

Milton Rd & US 180 Corridor Master Plans

Milton Rd - Raised Median / Access Control Specifications

Raised Median Specifications

No Build +: 12' wide raised median

Alternative 5: 12' wide raised median (per Tier 2 Alt spec)

Alternative 6a: 15' wide raised median (per Tier 2 Alt spec)

Alternative 6b: 15' wide raised median (per Tier 2 Alt spec)

Alternative 13:

a) At signalized intersections: 8' wide X 60' long raised median offset platform (40' long offset platform + 20' long ramps)

b) Midblock: No raised median. Dedicated Bus Rapid Transit (BRT) lanes would restrict all non-signalized left-turn-in and left-turn-out access.

Notes:

1) For all Build Alternatives (including the No Build +), the raised median would drop where left turn lane(s) exist at signalized intersections.

2) The raised median, access control specifications would be evaluated between Forest Meadows St and south of Phoenix Ave (with the assumption that there would be a signalized intersection at Phoenix Ave).

3) U-turn movements would follow the Tier 3 Spot Improvements, which would generally allow U-turns at signalized intersections and approved left turn movements (raised median breaks) for 6-8-lane alternatives, but would restrict most U-turns for the No Build + (unless an exception is identified in the Spot Improvements list).

4) For all 6-8-lane Alternatives (5, 6a, 6b, and 13), it is recommended to add a signalized intersection at Chambers Dr to enhance operations.

Raised Median / Access Control Spacing Guidance

The below Raised Median / Access Control Spacing Guidance will be documented in the Milton Rd Corridor Master Plan report and is intended to serve an access management guide for future redevelopment along Milton Rd should a raised median be constructed. This guidance is subject to an approved Traffic Impact Analysis (TIA) for any proposed development.

1) Driveway spacing and left-turn-out access median breaks are subject to Level of Service (LOS) and safety analysis at any proposed driveway access point prior to permitting changes to access.

2) 300 feet or less of **frontage*: one driveway with right-turn-in, right-turn-out access permitted; no median break for left-turn-in, left-turn-out access permitted.

3) 300-500 feet of frontage: two driveways with right-turn-in, right-turn-out access permitted; no median break for left-turn-in, left-turn-out access permitted.

4) Over 500 feet of frontage: two site driveways and one median break for one left-turn-in movement could be considered.

5) If multiple properties provide cross access for 500' of frontage via an access agreement, a break in the median for left-turn-in access could be considered.

6) With the exceptions of permitted left-turn-out access, as identified in Table 1 below, left-turns onto Milton Rd are restricted to signalized intersections if a raised median were constructed on Milton Rd.

**Frontage* is defined as the linear distance of the property along ADOT right-of-way.

Table 1: Left-Turn Access Control (assuming a Raised Median)

¹Left-in: Traveling on Milton Rd and turning left in to an access point

²Left-out: Making a left turn from an access point on to Milton Rd

Alternative	Location	Permitted Left-Turn Movements
No Build Plus / No Build Hybrid	1) Saunders Dr	1) ¹ Left-in permitted; ² left-out restricted
	2) 1830 University West Apartment Homes Access Road (north of Pizza Hut)	2) Left-in permitted; left-out restricted
	3) University Ave (currently west side of Milton)	3) Assuming University Ave is realigned and signalized
	4) Target Access (east side of Milton across from current University Ave alignment, north of University Dr)	4) Left-in restricted; left-out restricted
	5) Chambers Dr	5) Left-in permitted; left-out permitted (Note: Recommended to stay as non-signalized in No Build + / Hybrid. This is the only non-signalized intersection recommended to permit a left-out movement.)
	6) McDonald’s Access (west side of Milton)	6) Left-in restricted; left-out restricted (Reviewed due to connection to Yale St)
	7) Malpais Ln	7) Left-in restricted; left-out restricted
	8) Mikes Pike St	8) Left-in restricted; left-out restricted
	9) Tucson Ave	9) Left-in permitted; left-out restricted
	10) Phoenix Ave	10) If signal = N/A. If no signal = Left-in permitted; left-out permitted
	11) Santa Fe Ave	11) If signal = N/A. If no signal = Left-in permitted; no left out
Alternative 5 (Add 2 GP Lanes)	1) Same as the No Build + 2) Chambers Dr	1) All Left-Turn Movement recommendations from the No Build + would apply 2) Convert to signalized intersection
Alternative 6a (Add 2 GP lanes + 2 Outside BRT/bike/RT lanes)	1) Same as the No Build + 2) Chambers Dr	1) All Left-Turn Movement recommendations from the No Build + would apply 2) Convert to signalized intersection
Alternative 6b	1) Same as the No Build +	1) All Left-Turn Movement

(Add 2 Outside BRT/bike/RT lanes)	2) Chambers Dr	recommendations from the No Build + would apply 2) Convert to signalized intersection
Alternative 13 (Add 2 Center BRT lanes)	1) Forest Meadows St to south of Phoenix Ave 2) Chambers Dr	1) Left-in restricted; left-out restricted (except at signalized intersections) 2) Convert to signalized intersection

Raised Median / Access Control Meeting Notes

Thursday, July 23, 2020

Google Meet Conference Call

Attendees:

ADOT: Dan Gabiou, Nate Reisner, Steve Orosz

City of Flagstaff: Jeff Bauman

MBI: Kevin Kugler, Jessica Belowich

Meeting Purpose:

The purpose of this meeting is to identify the specs we'd like to see for a raised median, access controlled version of our remaining Milton Rd CMP Alternatives. The intent is to model these versions to compare to the original alternative specs (which do not include raised median or access control features).

The raised-median, access control specifications and additional spot improvements recommended in this document would not apply to the original, non-access controlled versions of the Alternatives, per the spot-improvements previously agreed upon by the Project Partners on February 11, 2020.

Discussion

1) Raised Median Access Control Spec

No Build + Alternative

-Steve: How does the City feel about access management?

-Jeff: This is the right time to discuss, through the CMP process.

-Nate: Need to evaluate, especially for re-development

-Dan: The current proposal is we would define the raised median / access control spec, model it for our remaining alternatives, and share the traffic operations results with the Partners, public, and business community. Originally, we were only going to model a raised median / access controlled version of the Recommended Alternative, but Kevin and I felt this would be necessary in order to expedite the schedule.

-Steve: We need to agree to U-turn movements assumptions. I recommend yes for 6+ lanes and no for 4 lanes.

-Kevin: We do have some specific U-turn locations and restrictions identified in the Tier 3 Spot Improvements

-Dan: How much more traffic would be making U-Turns based on restricting left turn movements?

-Jessica: How do we account for non-signalized intersections that are not in the model?

-Dan: I think we'll need to make an assumption based on our best understanding. Do we have turning movement counts? Is there a way to calculate anticipated additional U-turns at signalized intersections and how much capacity the signalized left-turn lanes could hold?

-Jessica: We'll have to do some digging. VISSIM does not handle this type of analysis very well.



The group then discussed allowable left-turn movements and locations, starting from the southern part of the corridor to the northern end, starting with the No Build + Alternative. The agreed-upon results are summarized in Table 1.

No Build +

Allowable (non-signalized) Left Turn Movements (onto Milton) Locations:

SB @ Chambers?

-Note: There is about 900' between Chambers and University Dr.

-Steve: Yes, WB Left Out to SB Milton OK. SB Left to EB Chambers OK.

-Nate: Agree

-Jeff: Agree

Nate: Previous U-turn discussion applies.

Kevin: Even more reason not to allow a Left Out when adding more lanes

Steve: Agree with Kevin. Under Build Alts, recommend Signal at Chambers.

-Jeff: Yes

-Nate: Yes

*For Chambers, the signalized intersection would apply to Alt 13 as well.

Mike's Pike: No SB LT / No Left Out. All Agree

NB @ Saunders?

-Jeff: Yes. Is there any guidance on restrictions for additional lanes?

-Steve: Regarding delay, if LOS E+, need to mitigate

-Dan: Safety, additional conflict points

-Steve: no. Come back to Jeff's ideas.

-Kevin: Saunders is less than 660' from prior signal

-Jessica: This driveway not in model (would not impact model)

-Jeff: Left outs problematic. Left-in and U-turn opportunities

-Nate: Left-in, but no left-out

*Group: No left turns out. Left turns in OK.

Saunders Turn Movement Counts: 21 AM/PM + 35 / 58

1830 University West road (550' north of signal) – Left-in ok; no left out

–Jessica: Not in model

-Steve: Ok

-Nate: Ok

-Jeff: Ok

Turn Movement Counts: TBD

NB @ McDonald's (north of Chambers)?

-Steve: No NB Left

-Nate: Agree, no NB Left

-Jeff: Agree

Malpais Ln: No NB LT onto Milton / No U-Turns

-Jeff: Agree

-Steve: Agree

-Nate: Agree

Phoenix: Assumption is signalized for all Alts (including No Build +)

Tucson: Left in Ok (NB to WB) / No left out / No U-Turns

-Jeff: Ok

-Steve: Ok

-Nate: Ok

-Jessica: in model

Santa Fe: Florida T allows Left Turn from R66 onto WB Santa Fe. No Left Turns from SB Sitgreaves to EB R66.

Other alt: Turn left onto Phoenix.

If do not do Florida T, all Alts restrict Left Turn from NB R66 to WB Santa Fe.

Build Alts

Alt 5 (Add 2 GP lanes)

Any Changes compared to No Build +? -No, only add signalization of Chambers. U-turn discussion applies.

Alt 6a (Add 2 GP lanes + 2 BRT lanes)

Any Changes compared to No Build +? -No, only add signalization of Chambers. U-turn discussion applies.

Alt 6b (Add 2 outside BRT lanes)

Any Changes compared to No Build +? -No, only add signalization of Chambers. U-turn discussion applies.

Alt 13 (Add 2 center BRT lanes) – Access Control Spec Completed

Dan: Spec previously identified by Mountain Line/AECOM per 7/3/19 email

-Midblock: None – Bus lanes

-At Signalized Intersection bus stop locations (Riordan & Butler): 8' wide X 60' long offset platform (40' platform + 20' ramps)

Access Control: No Left Turns from side streets / business access points onto Milton permitted (ADOT/NAIPTA Agreed to this due to safety concerns. See 2/25/20 email from Bizzy.)

Dan: We already have run this model, but if we're adding a signal to Chambers, should we also add it here?

Steve: Yes, any alt that adds lanes should receive a signal at Chambers.

Dan: Group agree? -Yes

2) Raised Median width (and any other details)

No Build +: 12' width (11' with striping; space back of curb) – Raised median would apply throughout, except break for existing left-turn movements.

-11' left turn-lanes with 4' finger islands.

Alt 5: 12' width

Alts 6a/6b: 15' width

3) Preferred Access Distance Spec

Kevin: 660' spacing identified in the ADOT TGP, Section 1060 on Median Openings.

Steve: This spacing is for divided highways though

Nate: We treat this as an Interim spec until a more detailed access management policy identified for a corridor via a study.

Nate: Recommended Spacing for Left Turn Breaks

- 1) Driveway spacing and left-turn-out access median breaks are subject to Level of Service (LOS) and safety analysis at any proposed driveway access point prior to permitting changes to access.
- 2) 300 feet or less of *frontage: one driveway with right-turn-in, right-turn-out access permitted; no median break for left-turn-in, left-turn-out access permitted.
- 3) 300-500 feet of frontage: two driveways with right-turn-in, right-turn-out access permitted; no median break for left-turn-in, left-turn-out access permitted.
- 4) Over 500 feet of frontage: two site driveways and one median break for one left-turn-in movement could be considered.
- 5) If multiple properties provide cross access for 500' of frontage via an access agreement, a break in the median for left-turn-in access could be considered.

-Jeff: Nate's recommendations are a good starting point.