2040 TAZ Characteristics* – The Without Project model condition showed agricultural land use (no population, no households, and no employment) in the Project TAZ.

Table 3 provides household, population, and employment information for each of the analysis scenarios. Service population, which is the sum of population and employment, is also shown.

Table 3: Socioeconomic Data

Year 2040 Category	Project Information	Scenario		
		Baseline	Without Project	With Project
Total Households	255	66,536	66,536	66,791
Total Population	862	202,306	202,306	203,168
Total Employment	0	59,965	59,965	59,965
Total Service Population	862	262,271	262,271	263,133

5. VMT Assessment Results

Table 4 summarizes the Project VMT analysis results for each of the analysis scenarios. Per the City Guidelines and OPR Technical Advisory, no net change in VMT is the threshold by which an impact is to be determined. The change in land use and integration of the Annexation Project site into the City will result in a small increase to the total Citywide VMT (+14,878). A comparison of the With Project condition to the Baseline conditon equates to a VMT increase of 0.65%.

Table 4: VMT Calculation

Year 2040	Baseline	Without Project	With Project	Plan-to-Plan Comparison	Impact
Citywide Roadway VMT	2,282,928	2,288,299	2,297,806	+14,878	+0.65%

Mitigation measures can be considered to reduce the impact of the proposed annexation to less than significant. One potential method of reducing a VMT impact would be to modify the proposed land use in terms of either residential density or land use type. The densification of residential land use was not evaluated in detail since the Without Project agricultural development includes a zero residential baseline and any comparison to a zero baseline would result in some level of impact. Modification of the land use type to include retail and/or employment could be considered; however, this modification is not appropriate given the City's planning vision of the area.

As noted, the VMT analysis indicates that the proposed annexation and pre-zone of the area as RR-2.5 would result in an increase in Citywide VMT of 0.65%. However, no project-specific development is proposed as part of this annexation action and thus, no project-specific VMT mitigation (e.g., implementation of transportation demand management measures) can be applied. Nevertheless, on January 24, 2023, the City of Lancaster City Council adopted the Vehicle Miles Traveled Impact Fee Mitigation Program (VMT Mitigation Program) and certified the accompanying Final Program Environmental Impact Report (EIR), Findings, and Statement of Overriding Considerations. The VMT Mitigation Program allows developers to pay $150 per VMT to mitigate their VMT impacts and tier off of the Program EIR. As such, future developments that occur within the annexation area would be subject to project-specific CEQA review and approvals, including VMT analysis at a project-specific level. Should future projects within the Project site exceed the City's VMT thresholds, the projects would be able to tier from the Program EIR and mitigate their VMT impacts through the City's VMT Mitigation Program. As such, the proposed annexation would result in less than significant VMT impacts.

6. VMT Assessment Findings

The Annexation Project is projected to result in a small increase to the total Citywide VMT (+14,878). A comparison of the With Project condition to the Baseline condition equates to a VMT increase of 0.65%. Should future projects within the Annexation Project site exceed the City's VMT thresholds based on a project-specific analysis, the projects would be able to tier from the VMT Mitigation Program EIR and mitigate their VMT impacts through the City's VMT Mitigation Program; therefore, the Annexation Project would result in less than significant VMT impacts.

Attachment A – Project Location & Site Vicinity Exhibits

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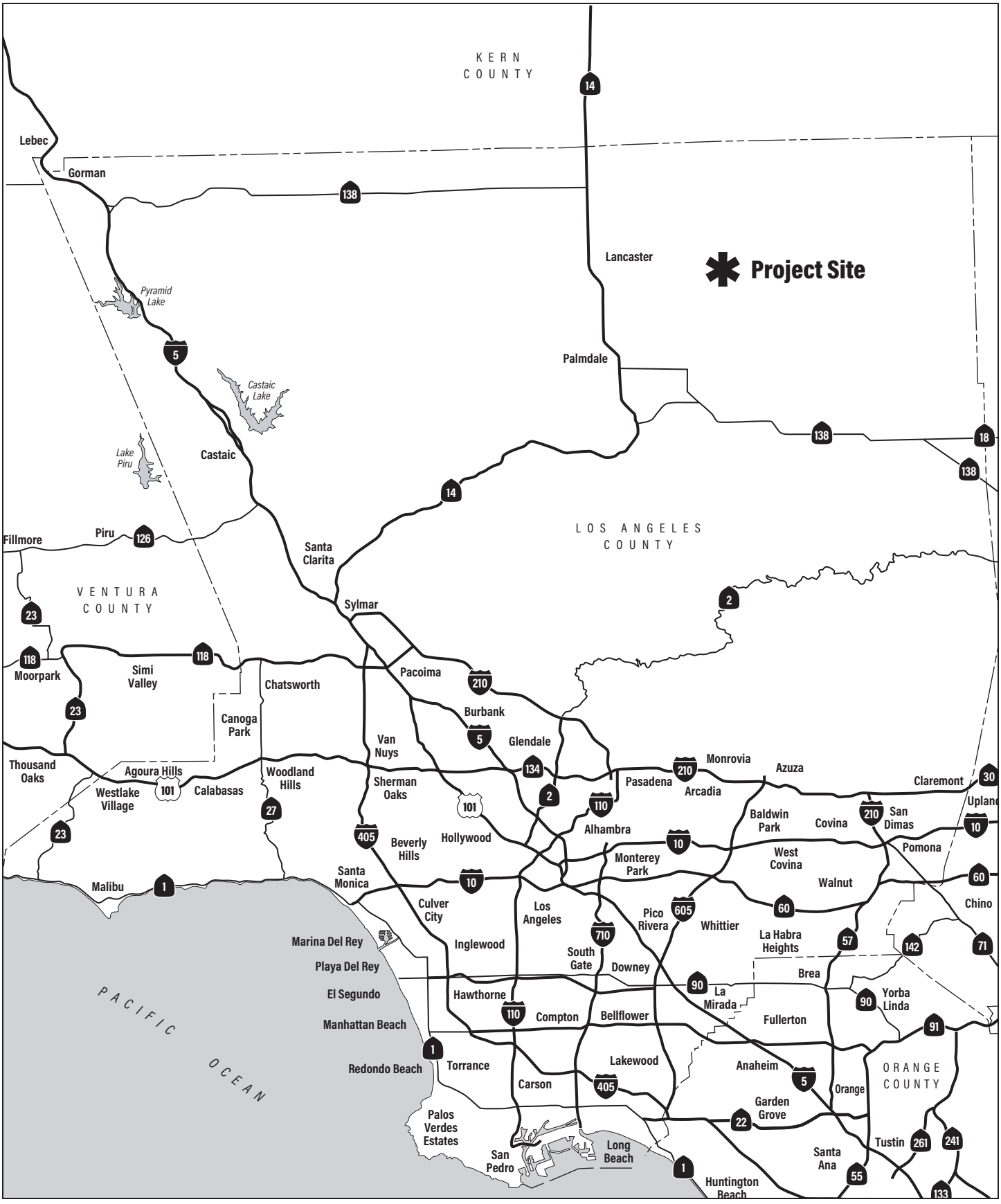

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INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Regional Vicinity

Exhibit 1

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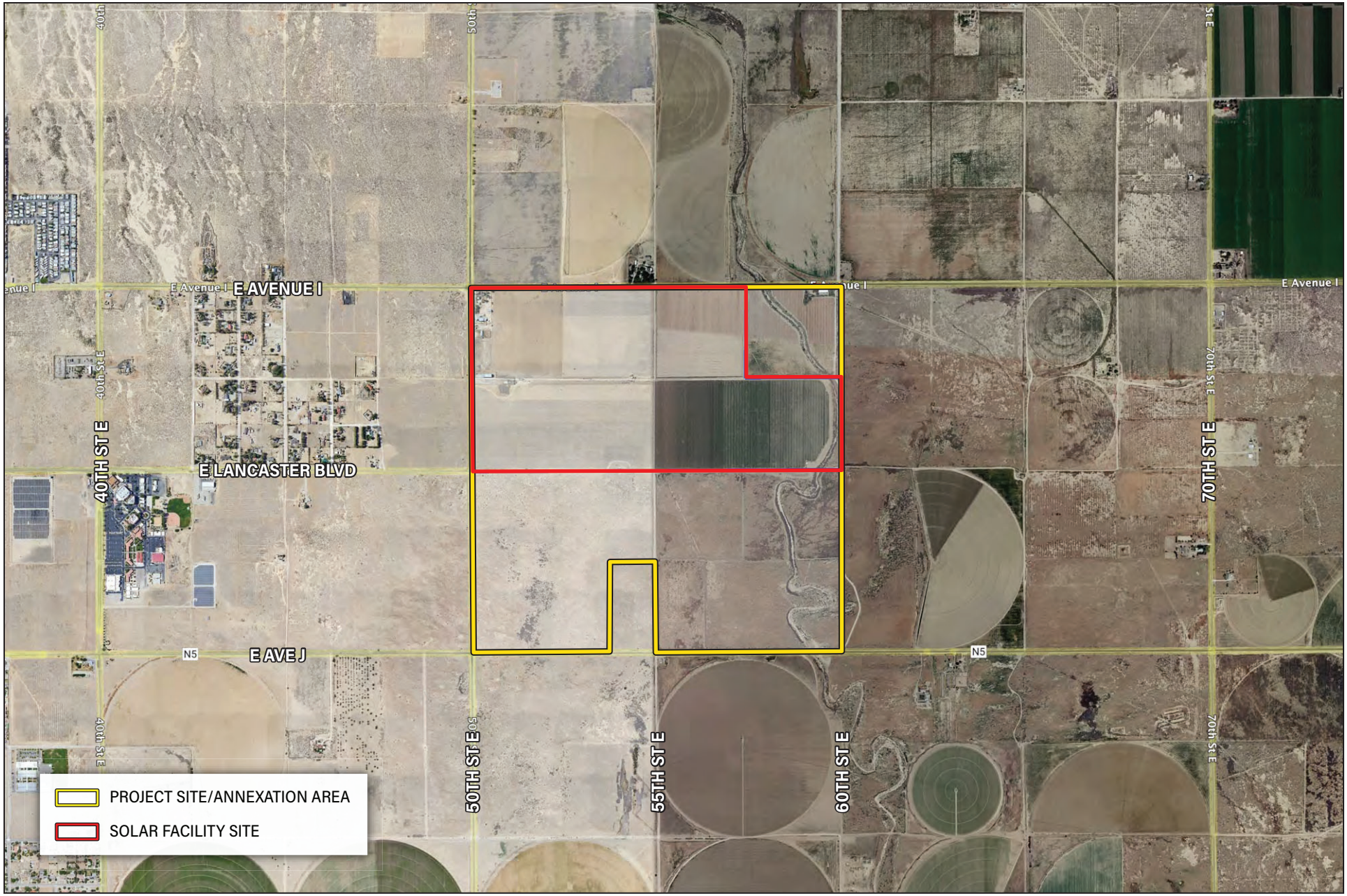

Source: Google Earth Pro, November 2023

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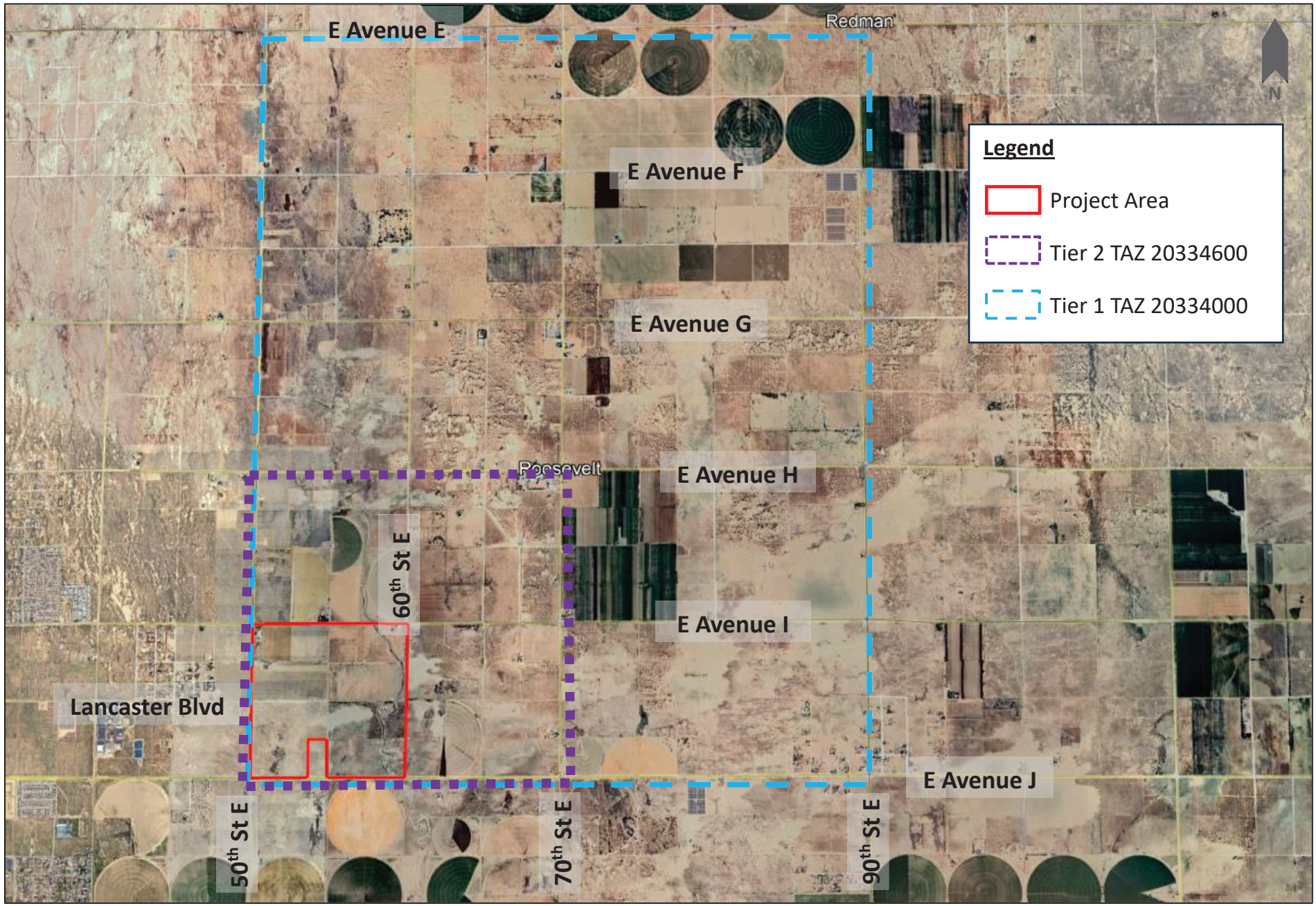
LANCASTER EASTSIDE ANNEXATION PROJECT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Site Vicinity

Exhibit 2



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Traffic Analysis Zone (TAZ) Map

Exhibit 3