Appendix M-2B

VMT Alternatives Analysis

February 24, 2022

Mr. Dan Fairbanks
March Joint Powers Authority
14205 Meridian Parkway, Suite 140
Riverside, CA 92518

SUBJECT: GATEWAY AVIATION D-1 VEHICLE MILES TRAVELED (VMT) ALTERNATIVES ANALYSIS

Dear Mr. Dan Fairbanks:

The following Vehicle Miles Traveled (VMT) Alternatives Analysis has been prepared for the proposed Gateway Aviation D-1 (**Project**), which is located in the southeastern portion of the March Air Reserve Base, west of Heacock Street, and south of Krameria Avenue in the March Joint Powers Authority (March JPA) jurisdiction. The purpose of this alternatives analysis is to evaluate potential changes in VMT for four (4) land use alternatives.

PROJECT ALTERNATIVES VMT ANALYSIS

The following 4 land use alternatives are evaluated as part of this analysis:

- Alternative 1: Nighttime Flight Noise Reduction Alternative
- Alternative 2: Reduced Flight Alternative
- Alternative 3: Private Aircraft Services Alternative
- Alternative 4: No Action Alternative

Each alternative has been estimated using the same methodology and procedures outlined by OPR's Technical Advisory and the WRCOG Guidelines, which calls for the use of the current RIVCOM travel demand model to estimate VMT by alternative.

ALTERNATIVE 1: NIGHTTIME FLIGHT NOISE REDUCTION ALTERNATIVE

Under Alternative 1, the Nighttime Flight Noise Reduction Alternative, buildout of the Proposed Action/Proposed Project area would occur in an identical manner to the Proposed Action/Proposed Project. Thus, Alternative 2 would result in the development of the Air Cargo Center Component and the Off-Site Component, as discussed in Chapter 2, Proposed Action/Proposed Project Description. The cargo building, and all proposed taxiway and aircraft parking apron improvements, utility improvements, landscaping, and internal driveways/parking lots would be constructed in the exact same manner as the Proposed Action/Proposed Project. In addition, all off-site work proposed by the Proposed Action/Proposed Project, including the work to be completed in Work Areas 1 through 5, as well as the work within the right-of-way along Heacock Street, would occur under this alternative.

The operational aspects of the cargo building would remain the same as those identified for the

Proposed Action/Proposed Project. Regarding flight operations, once constructed, this Alternative would average 17 flights per day, with flights would occur 6 days a week, the same as the Proposed Action/Proposed Project. During the holiday season, increased flight operations would be anticipated (estimated to result in an additional 256 flights over a 4-week period), the same as the Proposed Action/Proposed Project. Total annual flight operations would remain at 10,608 operations, the same as the Proposed Action/Proposed Project. However, under this Alternative, no flight operations would occur between the hours of 10 p.m. and 11 p.m. (approximately 5% of Proposed Action/Proposed Project's proposed flight operations). Thus, flight operations under Alternative 1 would only occur during the hours of 7 a.m. to 9:59 p.m.

Alternative 1 would not alter or change the VMT findings of the Proposed Action/Proposed project.

ALTERNATIVE 2: REDUCED FLIGHT ALTERNATIVE

Under Alternative 2, Reduced Flight Operations Alternative, buildout of the Proposed Action/Proposed Project area would occur in an identical manner to the Proposed Action/Proposed Project. Thus, Alternative 2 would result in the development of the Air Cargo Center Component and the Off-Site Component Proposed Action/Proposed Project Description. The cargo building, and all proposed taxiway and aircraft parking apron improvements, utility improvements, landscaping, and internal driveways/parking lots would be constructed in the exact same manner as the Proposed Action/Proposed Project. In addition, all off-site work proposed by the Proposed Action/Proposed Project, including the work to be completed in Work Areas 1 through 5, as well as the work within the right-of-way along Heacock Street, would occur under this alternative.

Under this Alternative, annual flight operations would be reduced by 10 percent, resulting in the total annual operations of 9,548 flights. Flight operations would occur during the same hours as the Proposed Action/Proposed Project. The operational aspects of the cargo building would also be reduced by 10% as those identified for the Proposed Action/Proposed Project.

Alternative 2 would reduce the operations by 10 percent, which would reduce the number employees for the Project Alternative by 10 percent as well. As shown in table 1 the Alternative 2 VMT per employee is 23.09.

TABLE 1: ALTERNATIVE 2 VMT PER EMPLOYEE

	Alternative 2
VMT	3,117
Employment	135
VMT per Employee[1]	23.09

[1] HBW VMT per Employee is a measure of all auto trips between home and work and does not include heavy duty truck trips or freight, which is consistent with OPR guidance.

ALTERNATIVE 3: PRIVATE AIRCRAFT SERVICES ALTERNATIVE

Under Alternative 3, the Private Aircraft Services Alternative, a private aircraft terminal facility would be constructed within the same building footprint as the cargo building proposed by the Proposed Action/Proposed Project. The private aircraft terminal facility would be used to provide either a new operation or an expansion of the private jet service facilities located to the south of the Proposed Action/Proposed Project site, to allow for an increase in the use of private jet services from the March Inland Port Airport. With the construction of a private aircraft terminal facility, the 9 grade-level loading doors, 31 truck dock positions, and 37 trailer storage positions proposed by the Proposed Action/Proposed Project would not be constructed. Development under this alternative would include construction of a tarmac and parking apron, allowing for aircraft to access the terminal facility. This would include construction of a new taxilane (Taxilane J) that would provide aircraft access to the existing Taxiway A within March ARB. This Alternative would also include an expansion of Taxiway G and construction of a parking apron adjacent to the western boundary of the terminal facility. The proposed tarmac expansion, Taxilane J, and parking aprons would be sized to accommodate private jet aircraft and would be paved to meet Federal Aviation Administration (FAA) standards. Access to the Proposed Action/Proposed Project site, as well as the terminal facility, would be constructed in the same manner as that proposed by the Proposed Action/Proposed Project. In addition, all off-site work proposed by the Proposed Action/Proposed Project, including the work to be completed in Work Areas 1 through 5, as well as the work within the right-of-way along Heacock Street, would occur under this Alternative.

Once operational, Alternative 3 would accommodate private aircraft, rather than commercial aircraft. In addition, because there would be no air cargo facility constructed under this Alternative, no air cargo would be transported to or from the Proposed Action/Proposed Project site, eliminating the movement of goods-distribution trucks to and from the Proposed Action/Proposed Project site. Annual flights under this Alternative would remain the same as the Proposed Action/Proposed Project; however, flight operations would not occur between the hours of 10 p.m and 11 p.m. (approximately 5% of Proposed Action/Proposed Project's proposed flight operations).

Alternative 3 proposes to remove the air cargo facility. For the purposes of this alternative, the employment will be based on ground crew operations. It is reasonable to assume the flight crew will arrive to the project site from other destinations to provide inflight operations by air, thus not contributing to VMT impacts. The Alternative 3 proposes to reduce its flight operations by 5%. Based on the John Wayne Airport General Aviation Improvement Program Traffic Impact Analysis (April 2018, Austin Transportation Consulting) (**GAIP**) trip generation rates for 9,558 annual flights equates to approximately 104 daily vehicle trips and subsequently resulting in approximately 20 ground crew employees. Table 2 shows the Alternative 3 VMT per employee of 22.30.

TABLE 2: ALTERNATIVE 3 VMT PER EMPLOYEE

	Alternative 3
VMT	446
Employment	20
VMT per Employee[2]	22.30

ALTERNATIVE 4: NO ACTION ALTERNATIVE

The No Project/No Development Alternative considers no development on the Project site beyond that which occurs under existing conditions. As such, the entire site would remain vacant and undeveloped, and no improvements would be made to the Project site.

ALTERNATIVE SCENARIOS VMT COMPARISON

Each of the land use alternatives (with the exception of the Alternative 1 and Alternative 4) has been modeled using the RIVCOM travel demand model to estimate VMT. Table 3 summarizes the results for each scenario.

TABLE 3: PROJECT VMT COMPARISONS WITH WRCOG VMT PER EMPLOYEE

	Proposed Project	Alternative 1: Nighttime Flight Noise Reduction Alternative	Alternative 2: Reduced Flight Alternative	Alternative 3: Private Aircraft Services Alternative	Alternative 4: No Action Alternative
VMT	3,546	3,546	3,117	446	0
Employee	150	150	135	20	0
VMT per Employee	23.64	23.64	23.09	22.30	0
15% below WRCOG Regional Average	25.47	25.47	25.47	25.47	25.47
Significant?	No	No	No	No	No

Project generated VMT and VMT per employee for all the Alternatives would be below the Technical Advisory's recommended impact threshold and result in a less than significant impact.

[2] HBW VMT per Employee is a measure of all auto trips between home and work and does not include heavy duty truck trips or freight, which is consistent with OPR guidance.

If you have any questions, please contact me directly at (949) 660-1994.

Respectfully submitted,

URBAN CROSSROADS, INC.

Alex So
Senior Analyst