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Arizona Department of Transportation

Environmental Planning

DRAFT REPORT
Air Quality Technical Report

I-10, Jct I-19 to Kolb Road and SR210, Golf Links Road to I-10

Federal Project No. 010-E(210)S
ADOT Project No. 010 PM 260 H7825 01L

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Draft Air Quality Technical Report
FOR
I-10, Jct I-19 to Kolb Road and SR210, Golf Links Road to I-10

Federal Project No. 101-E(210)S
ADOT Project No. 010 PM 260 H7825 01L

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Executive Summary

The Interstate 10 (I-10) from the junction of I-19 to Kolb Road and the extension of the Barraza-Aviation Parkway (State Route 210 [SR 210]) from Golf Links Road to I-10 Project is located in the city of South Tucson, the city of Tucson, and unincorporated Pima County. Two alternatives, System I and System IV, were screened from a total of eight alternatives evaluated in the feasibility study that also included System II, III, IIIa, IIIb, and IIIc alternatives as well as a no-build alternative.

The System I alternative would extend SR 210 to the south, generally along Alvernon Way, to intersect with I-10 east of the existing Alvernon Way traffic interchange (TI). Under this alternative, I-10 would be widened to include the following:

- Four lanes in each direction from I-19 to Kino Parkway
- Three lanes in each direction from Kino Parkway to Alvernon Way
- Five lanes in each direction west of Alvernon Way

Modifications to TIs at Park Avenue, Kino Parkway, Craycroft Road, Valencia Road, and Alvernon Way to maximize weaving distances, the removal of the Palo Verde Road TI and the addition of a TI at Country Club Road are also proposed.

The System IV alternative would also extend SR 210 to the south, generally along Alvernon Way, and proposes the same modifications to TIs and the addition of a TI at Country Club Road proposed for Alternative I. Alternative IV would widen I-10 from the I-19 junction to Kolb Road with the addition of two-lane collector-distributor roadways running parallel to the existing three-lane freeway mainline.
Figure ES-1 shows the project area.

Requirements of the air quality analysis are separated into the following four criteria areas:

- The impacts on air quality during construction were assessed qualitatively based on the expected construction activities and potential mitigation.
- The impacts of project operation were assessed by comparing the system alternatives-affected intersections to the no-build alternative level of service (LOS) and qualitatively describe the improvement in LOS that would result in equal or lesser impacts compared to the no-build alternative.
- The impacts from mobile source air toxics (MSATs) were addressed quantitatively based on projected traffic volumes and resultant MSAT emissions and potential mitigation.
- The impacts of project operation on climate change were assessed qualitatively based on the projected traffic volumes and resultant greenhouse gas (GHG) emissions.

The results of the quantitative MSAT and GHG analyses for the modeled scenarios of existing conditions (2017) and analysis year (2045) are presented in Tables ES-1 and ES-2, respectively.

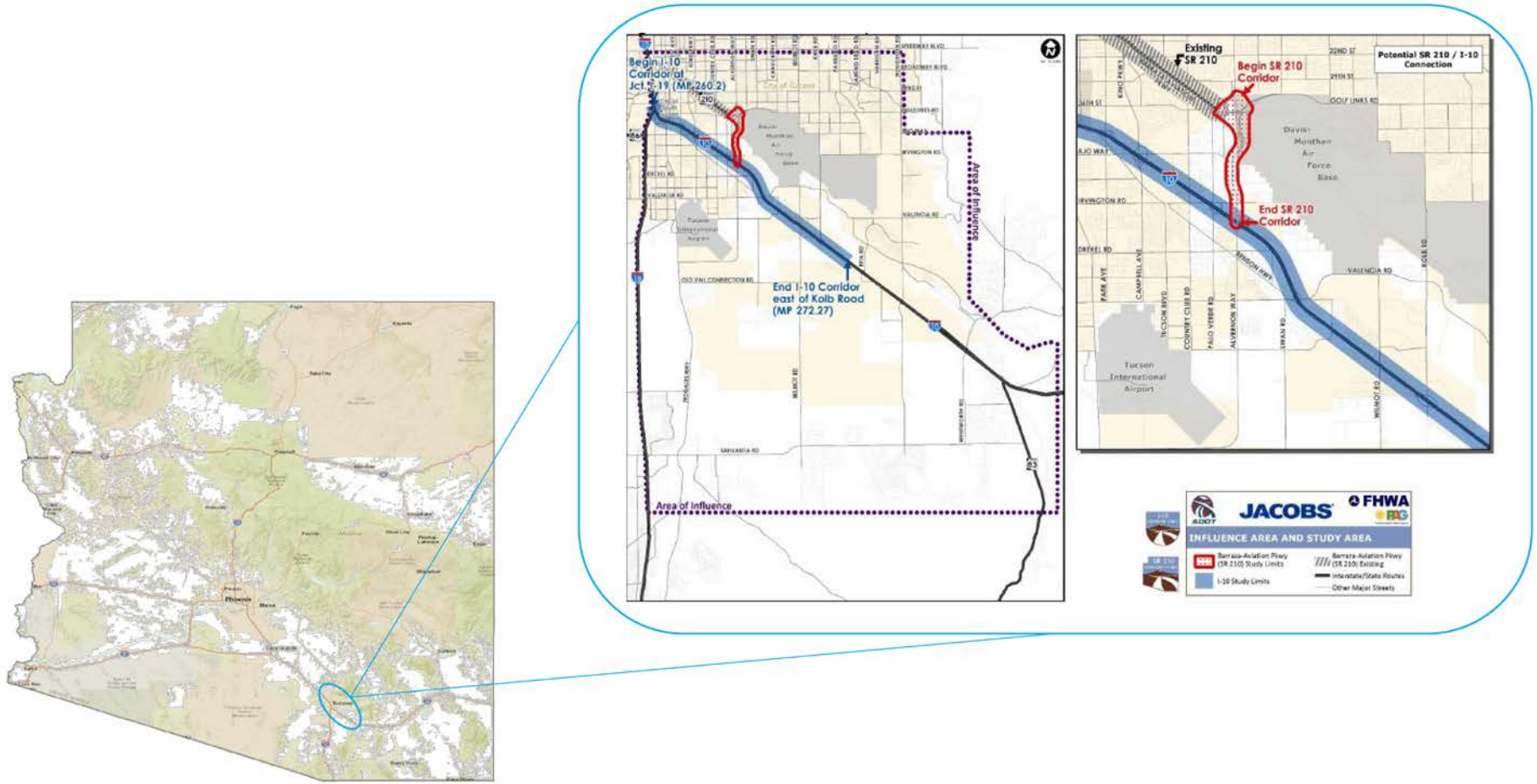

Figure ES-1. Project Area

Table ES-1. Predicted MSAT Emissions

Pollutant	Predicted MSAT Emissions (tons/year)				% Change from No-Build		% Change from Existing	
	2017 Existing	2045 No-Build	2045 System I	2045 System IV	2045 System I	2045 System IV	2045 System I	2045 System IV
1,3-Butadiene	2.8	0.0	0.0	0.0	-12.9%	-12.9%	-99.6%	-99.6%
Acetaldehyde	6.7	2.3	2.1	2.1	-9.1%	-9.1%	-69.2%	-69.2%
Acrolein	0.9	0.3	0.3	0.3	-9.5%	-9.5%	-68.0%	-68.0%
Benzene	40.1	12.8	12.1	12.2	-5.0%	-4.8%	-69.8%	-69.7%
Diesel PM	24.9	6.4	5.7	5.7	-9.9%	-9.9%	-77.0%	-77.0%
Ethyl Benzene	26.8	12.9	12.4	12.5	-3.8%	-3.1%	-53.6%	-53.3%
Formaldehyde	15.1	6.2	5.6	5.6	-9.8%	-9.8%	-63.0%	-63.0%
Naphthalene	2.0	0.6	0.6	0.6	-8.6%	-8.6%	-70.9%	-70.9%
Polycyclic Organic Matter	0.8	0.2	0.2	0.2	-3.8%	-3.8%	-74.5%	-74.5%
Total MSATs	**120.2**	**41.7**	**39.0**	**39.2**	**-6.4%**	**-6.1%**	**-67.5%**	**-67.4%**

Table ES-2. Predicted GHG Emissions

Precited CO_2e Emissions				% Change from No-Build		% Change from Existing	
2017 Existing	2045 No-Build	2045 System I	2045 System IV	2045 System I	2045 System IV	2045 System I	2045 System IV
2,244,662	2,075,355	1,974,387	1,974,386	-4.9%	-4.9%	-12.0%	-12.0%

CO_2e = carbon dioxide equivalent

As shown in Table ES-1, there is a substantial decrease in MSAT emissions in 2045 from existing year to analysis year for all alternatives because of engine technology advancements and cleaner vehicle power alternatives included in the Motor Vehicle Emission Simulator (MOVES) emissions development. The 2045 build scenarios are predicted to have a slight decrease in emissions from the 2045 no-build condition of approximately 5 percent. The two build conditions are predicted to have very similar emission profiles because of their similar traffic volumes and the low emission factors developed by MOVES for year 2045 requiring a greater difference in traffic data to yield a noticeable change.

Similarly, in Table ES-2, the build year scenarios are predicted to have a 7 percent decrease of CO_2e emissions from the no-build year scenario and an even greater decrease when compared to the existing year.

Overall, the project would have minimal impacts from construction activities, MSAT emissions, and GHG. Proposed project-related emissions would not have an adverse effect on neighboring Class I areas or ambient air quality or cause a violation of the carbon dioxide National Ambient Air Quality Standards.

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