



County of Bernalillo
State of New Mexico
Public Works Division

Date: May 13, 2022

To: Terry Brown, P.E., Judith Becker, P.E.

From: Julie Luna, Bernalillo County Transportation Planner

Subject: Avanzando Draft Traffic Impact Study

Below are Bernalillo County comments on the subject draft TIS dated March 18, 2022. Please address these comments for the subsequent submittal.

General Comments

1. Mitigation Alternatives – Additional mitigation alternatives need to be considered with this development. Here are two considerations.
 - a. Construct crossing over Isleta Drain in order to access Rio Bravo & Loris signal
 - b. Signal at La Junta Rd – this might be warranted due to crashes. From 2015-2019, there were 23 crashes at this location. Of these crashes 12 potentially could have been avoided with a traffic signal (9 crashes due to failure to yield, 3 crashed due to passing a stop sign)
2. Recommendations – Include language/recommendation concerning the closure of median opening at MRGCD's Arenal Main Canal.
3. Deficiency #3, Recommendation #3 – Discuss signal timing optimization in the context of the adaptive signal project on Rio Bravo Blvd.
4. Build Analysis – In many cases the Build LOS is better than the No Build. I assume this is due to the PHF = 1 for Build. In general, models need to make intuitive sense. I would prefer that the results reflected that with more traffic the LOS degrades. At a minimum, this needs to be explained such as, "Synchro recommends using a PHF of 1 when upstream intersection is at capacity." etc.

Specific Comments

1. Page 2 Exec Summary, Page 6 Comparison with past TIS – Remove language that the 2017 TIS included a shopping center 12,000 S.F. larger than this TIS. Provide a table showing the 2016, 2017, and 2022 trip generations for comparison. Reference the trip generation study to show the 2021 site plan's trip generation is sufficiently similar to the 2017 trip generation submittal.

Trip Generation				
	AM Enter	AM Exit	PM Enter	PM Exit
2016 TIS	151	62	300	290
2017 TIS	131	50	238	223
2021 Site Plan	180	113	214	196

2. Page 1 Introduction – I’m struggling considering this an addendum to the 2017 TIS. I agree that this TIS is based on the 2017 TIS draft submittal, but a 2017 Final where comments were addressed was never submitted. I’ve created a table comparing the two documents to help me navigate through the updates and differences. Please include something similar to help explain the background to this TIS.

	2017 TIS	March 18, 2022
Study Intersections	1. Rio Bravo & Isleta Blvd 2. Rio Bravo & Del Rio Rd 3. Rio Bravo & Loris Dr. 4. Driveway “A” & Loris 5. Driveway “B” & Rio Bravo Blvd	1. Rio Bravo & La Junta Rd 2. Rio Bravo & Sunstar Rd 3. Rio Bravo & Loris Dr. 4. Driveway “B” & Rio Bravo Blvd
Trip Distribution	Includes Access A & Based on 2035 MTP (adopted 2011) socioeconomic data	No Access A & Based on 2035 MTP (adopted 2011) socioeconomic data
Trip Generation	9 th Edition Trip Generation Manual	2021 Trip Generation Study showing a comparison between 2016 site plan trip generation using 9 th Ed. Trip Gen Manual and a new 2021 site plan with 10 th Ed. Trip Gen Manual
Growth Rates	2035 MTP (adopted 2011)	2040 MTP Update (adopted 2020) – I’m unsure if this is the case, please see comment #6.

3. Page 4 Description of Proposed Development – Property is zoned C-1, Neighborhood Commercial. Correct the zoning and remove language about a special use permit. (Previous comment)
4. Page 5 Other Developments or Transportation Projects – Include Bernalillo County’s adaptive signal project for Rio Bravo Blvd. This project is currently under construction. Project TIP page is attached.
5. Page 6/A-103 – Streetlight data was provided for La Junta only. These data are missing for Sunstar.
6. Page 13/A-25 & A-26 – Historical Growth Rates. Pages A-25 & A-26 provide the Travel Demand Model from the 2035 MPT showing model output for 2015 and 2035. The narrative describes using the 2040 Update MTP travel demand model. It appears that the most recent MTP was used for these growth rates. Update the appendix accordingly.

	A-26 & A-27			2040 MTP Update		
			Annual Average Percent Growth			Annual Average Percent Growth
Rio Bravo - Loris to La Junta	2015	2035		2016	2040	
AMPH Westbound Load				695.04	914.18	1.3%
AMPH Eastbound Load	584.37	1710.89	9.6%	1379.44	1599.93	0.7%
PMPH Westbound Load				1460.38	1654.93	0.6%
PMPH Eastbound Load	1734.09	2384.79	1.9%	844.78	1146.54	1.5%

7. Page 15-16 Intersection 1 Rio Bravo & Loris HCM Summary Tables – Mitigated results are provided. Explain how this works in relation to the adaptive signal project.
8. Page A-48 & A-49 Analysis Sheet Input Error – In PM 2025 both BUILD & NO BUILD have the same number of right turns (285) instead of 285 for NO BUILD and 299 for BUILD
9. Page 15-16 Intersection 1 Rio Bravo & Loris HCM Summary Tables **2025** – I thought the tables were supposed to provide the worst movement for each direction and I'm confused why NBR was not consistently reported.

Avanzando Commercial Development - Rio Bravo Blvd., Albuquerque, NM														
Intersection	Signalization	Movement	Implementation Year -2025											
			AM											
			NO BUILD				BUILD				BUILD Mitigated			
			LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay1 (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1
Loris Dr.	Signalized	EB Rio Bravo	B	13.1	None	None	B	13.2	None	None	B	13.00	None	None
		WB Rio Bravo	B	10.2	None	None	B	10.3	None	None	B	13.00	None	None
		NB Loris Dr.	D	36.3	None	NBR=1.46	D	36.0	None	NBR=1.50	D	36.60	NBR=1.20	None
	Intersection Delay (s/veh)	NBL = 36.3 B 16.5 NBR = 64.6				NBL = 36.0 B 16.8 NBR = 65.6				NBL = 36.6 B 14.2 NBR = 40.9				

Why is the delay for NBL? NBR has higher delays and the QSR is given for NBR.

		PM											
		NO BUILD				BUILD				BUILD Mitigated			
		LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR ² >1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR ² >1
Signalized	EB Rio Bravo	B	13.5	None	None	B	13.8	None	None	B	13.80	None	None
	WB Rio Bravo	B	11.1	None	None	B	11.2	None	None	B	11.20	None	None
	NB Frontage Rd.	F	115.1	NBR=1.066	NBR=2.50	F	115.1	NBR=1.066	NBR=2.50	D	51.10	None	NBR=1.71
	Intersection Delay (s/veh)	C 25.3				C 25.5				C 17.6			

1 - Level of Service (LOS)/ Delay for unsignalized intersections are for movements with worst results

2 - QSR = Queue Storage Ratio = 95th Percentile Queue (ft)/Available Storage Length (ft)

For 2025 PMPH – All data come from NBR. This makes sense. I'm not sure why this was not done for AMPH.

10. Page 15-16 Intersection 1 Rio Bravo & Loris HCM Summary Tables 2035 – There are a few typos.

HCM Results Summary Table

Avanzando Commercial Development - Rio Bravo Blvd., Albuquerque, NM

Intersection	Signalization	Movement	Horizon Year -2035												
			AM												
			NO BUILD				BUILD				BUILD Mitigated				
			LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	
1 - Rio Bravo Blvd. & Loris Dr.	Signalized	EB Rio Bravo	B	12.8	None	None	B	EBT = 13.7 11	None	None	B	13.4	None	None	
		WB Rio Bravo	A	9.8	None	None	B	WBL = 7.7 18.9	None	None	B	10.7	None	None	
		NB Loris Dr.	E	61.6	None	NBR=1.33	E	69.6	None	NBR=1.68	D	42.1	None	NBR=1.33	
	Intersection Delay (s/veh)		B 15.6				B 18.2				B 15				
	Signalized	PM													
		NO BUILD				BUILD				BUILD Mitigated					
			LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR ² >1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR ² >1	
		EB Rio Bravo	B	13.8	None	None	B	13.8	None	None	B	13.8	None	None	
		WB Rio Bravo	B	11.2	None	None	B	11.2	None	None	B	11.2	None	None	
	NB Loris Dr. - Driveway 'B'		F	156.4	NBR=1.186	NBR=3.19	F	176.5	NBR=1.2380	NBR=3.52	E	75.2	None	NBR=2.33	
	Intersection Delay (s/veh)		C 32.3				D 36				C 21.7				

Loris Dr.

1 - Level-of-Service / Delay for an unsignalized intersection are reported based on the turning movement with the worst results.

2 - QSR = Queue Storage Ratio = 95th Percentile Queue (ft)/Available Storage Length (ft)

11. Page 18, (A-32 & A-80). (A-41 & A-84) Rio Bravo & Sunstar

There are differences between the projected turning movement worksheet and the model inputs for 2025 PM Build and 2035 PM Build.

Rio Bravo & Sunstar	Page	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2025 PM Build	A-32	70	2	936	6	19	1899	2	18	0	2	2	0	2
2025 PM Build	A-80	70	2	920	5	19	1872	2	16	0	2	2	0	2
2035 PM Build	A-41	70	2	1034	7	21	2103	2	20	0	2	2	0	2
2035 PM Build	A-84	123	5	927	5	19	1893	0	17	0	5	0	0	0

12. Page 18, A-80 Rio Bravo & Sunstar – There appears to be minor typos on Page 18 Summary Table in 2025 PM No Build. I think it is worthwhile to include in this section’s narrative the increase in the number of the EBU for Build scenario. I feel like it is worthwhile to include the number of U-turn generated by the site. There is a discussion that the limited access generates the need for U-turns this could be a good place to put the number of U-turns (15 AMPH, 70 PMPH).

Intersection Delay (s/veh)		D 31.2				D 27.3			
		PM							
		NO BUILD				BUILD			
		LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR ² >1
Unsignalized	EB Rio Bravo	D	25.3 16.0	None	None	F	128.8	None	None
	WB Rio Bravo	A	9.9	None	None	B	10.1	None	None
	NB Sunstar NBR	F	110.3	None	None	F	149	None	None
	SB Frontage Rd.	F	113.8	None	None	F	192	None	None
Intersection Delay (s/veh)		F 113.8				F 192			

13. Page 18, A-41, A-84 Rio Bravo & Sunstar 2035 PM Build–The input in the analysis is different from the turning movement projection sheet. See comment #11.

14. Page 19 Narrative –

Describe why queuing analysis does not indicate queue capacity and how recommendations are being made to queue lengths. I assume that there is due to the amount of traffic being beyond the model’s parameters and that left turn recommendations are based on SAMM requirements.

Intersection #4 - Rio Bravo Blvd. / La Junta Rd. – Appendix Pages A-85 thru A-93

Rio Bravo Blvd./La Junta Rd. intersection is an unsignalized intersection. The results of the 2025 Implementation Year and 2035 Horizon Year analysis of the unsignalized intersection of Rio Bravo Blvd. /La Junta Rd. are summarized in the following tables:

It is worthwhile to note that AM Build contribute 19 EB U-turns to the EBL

HCM Results Summary Table

Avanzando Commercial Development - Rio Bravo Blvd., Albuquerque, NM

Intersection	Signalization	Movement	Implementation Year -2025							
			AM				BUILD			
			NO BUILD				BUILD			
			LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1
4 - Rio Bravo Blvd. & La Junta	Unsignalized	EB Rio Bravo	A	8.8	None	None	A	9.4	None	None
		WB Rio Bravo	C	19.2	None	None	C	15.8	None	None
		NB Sunstar	F	183.7	None	None	F	96.5	None	None
		SB Frontage Rd.	E	40.1	None	None	D	30	None	None
		Intersection Delay (s/veh)	F 183.7				F 96.5			
	Unsignalized	EB Rio Bravo	C	19.3	None	None	F	\$996.60	EBL V/C =2.79	EBL QSR =2.42
		WB Rio Bravo	A	9.9	None	None	B	11	None	None
		NB Sunstar	F	58.9	None	None	-	-	None	None
		SB Frontage Rd.	E	36.4	None	None	-	-	None	None
		Intersection Delay (s/veh)	F 58.9				F \$996.60			

1 - Level of Service (LOS)/ Delay for unsignalized intersections are for movements with worst results

2 - QSR = Queue Storage Ratio = 95th Percentile Queue (ft)/Available Storage Length (ft)

\$ - Delay exceeds 300 seconds

2025 AM Build has better significantly better results than No Build. I assume this is due to PHF. It looks odd.

Here, the QSR shows that the EBL needs to be extended. How is this interpreted.

The model is not providing output. This needs to be indicated. Providing "None" in these cells is incorrect and misleading.

I assume that model output over 300 seconds of delay is beyond the model's capabilities. I really appreciate seeing that the model says it will take over 16 min to make an EBL, but it needs to be noted if results over 300s may not carry the same validity as results below 300s delay.

16. Page 20 Summary Table – Comments in red.

Intersection	Signalization	Movement	Horizon Year -2035							
			AM							
			NO BUILD				BUILD			
			LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1	LOS	Delay ¹ (s/veh)	Movements w/ V/C ratio >1	Movements w/ QSR>1
4- Rio Bravo Blvd. & La Junta	Unsignalized	EB Rio Bravo	A	9	None	None	A	9.7	None	None
		WB Rio Bravo	C	22.7	None	None	C	18	None	None
		NB Sunstar	F	\$ 353.9	None	None	F	171.3	None	None
		SB Frontage Rd.	F	62.4	None	None	E	40.1	None	None
		Intersection Delay (s/veh)	F 353.9				F 171.3			
	Unsignalized	EB Rio Bravo	C	21.1	None	None	F	\$359.20	EBL V/C =1.5	EBL QSR =1.8
		WB Rio Bravo	B	10.3	None	None	B	11.7	None	None
		NB Sunstar	F	82.6	None	None	F	\$	None	None
		SB Frontage Rd.	F	63.7	None	None	F	\$	None	None
		Intersection Delay (s/veh)	F 82.6				F \$			

2035 AM Build has better significantly better results than No Build. I assume this is due to PHF. It looks odd.

A-92 & A-93 Both provide 2035 PM Build and both are mislabel as "2025 PM BUILD"

The model is not providing output. This needs to be indicated. Providing "None" in these cells is incorrect and misleading.

1 - Level-of-Service / Delay for an unsignalized intersection are reported based on the turning movement with the worst results
 2 - QSR = Queue Storage Ratio = 95th Percentile Queue (ft)/Available Storage Length (ft)
 \$ Delay exceeds 300 seconds

A-91 (2035 NO BUILD) has a minor input error with 0 NBT and 5 NBR. It should be the other way around. I wanted to point this out since the side street traffic sometimes has large affects on the overall intersection.

Is there a point where Synchro will not provide a time?

17. Page 21 – Pedestrian and bikeway recommendations - BCPWD has met with the developer and has provided multi-modal requirements based on current plans. These include the Isleta Drain Trail along the site's western frontage, multi-use trail along the site's northern frontage. For turn lane improvements at the site's Access B, sufficient shoulder for a bicycle lane are required.

CC:

Richard Meadows, Bernalillo County

Afshin Jian, Bernalillo County

Margaret Haynes, NMDOT

Nancy Perea, NMDOT

Albuquerque Metropolitan Planning Area	Mid-Region Metropolitan Planning Organization	Transportation Improvement Program (TIP)
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CN:	A300943	Mid-Region MPO Rec Num:	209	NMDOT Dist.: 3	County Bernalillo	Municipality Unincorporated Area
Fed ID	A300943	Category:	ITS-TSM	Lead Agency: County of Bernalillo		Length: 6.015 Miles
RT1 NM0500	Proj NM 500 Rio Bravo and 2nd Street SW Adaptive Signal Control Technology Project					Est. Proj. Cost: \$1,200,000
RT2 FL4035	Fr: Rio Bravo: Coors to University To: 2nd Street: Rio Bravo Blvd to Woodward Rd.					Est. Letting
	Rt 1 BMP	7.2	Rt 2 BMP:	2.729	Rt 1 EMP:	11.65
				Rt 2 EMP:	4.294	TIP Amendment Pending? <input type="checkbox"/>
Project Desc.: Install adaptive signal control system and fiber optic cable on Rio Bravo Blvd and 2nd Street. NOTE: Local match will be used as a soft match for preliminary engineering and design.						
Project Phases: <input checked="" type="checkbox"/> Environ. Document <input checked="" type="checkbox"/> Prel. Engr. <input checked="" type="checkbox"/> Design <input type="checkbox"/> Right-of-way <input checked="" type="checkbox"/> Construction <input type="checkbox"/> Other						Work Zone Routine
Remarks: AM-May-20, AM-Mar-20, R-20-02, R-15-05.						

PROGRAMMED FUNDS - Four Year Federal TIP by Funding Category						TIP Informational Years	
FUND SOURCE	2020	2021	2022	2023	4 Yr. TOTALS	2024	2025
State Match		\$0			\$0		
Local Match		\$174,720			\$174,720		
STP-U		\$1,025,280	24		\$1,025,280		
Totals		\$1,200,000			\$1,200,000		