County of San Diego

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TO: Jeff Smyser, Land Use/Environmental Planner III
FROM: Ricky Williams, Air Quality Specialist
SUBJECT: Tran Monastery, PDS2014-MUP-14-010 Air Quality Analysis
DATE: January 11, 2019

This memorandum summarizes the air quality emissions calculations for the Tran Monastery project (project). The project is proposing to expand an existing monastery through constructing an 8,272-square foot structure, including a small meditation room, large meditation room, a kitchen, bedrooms, social room with accommodations for up to four on-site residents at any one time. The project site is located at 715 Vista Avenue in Escondido. Air quality emissions were quantified based on data provided by the applicant.

Project construction is scheduled to begin in July 2019 and take approximately 6 months to complete, and project buildout is anticipated to be in 2020. Earthwork consists of 2.7 acres of grading, 13,000 cubic yards (c.y.) of cut, 500 c.y. of fill, and 12,500 c.y. of soil export. Short-term construction emissions would result from fuel combustion and exhaust from construction equipment and vehicle traffic (i.e., worker commute), and grading and site work. Grading activities associated with construction of the project would be subject to County of San Diego Grading Ordinance, which requires the implementation of dust control measures, and San Diego Air Pollution Control District (SDAPCD) Rule 55. SDAPCD Rule 55 requires the implementation of dust control measures such as application of water to graded/exposed surfaces and during loading/unloading activities, wheel-washing or other means to minimize track out dust on vehicles entering/leaving the project site, stabilization of dirt piles, and hydroseeding of graded areas to minimize dust emissions from exposed surfaces. The project would be required to water the site three times daily and replace ground cover in disturbed areas when they become inactive.

Analysis Guidelines

The County has established Guidelines for Determining Significance (Guidelines) which incorporate the SDAPCD's established screening-level thresholds (SLTs) for all new source review (NSR) in SDAPCD Rule 20.2 and Rule 20.3. These SLTs can be used as numeric limits to demonstrate that a project's total emissions (e.g. stationary and fugitive emissions, as well as emissions from mobile sources) would not result in a significant impact to air quality. Because SDAPCD does not have SLTs for emissions of volatile organic compounds (VOCs), the screening level from the South Coast Air Quality

Management District (SCAQMD) for the Coachella Valley (which is more appropriate for the San Diego Air Basin) is used. Based on these SLTs, a significant impact would result if any of the following would occur:

- The project would result in emissions that exceed 250 pounds per day of NO_x or 75 pounds per day of VOCs;
- The project would result in emissions of CO that, when totaled with the ambient concentration, would exceed a 1-hour concentration of 20 parts per million (ppm) or an 8-hour average of 9 ppm;
- The project would result in emissions of $PM_{2.5}$ that exceed 55 pounds per day;
- The project would result in emissions of PM_{10} that exceed 100 pounds per day and increase the ambient PM_{10} concentrations by 5 micrograms per cubic meter ($\mu g/m^3$) or greater at the maximum exposed individual.

Construction Analysis

Construction for the proposed project is anticipated to begin in July 2019 and take approximately 6 months to complete. The table below summarizes the expected construction schedule and number of pieces of equipment that would be used.

Table 1 Expected Construction Schedule and Construction Equipment

Equipment Type	Proposed Start Date	Proposed Completion Date	Quantity
Site Preparation	7/1/2019	7/5/2019	
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			1
Grading	7/8/2019	7/26/2019	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Paving	7/29/2019	8/2/2019	
Pavers			2
Paving Equipment			2
Rollers			2
Building Construction	8/5/2019	12/31/2019	
Cranes			1
Forklifts			3
Generator Set			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	12/23/2019	12/31/2019	
Air Compressor			1

Source: Ldn Consulting, Inc. 2017. *Global Climate Change Analysis: Tran Monastery Major Use Permit.* Adjusted to reflect construction timeline beginning in July 2019.

Short-term construction-related emissions of criteria air pollutants and precursors were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2

computer program.[1] Modeling was based on project-specific information (e.g., building type and size), where available, and default values in CalEEMod that are based on the project's location, land use type, and type of construction. Consistent with SDAPCD Rule 67.0.1, nonresidential interior paint would not exceed flat coating limits (i.e., 50 grams per liter [g/L] VOC), exterior paint would not exceed non-flat coating limits (i.e., 100 g/L VOC), and a small portion of exterior trim paint and other minor paint finishes would not exceed non-flat high-gloss coating limits (i.e., 150 g/L VOC). It was conservatively assumed in CalEEMod that all nonresidential interior and exterior architectural coating would be 150 g/L VOC.

Table 2 presents the maximum daily criteria air pollutant and precursor emissions resulting from the construction of the project.

Table 2 Maximum Daily Estimated Construction Criteria Air Pollutant and Precursor Emissions (pounds per day)[1]

Year	VOC	NOx	CO	SO_X	PM_{10}	$PM_{2.5}$
2019	21	64	28	<1	6	3
Maximum Daily Emissions	**21**	**64**	**28**	**<1**	**6**	**3**
Screening-Level Threshold	75	250	550	250	100	55
Exceeds Screening-Level Threshold?	No	No	No	No	No	No

Notes: CO = carbon monoxide; NOX = nitrogen oxides; PM10 = respirable particulate matter; PM2.5 = fine particulate matter; SO2 = sulfur dioxide; VOC = volatile organic compounds
[1]The maximum daily emissions are obtained from the summer scenario.

Source: Modeling conducted by the County of San Diego in 2019.

Operational Analysis

Operational emissions from all sources were estimated at full buildout of the project, which would occur as early as 2020. CalEEMod Version 2016.3.2 was used to estimate long-term operational emissions of criteria air pollutants and precursors from area sources (i.e., consumer products, architectural coatings, and landscape maintenance equipment use), energy consumption (i.e., electricity and natural gas consumption), and mobile sources. CalEEMod default values incorporate the current 2016 Title 24 standards that would apply to the project. Long-term building maintenance requires reapplication of architectural coatings; therefore, it was conservatively assumed in CalEEMod that all nonresidential interior and exterior architectural coating would be 150 g/L VOC. Mobile source emissions were estimated with default trip lengths included in CalEEMod. Trip generation rates from the project's traffic study were used to estimate Sunday trip rates and adjusted for weekday and Saturday trip rates based on the ratio of CalEEMod default

[1] California Air Pollution Control Officers Association. 2016. *California Emissions Estimator Model Version 2016.3.2.* Available: http://caleemod.com/. Accessed January 11, 2019.

trip rates for these rates compared to the default Sunday rate. Based on the project-specific traffic study, the project would generate up to 108 daily trips on Sundays.[2]

Table 3 presents the maximum daily and annual criteria air pollutant and precursor emissions resulting from the operation of the project.

Table 3 Maximum Daily and Annual Estimated Operational Criteria Air Pollutant and Precursor Emissions

Category	VOC	NOx	CO	SO_X	PM_{10}	$PM_{2.5}$
pounds per day[1]						
Area	<1	<1	<1	0	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	<1	<1	2	<1	<1	<1
Total	**<1**	**<1**	**2**	**<1**	**<1**	**<1**
Screening-Level Threshold	75	250	550	250	100	55
Exceed Screening-Level Threshold?	No	No	No	No	No	No
tons per year						
Area	<1	<1	<1	0	0	0
Energy	<1	<1	<1	<1	<1	<1
Mobile	<1	<1	<1	<1	<1	<1
Total	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
Screening-Level Threshold	13.7	40	100	40	15	10
Exceed Screening-Level Threshold?	No	No	No	No	No	No

Notes: CO = carbon monoxide; NOX = nitrogen oxides; PM10 = respirable particulate matter; PM2.5 = fine particulate matter; SO2 = sulfur dioxide; VOC = volatile organic compounds.
Columns may not add up due to rounding.
[1]The maximum daily emissions are obtained from the winter scenario.

Source: Modeling conducted by the County of San Diego in 2019.

Conclusion

As shown in Tables 2 and 3, project construction and operational criteria air pollutant and precursor emissions would not exceed the SDAPCD SLTs for any criteria air pollutants or precursors.

[2] Linscott, Law & Greenspan, Engineers. 2014 (July). *Tran Monastery – Traffic Letter Report.*

Attachment A
CalEEMod Calculations