U.S. Department of Transportation
Federal Highway Administration

ARIZONA DIVISION

4000 North Central Avenue
Suite 1500
Phoenix, Arizona 85012-3500
(602) 379-3646
Fax: (602) 382-8998
http://www.fhwa.dot.gov/azdiv/index.htm

July 17, 2018

In Reply Refer To:
(TRAP 19 - MPO)
Yuma Non-attainment Area
Yuma Metropolitan Planning Organization
Conformity Finding

Mr. Paul Ward, Executive Director
Yuma Metropolitan Planning Organization
502 S. Orange Avenue
Yuma, Arizona 85364

Dear Mr. ~~Ward~~: Paul

In accordance with the Clean Air Act Amendments of 1990, a conformity finding of the transportation plans and programs in a non-attainment area is required of the U.S. Department of Transportation. Based on our evaluation of the Yuma Metropolitan Plan Organization's (YMPO) finding of conformity and related documentation submitted in its March 16, 2018 letter, in coordination with the Environmental Protection Agency (EPA), the MPO and the State Department of Transportation, the Federal Highway Administration and Federal Transit Administration have determined that the Yuma, Arizona urbanized area has met the requirements of the EPA Transportation Conformity Rule (40 CFR Parts 51 and 93). This includes the Yuma area PM10 non-attainment area.

A Finding of Conformity is hereby made with respect to the subject Amendment #1 of the FY 2018-2041 YMPO Regional Transportation Plan (RTP) as approved by the YMPO Executive Board on April 26, 2018. A Finding of Conformity for the FY 2018-2041 Regional Transportation Plan (RTP) was made previously on October 3, 2017.

This conformity determination is in effect until a new determination is required either by new regulatory requirements, major revision of transportation plans, or a State Implementation Plan (SIP) revision.

Sincerely,

Karla S. Petty

Karla S. Petty
Division Administrator

ec: pward@ympo.org; Gregory Byres ADOT (gbyres@azdot.gov), Amy Corathers (FTA Region 9) (amy.corathers@dot.gov) , Jerry Wamsley EPA (wamsley.jerry@epa.gov) ; Timothy Franquist Jr., ADEQ (franquistjr.timothy@azdeq.gov); Bret Anderson ADOT banderson@azdot.gov; Beverly Chenausky ADOT bchenausky@azdot.gov; Mark Hoffman ADOT mhoffman@azdot.gov

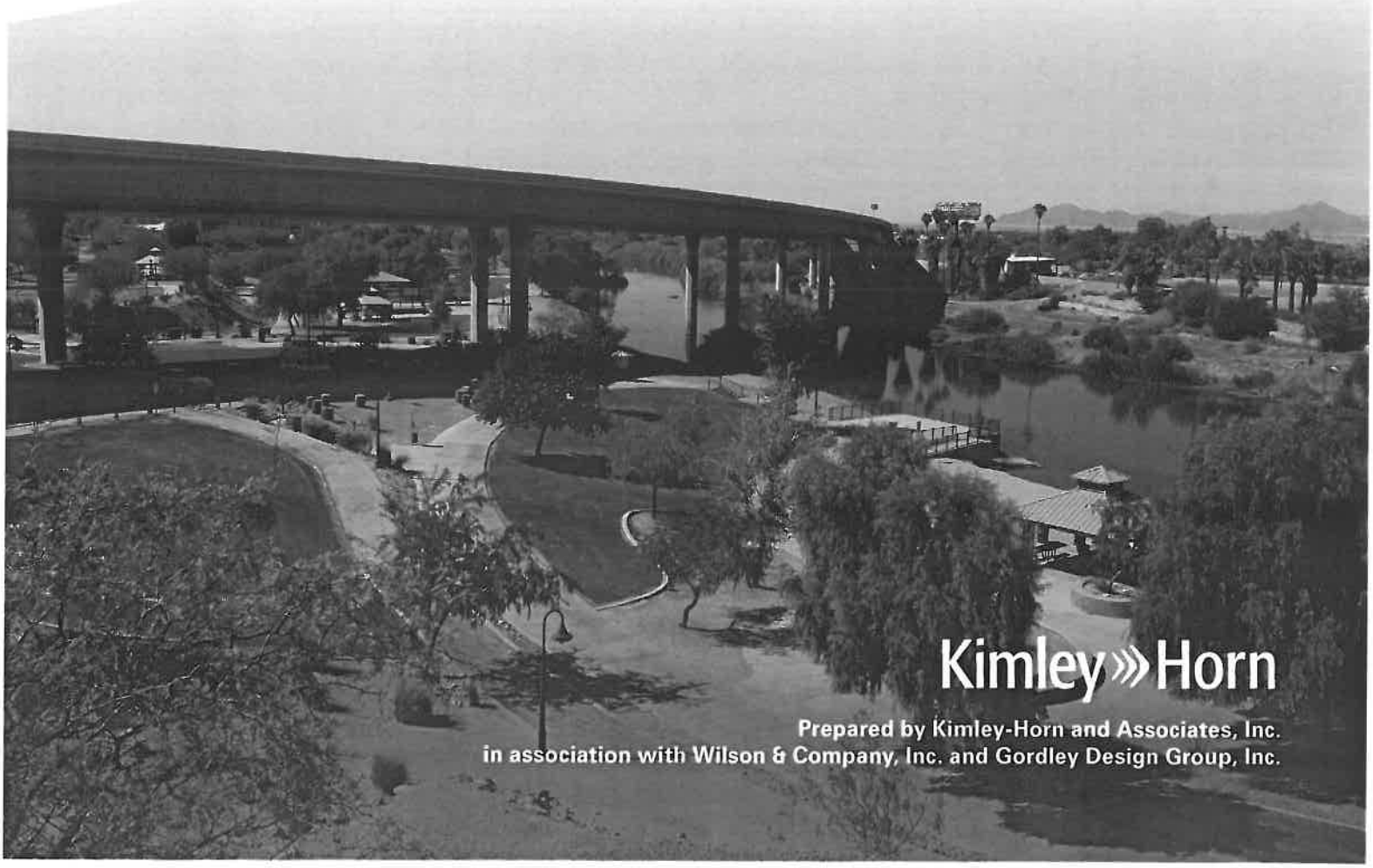
Approved by the YMPO Executive Board, June 29, 2017

YMPO
2018-2041

Regional Transportation Plan

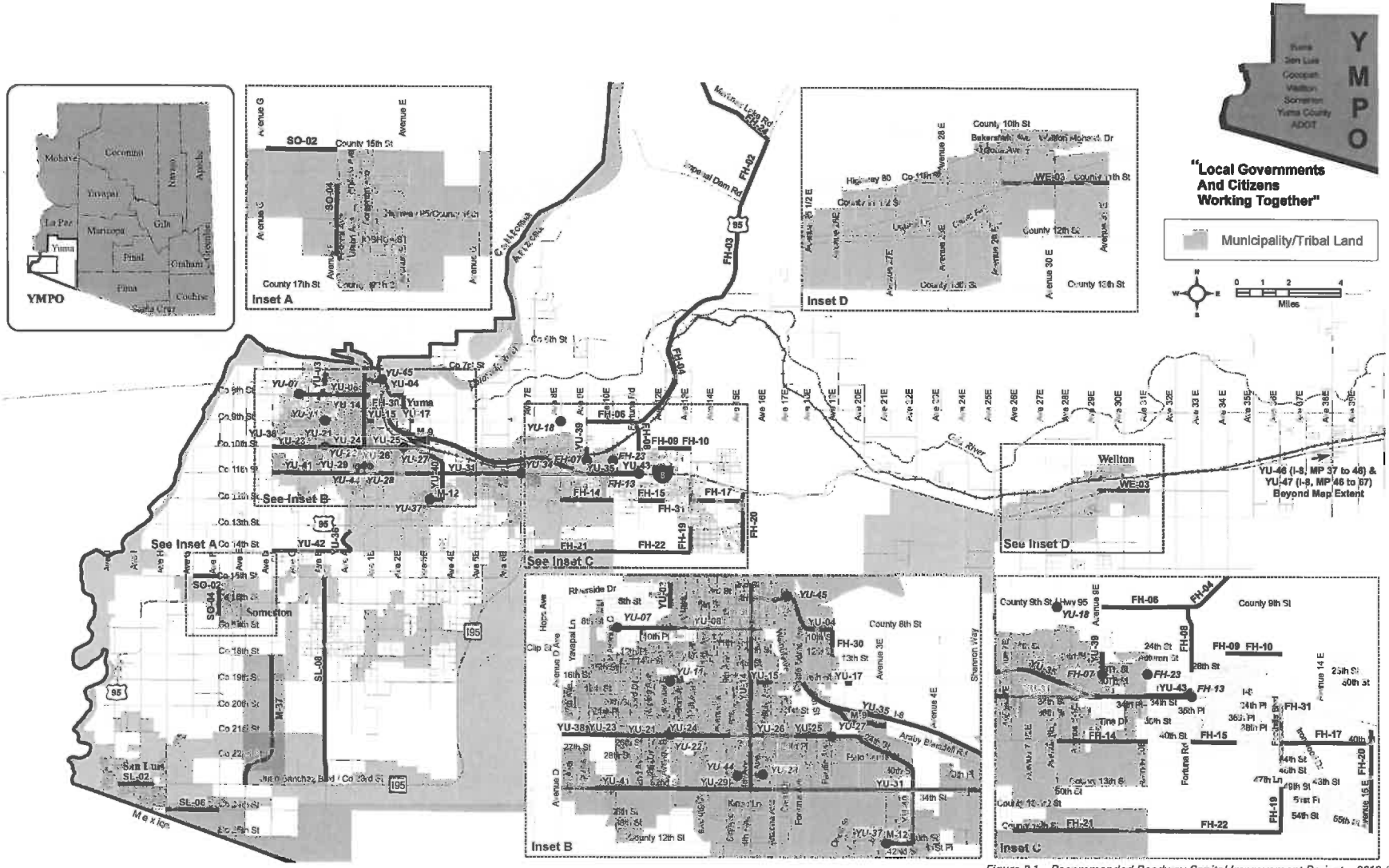
MOVING THE YUMA REGION FORWARD

AMENDMENT 1 – MARCH 2018



Kimley»Horn

Prepared by Kimley-Horn and Associates, Inc.
in association with Wilson & Company, Inc. and Gordley Design Group, Inc.



Note: Colors are used to distinguish the starting and ending points of improvements

Figure P.1 – Recommended Roadway Capital Improvement Projects, 2018-2041 (Source: Kimley-Horn)

Area-Project No.	Yuma County – Recommended Roadway Capital Projects						Cost (Million $)	RTP Period						Factored Cost (Million $)	RTP Period						Project Description
								1	2	3	4	5	UF		1	2	3	4	5	UF	
								$/Cost by Timeframe							Factored Cost by Timeframe						
	Project	Limits	Agency	Length (Miles)	Through Lanes Old	Through Lanes New		2018-2022	2023-2027	2028-2032	2033-2037	2038-2041	Unfunded		2018-2022	2023-2027	2028-2032	2033-2037	2038-2041	Unfunded	
SO-02	Co. 15th St. Safety and Hazard Elimination	Ave. G to Ave. F	YC/ COC	1.00	-	2	0.5	0.5	0.0	0.0	0.0	0.0	-	0.5	0.5	0.0	0.0	0.0	0.0	0.0	This project is a safety and hazard elimination project. This project is phased for the period 2018-2022.
SL-08	Ave. B Widening*	Co. 15th St. to SR 195	YC/SL	7.00	2	4	37.8	2.2	-	-	-	-	35.0	89.1	2.2	0.0	0.0	0.0	0.0	86.3	This project will widen Avenue B from two to four lanes from Co. 15th Street to SR 195. This project is phased for the period 2018-2022.
FH-15	Co. 12th St. Widening	Fortuna Rd. to Ave. 12E	YC	1.00	2	4	5.0	-	5.0	-	-	-	-	7.1	0.0	7.1	0.0	0.0	0.0	0.0	This project will widen Co. 12th Street from two to four lanes from Fortuna Road to Avenue 12E. This project is phased for the period 2023-2027.
FH-17	Co. 12th St. Road Extension	Foothills Blvd. to Ave. 15E	YC	1.50	0	2	6.7	0.0	6.7	0.0	0.0	0.0	-	9.5	0.0	9.5	0.0	0.0	0.0	0.0	This project will widen Co. 12th Street from two to four lanes from Foothills Boulevard to Avenue 15E. This project is phased for the period 2023-2027.
FH-08	24th St. Paving Dirt Road	Universe Ave. to Camino del Sol	YC	0.50	-	2	1.0	-	-	1.0	-	-	-	1.7	0.0	0.0	1.7	0.0	0.0	0.0	This project will pave 24th Street from Universe Avenue to Camino del Sol. This project is phased for the period 2028-2032.
FH-19	Foothills Blvd. Widening	Co. 13th St. to Co. 14th St.	YC	1.00	2	4	5.0	-	-	5.0	-	-	-	8.7	0.0	0.0	8.7	0.0	0.0	0.0	This project will widen Foothills Boulevard from two to four lanes from Co. 13th Street to Co. 14th Street. This project is phased for the period 2028-2032.
FH-08	Fortuna Rd. Widening	US 95 to 28th St.	YC	1.50	2/3	4	6.0	-	-	3.8	2.2	-	-	11.2	0.0	0.0	6.6	4.6	0.0	0.0	This project will widen Fortuna Road from two to four lanes from US 95 to 28th Street. This project is phased for multiple time periods (Phase 3: 2028-2032, Phase 4: 2033-2037).
YU-03	Ave. B Safety Improvements	1st St. to 5th St.	YC/ COY	0.50	-	-	0.5	-	-	-	0.5	-	-	1.1	0.0	0.0	0.0	1.1	0.0	0.0	This project provides safety improvements to Avenue B from 1st Street to 5th Street. This project is phased for the period 2033-2037.
FH-22	Co. 14th St. Paving Dirt Rd.	Ave. 10E to Ave. 13E	YC	3.00	-	2	6.0	-	-	-	6.0	-	-	12.6	0.0	0.0	0.0	12.6	0.0	0.0	This project will pave Co. 14th Street from Avenue 10E to Avenue 13E. This project is phased for the period 2033-2037.
FH-10	24th St. Paving Dirt Road	Camino del Sol to Foothills Blvd.	YC	1.30	-	2	2.6	-	-	-	2.6	-	-	5.5	0.0	0.0	0.0	5.5	0.0	0.0	This project will pave 24th Street from Camino del Sol to Foothills Boulevard. This project will be phased for the period 2033-2037.
FH-30	Pacific Avenue Widening	Co. 8th St to City 12th St	YC/ COY	0.50	2	4	2.0	0.0	2.0	0.0	0.0	0.0		2.8	0.0	2.8	0.0	0.0	0.0	0.0	This project will widen Pacific Avenue from County 8th St to City 12th St from 2 to 4 lanes. This project will be phased for the time period 2023-2027.
FH-20	Ave. 15E Widening	S. Frontage Rd. to Co. 14th St.	YC	2.50	2	4	12.5	-	-	-	-	12.5	-	30.8	0.0	0.0	0.0	0.0	30.8	0.0	This project will widen Avenue 15E from two to four lanes from S. Frontage Road to Co. 14th Street. This project will be phased for the period 2038-2041.
FH-24	Martinez Lake Rd. overlay	US 95 to MP 4.3	YC	4.30	2	2	1.8	1.8	0.0	0.0	0.0	0.0	-	1.8	1.8	0.0	0.0	0.0	0.0	0.0	This project will overlay Martinez Lake Road from US 95 to MP 4.3. This project will be phased for the period 2018-2022.
YU-42	Co. 14th St. Overlay	Ave. A to Ave. D	YC	3.00	2	2	1.3	1.3	-	-	-	-	-	1.3	1.3	0.0	0.0	0.0	0.0	0.0	This project will overlay Co.14th Street from Avenue A to Avenue D. This project will be phased for the period 2018-2022.
YU-43	North I-8 Frontage Rd.	Ave. 10E to 11 E	YC	1.00	2	4	5.0	5.0	-	-	-	-	-	5.0	5.0	0.0	0.0	0.0	0.0	0.0	This project will widen I-8 Frontage Road from two to four lanes from Avenue 10E to Avenue 11E. This project will be phased for the period 2018-2022.
FH-31	Foothill Blvd Mill and Overlay	S. Frontage Road to 44th St.	YC	1.50	4	4	2.0	-	-	-	-	2.0	-	4.9	0.0	0.0	0.0	0.0	4.9	0.0	This project will overlay Foothills Blvd from the South Frontage Road to 44th Street. This project will be phased in the time period from 2038 to 2041.
M-37	Ave. E Extension	Co. 23rd St to Co. 19th St	YC	6.00	0	2	8.5	-	8.5	-	-	-	-	12.1	0.0	12.1	0.0	0.0	0.0	0.0	This project will construct a two-lane roadway on new alignment. This project will be constructed in the time period 2023-2027.
							Total Cost (Million $)	69.2	11.4	22.2	9.5	11.3	14.5	35.0	119.4	11.4	31.5	17.0	23.8	35.1	86.3

Note: An estimated $35 million ($86.3 Million factored cost) of this project is unfunded.

Table 8.3 – Yuma County Roadway Capital Improvement Projects, 2018-2041
(Source: Kimley-Horn)

Comparison of Costs versus Revenues for Capital Projects

The FHWA/FTA Final Rule on metropolitan transportation planning and programming requires that revenue be reasonably available to cover the project costs of all recommended projects. This means the 2018-2041 RTP must be "fiscally constrained."

Table 8.9 summarizes estimated project costs by jurisdiction, as compared to projected revenues. The RTP uses an inflation rate to reflect the year of expenditure based on FHWA guidance provided in the document Financial Planning and Fiscal Constraint for Transportation Plans and Programs (2013), which recommends using an inflation rate of four percent per year unless local data suggests a different inflation rate would be more appropriate. An inflation rate of four percent per year was used to estimate future project cost estimates, as reflected in the factored cost estimates previously shown in *Tables 8.2 through 8.8*.

Overall, there is estimated to be approximately $43 million more in revenues than project costs. It was determined through discussion with the TAC that this estimated excess revenue could provide a cushion should implementation costs be higher than projected. If additional revenues become available projects can either be advanced or unfunded projects could potentially be implemented. Unfunded projects are summarized in the Appendix under separate cover.

YMPO Member Agency	Total RTP Funded Project Costs, (Million $)	Total RTP Factored Projects Costs (Million $)	Estimated Factored Roadway Capital Revenues and Costs by Timeframe					
			2018-2022	2023-2027	2028-2032	2033-2037	2038-2041	Unfunded Projects
City of Yuma	159.4	256.2	47.4	41.4	58.1	68.6	40.7	122.5
Yuma County	69.2	119.4	11.4	31.5	17.0	23.8	35.7	147.7
City of San Luis	8.8	10.5	4.8	5.7	0.0	0.0	0.0	37.5
City of Somerton	7.3	10.5	2.6	2.7	3.1	2.1	0.0	24.6
Town of Wellton	4.0	7.7	0.0	1.4	1.7	2.1	2.5	45.8
Cocopah Indian Tribe	1.3	2.1	0.3	0.4	0.4	0.5	0.5	4.3
Total Estimated Costs for Capital Improvements	241.4	394.3	66.5	71.0	80.3	97.1	79.4	403.4
Total Anticipated Available Revenue	N/A	$437.4	60.9	69.6	96.1	110.5	100.4	N/A
Difference (Revenues minus capital expenditures)	N/A	$43.2	($5.6)	($1.4)	$15.8	$13.4	$21.0	N/A

Note: Costs in 2016 dollars

Table 8.9 – RTP Estimated Capital Expenditures versus Revenues by Time Period
(Source: Kimley-Horn)

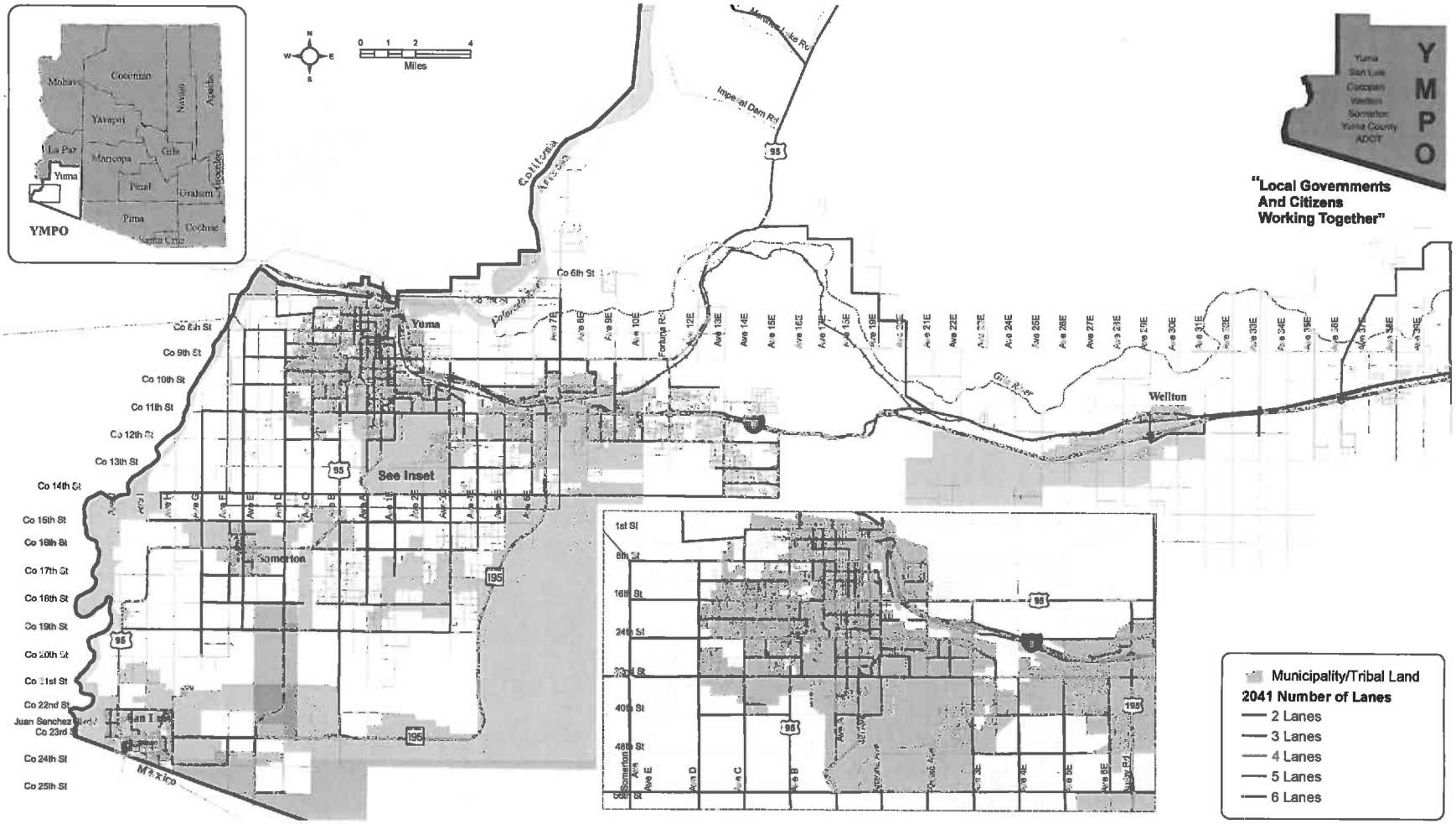


Figure 8.2 – 2041 "With Improvements" Number of Through Lanes (Source: Kimley-Horn)

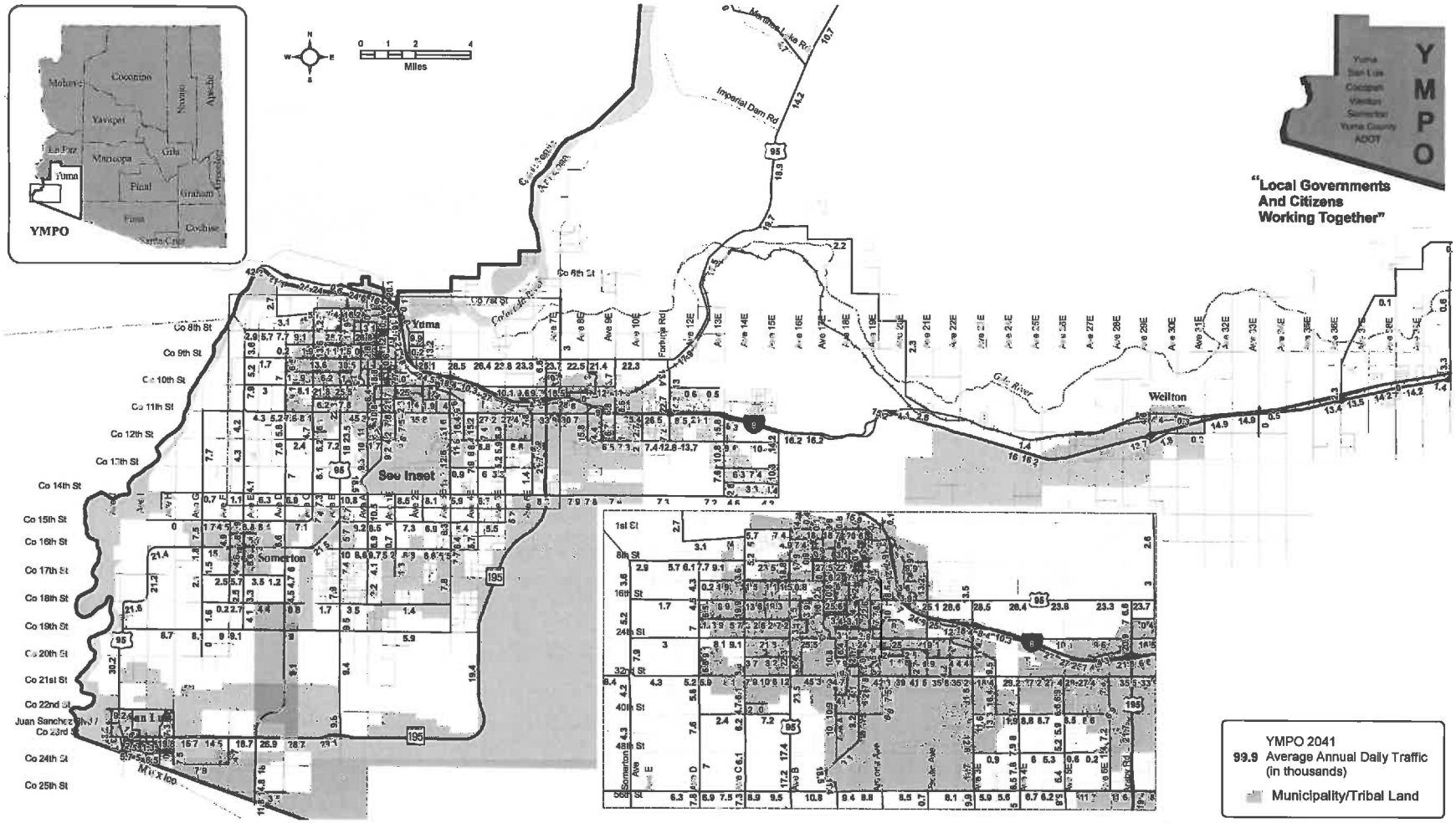


Figure 5.3 – 2041 "With Improvements" Traffic Volumes (Source: Kimley-Horn)

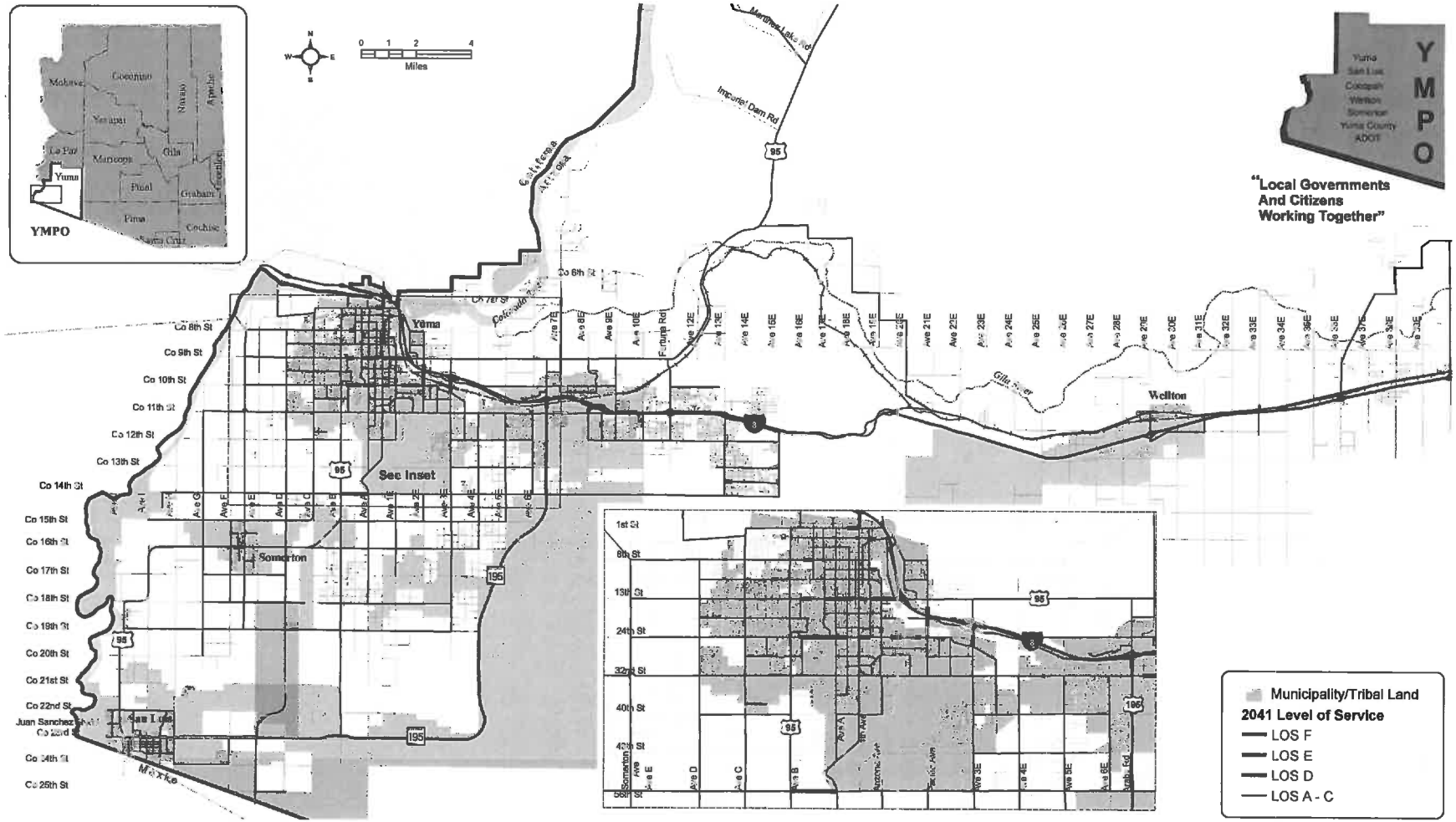
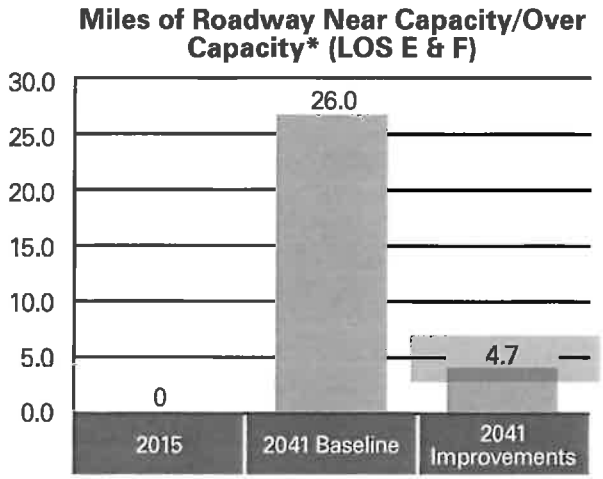


Figure 8.4 – 2041 "With Improvements" Level of Service (Source: Kimley-Horn)



*volume/capacity > 0.85

Figure 8.5 – Comparison of Lane Miles of Roadway Near Capacity or Over Capacity (Source: Kimley-Horn)

Impact of Planned Roadway Improvements on Traffic and Congestion

YMPO's Travel Demand Model (TDM) was developed for the year 2041 "with improvements" to determine how the RTP roadway improvement projects are anticipated to affect regional traffic patterns, traffic volumes, and roadway network performance.

(Source: Yuma International Airport, Airport Master Plan, Draft Change 1, 2011, page 153 with additional revisions

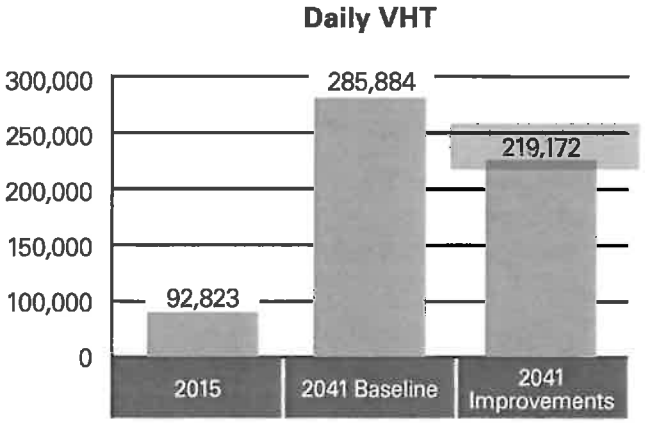


Figure 8.6 – Comparison of Daily Vehicle Hours of Travel (Source: Kimley-Horn)

Results and Conclusions

Emissions estimates from MOVES and AP-42 were combined estimates of reductions from RACMs and newly paved roads to determine the overall impact of on-road mobile sources on PM_{10} levels in the YMPO nonattainment area for the maintenance plan budget years of 2018, 2021, 2031 and 2041. The ADEQ Yuma PM Maintenance Plan (August 2006) establishes annual emissions maintenance budgets for use in conformity analyses. Results from this analysis are summarized in *Table 8.16*, along with comparisons to the established Motor Vehicle Emission Budgets (MVEBs).

Budget Year	PM_{10} Tons per Year	Maintenance Plan Budget Tons per Year*	Annual Reduction Tons per Year	Adjusted PM_{10} Tons per Year
2018	8,816.64	10,803	66.15	8,750.49
2021	8,946.03	10,803	403.15	8,542.88
2031	9,315.67	10,803	754.15	8,561.52
2041	9,770.40	10,803	1,139.15	8,631.25

**MVEBs were found adequate for use in conformity (75 FR 32295; effective June 27, 2007).*

Table 8.16 – Motor Vehicle Emissions Budget Comparison
(Source: Kimley-Horn)

This air quality analysis documentation demonstrates conformity between the 2018-2022 Transportation Improvement Program, the 2018-2041 Regional Transportation Plan, and the State Implementation Plan.

The analysis indicates that the projected emissions levels based on projects contained in the YMPO RTP Update 2018-2041 meet the applicable conformity tests. Therefore, it is the determination of this analysis that this plan conforms under the PM_{10} National Ambient Air Quality Standards.

APPENDIX

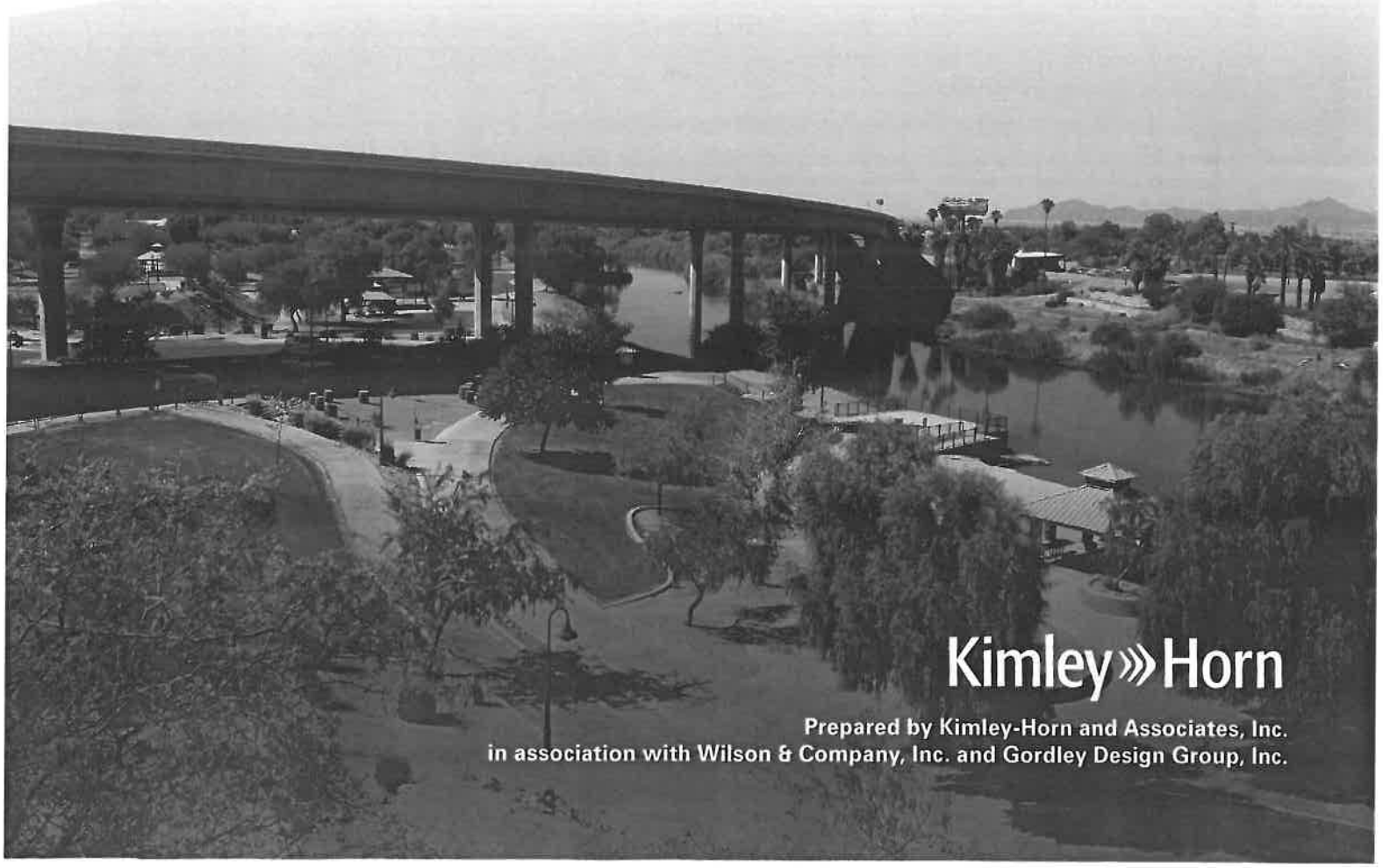
Approved by the YMPO Executive Board, June 29, 2017

YMPO
2018-2041

Regional Transportation Plan

MOVING THE YUMA REGION FORWARD

AMENDMENT 1 – MARCH 2018



Kimley»Horn

Prepared by Kimley-Horn and Associates, Inc.
in association with Wilson & Company, Inc. and Gordley Design Group, Inc.

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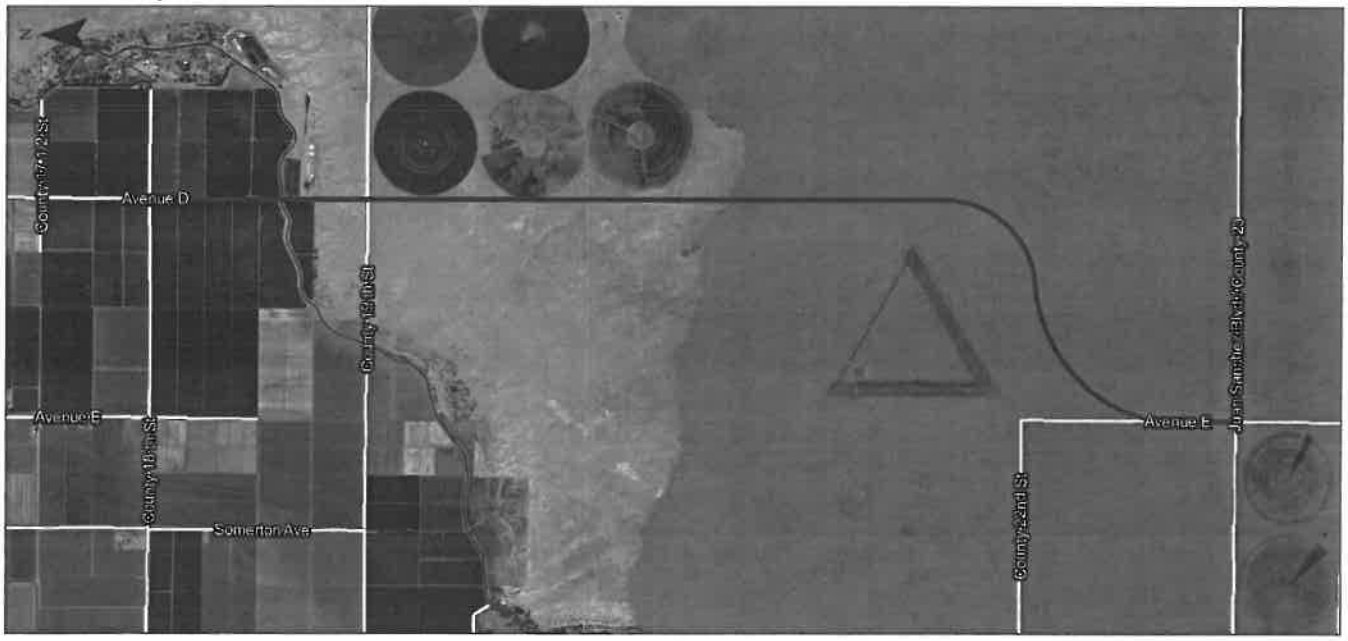
YMPO 2018-2041 RTP Project Information Sheet
Project M-37
Avenue E Extension

Project Name	Avenue E Extension				
Project Location	County 23rd St to County 19th St				
Project Length (miles)	6.0 miles				
Roadway Ownership	Yuma County				
Base Cost	$8.5M (note: cost estimate obtained from *Avenue E, SR 195 to County 18th Street, Final Design Concept Report*, March 2015)				
Factored Cost over RTP Period	$12.1M				
RTP Period	2018-2022 ☒	2023-2027 ☒	2028-2032 ☐	2033-2037 ☐	2038-2041 ☐
Project Description	This project consists of a new two-lane road from County 23rd Street to County 19th Street				

Location Map



YMPO Regional Transportation Plan 2018-2041 Reserve Project List

CITY OF YUMA

Area-Proj No.	Project	Limits	Agency	Length (Miles)	Through Lanes Old	Through Lanes New	Cost (Millions)	Addresses Safety Issue	Addresses Congestion Issue	Preserves Existing Infrastruc-ture	Improves System Continuity & Efficiency	Promotes Economic Develop-ment	Encourages Multimodal Travel	Improves Air Quality	Notes	Project Description
	Projects identified from 2018-2041 RTP Update Long Range Travel Demand Model Results															
M-3	16th St	21st Ave to South Ellis Lane	CO/Y	0.81	4	6	4.32		X		X	X		X	LOS E segment in 2041 mod	
M-5	16th St Widening	Pendergast Avenue to 14th Avenue	CO/Y	0.53	4	6	2.30		X		X	X		X	LOS E segment in 2041	
M-6	16th St Widening	4th Ave to 7th Ave	CO/Y	0.23	4	6	1.15		X		X	X		X	LOS E segment in 2041	
M-7	16th St Widening	7th Ave to 4th Ave	CO/Y	0.21	4	6	1.04		X		X	X		X	LOS E segment in 2041	
M-8	16th St Widening	7th Ave to 8th Ave	CO/Y	0.69	4	6	3.54		X		X	X		X	LOS E segment in 2041	
M-10	24th St	South Ellis Lane to Ave A	CO/Y	0.13	4	6	1.00		X		X	X		X	LOS E segment in 2041	
M-12	24th St	Ave A to 4th Ave	CO/Y	0.30	4	6	3.00		X		X	X		X	LOS E segment in 2041	
M-15	Ave 9E	16th Gila Ridge Rd	CO/Y	0.13	4	6	0.72		X		X	X		X	LOS E segment in 2041	
M-16	Ave 9E	32nd St to 40th St	CO/Y	1.00	4 an/5	6	7.00		X		X	X		X	LOS E segment in 2041	
M-17	8th St	Dora Ave to Mulle Ave	CO/Y	0.70	4	6	1.04		X		X	X		X	LOS E segment in 2041	
M-18	Ave 3E	8th Ave to 20th Ave	CO/Y	0.68	2	4	0.68		X		X	X		X	LOS E segment in 2041	
M-19	Ave 34/2E	40th St to 48th St	CO/Y	1.00	2	4	5.00		X		X	X		X	LOS E segment in 2041	
M-20	4th Ave	I-8 to 1st St	CO/Y	0.63	4	6	1.20		X		X	X		X	LOS E segment in 2041	
SL-21	4th Ave/I-8 Interchange	-	CO/ADOT	0.09	4	6	0.71		X		X	X		X	LOS E segment in 2041	
M-22	I-8 North Frontage Road	Ave 8E to Ave 19E	CO/Y	2.00	2	4	10		X							
M-23	South Frontage Rd	Ave 9E to Ave 9E	CO/Y/C	1.00	2	4	5		X		X	X		X	LOS E in 2041	
						Total Cost (Million $)	49.8									

ADOT SOUTHWEST DISTRICT

Area-Proj No.	Project	Limits	Agency	Length (Miles)	Through Lanes Old	Through Lanes New	Unfunded	Addresses Safety Issue	Addresses Congestion Issue	Preserves Existing Infrastruc-ture	Improves System Continuity & Efficiency	Promotes Economic Develop-ment	Encourages Multimodal Travel	Improves Air Quality	Comments	Project Description
	Projects identified from 2018-2041 RTP Update Long Range Travel Demand Model Results															
M-23	I-8 Westbound On-Ramp	Foothills Blvd Interchange	ADOT	-	-	-	10		X		X	X		X	2041	
M-24	I-8 W/B widening (Part of original Interch)	Araby Rd to Ave 5E	ADOT	2.18	4	6	17.1		X		X	X		X	LOS E segment in 2041	
M-25	I-8 W/B on ramp at Ave 11E Interchange		ADOT	0.17	-	-	10		X		X	X		X	LOS E segment in 2041	
M-26	I-8 W/B off ramp at Ave 13E Interchange		ADOT	0.21	-	-	10		X		X	X		X	LOS E segment in 2041	
M-27	I-8 EB off-ramp at Ave 13E Interchange		ADOT	0.18	-	-	10		X		X	X		X	LOS E segment in 2041	
						Total Cost (Million $)	53.1									

YUMA COUNTY

Area-Proj No.	Project	Limits	Agency	Length (Miles)	Through Lanes Old	Through Lanes New	Unfunded	Addresses Safety Issue	Addresses Congestion Issue	Preserves Existing Infrastruc-ture	Improves System Continuity & Efficiency	Promotes Economic Develop-ment	Encourages Multimodal Travel	Improves Air Quality	Comments	Project Description
[illegible]	Misc Improvements	County-wide	YC	-	-	-				X						[illegible] (Phase 1 2018-2022, Phase 2 2023-2027, Phase 3 2028-2032, Phase 4 2033-2037, Phase 5 2038-2041)
[illegible]	Misc Widening/Imp	County-wide	YC	-	-	-		X	X		X	X		X		This project will widen and improve roads Countywide. The project is phased for multiple time periods (Phase 1 2018-2022, Phase 2 2023-2027, Phase 3 2028-2032, Phase 4 2033-2037, Phase 5 2038-2041)
SL-28	Co. 15th St Widening	County 15 1/2 to Ave D, and Ave G to west	YC	1.00	2	4	8.5									This project will widen Co. 15th Street from two to four lanes from Co. 15 1/2 to Avenue D and from Avenue G to west Somerton Boundary
	Projects identified from 2018-2041 RTP Update Long Range Travel Demand model Results															
M-32	Co 16th St	Ave B to UPRR (assume this is an intersection widening)	YC	0.05	2	4	0.5		X		X	X		X	LOS E segment in 2041	
M-33	Ave 19E	South Frontage Rd to 48th St	YC	0.50	2	4	2.0		X		X	X		X	LOS E segment in 2041 mod LOS F in 2011	
M-35	Somerton Ave/3rd St	intersection area	YC	0.05	-	-	0.1		X		X	X		X	E in 2041	
M-34	Ave F	Co 23 1/2 to Co 23 1/2	YC/SL	1.00	2	4	5.0		X		X	X		X	LOS F segment in 2041	
M-36	40th St (Ave 19E)	Ave 19E to Ave 19E (looks discontinuous after Ave 19E)	YC	2.00	2	4	10.0		X		X	X		X	LOS E segment in 2041	
		Avenue B extension (Cocoite Blvd to [illegible])														
M-37	Ave B Extension	22nd St to 32nd St	YC	0.50	0	2	5.5		X		X	X		X	SLDCR	
M-38	16th South Frontage Rd	Fortuna Wash to Ave 19E	YC	0.50	2	4	5.5		X		X	X		X	LOS E segment in 2041	
						Total Cost (Million $)	33.6									

CITY OF SAN LUIS

Area-Proj No.	Project	Limits	Agency	Length (Miles)	Through Lanes Old	Through Lanes New	Unfunded	Addresses Safety Issue	Addresses Congestion Issue	Preserves Existing Infrastruc-ture	Improves System Continuity & Efficiency	Promotes Economic Develop-ment	Encourages Multimodal Travel	Improves Air Quality	Comments	Project Description
SL-03	Juan Sanchez Blvd Widening	4th Ave to Ave A	SL	1.30	2	4	7.7		X			X	X	X		
SL-04	Juan Sanchez Blvd Widening	Ave G to Ave F 1/2	SL	0.50	2	4	3.0		X			X	X	X		
SL-05	Juan Sanchez Blvd Widening	Ave F 1/2 to Ave E 1/2 (CR 1/8)	SL	1.00	2	4	4.5		X			X	X	X		
						Total Cost (Million $)	15.2									

CITY OF SOMERTON

Area-Proj No.	Project	Limits	Agency	Length (Miles)	Through Lanes Old	Through Lanes New	Unfunded	Addresses Safety Issue	Addresses Congestion Issue	Preserves Existing Infrastruc-ture	Improves System Continuity & Efficiency	Promotes Economic Develop-ment	Encourages Multimodal Travel	Improves Air Quality	Comments	Project Description
SO-02	Co. 15th St Widening	Somerton west boundary (approx. Central canal) Ave G to County 15 1/2	SO	2.00	2	4	10.0		X			X	X	X		This project will widen Co. 15th Street from two to four lanes from Avenue G to Co. 15 1/2 Canal
						Total Cost (Million $)	10.0									

FOR DISCUSSION PURPOSE ONLY

11/30/2016

YMPO
2018-2041
Regional Transportation Plan

Amendment No. 1
Air Quality Conformity
Conformity Documentation

Prepared by:

Kimley»Horn

333 E. Wetmore Road
Suite 280
Tucson, Arizona 85705

Prepared for:
Yuma Metropolitan Planning Organization

"Local Governments
And Citizens
Working Together"

May 2017
Updated March 2018

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1. INTRODUCTION

As the number of vehicles on the nation's roadways increased, air pollution from mobile sources was identified as an important national health concern. Recognizing this connection, the 1990 Clean Air Act Amendments (CAAAs) and the Arizona Transportation Conformity Rules require transportation plans, programs (TIP), and projects to conform to the purpose of the Arizona State Implementation Plan (SIP). Conformity to a SIP means that planned transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the national ambient air quality standards (NAAQS). The current federal transportation legislation, Fixing America's Surface Transportation Act and its predecessor, Moving Ahead for Progress in the 21st Century (MAP-21), reinforces the need for coordinated transportation and air quality planning through the metropolitan planning provisions.

The YMPO has the responsibility to ensure that the transportation plans and programs within the YMPO planning boundaries, generally the greater Yuma area, conform to the state and national air quality plans and standards. Specifically, the emissions generated from proposed projects in the YMPO's five-year Transportation Improvement Program (TIP) for 2018-2022 and the twenty-three year Regional Transportation Plan (RTP) for 2018-2041 must be consistent with and conform to national ambient air quality standards (NAAQS).

The YMPO is required to undertake an air quality conformity analysis for two specific reasons:

- to ensure that transportation investments (projects), strategies and programs, taken as a whole, have air quality impacts consistent with and conforming to state and national air quality plans and standards; and
- to ensure that neither the transportation system as a whole nor individual transportation projects cause new air quality violations or worsen existing conditions.

The air quality conformity process establishes the connection between transportation planning and emission reductions from transportation sources and is intended to ensure that integrated transportation and air quality planning occurs in areas designated as Non-Attainment or Maintenance Areas by the United States Environmental Protection Agency (EPA). A regional emissions analysis must be conducted to assess the impacts that transportation projects will have on emissions within an air quality planning area.

A *Non-Attainment* area is an area that has violated one or more of the National Ambient Air Quality Standards (NAAQS). A portion of the greater Yuma area is currently designated as a nonattainment area. Yuma County comprises the southernmost part of the Colorado River Valley. The City of Yuma, the county seat, is located just south of the confluence of the Colorado and Gila Rivers. The non-attainment area is geographically located in the far southwest portion of the Lower Colorado River Valley as shown in **Figure 1**. The yellow area in Figure 1 represents the YMPO Regional Travel Demand Model Boundary. The red hatched area represents the designated PM10 non-attainment area. There is a portion of the PM10 non-attainment area that is outside of the travel demand model boundary. This area is Federal Land that is not subject to air quality conformity. The PM10 non-attainment area contains a total of 16 full and partial townships comprising approximately 456 square miles or 300,000 acres.

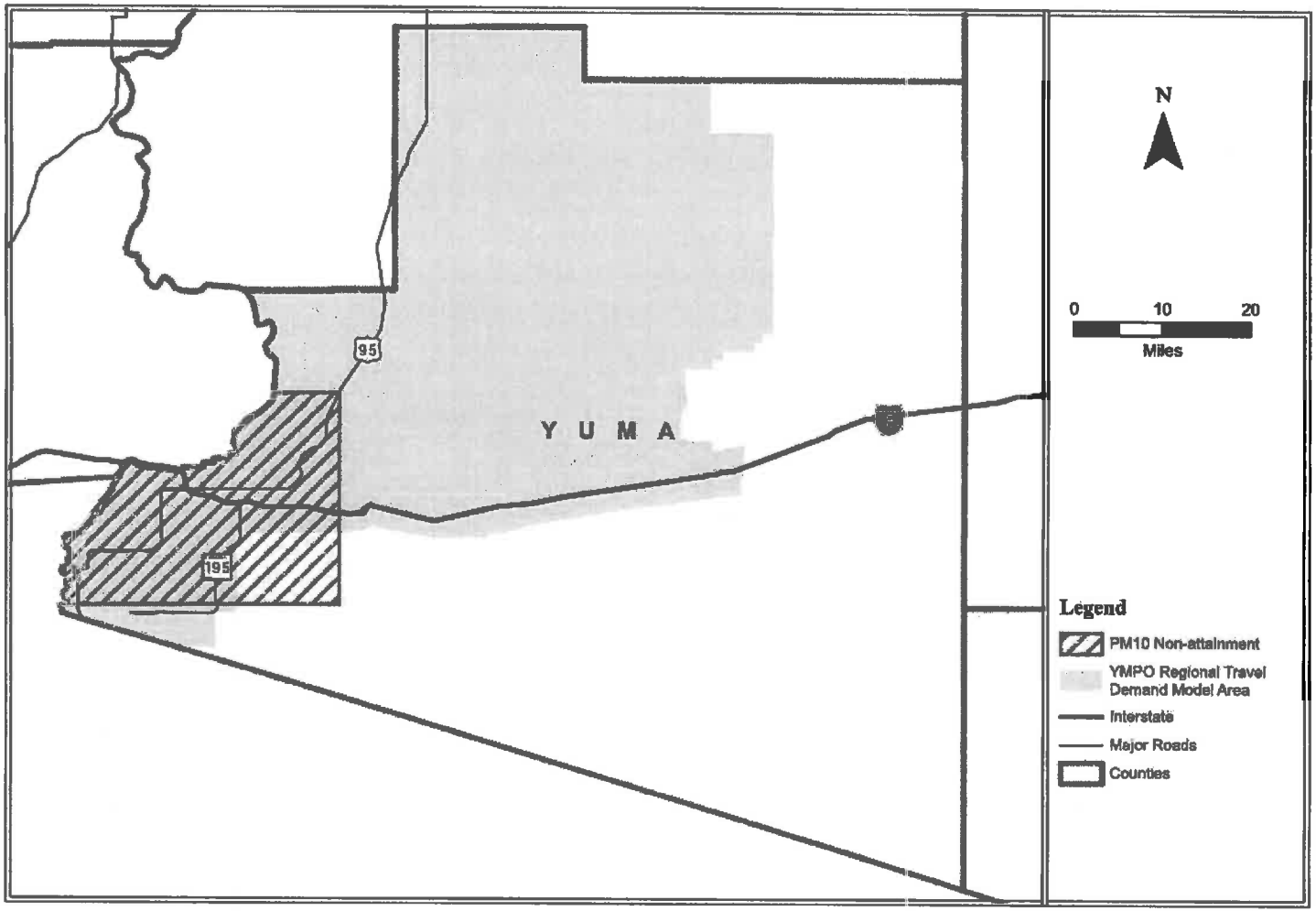

Figure 1. 2018-2041 PM10 Non-attainment area and YMPO RTP Model Boundary

In the Yuma area, the air quality violation was for PM_{10} particulate matter, a mix of solid and liquid droplets 10 microns or less in diameter. The Yuma area was designated as non-attainment in 1991, but EPA promulgated a Clean Data Finding for 1998-2001 and subsequent years on March 14, 2006 [71 Federal Register 13021; effective May 16, 2006]. A request for redesignation to attainment status and a related Maintenance Plan were submitted to EPA on August 17, 2006 and the EPA did not take formal action on the plan.

The purpose of this conformity analysis is to demonstrate that the Yuma non-attainment area supports the implementation of the financially constrained *YMPO RTP Update 2018-2041* by contributing to improved air quality and will therefore not jeopardize the Yuma region's attainment of the annual PM_{10} NAAQS. The conformity determination has been performed according to procedures prescribed by the following federal, state and local regulations: 69 FR 40004, 40 CFR Parts 51 and 93 (i.e. Transportation Conformity Rule Requirements); Arizona transportation conformity rules; and Metropolitan Planning Organization (MPO) Planning Regulations (23 CFR 450) implementing FAST Act and MAP-21 Requirements. Results of this conformity determination are found in **Table 10** of this report. For this transportation plan to be found to conform, the MPO and DOT must demonstrate that the applicable criteria and procedures have been satisfied (section §93.109-a). The following criteria for non-attainment areas are found to be applicable and are described as:

1) The TIP and RTP must pass an emissions budget test with a budget that has been found to be adequate by EPA for transportation conformity purposes, or an emission reduction test;
2) The conformity determinations must be based upon the most recent planning assumptions;
3) The conformity determinations must be based upon the latest emission estimation model available;
4) MPOs and state departments of transportation must provide reasonable opportunity for consultation with state air agencies, local air quality and transportation agencies, DOT, and the EPA;
5) Timely implementation of Transportation Control Measures (TCMs) in the applicable State Implementation Plan (SIP) must be provided for; and
6) The conformity determination must comply with FAST Act, MAP-21 and MPO Planning Regulations.

This report documents the process used by the Yuma MPO for the Conformity Determination for the *YMPO RTP Update 2018-2041*. EPA's MOVES2014a model was used to derive emissions as required by the EPA[1]. This conformity determination serves as an update to the YMPO's most recent conformity finding in 2014. The MOVES input files were created and modified as discussed in the interagency consultation process, with general assumptions and methodology outlined in this chapter. The modeled emissions are based on a number of inputs including temperature, relative humidity, and presence of inspection and maintenance programs, vehicle source type mix, vehicle age distribution, temporal distributions, average daily vehicle miles traveled (VMT), source type populations, hourly distribution, road type distribution, and average speed distribution

1.1 Latest Planning Assumption

The 2012 Yuma MPO Travel Demand Model was updated with consultation and input from state and local transportation agencies and the USDOT to the year 2015. The 2041 RTP provides the appropriate level of detail required by 40 CFR 93.106 of the conformity regulations. The highway projects in the 2041 LRTP are financially constrained for the entire plan and for each horizon year in terms of capital,

[1] MOVES2014 and MOVES2014a Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity, November 2015.

operations and maintenance costs (See RTP Chapter 8). The conformity analysis is based on assumptions derived from estimates of current and future population, employment, travel, and congestion. As part of the 2041 RTP conformity determination, past assumptions have been discussed with various local, state and federal agencies for their continued validity and updated whenever necessary. Detailed planning assumptions are presented in Section 2 of this chapter.

1.2 Latest Emissions Estimation Model

Mobile source emissions estimates for an average day (assumed for this analysis to occur in the month of April) to represent annual conditions were developed using EPA's Motor Vehicle Emission Simulator, MOVES2014a (November 2016), and travel estimates from the latest Yuma MPO Travel Demand Model. The Yuma MPO, Arizona Department of Transportation (ADOT), and Arizona Department of Environmental Quality (ADEQ) provided the most current data available for emissions calculations. The Federal Highway Administration (FHWA) provided guidance as well. The EPA's AP-42 guidance (https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors) as well as the region's previous conformity finding were referenced to calculate road dust emissions.

1.3 Travel Demand Modeling

The YMPO Travel Demand Model is the most recent and approved regional travel demand model for the study area. The travel demand model boundary is shown in **Figure 1**. Although model approval is a joint process between the MPO and the appropriate state review agencies, the Arizona Department of Transportation (ADOT) is the primary agency responsible for approval of the travel demand model for use in developing the Long-Range Transportation Plan (RTP) and other planning activities of the Yuma MPO.

The YMPO Travel Demand Model is a four-step model. Trip generation, trip distribution, mode choice, and trip assignment components are included in the model. The base year of the travel demand model is 2015. Socioeconomic data was forecasted to the year 2041 as a part of this model update effort. Traffic count data provided by Arizona Department of Transportation from their Transportation Data Management System for the year 2015 was used to validate the travel demand model[2]. Trip making characteristics, such as trip generation, average trip lengths, and travel mode were obtained from the 2001 National Household Travel Survey. A transit trip matrix estimated from the Yuma County Intergovernmental Public Transportation Agency (YCAT) in 2012 was used in the mode choice component of the travel demand model. These travel surveys appear to remain adequate based on comparison of available travel data in the region. Appendix E of the RTP contains the assumptions and methodology used to develop the travel demand model.

1.4 Interagency Consultation and Public Participation

Interagency consultation is the central coordinating mechanism for public agency involvement and input to the conformity determination. The conformity determination must be made according to 40 CFR §93.105-(a)-(2) and (e) and the requirements of 23 CFR 450 (40 CFR §93.112, Criteria and Procedures).

The Yuma MPO coordinated its activities for this conformity determination with numerous stakeholders and review agencies, including ADOT, ADEQ, FHWA, EPA, and other necessary agencies. The Yuma MPO has held teleconference calls and email correspondence to discuss the issues pertinent to the YMPO Conformity Demonstration (e.g. latest planning assumptions).

The Yuma MPO's Public Participation Plan, adopted in 2016, specifies procedures to ensure public involvement in the planning process. All Executive Board meetings are open to the public for comments

[2] https://www.azdot.gov/planning/DataandAnalysis

on any item. The public was notified of the opportunities to comment on this conformity demonstration. All comments received from the public, committee members, and review agencies were addressed appropriately. Specific information related to the public participation process for development of the RTP is provided in Chapter 3 of the RTP document.

1.5 Exempt Projects

There are no projects in the transportation plan or program that require mitigation. 40 CFR § 93.126 Exempt Projects. The YMPO's Plan and Program include the following exempt projects by category: Safety Improvements; Traffic Control Devices; Pavement Preservation; Sweeping Paved Surfaces; Watering Canal Maintenance/service Roads; Lighting Improvements; Purchase of Federal Transit Administration (FTA) Section 5310 paratransit vans, Section 5307 public transportation vehicles; Bicycle and Pedestrian Facilities; and Planning, Engineering, and Environmental studies. All projects in the YMPO area are from a conforming Plan and conforming Program, as determined by YMPO in the proposed RTP February 2017. There are no projects where there are PM10 construction impacts and, at the same time, where the Yuma PM10 SIP also identifies construction-related fugitive PM10 as a contributor to the non-attainment.

1.6 Conformity Test

The conformity tests specified in the federal transportation conformity rule are: (1) the emissions budget test, and (2) the emissions reduction test. For the emissions budget test, predicted emissions for the TIP/LRTP must be less than or equal to the motor vehicle emissions budget (MVEB) specified in the approved air quality implementation plan or the emissions budget found to be adequate for transportation conformity purposes. If there is no approved air quality plan for a pollutant for which the region is in non-attainment or no emission budget has been found to be adequate for transportation conformity purposes, the emissions reduction test applies.

The Build/No Build Test was applied to transportation projects in the Yuma PM10 nonattainment area until 2007. On June 12 2007, EPA found that the MVEB for PM10 in the 2006 Yuma PM10 Maintenance Plan is adequate for transportation conformity purposes, effective June 27, 2007. (72 FR 32295). As a result of EPA's adequacy finding, the applicable emissions budget for the YMPO nonattainment conformity determinations is 10,803 TPY for 2016 and all years thereafter.

2. METHODOLOGY

The emissions inventory development and emissions projection discussion below identifies procedures used by the Yuma MPO to obtain emissions for the PM10 non-attainment area protocol report was developed and discussed during the interagency consultation call. A copy of the protocol report can be found in **Appendix A**. The protocol report outlines the approach taken for data sources for the conformity demonstration.

2.1 Mobile Source Emissions

Table 1 summarizes the settings used in the MOVES run specification file. **Table 2** lists the assumptions used in the MOVES County Data Manager. Further details on the use of MOVES are found in the following sections.

Table 1 – MOVES Runspec Parameters	
MOVES Runspec Parameter	**Settings**
MOVES2014a Version 2016/11/17	Database version 2015/12/01
Scale	County, Inventory
Time Span	Years: 2018, 2021, 2031, and 2041 Time aggregation: Hour 1 month representing average annual conditions (April) All hours of the day selected Weekdays only
Geographic Bounds	Arizona- Yuma County
Vehicles/Equipment	All available fuel types All available source types
Road Type	All road types including off-network
Pollutants and Processes	PM10 (exhaust, tirewear, brakewear), PM2.5 (tirewear and brakewear), total energy consumption. All Processes
General Output	Units : grams, joules, miles Activity: Distance Traveled
Output Emissions	Time = hour, location = county
Advanced Performance	None

Once all of the base parameters have been established for a given MOVES Runspec, the County Data Manager can be used to enter locally-specific data. Input provided in Excel spreadsheet format can be referenced using this tool, which converts the data to MySQL format and incorporates it into the MOVES analysis. For this analysis, locally-specific data could consist of data used for the entire region, statewide, or county-level data. **Table 2** provides more detail on the methodology and assumptions used to arrive at the information entered for each input value. Default data refers to data extracted from the most up to date available MOVES program (MOVES2014a) for each scenario being modeled. **Table 3** summarizes the source population for each analysis year determined from the county vehicle registration data and projected using a calculated growth rate from the YMPO Travel Demand Model VMT.

Table 2 – MOVES County Data Manager Parameters	
County Data Manager Input	**Data Source**
Age Distribution	January 2016 vehicle registration data for the Yuma area was obtained from the MVD report generated January 2, 2016, furnished by ADOT, along with a conversion process spreadsheet to modify this data for use in the EPA converter spreadsheet. The same age distribution was used for all analysis years.
Source Type Population	January 2016 source type population information was obtained for the Yuma area from the MVD report generated January 2, 2016, furnished by ADOT. Future year growth was obtained by determining the annual growth rates in VMTs from the YMPO Travel Demand Model, and then applying those growth rates to the January 2016 source type population to obtain the model years source type population.
Meteorology Data	Default Values
I/M Program	No I/M program information will be applied
Vehicle Type VMT (HPMS)	Daily VMT is from the YMPO Travel Demand Model. This travel demand model's base year socioeconomic data is 2015 and was validated against 2015 traffic volumes.
Monthly VMT Fraction	Determined using EPA conversion tool for Annual Average Weekly VMT.
Daily VMT Fraction	Determined using EPA conversion tool for Annual Average Weekly VMT.
Hourly VMT Fraction	2014 Arizona Statewide Model data was obtained from ADOT for use in the data field. This data was used for all analysis years.
Fuels	Default data was obtained using MOVES Fuel Wizard
Ramp Fraction	Using local data obtained from YMPO Travel Demand Model. This travel demand model's base year socioeconomic data is 2015 and was validated against 2015 traffic volumes.
Road Type Distribution	2014 Arizona Statewide Model data was obtained from ADOT for use in this data field. This data was used for all analysis years.
Average Speed Distribution	Default data was used since more detailed data is not available at a regional or state level.

Table 3 – Source Population and Daily VMT by Analysis Year				
Input Value	**Analysis Year**			
	2018	**2021**	**2031**	**2041**
Source Population	188,723	200,275	244,134	297,598
Daily VMT	3,571,121	3,848,713	4,776,257	5,677,186

2.2 Paved and Unpaved Road Dust

The primary contributor to PM10 emissions in the Yuma non-attainment area is road dust from paved and unpaved roads. Emissions for road dust are calculated using the AP-42[3]. The *AP-42, Compilation of Air Pollutant Emission Factors*, has been published since 1972 as the primary compilation of EPA's emission factor information. This document, currently in its fifth edition, contains guidance on how to determine PM10 road dust emissions from both paved and unpaved roads in chapter 13 sections 13.2.1 (updated January 2011) and 13.2.2 (updated November 2006) respectively. The methodology for estimating paved and unpaved road dust emissions was determined following consultation with the FHWA Resource Center and the Arizona Department of Environmental Quality in April 2017.

VMT from the YMPO Travel Demand Model was obtained for the model functional classes. VMT for off-network links had to be estimated to determine the local paved and unpaved values. Local streets and roadways are not represented in the Yuma MPO Travel Demand Model (TDM). To estimate Vehicle Miles Traveled (VMT) on these roadways, the methodology described in the Arizona Department of Environmental Quality's (AzDEQ) Yuma PM10 Maintenance Plan (August 2006) was used. The VMT per mile for each local link in an individual traffic analysis zone (TAZ) or group of TAZ's was estimated based on its length and the number of trip ends generated in the TAZ. The following equation was used to estimate VMT for local paved and unpaved roadways:

$$VMT_{i,n} = (T_n/\Sigma L) \times (L_{i,n})^2$$

where:

$VMT_{i,n}$ = daily vehicle miles traveled for link i within TAZ n
T_n = total number of trip ends generated in TAZ n
L = total length of all links in TAZ n in miles
$L_{i,n}$ = length of link i within TAZ n in miles

Daily VMT and the number of trip ends generated in each TAZ and groups of TAZ's were obtained for the base year 2015 from the travel demand model. The length of paved and unpaved local roads in the non-attainment area was obtained from Yuma County, the City of Yuma, and the City of Somerton.

The aggregate future year VMT for local roads was estimated off-model using the following equation based on the base year and future year number of dwelling units. The methodology was also taken from the AzDEQ Yuma PM10 Maintenance Plan (August 2006).

$$VMT_f = (DU_f - DU_p) \times 1.22 + VMT_p$$

where:

VMT_p = present year daily vehicle miles traveled
VMT_f = future year daily vehicle miles traveled
DU_p = present year dwelling units

[3] https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors

DU_f = future year dwelling units

For this analysis, the increase in VMT will be applied to local paved roadways as the increase in the number of dwelling units would likely occur along roadways paved for the development and not on unpaved roadways. Silt loading factors for paved roadways contained in the previous conformity determination were also carried forward, as were emission factors for unpaved roads.

According to the AP-42, paved road dust can be determined using the following equation:

$$E = K\,(sL)^{0.91} \times (W)^{1.02}$$

where
E = particulate emission factor (having units matching the units of k),
k = particle size multiplier for particle size range and units of interest (1 for PM10 and units of g/VMT),
sL = road surface silt loading (grams per square meter) (g/m2), and
W = average weight (tons) of the vehicles traveling the road (determined by referencing the average value used by MAG in their most recent conformity finding).

This equation was applied to all paved road types to determine the associated emissions.

2.3 Total Emissions

After performing the analyses described above, emissions from all processes were combined to determine the overall impact of on-road mobile sources on PM10 levels in the Yuma non-attainment area. **Table 4** through **Table 7** show these emissions for all analysis years, along with the values needed to calculate paved road dust emissions.

Table 4 - Yuma 2018 Particulate Matter (PM10) Conformity Analysis

Facility Type	Particle Size Multiplier (g/VMT)	Silt Loading Factor (g/m2)	Average Vehicle Weight (tons)	Emission Factor (g/VMT)	Vehicle Miles Traveled (VMT)	Emissions (kg/day)
Interstate	1	0.04	3.18	0.174	755,090	131.33
Principal Arterials	1	0.3	3.18	1.088	936,795	1,019.30
Minor Arterials	1	0.3	3.18	1.088	750,200	816.27
Rural Major Collectors	1	0.7	3.18	2.352	333,240	783.92
Rural Minor Collectors	1	0.7	3.18	2.352	159,819	375.96
Urban Collectors	1	0.24	3.18	0.888	244,730	217.35
Local Roads	1	0.85	3.18	2.807	39,256	110.19
Interstate Ramps	1	0.04	3.18	0.174	34,314	5.97
Local paved	1	0.85	3.18	2.807	2,132,053	5,984.73
Local unpaved				107.611	112,887	12,147.88
MOVES Emissions						
				Tireware (kg/day)	36.56	320.31
				Brakeware (kg/day)	113.12	
				Exhaust (kg/day)	170.63	
					PM_{10} Emissions (kg/day)	**21,913.21**
					PM_{10} Emissions (tons/day)	**24.15**
					PM_{10} Emissions (tons/year)	**8,816.64**

Table 5 - Yuma 2021 Particulate Matter (PM10) Conformity Analysis						
Facility Type	**Particle Size Multiplier (g/VMT)**	**Silt Loading Factor (g/m2)**	**Average Vehicle Weight (tons)**	**Emission Factor (g/VMT)**	**Vehicle Miles Traveled (VMT)**	**Emissions (kg/day)**
Interstate	1	0.04	3.18	0.174	807,300	140.41
Principal Arterials	1	0.3	3.18	1.088	1,000,350	1088.45
Minor Arterials	1	0.3	3.18	1.088	782,172	851.06
Rural Major Collectors	1	0.7	3.18	2.352	384,146	903.67
Rural Minor Collectors	1	0.7	3.18	2.352	192,014	451.70
Urban Collectors	1	0.24	3.18	0.888	268,760	238.69
Local Roads	1	0.85	3.18	2.807	42,683	119.81
Interstate Ramps	1	0.04	3.18	0.174	32,546	5.66
Local paved	1	0.85	3.18	2.807	2,137,352	5,999.61
Local unpaved				107.611	112,887	12,147.88
MOVES Emissions				Tireware (kg/day)	39.39	287.86
				Brakeware (kg/day)	120.68	
				Exhaust (kg/day)	127.79	
					PM_{10} Emissions (kg/day)	**22,234.79**
					PM_{10} Emissions (tons/day)	**24.51**
					PM_{10} Emissions (tons/year)	**8,946.03**

Table 6 - Yuma 2031 Particulate Matter (PM10) Conformity Analysis						
Facility Type	**Particle Size Multiplier (g/VMT)**	**Silt Loading Factor (g/m2)**	**Average Vehicle Weight (tons)**	**Emission Factor (g/VMT)**	**Vehicle Miles Traveled (VMT)**	**Emissions (kg/day)**
Interstate	1	0.04	3.18	0.174	1,004,870	174.77
Principal Arterials	1	0.3	3.18	1.088	1,212,302	1,319.07
Minor Arterials	1	0.3	3.18	1.088	938,939	1,021.63
Rural Major Collectors	1	0.7	3.18	2.352	487,074	1,145.80
Rural Minor Collectors	1	0.7	3.18	2.352	221,083	520.08
Urban Collectors	1	0.24	3.18	0.888	356,952	317.01
Local Roads	1	0.85	3.18	2.807	57,581	161.63
Interstate Ramps	1	0.04	3.18	0.174	37,025	6.44
Local paved	1	0.85	3.18	2.807	2,166,095	6,080.29
Local unpaved				107.611	112,887	12,147.88
MOVES Emissions				Tireware (kg/day)	48.53	258.91
				Brakeware (kg/day)	149.01	
				Exhaust (kg/day)	61.37	
					PM_{10} Emissions (kg/day)	**23,153.51**
					PM_{10} Emissions (tons/day)	**25.52**
					PM_{10} Emissions (tons/year)	**9,315.67**

Table 7 - Yuma 2041 Particulate Matter (PM10) Conformity Analysis						
Facility Type	**Particle Size Multiplier (g/VMT)**	**Silt Loading Factor (g/m2)**	**Average Vehicle Weight (tons)**	**Emission Factor (g/VMT)**	**Vehicle Miles Traveled (VMT)**	**Emissions (kg/day)**
Interstate	1	0.04	3.18	0.174	1,194,709	207.78
Principal Arterials	1	0.3	3.18	1.088	1,446,654	1,574.06
Minor Arterials	1	0.3	3.18	1.088	1,061,003	1,154.44
Rural Major Collectors	1	0.7	3.18	2.352	644,348	1,515.78
Rural Minor Collectors	1	0.7	3.18	2.352	259,665	610.84
Urban Collectors	1	0.24	3.18	0.888	429,025	381.02
Local Roads	1	0.85	3.18	2.807	74,692	209.66
Interstate Ramps	1	0.04	3.18	0.174	42,163	7.33
Local paved	1	0.85	3.18	2.807	2,205,080	6,189.72
Local unpaved				107.611	112,887	12,147.88
MOVES Emissions				Tireware (kg/day)	58.03	285.18
				Brakeware (kg/day)	176.56	
				Exhaust (kg/day)	50.60	
					PM_{10} Emissions (kg/day)	**24,283.71**
					PM_{10} Emissions (tons/day)	**26.77**
					PM_{10} Emissions (tons/year)	**9,770.40**

3. REASONABLE AVAILABLE CONTROL MEASURES

In 1992, Transportation Control Measures (TCMs) were established for the Yuma non-attainment area. These TCMs were transportation improvements planned and implemented for the purpose of reducing pollutant emissions and improving air quality. At the same time, local governments adopted, implemented and enforced Reasonable Available Control Measures (RACMs). Some of the RACMs implemented included:

- paving, stabilizing, and/or reducing travel on unpaved streets, roads, and unpaved areas;
- watering unpaved streets, alleys, shoulders, and canal and levee roads;
- sweeping paved streets;
- reducing travel on canal roads; and
- constructing improvements such as parking lots and landscaped areas to minimize the amount of undeveloped desert in developed areas that was exposed to the elements.

The conformity demonstration inventoried the recent RACMs implemented by jurisdictions within the Yuma non-attainment area. For the updated conformity, updated mileage data was gathered from these jurisdictions and emissions were calculated as shown in **Table 8**. The length in centerline miles was provided from the jurisdictions along with the number of days of operation. The number of days of operation refers to the number of days throughout the year that the RACM was conducted. The vehicle per day (veh/day) estimation was obtained from local paved road traffic counts and adjusted by taking 10% for paved RACM and 10% of the paved veh/day for the unpaved RACM. This assumption was made to provide a conservative estimation that could be applied to all jurisdictions. To quantify the RACMs for each jurisdiction the guidelines provided by the FHWA for Multi-Pollutant Emissions Benefits of Transportation Strategies were followed[4].

[4] https://www.fhwa.dot.gov/ENVIRONMENT/air_quality/conformity/research/mpe_benefits/mpe07.cfm

Table 8- Reasonable Available Control Measures Emission Reductions					
Categories=Watering/Street Sweeping; Paving, Stabilizing, Reduced Travel; Ground Improvements					
Entity	**Category**	**Length in Lane Miles**	**Veh/Day**	**Total Days of Operation**	**Emission Reductions (tons/year)**
City of Somerton	Watering	4.84	10	305	8.81
	Street Sweeping	42.75	90	52	0.04
				Total	8.85
City of Yuma	Watering	0.028	10	208	0.02
	Street Sweeping	39.6	90	208	0.20
				Total	0.22
Yuma County	Paving	2	90	-	41
	Watering	19.3	10	208	15.80
	Street Sweeping	3.9	90	208	0.02
	Stabilizing	0.08	10	208	0.07
				Total	56.89
MCAS	Street Sweeping	8.6	90	146	0.03
				Total	0.03
San Luis	Watering	0.17	10	208	0.14
	Street Sweeping	4	90	208	0.02
				Total	0.16
				Grand Total	**66.15**

3.1 Newly Paved Roads

In addition to the emissions reductions sources described above, there will be emissions reductions gained because of newly paved roads and widened roads that are included as fiscally constrained projects list in the 2018-2041 RTP. These emissions reductions shown in **Table 9** were estimated by analysis year for these paving improvements. The reduction in tons/year were estimated using the same methodology used in the RACMs.

Table 9– Emissions Reductions from RTP Paving Improvements		
Analysis Year	**Miles of Improvements**	**Emission Reductions (tons/year)**
2018	0	0
2021	11.20	337
2031	33.26	688
2041	51.87	1,073

4. SUMMARY RESULTS AND CONCLUSIONS

Results from this analysis are summarized in **Table 10** and compared with the established motor vehicle emission budgets (MVEBs). Estimated emissions are representative of the combination of MOVES and AP-42 results. The annual reductions are from the RACMs and the newly paved roads. The difference in the estimated emissions and reduction provides the total adjusted PM10 levels in the YMPO nonattainment area for the maintenance plan budget years 2018, 2021, 2031, 2041.

Table 10 – Motor Vehicle Emissions Budget Comparison

Budget Year	PM10 Tons per Year (TPY)	Maintenance Plan Budget TPY*	Annual Reduction TPY	Total Adjusted PM10 TPY
2018	8,816.64	10,803	66.15	8,750.49
2021	8,946.03	10,803	403.15	8,542.88
2031	9,315.67	10,803	754.15	8,561.52
2041	9,770.40	10,803	1,139.15	8,631.25

*Motor Vehicle Emissions Budgets were found adequate for use in conformity (75 FR 32295; effective June 27, 2007)

On June 12, 2007 EPA found the MVEB to be adequate for transportation conformity purposes (75 FR 32295; effective June 27, 2007). EPA did not take formal action on the Yuma PM10 Maintenance Plan that was submitted on August 17, 2006. The MVEB for all analysis years is 10,803 tpy. The modeled emissions total each analysis year is shown in **Table 10**.

This air quality analysis documentation demonstrates conformity between the 2018-2022 Transportation Improvement Program, the 2018-2041 Regional Transportation Plan, and the State Implementation Plan. The analysis indicates that the projected emissions levels based on projects contained in the *YMPO RTP Update 2018-2041* meet the applicable conformity tests. Therefore, it is the determination of this analysis that this plan conforms under the PM_{10} National Ambient Air Quality Standards.

Yuma Metropolitan Planning Organization

502 S. Orange Ave. Phone: (928) 783-8911
Yuma, Arizona 85364 Fax: (928) 329-1674
www.ympo.org

Yuma San Luis Cocopah Wellton Somerton Yuma County ADOT Y M P O

Local Governments and Citizens Working Together

REVIEW COMMENTS

SUBMITTAL:	January 2018, TIP Amendment No. 1 Air Quality Conformity - Conformity Documentation	PROJECT NAME:	YMPO Regional Transportation Plan
REVIEWED BY:	Public and Agency review	DOCUMENT:	January 2018, TIP Amendment No. 1 Air Quality Conformity - Conformity Documentation
RETURN DATE:	February 28, 2018	CONSULTANT	Kimley-Horn
YMPO PROJECT MANAGER:	Charles Gutierrez		

ITEM NO.	PAGE NO.	COMMENT	COMMENT RESPONSE
1		Jerry Wamsley, EPA Thank you for the opportunity to review and comment on the air quality conformity analysis for Amendment #1 to the 2018-2041 Yuma MPO Regional Transportation Plan, dated January 2018. We have no comments and concur in your conformity analysis. As you proceed, if you have any questions or concerns, please do not hesitate to contact me.	No action required.
2		Mark Hoffman, ADOT In the Amendment 1 document and the Appendix, correct the project name to be consistent. Either use "Avenue D and Avenue E Extension" or "Avenue E and Avenue D Extension".	To be consistent with the TIP, the project will be referred to as Avenue E Extension, with project limits of County 23rd Street to County 19th Street.
3		Name: Beverly Chenausky, ADOT Page 8. Air Quality Conformity Report "The methodology for determining paved and unpaved road dust emissions was determined following consultation with the FHWA Resource Center." – insert a Date/year as done throughout this paragraph	This sentence has been updated to reflect the consultation that occurred with FHWA and with AzDEQ in April 2017.
4		Name: Beverly Chenausky, ADOT Page 9-11. Air Quality Conformity Report All Tables Under the facility Type Split out the "MOVES Emissions" to show different processes example MOVES Exhaust emissions MOVES Tirewear and Brakewear Emissions	The MOVES subtotals for tireware, brakewear, and exhaust have been added to the summary tables for

	(Also are the results only using PM10 emissions?)	each analysis year. These results are for PM10 only.
5	Name: Beverly Chenausky, ADOT Page 14 Table 10 same as above.	Table 10 is intended to summarize the results. The breakout of the MOVES emissions is not appropriate in the table.
6	Comment #1 Author: Dorothy Reid (IP address: 72.134.159.138, cpe-72-134-159-138.natsow.res.rr.com) Email: grampareid@aol.com Comment:For safety reasons I feel it extremely important that for ALL road improvement plans to include shoulders that are wide enough for vehicles to make emergency stops and for cyclists to transit without impeding traffic. No cyclist wants to endanger themselves by riding in heavy traffic but without shoulders they are left with no choice. Do it right the first time.	No action required
7	Author: B. Faure Email: gregger4@gmail.com Comment: This is an area that is widely used by bicyclists. Please include a wide (4 ft.) road shoulders in the plan to support this use. Thank you.	No action required
8	Author: Mary Kay Harton Email: Marykay.harton@yahoo.com Comment: Shoulders MUST be wide enough for a bike lane!!! Than you. This needs to be part of every project. Thank you	No action required
9	Author: Gene Dalby Email: eb_dalbey@yahoo.com Comment: The key to make this a successful project for the citizens of Yuma County is to make the shoulders wide enough for safe travel of bicycles. This will also provide a safe lane of travel with enough width to support a vehicle that may move close to the side of the road and not hit the sand which often causes the accident.	No action required
10	Author: Jeff Brand Email: jeff.brand@bikehighway.com Comment: The shoulder will need to be wide enough for safe bicycling or it will need to include a bicycle lane. 195 is used by cyclists to bike from the Foothills to San Louis. In fact 2 years ago, the County Department of Public Works added shoulders to a ½ miles section (both south & north sides) of the roadway South of Avenue D to increase the safety of cyclists. This is the only way to bicycle between San Louis and the foothills. Thank you for reaching out to the public for comments.	No action required

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