



To:	Beverly Chenausky, ADOT	Project Name:	State Route 303 Loop (Estrella) MC 85 – Van Buren Street
From:	Simran Singh and David Shu, AZTEC	Project Number:	Project No. 303L MA 99 H6870 01C Federal No. RARF-303-A(ASO)T
Date:	April 3, 2024	Subject:	Air Quality Re-evaluation due to Temporary Connector to MC 85

1. Introduction and Project Re-Evaluation

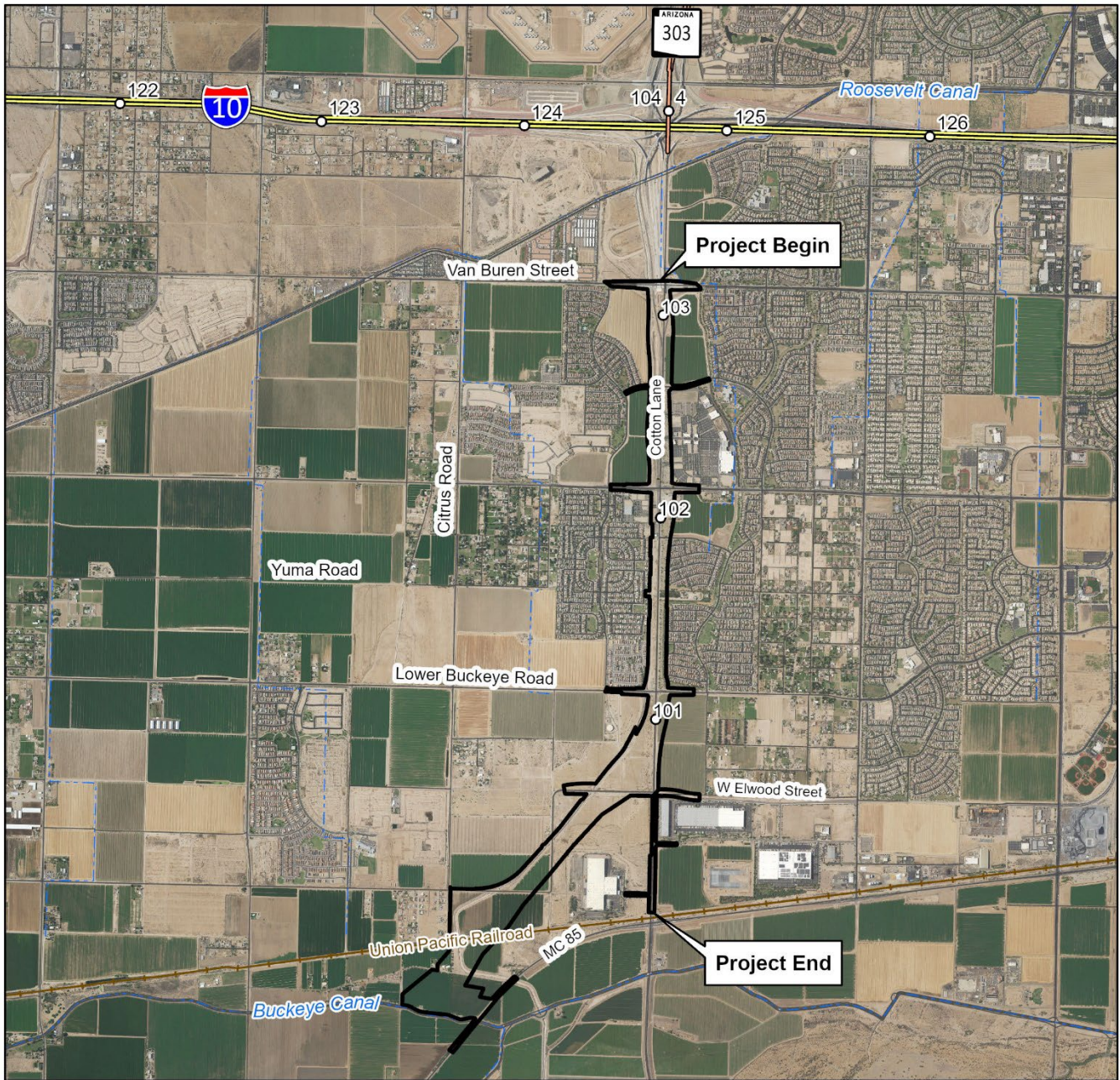
1.1 Introduction

The purpose of this memorandum is to provide an air quality re-evaluation for the State Route 303 Loop (Estrella), MC 85 – Van Buren Street project during final design. Figure 1 shows the project vicinity and construction limits, and Figure 2 shows the proposed final design outline. Air quality analyses were conducted as part of the 2018 State Route (SR) 303 Loop (303L) (Project), State Route 30 (SR30) to I-10 (Maricopa Freeway) Final Environmental Assessment (EA) and Section 4(f) Evaluation. The final design project limits fall within the Study Area of the Final SR 303L, SR30 to I-10 EA limits [FA No. STP-303-A(ASO)S] for which a FONSI was approved by the Federal Highway Administration (FHWA) on November 6, 2018. The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by ADOT pursuant to 23 U.S.C. 23 U.S.C. 327 and a Memorandum of Understanding dated April 16, 2019 and executed by FHWA and ADOT.

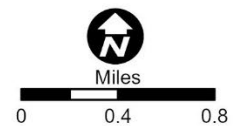
This memorandum is to support the NEPA reevaluation, under the MOU, “Pursuant to 23 U.S.C. 327(a)(2)(B)(iv)(II), for any project requiring a project-level conformity determination under the Clean Air Act and its implementing regulations, FHWA's Arizona Division Office will document the project level conformity determination within a reasonable timeframe. The FHWA's Arizona Division Office will restrict its review to only that data, analyses, applicable comments and responses, and other relevant documentation that enable FHWA to make the project-level conformity determination.” Any project-level conformity determinations will be provided as a separate action by FHWA.



Figure 1. Project Vicinity Map

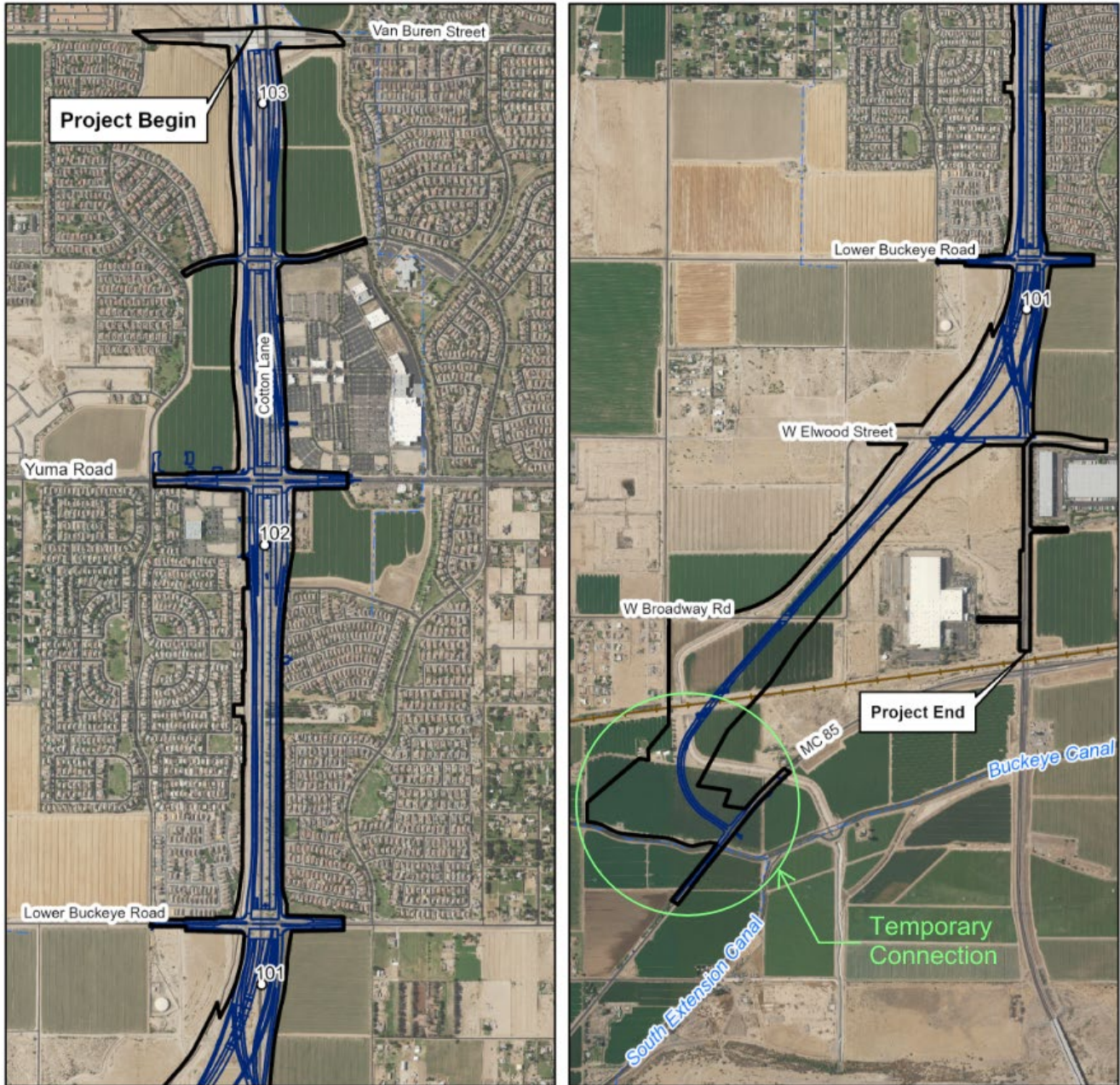


Source: ADOT ATIS (2013); ASLD Steams (1993); AZTEC (2024)



Map Disclaimer: This map is intended for general siting purposes only.

Figure 2. Final Design Outline



Source: ADOT ATIS (2013); ASLD Steams (1993); AZTEC (2024)

- Interim Design
 - Local Roads
 - o Mileposts
 - ~ Drainage
- Project Design Outline



Map Disclaimer: This map is intended for general siting purposes only.



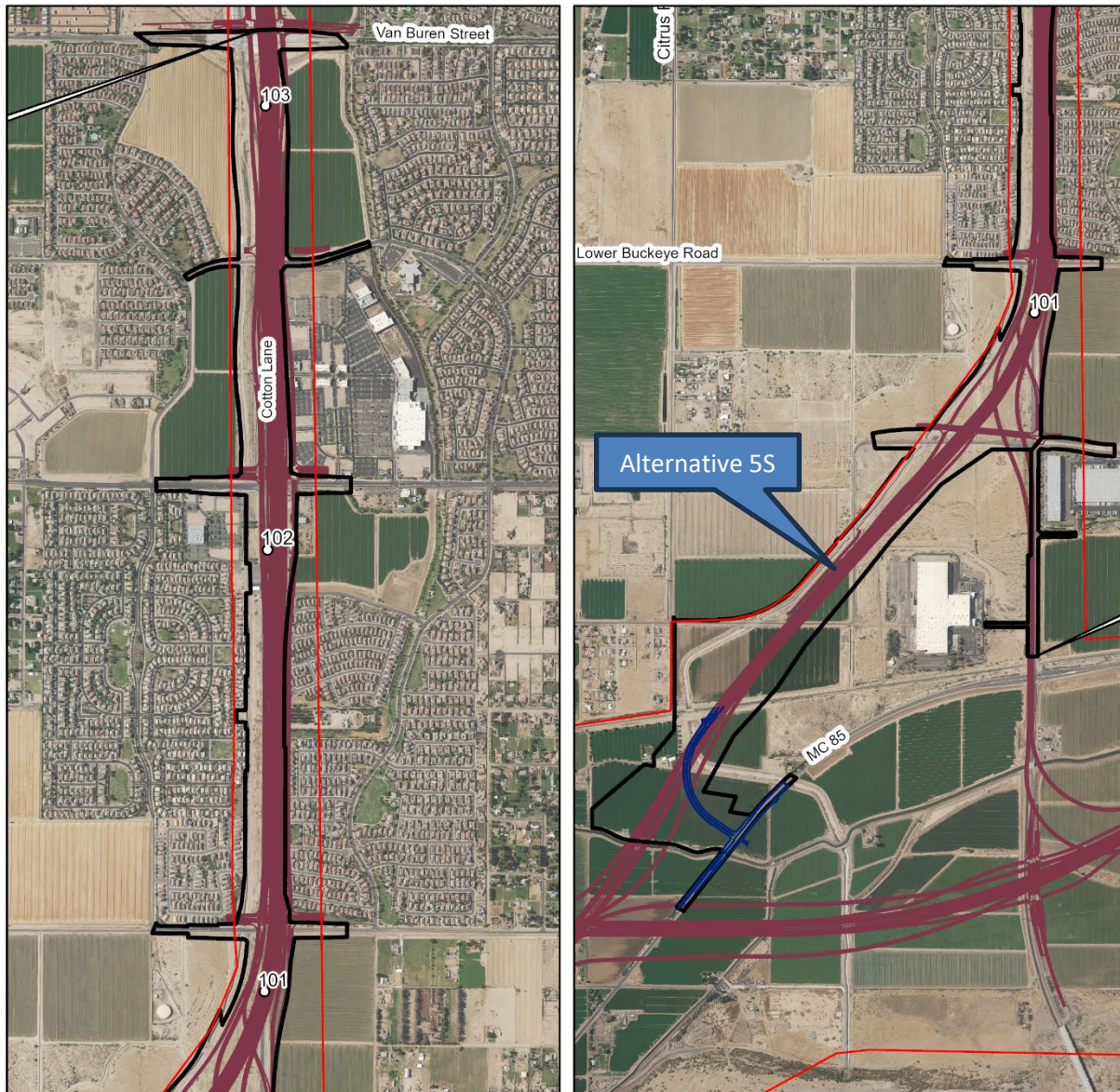
1.1.1 Background

From previous environmental documentation, the project area was evaluated for potential environmental impacts of the proposed project and its alternatives through a Final EA in accordance with the National Environmental Policy Act of 1969 (NEPA). The EA's study area included residential, farmland, and commercial land uses south of I-10, 18 miles west of downtown Phoenix, bounded to the North by I-10 and Gila River to the South. For Phase 1 of the project, an alternative selection report identified potential corridors for further environmental analysis. During Phase 1, 5 alternative design corridors were identified. During Phase 2, a Location and Design Concept Report (L/DCR) associated with the projects EA refined two selected alternatives and recommended a build alternative option with an implementation plan. These selected alternatives include the projects air quality reevaluation study area, which were previously identified in the EA.

1.1.2 Overview of Alternatives

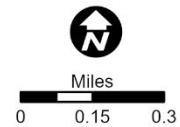
Alternatives 2C and 5S were chosen from the L/DCR phase and used as the study area in the EA. Alternative 2C proceeds southwest of Cotton Lane at Lower Buckeye Road to midway between 175th avenue and Citrus Road, where it then turns south and continues to SR 30. Alternative 5S is a hybrid of Alternative 2C and Alternative 3 alignment, leaving SR 303L along the 2C alignment, while the south-to-east and west-to-north ramps of SR 303L/SR 30 stack TIs in Alternative 3's alignment. This creates a TI split, with two directional ramps south-to-east and west-to-north along Cotton Lane and traffic movements occurring along the Alternative 2C interchange. The ADOT SR 303L Air Quality Report study area included the proposed SR 303L MC 85 – Van Buren Street project area, and an intersection screening analysis was performed based upon changes to level of service (LOS) and intersection volumes for the No Build and Build Alternative 5S scenario in the SR 303L Air Quality Report. This memo discusses the design changes between the EA and the proposed SR 303L, MC 85 – Van Buren Street project and compares the LOS volumes and intersection volumes of the ADOT SR 303L Air Quality Report with a design year of 2040 and the proposed interim connection to MC 85. The ultimate SR303 configurations were coded in the 2040 Traffic Demand Model (TDM). ADOT conducted the analysis with Alternative 5S design because it was the preferred alternative when the Air Quality Technical Report was initiated. Figure 3 shows the larger study area and the Alternative 5S design in the SR 303L Air Quality Report, which contains the SR 303L, MC 85 – Van Buren Street final design project limit as shown in Figure 1. The blue lines in Figure 3 show the temporary connection to MC 85 not previously studied in the SR 303L Air Quality Report.

Figure 3. Build Alternative Alignment and Study Area in Final EA.



Source: ADOT ATIS (2013); ASLD Steams (1993); AZTEC (2024)

- Temporary Connection in Interim Design
- Mileposts
- Local Roads
- ~ Drainage
- Project Design Outline



Map Disclaimer: This map is intended for general siting purposes only.

Source: ADOT Air Quality Technical Report for SR303L, SR 30 to I-10, June 11, 2018.



1.1.3 Re-Evaluation of Alternative and Project Design Changes

The 2018 Final EA's air quality report concluded that the project is not predicted to cause or exacerbate violations of National Ambient Air Quality Standards (NAAQS) or have a measurable effect on mobile source air toxic (MSAT) impacts or greenhouse gas (GHG) impacts from the project.

The proposed changes to the project addressed in this current re-evaluation analysis include a temporary connection to MC 85, similar to the final EA's proposed alternative connection 2C but it is not a permanent TI. As SR 303L project design moved forward, it was determined that an interim connection to MC 85 should be put in place, altering the design to construct the southbound lanes connecting to MC 85 north of Buckeye Canal. This connection to MC 85 will be removed when the northbound lanes and connection to SR 30 are built in the future. The temporary connection to MC 85 is not significantly changing the scope of the project because the temporary addition is anticipated to last for less than 3 years while final design occurs for SR 30 segment. The proposed interim TI project will include a smaller evaluation area compared to the full SR 303L study area, only consisting of construction and operation of the interim connection that will be utilized until project final design is complete.

The SR 303L, MC 85 – Van Buren Street project scope of work includes the following. The changes to design from the original EA are highlighted in yellow.

- Subsurface utility investigations (dry-vacuum potholing) to determine existing utility depths
- Constructing three general purpose lanes in each direction
- Constructing transition lanes from freeway end to Cotton Lane near Elwood Street
- Completing the south half of the Van Buren diamond Traffic Interchange (TI)
- Constructing a full diamond TI at Yuma Road
- Constructing a half diamond TI at Elwood Street
- Constructing grade separated bridges over Lilac Street/Canyon Trails Boulevard, Lower Buckeye Road, Elwood Street, and Union Pacific Railroad
- Constructing box culvert at Flood Control District of Maricopa County (FCDMC) Outfall Channel south of the railroad, realigning the FCDMC canal south of the railroad; and providing an access road
- Constructing southbound lanes configuration (2-lanes in each direction) from Elwood Street to MC 85 north of Buckeye Canal to provide a temporary connection to MC 85 until the full SR 30 interchange is constructed
- Installing traffic lights and restriping MC 85 at SR 303L and MC 85 intersection
- Widening MC 85 approximately 1,500 feet either side of the intersection to account for new left and right turn lanes onto SR 303L
- Constructing two ramp overpass bridges from Lower Buckeye to Elwood Streets
- Potentially constructing a full diamond TI at Lower Buckeye
- Constructing one-way frontage roads in each direction to maintain local access, including connections to the major arterial streets
- Replacing neighborhood retention basins along Cotton Lane with a storm drain system and connecting the Canyon Trails channel to the Loop 303 Outfall Channel
- Connecting on-site and off-site drainages to FCDMC Outfall Channel and repairing channel as necessary
- Replacing agricultural tailwater ditches where applicable
- Constructing first flush basin north of railroad and east of Citrus Road near FCDMC Outfall Channel and north of Buckeye Canal near MC 85 connection
- Removing and replacing FCDMC fencing
- Constructing ROW fencing, as necessary



- Constructing new Americans with Disabilities Act (ADA) features specifically sidewalks, where applicable
- Installing FMS signage, signalization, and lighting
- Relocating utilities within ROW and in arterial street crossings
- Constructing retaining walls that will incorporate aesthetic patterns that highlights the City of Goodyear's history
- Constructing ten (10) new sound walls with similar patterns as the retaining walls
- Restriping the roadway
- Removing, replacing, and/or installing traffic signs
- Installing detection loops
- Removing existing landscaping, including trees, that would be impacted by the project
- Landscaping new freeway with rocks and vegetation
- Staging and stockpiling within the project limits in ADOT's ROW
- Constructing box culvert at FCDMC Outfall Channel south of the railroad, realigning the FCDMC canal south of the railroad; and providing an access road
- Constructing southbound lanes configuration (2-lanes in each direction) from Elwood Street to MC 85 north of Buckeye Canal to provide a temporary connection to MC 85 until the full SR 30 interchange is constructed
- Installing traffic lights and restriping MC 85 at SR 303L and MC 85 intersection
- Widening MC 85 approximately 1,500 feet either side of the intersection to account for new left and right turn lanes onto SR 303L
- Constructing first flush basin north of railroad and east of Citrus Road near FCDMC Outfall Channel and north of Buckeye Canal near MC 85 connection

As indicated in the 2018 Air Quality Report, the analysis was performed for Alternative 5S in the year 2040 for the worst-case ultimate condition. Alternative 5S was selected to represent peak emissions, given that this scenario includes the greatest traffic volume at an intersection, the greatest number of diesel vehicles, and is likely to generate the most PM₁₀ emissions in the project area. The intersections at Cotton Lane/SR303L and NB Frontage Rd & Elwood St were modeled because they have higher ADT and truck volumes of the arterials.

As stated previously, the 2040 TDM used SR303 ultimate configurations. The temporary connection to MC 85 (approximately 2,000 feet) and other design changes in SR303, Van Buren to MC 85 project are not significantly changing the scope of the project and not likely to affect the traffic data in the 2040 TDM because the temporary connection to MC 85 would be removed once the full SR303 to SR 30 interchange is built and other design changes are not roadway capacity related improvements.

2. Regional Emissions

Per regional Transportation Conformity rules, regional emissions due to transportation projects can not interfere with non-attainment areas NAAQS, or maintenance area NAAQS. The project is within the Phoenix nonattainment areas for particulate matter smaller than 10 microns (PM₁₀) and Ozone, and carbon monoxide (CO) maintenance areas, and is also identified in the MAG MOMENTUM 2050 Regional Transportation Plan. The project will provide easier access to and from addresses near Van Buren Street, resulting in shorter trips and reduced surface street traffic around the SR 303L approved interchanges. The proposed project would lessen regional congestion compared to no action, which would have minimal impacts on regional VMT. The proposed improvements would likely reduce regional air pollutant emissions resulting from highway vehicle traffic. If a proposed project is included in an approved regional transportation plan (RTP) and transportation improvement program (TIP), it is assumed to meet Transportation Conformity requirements listed in 40 CFR 93, Subpart A.



3. CO Hot-Spots

CO Hot-Spot analysis is required per Transportation Conformity rules for roadway projects in nonattainment or maintenance areas in which the project affects intersections with LOS ratings of “D” or worse, or if project implementation results in a TI changing to an LOS of “D” or worse. The FHWA Technical Advisory T 6640.8A notes “A microscale CO analysis is unnecessary where such impacts (project CO contribution plus background) can be judged to be well below the 1- and 8-hour NAAQS (or other applicable State or local standards). This judgment may be based on (1) previous analyses for similar projects; (2) previous general analyses for various classes of projects; or (3) simplified graphical or "look-up" table evaluations. In these cases, a brief statement stating the basis for the judgment is sufficient.”

The CO hotspot analysis conducted in the EA had a larger scale footprint based on worst case ultimate condition, with predicted worst-case scenarios for one-hour and eight-hour CO concentrations below NAAQS at the EA study area’s selected intersections. The design year used in the EA’s CO hotspot analysis was 2040. The worst intersections in 2040 Build condition from the EA were MC 85 & Cotton Lane intersection and Cotton Lane/SR 303L NB frontage Rd & Elwood St intersection selected for CO hotspot analysis AQ report for the EA dated November 2018. The results indicated that the predicted worst-case one-hour CO concentration was 1.3 ppm at MC 85 & Cotton Lane intersection and 1.4 ppm at Cotton Lane/SR 303L NB frontage Rd & Elwood St intersection in the projects 2040 Build condition. In addition, the predicted worst-case eight-hour CO concentration was 0.8 ppm at MC 85 & Cotton Lane intersection and Cotton Lane/SR 303L NB frontage Rd & Elwood St intersection in 2040 Build condition.

The 2040 Build traffic data (Alternative 5S) in the EA dated Nov 2018 indicated that AM peak hour LOS was C with delay of 26.0 seconds, and PM peak hour LOS was D with delay of 47.6 seconds at the MC 85 & Cotton Lane intersection. In addition, the AM peak hour LOS was D with delay of 38.1 seconds, and PM peak hour LOS was D with delay 24.3 seconds at the Cotton Lane/SR303L NB frontage Road & Elwood St intersection. See Table 1 below.

Table 1. SR 303 Loop Intersection Screening

#	Intersection	2040 No Build						2040 Build Alternative 5S					
		AM			PM			AM			PM		
		LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume
1	Yuma Rd & SR303L SB Frt Rd							C	33.6	3,215	C	26.2	3,400
2	SR303L NB Frt Rd & Yuma Road							C	22.2	3,378	C	22.2	3,016
3	Yuma Rd & Cotton Lane	D	49.8	4,739	C	32.1	5,094						
4	Lower Buckeye Rd & SR303L SB Frt Rd							B	13.8	1,439	B	11.6	1,581
5	Lower Buckeye Rd & Cotton Lane	C	21.0	3,541	C	30.5	3,628						
6	SR303L NB Frt Rd & Lower Buckeye Rd							B	11.2	1,326	B	13.2	1,241
7	SR303L SB Frt Rd & Elwood St												
8	Cotton Lane/SR303L NB Frt Rd & Elwood St												
9	MC85 & Cotton Lane	C	27.8	5,691	D	51.8	5,849	C	26.0	5,262	D	47.6	5,511
10	Cotton Lane & SR30 WB Off-Ramp	A	6.2	4,202	C	26.3	5,202	A	6.4	3,725	C	26.5	4,738
11	Cotton Lane & SR30 EB Off-Ramp	C	23.8	5,441	D	39.9	4,751	B	19.8	5,204	C	30.4	4,674
12	Elwood St & Elwood St SB Off-Ramp							B	13.5	2,328	B	13.4	2,891
13	Elwood St & SR303L SB Frt Rd												



#	Intersection	2040 No Build						2040 Build Alternative 5S					
		AM			PM			AM			PM		
		LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume	LOS	Delay	Volume
14	Cotton Lane/SR303L NB Frt Rd & Elwood St							D	38.1	4,016	C	24.3	4,196
15	Elwood St & Cotton Lane	C	23.5	3,782	C	24.3	3,973						
16	SR303L NB Off Rp & Elwood St							B	10.4	2,231	A	9.3	2,487
17	Frontage Rd & Lilac St												
18	Cotton Ln & W Durango St	B	12.4	2,956	B	16.4	3,018						
19	SR303L SB Frt Rd & Lilac St							B	14.8	919	B	14.7	1,141
20	Frontage Rd & Lilac St												
21	Lilac St & Cotton Lane	D	48.5	4,382	D	38.7	4,720						
22	SR303L NB Frt Rd & Lilac St							B	14.2	895	B	14.9	1,262
23	Van Buren East & SB Ramp	B	17.2	1,913	B	15.5	2,043						
24	Van Buren West & NB Ramp	B	13.3	1,720	B	22.4	2,260						
25	SR30 North TI & Cotton Lane												
26	SR30 South TI & Cotton Lane												

Source: WSP, 2018
 Shaded cells = intersection does not exist in the Alternative

MC 85 & SR30 intersection was not analyzed for the proposed SR 303L, MC 85 – Van Buren Street project because intersection improvements are no part of the project scope and only temporary construction pavement markings and signage will be installed/removed during construction. The overall peak hour LOS is C at MC 85 & SR303 intersection in 2030, see Table 2 below. The final connection to MC 85 would be completed with the SR30 project in its original location previously evaluated in the 2018 air quality report.

Table 2. Analysis results for MC 85 & SR303 intersection in 2030

2030 Build Alt 1A							
Intersection	Overall				Movement	95th Queue	
	AM		PM			AM	PM
	LOS	Delay	LOS	Delay			
SR 303L at MC 85	C	32.7	C	33.9	EBL	481	393
					EBT	1186	120
					EBR	-	-
					WBL	-	-
					WBT	348	352
					WBR	149	56
					SBL	91	151
					SBT	-	-
SBR	159	349					

Source: WSP, 2024

The CO hotspot analysis conducted on worst case ultimate condition in the EA with no actual design details already demonstrated conformity. The proposed final design would improve roadway capacity and reduce travel time by reducing traffic congestion at intersections in the project area.

Therefore, no additional CO Hot-Spot analysis is required, under Transportation Conformity rules, for this proposed interim final design.

In accordance with the guidelines delineated in 40 CFR 93.110, specifically articulated under Section 93.110(a) of the Transportation Conformity rule conformity determinations must be grounded in the "most recent planning assumptions in force at the time the conformity analysis begins." Additionally, the same section of the



conformity rule mandates that "New data that becomes available after an analysis begins is required to be used in the conformity determination only if a significant delay in the analysis has occurred, as determined through interagency consultation." The conformity process for this project was successfully concluded in 2018 based on worst-case ultimate condition. Subsequently, this Air Quality (AQ) re-evaluation in 2023 has been determined not to constitute a significant delay in the analysis, as affirmed through interagency consultation. Consequently, the projects preceding Carbon Monoxide (CO) hotspot analysis in its EA, which relied upon 2040 traffic data, remains valid and aligns with the regulatory framework outlined in the Transportation Conformity rule.

4. PM₁₀ Hot-Spots

A PM₁₀ hotspot analysis was done for this project in its 2018 EA with a larger project study area for the worst-case ultimate condition. The same worst intersections used in the CO analysis (MC 85 & Cotton Lane intersection and Cotton Lane/SR 303L NB frontage Rd & Elwood St intersection) were selected for this EA's PM₁₀ hotspot analysis. The predicted total PM₁₀ concentrations for MC 85 & Cotton Lane intersection was 136.9 ug/m³, and the total PM₁₀ concentration for Cotton Lane/SR 303L NB frontage Rd & Elwood St intersection was 134.3 ug/m³. Both these PM₁₀ concentrations were below PM₁₀ NAAQS of 150 ug/m³ for the analyses design year of 2040.

As stated in the EA, while other freeway and freeway interchange locations have higher overall traffic volumes associated with the project when accounting for highway traffic, they likely do not have higher concentrations than the selected two locations as designed in Alternative 5S or Alternative 2C, because the arterial links at the selected intersections have worse traffic conditions than others. Arterial links have MOVES emissions factors that are 5-20 times higher than free-flow freeway links, even with the higher truck fractions on the freeway links taken into account. Also, the road dust emissions factors are twice as high on arterials compared to freeways. Arterial intersections also have queuing emissions, which do not occur on the freeway links.

Pursuant to guidance outlined in 40 CFR 93.110, specifically articulated in Section 93.110(a) of the Transportation Conformity rule, conformity determinations be predicated upon the "most recent planning assumptions in force at the time the conformity analysis commences." Furthermore, the same section of the conformity rule stipulates that "New data that becomes available after an analysis begins is required to be used in the conformity determination only if a significant delay in the analysis has occurred, as determined through interagency consultation." The conformity process for this project was successfully concluded in 2018 based on worst-case ultimate condition, and this Air Quality (AQ) re-evaluation in 2023 does not constitute a significant delay in the analysis. Consequently, the prior Particulate Matter (PM) hotspot analysis in the projects EA, which utilized 2040 traffic data, remains valid and adheres to the regulatory framework outlined in the Transportation Conformity rule.

5. MSATs

A quantitative analysis of Mobile Source Air Toxics (MSATs) was performed as part of the original SR303L EA and ADOT SR303L Air Quality Technical Report. Both analyses confirmed that project design and project alternatives would not influence MSATs traffic-related emissions.

The FHWA has updated their MSAT analysis policy/guidance on January 18, 2023. The current policy updated the prior policy from October 2016, by incorporating emissions estimates that consider additional United States Environmental Protection Agency (US EPA) motor vehicle emission rules using the most up-to-date Motor Vehicle Emissions Simulator (MOVES3) model. The latest updated policy shows that, consistent with the earlier policy and MOVES projections, MSAT emissions will drop dramatically in the coming decades, even with substantial increases in VMT. Implementation of the project with a small design change of temporary connection to MC85 would not affect the MSAT conclusions from the EA with respect to the SR303 project, considering the latest FHWA guidance. In addition, the ADT volumes on SR303 mainline within the smaller



footprint in final design has decreased to be less than the range of 140,000 to 150,000 or greater requirement warranted for the quantitative MSAT analysis with higher potential MSAT effects. Based on this finding, there is no need for additional quantitative MSAT emissions analysis for the proposed SR 303L project.

6. Construction Emissions & General Conformity

The interim phase during final design to SR 303L would not include any additional construction from what was proposed in the original project scope. However, the temporary connector to MC 85 construction may result in additional construction activities outside of the original project scope. The very slight increase in construction activity associated with these additional activities would not cause the construction-related emissions to exceed the General Conformity de-minimis emissions thresholds. In addition, the proposed construction of the interim phase will take less than 5 years to complete, as such the proposed project is not subject to construction emissions evaluation. The prior General Conformity emissions analysis for the SR 303 L project showed total emissions from construction to be below the de-minimis emissions thresholds. Therefore, the General Conformity requirements of 40 CFR 93, Subpart B do not apply to the project.

7. Conclusion

This air quality re-evaluation was conducted because of temporary connection to MC 85 and design changes that do not impact capacity. As discussed previously, the temporary additions are not significantly changing the scope of the project because the interim connection to MC 85 would last for less than 3 years. Because these changes are temporary and last less than 5 years, ADOT determines that the conclusions from the 2018 EA Air Quality Technical Report are still valid with respect to the approved MC 85 - Van Buren St project. No additional hot-spot analyses are warranted. This project is consistent with the latest SIPs for the area, is a de-minimis project and therefore exempt under General Conformity requirements (40 CFR 93, Subpart B), and last, meets all Transportation Conformity requirements (40 CFR 93, Subpart A). In addition, this project would not cause or contribute to any new localized CO or PM₁₀ violations or increase the frequency or severity of any existing CO or PM₁₀ violations in CO and PM₁₀ nonattainment and maintenance areas. Impacts on air quality as a result of the temporary connector to MC 85 would not change from what was disclosed in the FONSI. No new mitigation measures are warranted beyond those already committed to the FONSI.