



## Eastern Corridor Segments II and III

Combined Linwood/Eastern Interchange and US 50/Red Bank Interchange Focus Area

Theme

# US 50/RED BANK CONNECTIVITY

**Primary Needs identified for this theme:**

- P3) Address localized connectivity travel patterns within the interchange.
- P4) Address capacity issues and long queues on northbound and westbound approaches of the Red Bank/Colbank intersection.

**Secondary Needs identified for this theme:**

- S12) Address lack of/limited wayfinding to improve regional connectivity.

Concept not drawn.

DESCRIPTION

- Designate lane assignments on dual southbound left turn lanes on Red Bank Road to Colbank Road.
- Make inside lane on Colbank Road a dedicated left onto the ramp to westbound US 50.

9/7 MEETING DISCUSSION AND COMMENTS

- Concept has been combined with concepts I-25b and X-4a.The idea was not specifically discussed at this meeting as concept I-25a.
- No additional comments received following the 9/7 meeting.

NEEDS ADDRESSED

- P4) Address capacity issues and long queues on northbound and westbound approaches of the Red Bank/Colbank intersection.
- S12) Address lack of/limited wayfinding to improve regional connectivity.

NEXT STEPS/RECOMMENDATION

- Combine with concepts I-25b and X-4a, and advance for further study.

5/22 MEETING DISCUSSION AND COMMENTS

- This concept would designate lane assignments on southbound Red Bank and on Colbank Road and would add additional wayfinding signage.

Comments Submitted Following the 5/22 Meeting  
(Comments are presented as submitted by Committee members; no edits to content were made.)

- Figure 1-25a is not included in the Concept Drawing pdf. If this concept is being considered for further study, please provide the Figure to allow for comments.

ODOT Response:

- Concept I-25a proposes only signing and pavement marking changes and was not drawn.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
NEUTRAL	NEUTRAL	SIMPLE	< \$5 MILLION	NONE	MINIMAL (C1/C2)	NEUTRAL	NEUTRAL	NEUTRAL	ADVANCE with other concepts

RECOMMENDATION: ADVANCE WITH OTHER CONCEPTS

Concept drawings are presented on the following pages.

DESCRIPTION

- Improve signal timing.
- Lengthen storage lanes (storage refers to the amount of space available for vehicles to line up in a designated turn lane).
- Add dual westbound right turn lanes from Colbank to northbound Red Bank.
- Add dual northbound through lanes on Colbank to northbound Red Bank at the Red Bank/Colbank intersection.

NEEDS ADDRESSED

- P4) Address capacity issues and long queues on northbound and westbound approaches of the Red Bank/Colbank intersection.

improvements to traffic operations, reducing AM peak hour delays by 85 percent and PM peak hour delays by 43 percent.

- The committee discussed installing a traffic signal to stop the northbound movement at the intersection of Colbank and US 50 ramp and provide a turn arrow so that drivers turning left from Colbank to the westbound US 50 ramp don’t have to stop a second time but could move continually through the intersection (similar to the existing intersection at Glenway and Glenhills Way). The signal could be equipped with a sensor to display an arrow only when the queue is long.
- The committee discussed whether or not two travel lanes were needed on the ramp to eastbound US 50 past the Colbank/US 50 ramp intersection. Restriping could reduce the lanes to one if it’s warranted.
- No additional comments received following the 9/7 meeting.

5/22 MEETING DISCUSSION AND COMMENTS

- The needs of bicyclists should be considered as part of this concept.
- No additional comments received following the 5/22 meeting

12/12 MEETING DISCUSSION AND COMMENTS

- Committee members felt that this concept was a good, simple solution for the challenges in this area.
- The public also appeared to like or be neutral toward this concept; see Public Feedback Ratings Summary, next page.

9/7 MEETING DISCUSSION AND COMMENTS

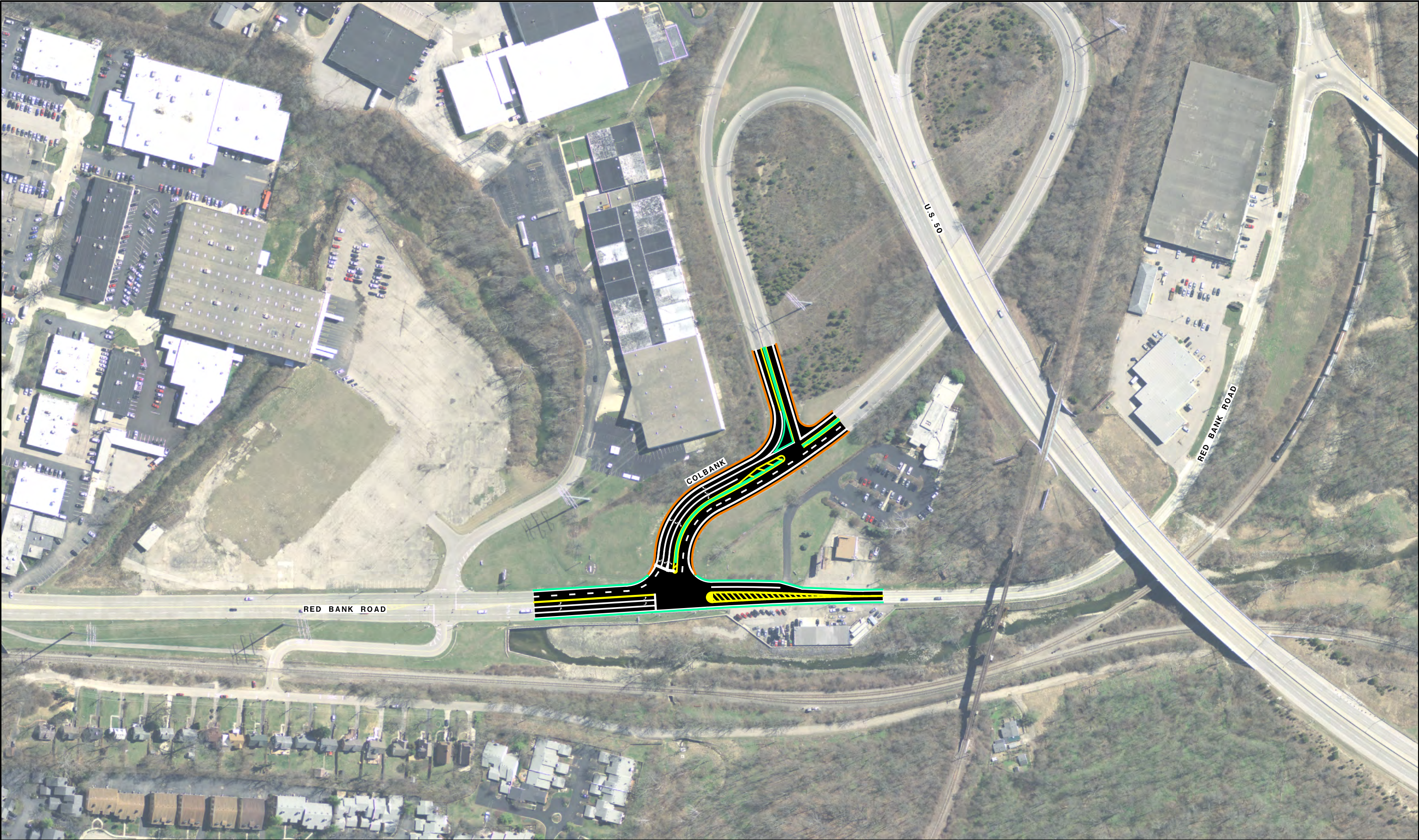
- This concept is an alternative to others designed to improve operations at the Red Bank/US 50 interchange: I-25c, X-4a, X-4c-2, X-4d and X-4d-1.
- Simulations demonstrate this concept would provide good

NEXT STEPS/RECOMMENDATION

- Include concept in the Implementation Plan as a high priority.

Safety ECAT Benefit/ Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
	Red Bank Rd. & Colbank Rd.	AM	19.5	B	85%				\$675K to \$1M	0	\$17K to \$34K	C2	R/W Impacts, Noise, ESA Issues	Neutral	Neutral	Neutral
		PM	18.8	B	43%											

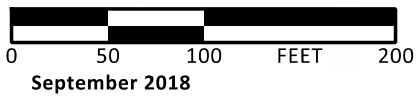
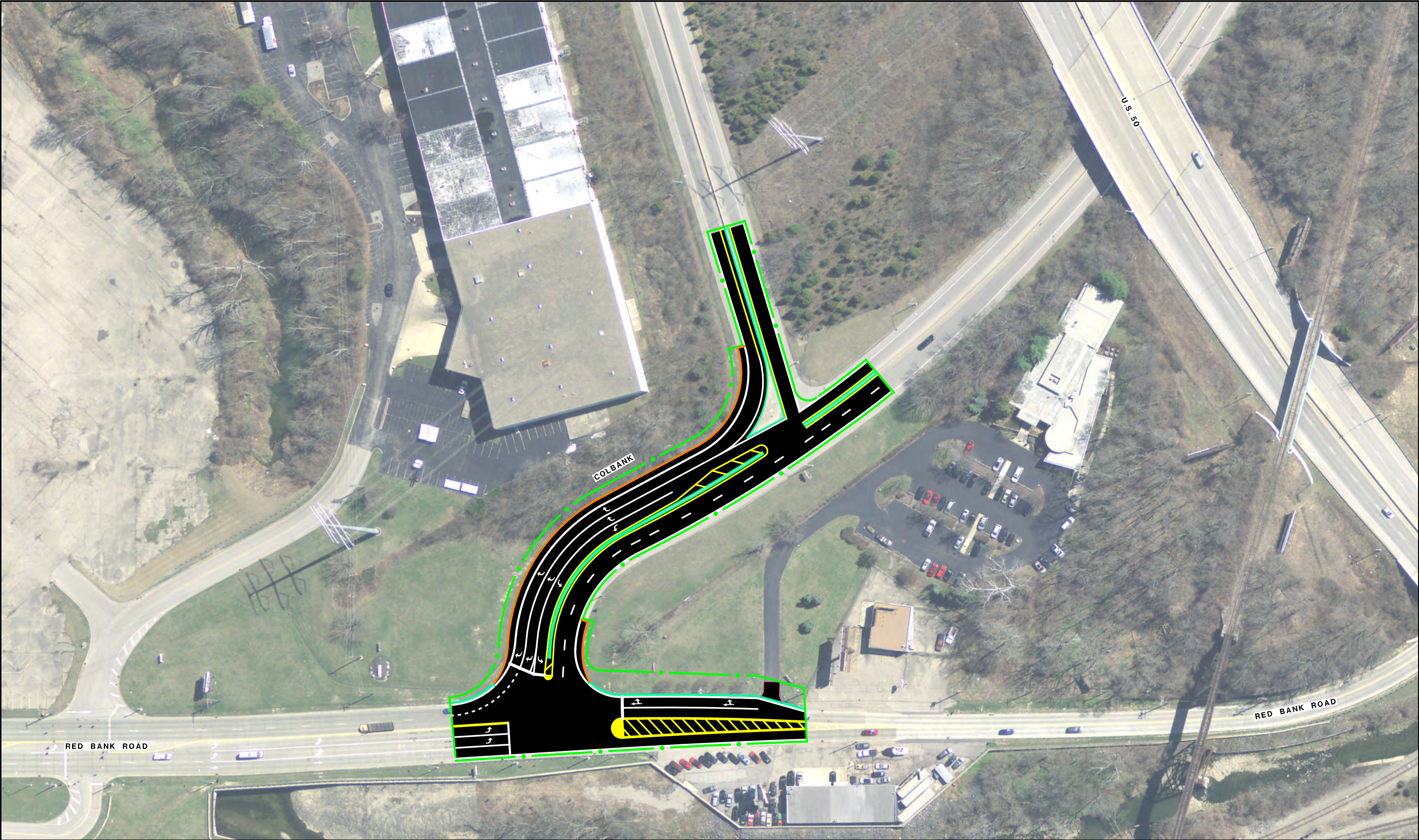




**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure I-25B**  
**DUAL WESTBOUND TURN LANES**  
**AND DUAL NORTHBOUND THROUGH LANES**





**Concept Drawing**  
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**Figure I-25B**  
DUAL WESTBOUND TURN LANES  
AND DUAL NORTHBOUND THROUGH LANES



*Drawing was presented at the October 24 & 25 Open House meetings.*



## Red Bank and Colbank Intersection Improvements

- \$675,000 to \$1.0M construction cost
- New R/W needed from 2 parcels; no buildings impacted
- Reduces AM peak delay by approximately 75%; PM peak delay by approximately 40%
- New signal at ramps coordinated with existing signal to allow protected left turn onto US 50 westbound ramp

## PUBLIC FEEDBACK RATINGS SUMMARY

Strongly Oppose	Dislike	Neutral	Like	Strongly Support
5%	15%	42%	26%	12%

*(percentages have been rounded)*



Concept drawings are presented on the following pages.

DESCRIPTION

- Eliminate the Red Bank/Colbank intersection so that traffic to/from US 50 is the through movement.
  - Realign south leg of Red Bank to ramp terminal intersection.
  - This concept combines the two existing intersections (US 50 ramps/Colbank Road and Colbank Road/Red Bank Road) into one.

NEEDS ADDRESSED

- P4) Address capacity issues and long queues on northbound and westbound approaches of the Red Bank/Colbank intersection.

5/22 MEETING DISCUSSION AND COMMENTS

- The reconfigured intersection would better support current and future traffic volumes.
- Initial analysis indicates that, as proposed, this concept would result in:
  - An 80 percent decrease in morning peak-hour delays.
  - A 50 percent decrease (approximately) in evening peak-hour delays.
- The concept would require vehicles traveling north on Red Bank Road (from Wooster Pike) to turn left at the new intersection to continue traveling on Red Bank Road.
- Constructing the approach to the new southwest leg of the new intersection would require:
  - Eliminating a building along Red Bank Road, west of the Lawyers Title of Cincinnati building located at 3500 Red Bank Road.
  - Crossing under the railroad trestle has a width constraint that limits the concept.

Comments Submitted Following the 5/22 Meeting

(Comments are presented as submitted by Committee members; no edits to content were made.)

- Mariemont does not support eliminating the intersection. Multiple traffic routes currently allows for options for vehicle and truck traffic from businesses.

9/7 MEETING DISCUSSION AND COMMENTS

- This concept is an alternative to others designed to improve operations at the Red Bank/US 50 interchange: I-25b, X-4a, X-4c-2, X-4d and X-4d-1.
- This option combines two intersections into one.
- Functionally, this concept works well to improve traffic delays; however, access to two businesses is compromised, and it would require relocating one business.
- No additional comments received following the 9/7 meeting.

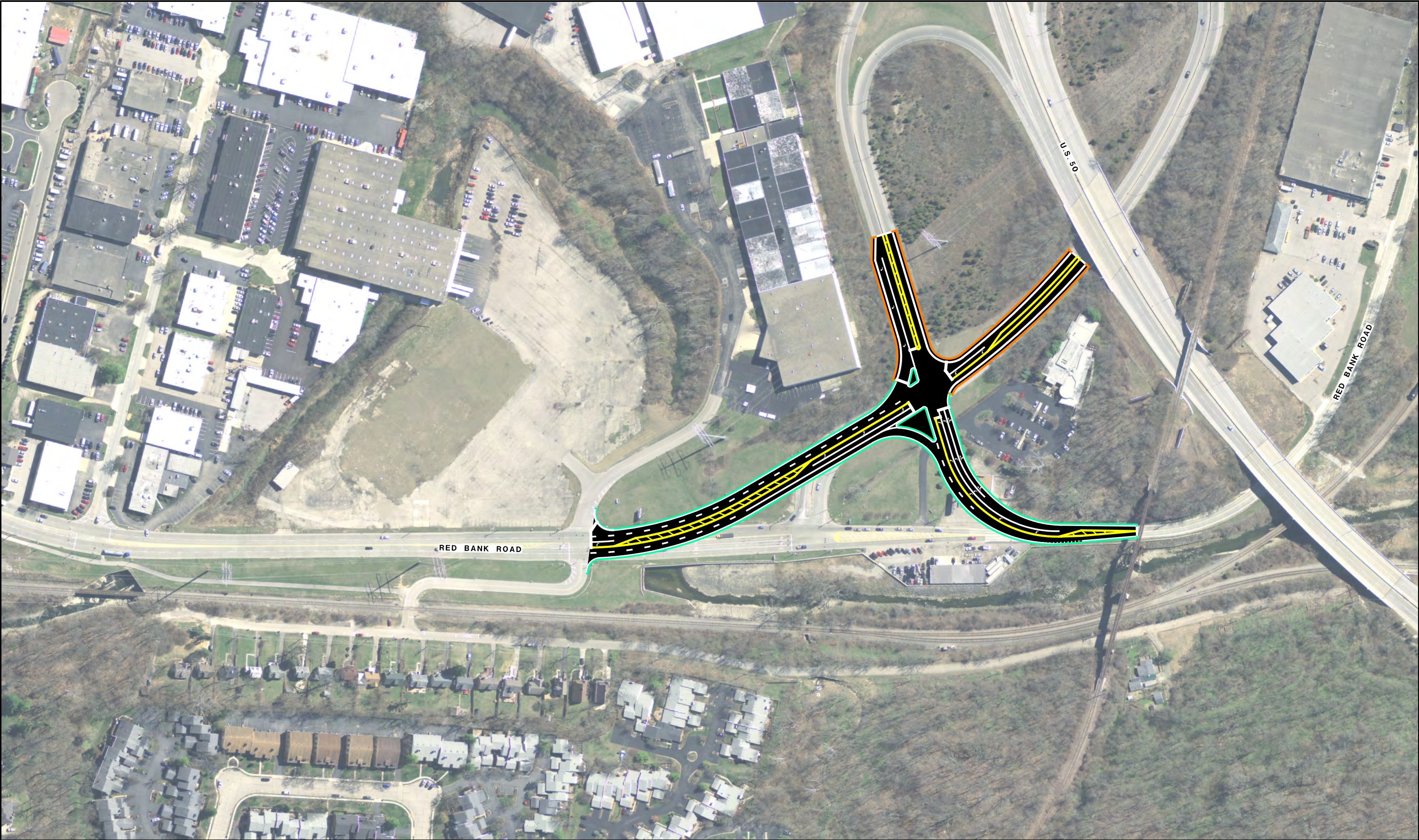
NEXT STEPS/RECOMMENDATION

- No further study. The benefit provided by this concept is comparable to concept I-25b, which is less expensive and has fewer impacts.

Safety ECAT Benefit/ Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
	Relocated Red Bank Rd. & Colbank Rd.	AM	25.0	C	81%	19.9	B	66%	\$2.1M to \$3.1M	1 commercial	\$350K to \$700K	D1	R/W Impacts	Neutral	Improves	Neutral
		PM	17.1	B	47%	12.6	B	68%								

RECOMMENDATION: NO FURTHER STUDY





0 100 200 FEET 400  
MARCH 2018



**Stantec**

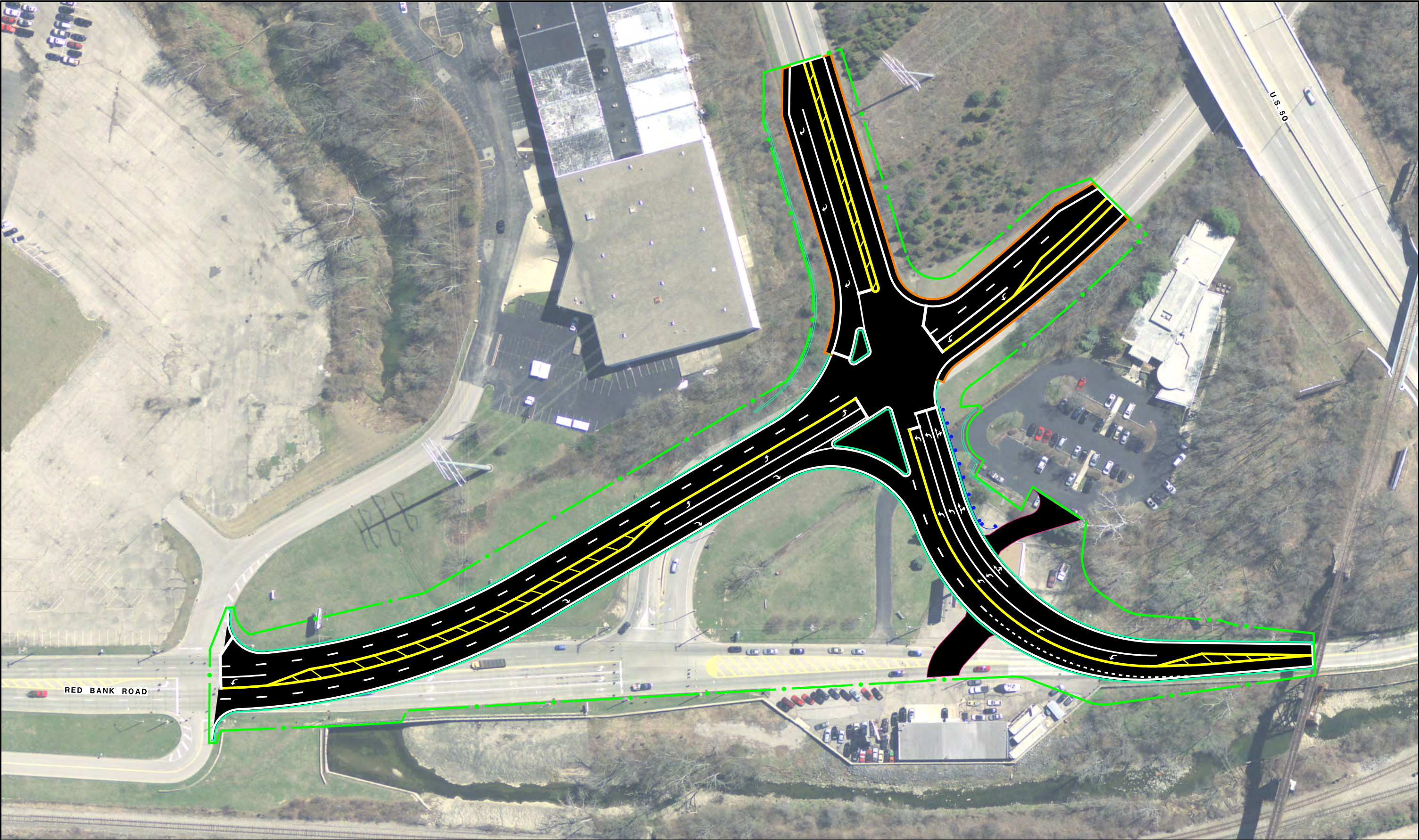
**Concept Drawing**

Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
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**Figure I-25C**

**RELOCATE RED BANK/COLBANK INTERSECTION**





**Concept Drawing**  
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Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure I-25C**  
**RELOCATE RED BANK/COLBANK INTERSECTION**



Concept drawing is presented on the following page.

DESCRIPTION

- Add wayfinding signage.

NEEDS ADDRESSED

S12) Address lack of/limited wayfinding to improve regional connectivity.

5/22 MEETING DISCUSSION AND COMMENTS

- This concept would address the lack of signage uniformity in this area.

Comments Submitted Following the 5/22 Meeting

(Comments are presented as submitted by Committee members; no edits to content were made.)

- Mariemont supports improved wayfinding.

9/7 MEETING DISCUSSION AND COMMENTS

- This concept is a supplement to other concepts designed to improve operations at the Red Bank/US 50 interchange. Other concepts that could be combined with this concept include: I-25c, I-25b, X-4c-2, X-4d and X-4d-1.
- Signage would ensure dual left-turn lanes are well-marked and would add missing signage referring drivers to US 50 (Columbia Parkway). It would also replace Milford with Mariemont as the next village on

directional signage located on Red Bank, as the road approaches US 50.

- Overhead signage is recommended approaching the Red Bank/Colbank intersection, and again at the intersection to reduce unnecessary weaving by drivers in the area.
- The committee discussed the possibility of adding pavement tatoos/markings, but it was determined that while those tend to work well on highways, they would likely be blocked by slow moving or idling vehicles when/if there is a queue.
- No additional comments received following the 9/7 meeting.

12/12 MEETING DISCUSSION AND COMMENTS

- No substantial discussion held.

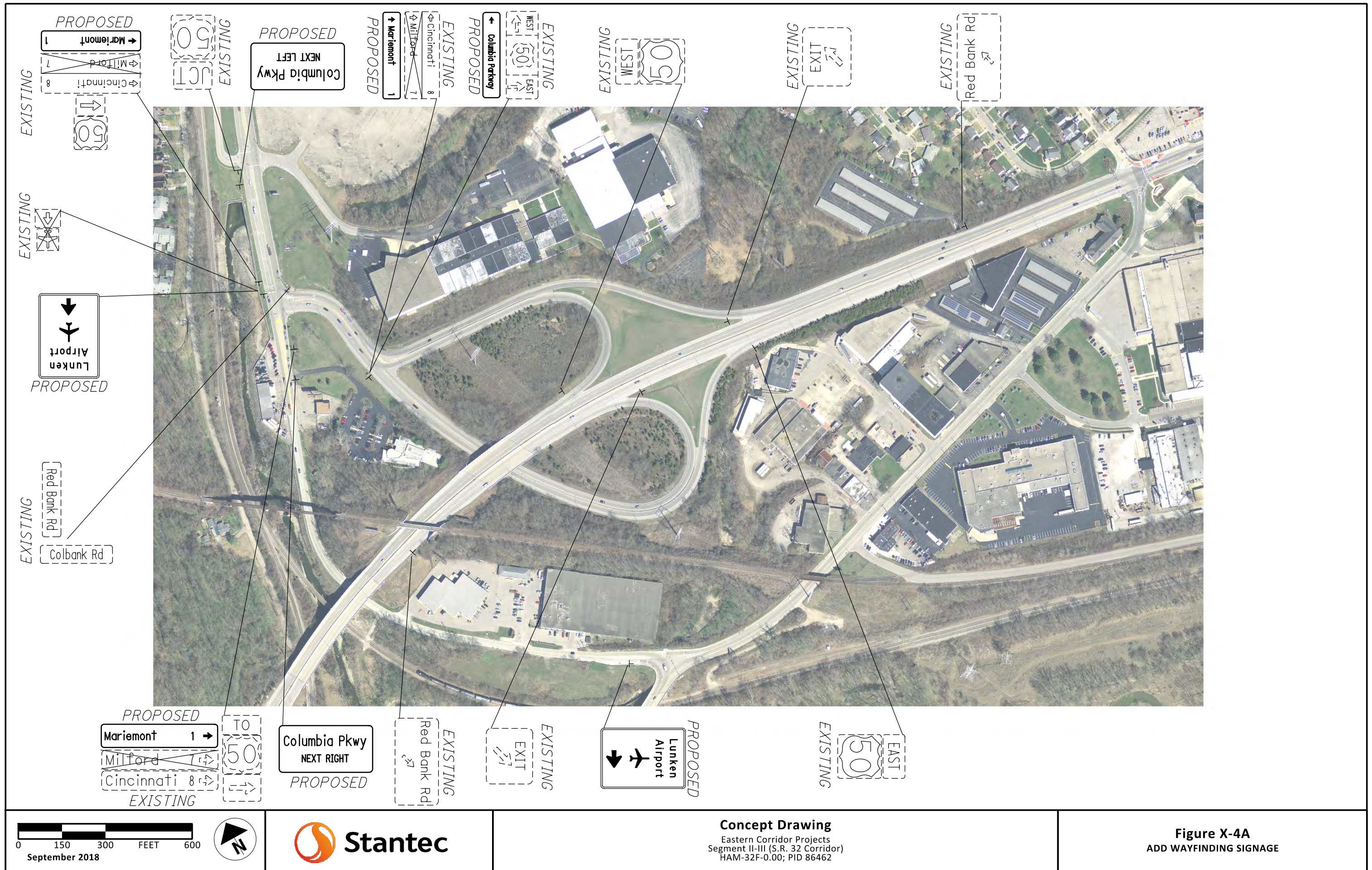
NEXT STEPS/RECOMMENDATION

- Include in the Implementation Plan as a high priority.
- Can be packaged with signal upgrades on US 50, SR 32 and near the Red Bank interchange. Also can be combined with additional signal backplates on US 50, similar wayfinding signage at Beechmont Circle and advanced warning signage on US 50 eastbound.
- Possible HSIP funding.

Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$20.2K to \$30.4K	0	\$0	C1	No Impacts	Neutral	Improves	Neutral

PRIORITY: HIGH







Concept not drawn.

DESCRIPTION

- Signalize the Colbank Road/US 50 ramp intersection.
- Make the inside lane on Colbank a dedicated left turn lane onto the ramp to westbound US 50.
- Add signage at the end of the ramps.

NEEDS ADDRESSED

P3) Address localized connectivity travel patterns within the interchange.

5/22 MEETING DISCUSSION AND COMMENTS

- Initial analysis suggests a signal is not warranted at this location.

Comments Submitted Following the 5/22 Meeting  
*(Comments are presented as submitted by Committee members; no edits to content were made.)*

- Mariemont supports not signalizing this intersection.

NEXT STEPS/RECOMMENDATION

- No further study. A signal is not warranted at this location.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
DEGRADES	DEGRADES	SIMPLE	< \$5 MILLION	NONE	MINIMAL (C1/C2)	NEUTRAL	NEUTRAL	NEUTRAL	NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY



Concept drawing is presented on the following page.

DESCRIPTION

- Install a roundabout at the Colbank Road/US 50 ramp intersection.

NEEDS ADDRESSED

- P3) Address localized connectivity travel patterns within the interchange.

5/22 MEETING DISCUSSION AND COMMENTS

- This concept appears to work well to reduce delays during both morning and evening peak-hours.
- The concept would resolve backups from vehicles turning left by allowing left turns without having to yield to traffic coming from other directions.
- This concept is a minor project with good benefits.
- No additional comments received following the 5/22 meeting.

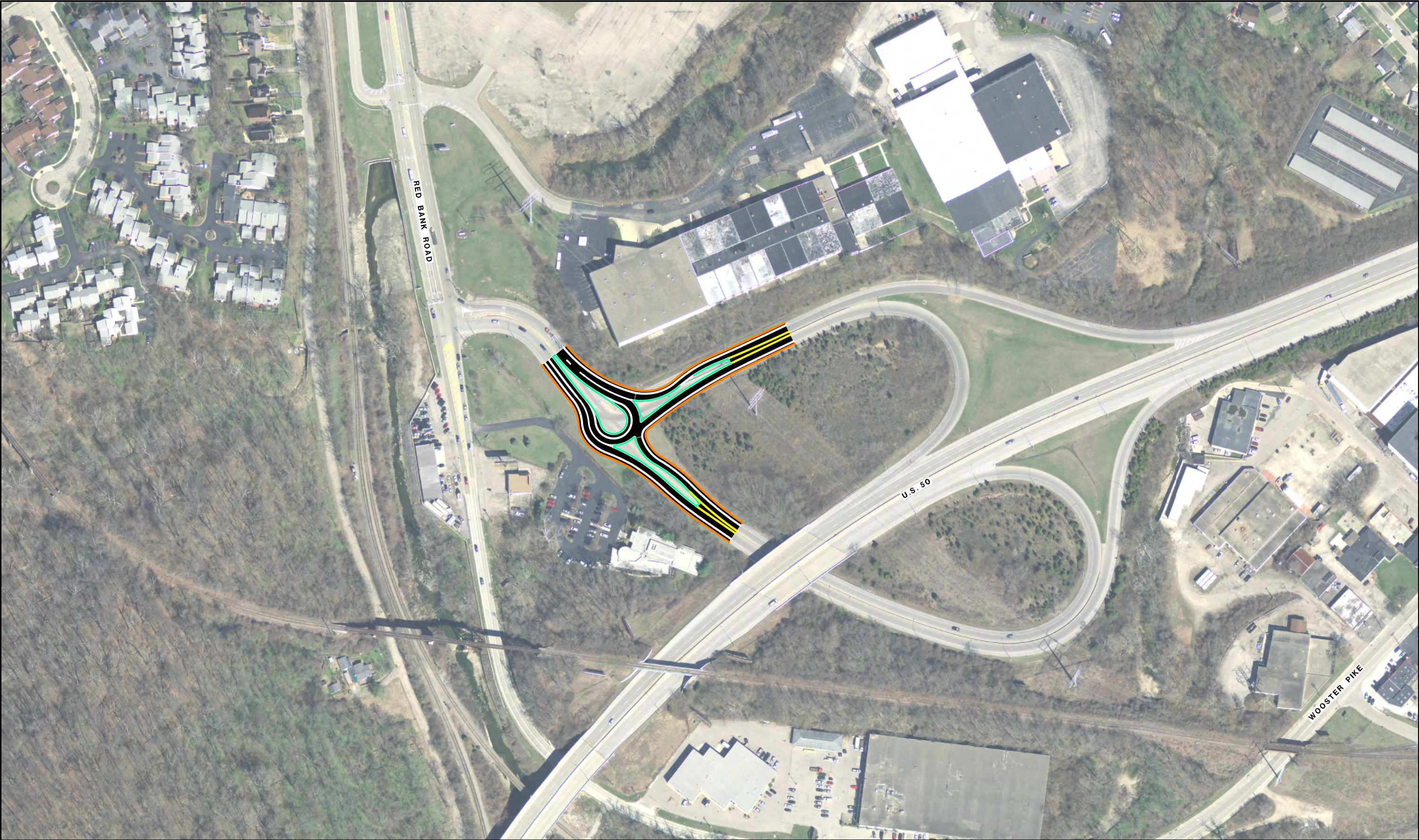
NEXT STEPS/RECOMMENDATION

- No further study. This concept has similar operational and safety benefits as concept X-4c-2. However, the right-of-way impacts are greater. Therefore, X-4c-2 will be advanced instead of X-4c-1.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
IMPROVES	IMPROVES	MODERATE	< \$5 MILLION	PROPERTY TAKES	MINIMAL (C1/C2)	NEUTRAL	NEUTRAL	NEUTRAL	NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY





**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
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**Figure X-4C-1**  
**ROUNDBOUT AT COLBANK AND U.S. 50**  
**RAMP INTERSECTION**



Concept drawings are presented on the following pages.

DESCRIPTION

- Install a roundabout at the Colbank Road/US 50 ramp intersection.

NEEDS ADDRESSED

- P3) Address localized connectivity travel patterns within the interchange.

5/22 MEETING DISCUSSION AND COMMENTS

- This concept appears to work well to reduce delays during both morning and evening peak-hours.
- The concept would resolve backups from vehicles turning left by allowing left turns without having to yield to traffic coming from other directions.
- This concept is a minor project with good benefits.
- As compared to concept X-4c-1, this alternative would not have any right-of-way impacts.
- No additional comments received following the 5/22 meeting.

9/7 MEETING DISCUSSION AND COMMENTS

- This concept is an alternative to others designed to improve operations at the Red Bank/US 50 interchange: I-25b, I-25c, X-4a, X-4d and X-4d-1.
- A roundabout at this intersection is likely to be confusing to drivers, as traffic coming into the roundabout would be required to yield to traffic turning left.

- The committee discussed whether it would be possible to make dual left turn lanes for the turn onto the US 50 ramp.
- Matt Crim, Stantec, reported that approximately 490 cars turn left from Colbank to westbound US 50, whereas 169 cars continue straight to eastbound US 50 during the PM peak hour.
- A non-traditional roundabout at this location is considerably more expensive than the signalized intersection concept and provides less benefit.
- No additional comments received following the 9/7 meeting.

NEXT STEPS/RECOMMENDATION

- No further study. The cost/benefit analysis for this concept is less favorable than other alternatives.

Safety ECAT Benefit/ Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
		AM	5.3	A	9%				\$1.1M to \$1.7M	0	\$4.5K to \$9K	C2	R/W Impacts, Noise, ESA Issues	Neutral	Neutral	Neutral
		PM	6.3	A	22%											

RECOMMENDATION: NO FURTHER STUDY

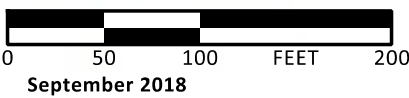
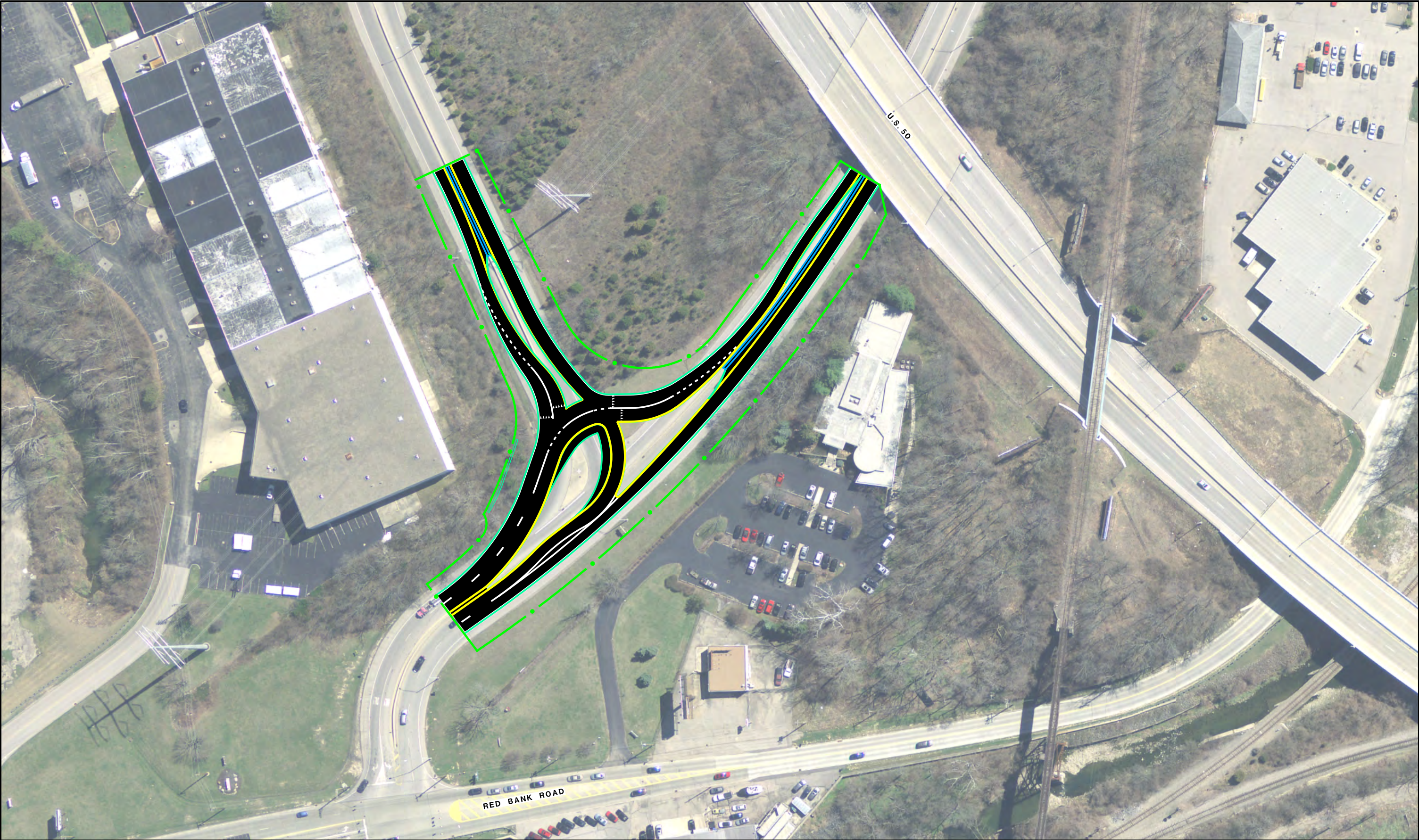




**Concept Drawing**  
Eastern Corridor Projects  
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**Figure X-4C-2**  
**ROUNDBOUT AT COLBANK AND U.S. 50**  
**RAMP INTERSECTION**





**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure X-4C-2**  
**ROUNDBOUT AT COLBANK AND U.S. 50**  
**RAMP INTERSECTION**



Concept drawings are presented on the following pages.

DESCRIPTION

- Extend Wooster to tie directly into Colbank Road.
  - The road would be tied directly into Red Bank at Woodland Road via the eastbound US 50 ramps (east of Hyde Park Lumber).
- All three intersections would be signalized.

NEEDS ADDRESSED

- P4) Address capacity issues and long queues on northbound and westbound approaches of Red Bank/Colbank intersection.
- P7) Address capacity issue for northbound left turn movement at the Wooster/Red Bank intersection.
- S16) Address bicycle and pedestrian connectivity across railroad tracks to existing Armleder and Lunken bike paths.

5/22 MEETING DISCUSSION AND COMMENTS

- This concept moves the primary connection from Wooster Pike to Red Bank east of Hyde Park Lumber:
  - Avoids impact to any buildings.
  - Avoids new connections under the railroad trestle.

5/22 MEETING DISCUSSION AND COMMENTS (continued)

- Maintains local access to Hyde Park Lumber & Design Center, the Department of Motor Vehicles (Red Bank branch) and other businesses in the shopping center.
- The existing intersection of Red Bank/Colbank would become a cul-de-sac.
- This concept appears to help alleviate traffic on Wooster, but a traffic modeling simulation has not yet been run.
- Bike path considerations:
  - At-grade crossings at Red Bank.
  - Connecting to Wasson Way may be a challenge.
  - Shared use paths could be constructed at the same time as new road connections.
- Concept has potential, but a traffic analysis study is needed.
- Concept assumes removal of the railroad embankment. It was noted that preservation for commuter rail may be necessary.

Comments Submitted Following the 5/22 Meeting

- (Comments are presented as submitted by Committee members; no edits to content were made.)
- Mariemont does not support creating a cul-de-sac on Red Bank and eliminating the current intersection of Colbank and Redbank. Multiple traffic routes currently provide options for vehicle and truck traffic from businesses.

9/7 MEETING DISCUSSION AND COMMENTS

- This concept is an alternative to other concepts designed to improve operations at the Red Bank/US 50 interchange including I-25b, I-25c, X-4a, X-4c-2 and X-4d-1.
- This concept is very similar to X-4d-1. X-4d includes signals at all three intersections; X-4d-1 has a signal at one intersection, is stop-controlled at another and has a roundabout at the third. Both concepts work well.
- Mariemont expressed concern about making the current Red Bank/Colbank intersection a cul-de-sac. Redundancy is desired to provide two routes for trucks to Red Bank Road.
- When considering the existing roadway configuration along Red Bank, it is virtually impossible to create a shared-use path from Red Bank to Armleder and the Little Miami Trail due to existing structural constraints (lack of space, guardrails, retaining walls). This concept however, includes an option to construct a shared-use path along the south side of Colbank and its new connection to Wooster Road.
- No additional comments received following the 9/7 meeting.

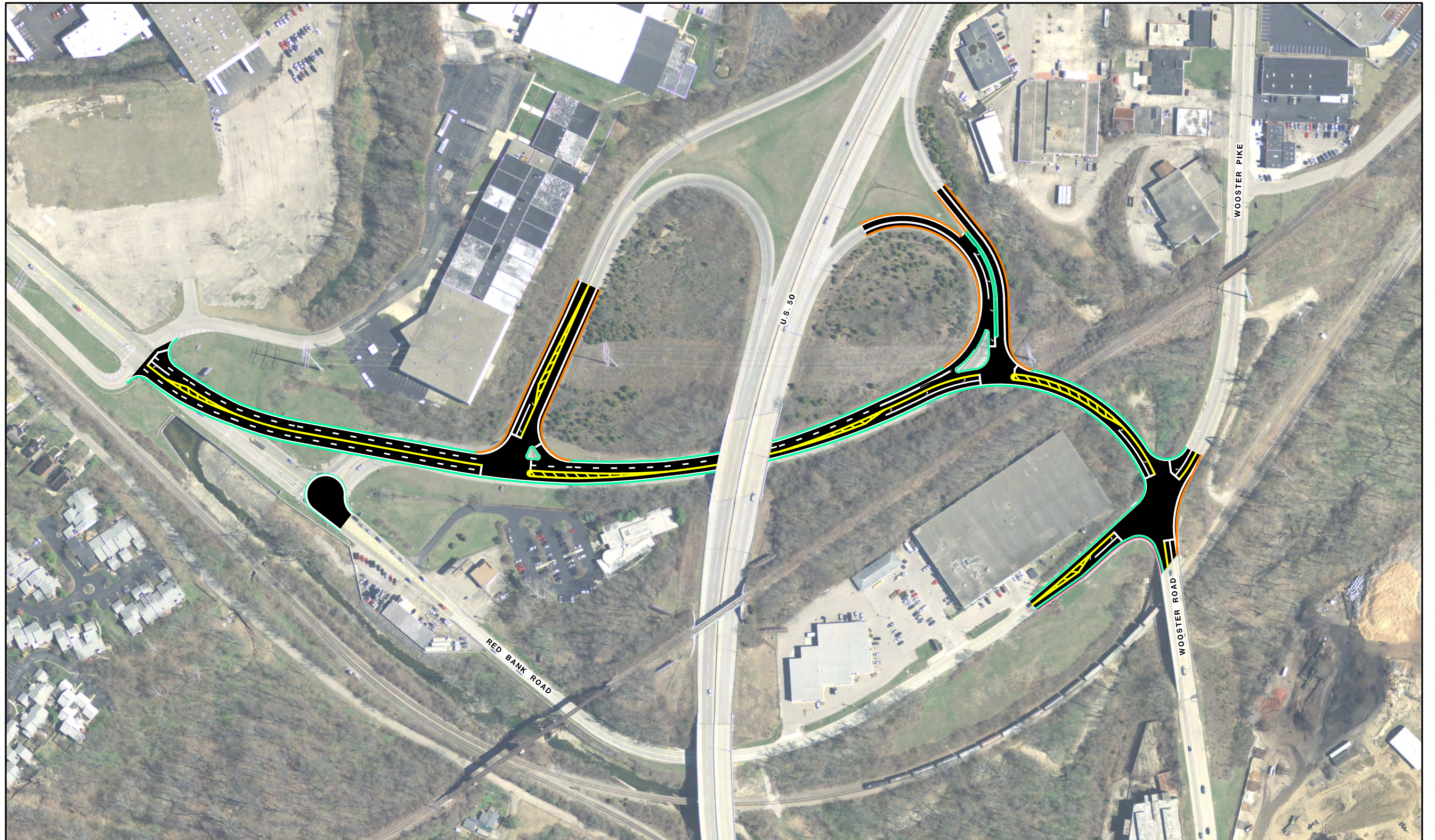
NEXT STEPS/RECOMMENDATION

- No further study. Concept X-4d-1 (roundabout at Wooster intersection) appears to be a better option and allows for a better shared-use path connection (the roundabout allows a shared-use path to utilize existing width on the bridge).

Safety ECAT Benefit/ Cost Ratio	Traffic Operations								Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi- Modal	Improve Regional Connectivity	Improve Local Access
	Location	Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
	Red Bank Rd & US 50 WB Ramps	AM	15.3	B	88%	7.9	A	87%					Improves	Improves	Neutral	
		PM	16.8	B	49%	11.9	B	70%								
	Red Bank Rd & US 50 EB Ramps	AM	12	B		2.7	A									
		PM	11.1	B		2.9	A									
	Red Bank Rd & Wooster Road/Old Red Bank Rd	AM	22.7	C	-2%	11.9	B	56%								
		PM	13.7	B	8%	13.4	B	57%								

RECOMMENDATION: NO FURTHER STUDY



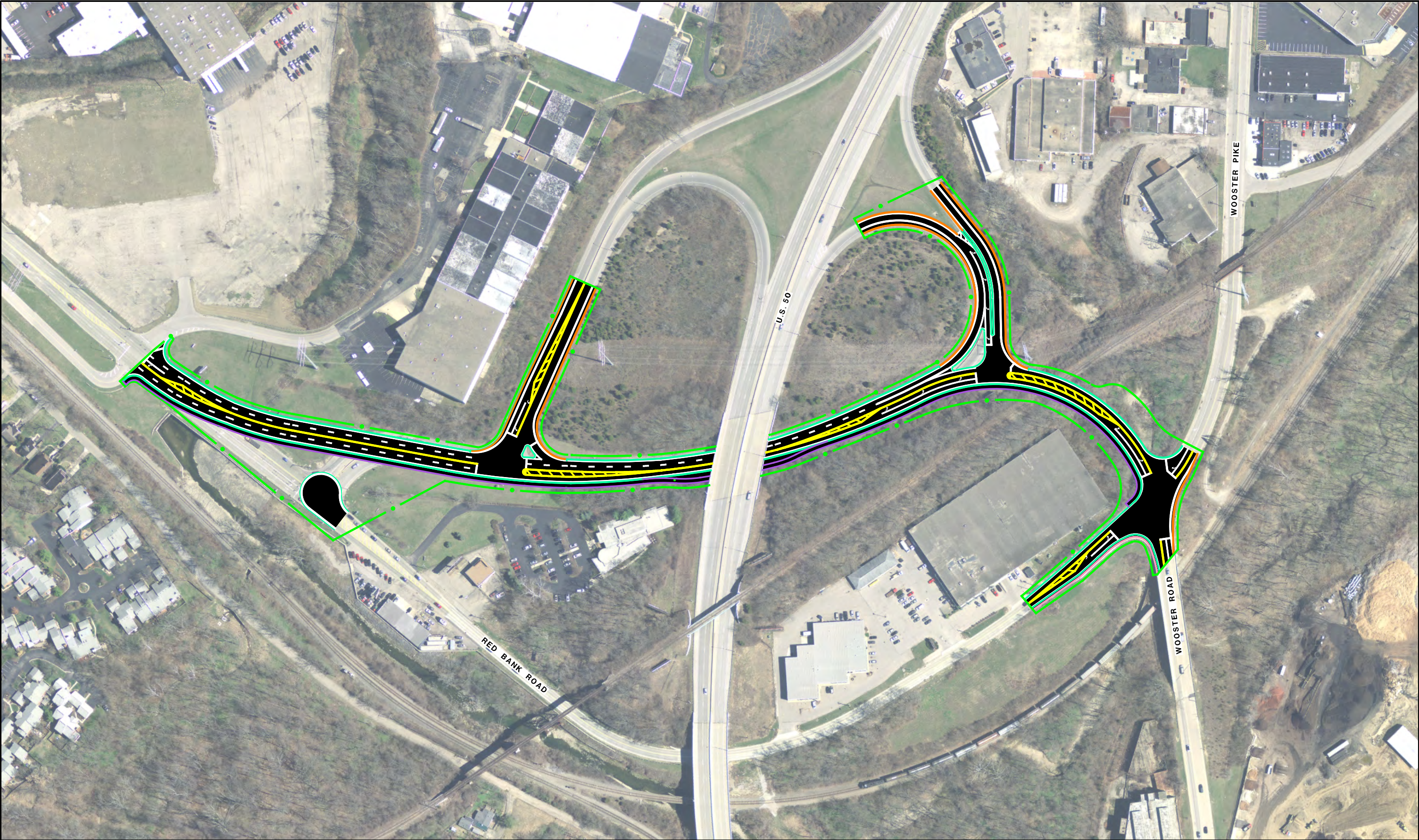


**Concept Drawing**  
 Eastern Corridor Projects  
 Segment II-III (S.R. 32 Corridor)  
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**Figure X-4D**

**EXTEND WOOSTER TO TIE  
 DIRECTLY INTO RED BANK ROAD**





**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure X-4D**  
**EXTEND WOOSTER TO TIE  
DIRECTLY INTO RED BANK ROAD**



DESCRIPTION

- Extend Wooster to tie directly into Colbank Road.
  - The road would be tied directly into Red Bank at Woodland Road via the eastbound US 50 ramps (east of Hyde Park Lumber).
  - The concept includes a signal at the first ramp location, an unsignalized connection at the US 50 and eastbound ramps, and a roundabout at Red Bank Road and Wooster Road.

NEEDS ADDRESSED

- P4) Address capacity issues and long queues on northbound and westbound approaches of Red Bank/Colbank intersection.
- P7) Address capacity issue for northbound left turn movement at the Wooster/Red Bank intersection.
- S16) Address bicycle and pedestrian connectivity across railroad tracks to existing Armleder and Lunken bike paths.

9/7 MEETING DISCUSSION AND COMMENTS

- This concept is an alternative to other concepts designed to improve operations at the Red Bank/US 50 interchange including I-25b, I-25c, X-4a, X-4c-2, X-4d and X-4d-1.
- This concept is very similar to X-4d-1. X-4d includes signals at all three intersections; X-4d-1 has a signal at one intersection, is stop-controlled at another and has a roundabout at the third. Both concepts work well.
- The roundabout portion of this concept provides an advantage over the signalized intersection by providing a continuous flow connection from Wooster Road to Red Bank Road. It also eliminates the need for the existing left turn lane on the Wooster bridge, allowing space for a shared-use path without widening the bridge.
- This concept includes an option to construct a shared-use path along the south side of Colbank and its new connection to Wooster Road. The grade of the new roadway is flat.
- The concept does not preclude future rail use in the area, but would require building a new bridge. The cost of constructing a new bridge has

Concept drawings are presented on the following pages.

- not been estimated.
- The roundabout is designed for full semi-truck utilization.
- No additional comments received following the 9/7 meeting.

12/12 MEETING DISCUSSION AND COMMENTS

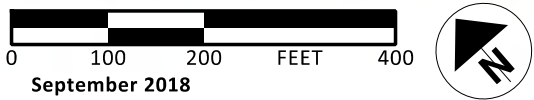
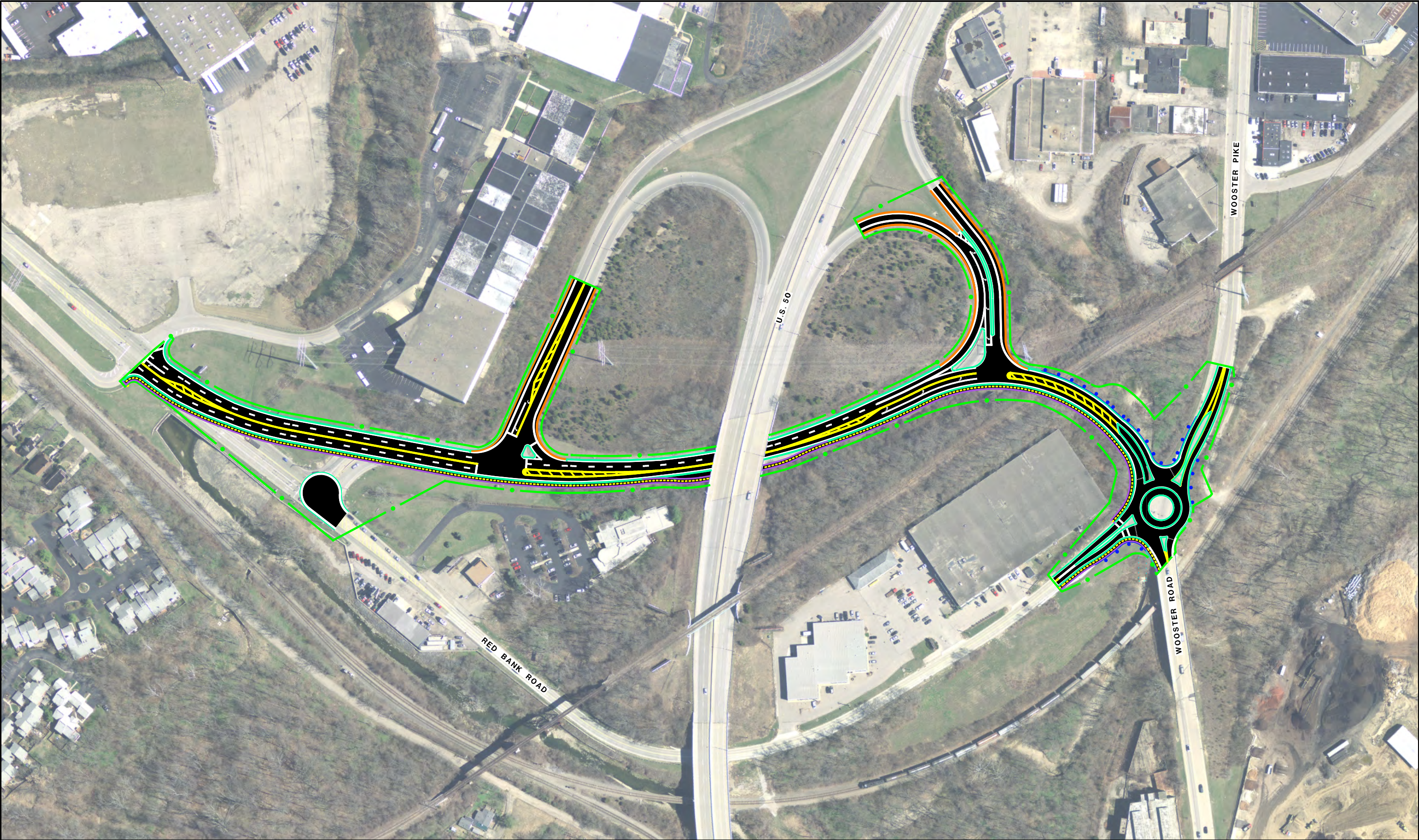
- A benefit of this concept is that it opens up a new bicycle/pedestrian corridor option.
- The committee agreed to no longer pursue this roadway concept.
- The committee also agreed that the roundabout at Wooster Road and the addition of the shared-use path in this alignment should be advanced as other projects [I-20b (E4) & BIKE-4a (E7)].

NEXT STEPS/RECOMMENDATION

- No further study.

Safety ECAT Benefit/ Cost Ratio	Traffic Operations								Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi- Modal	Improve Regional Connectivity	Improve Local Access
	Location	Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
	Red Bank Rd & US 50 WB Ramps	AM	15.3	B	88%	10.8	B	82%	\$2.7M to \$4.1M	0	\$160K to \$320K	C2	R/W Impacts, Stream Impacts, Waterway Permit, Potential T&E, Noise, ESA Issues	Improves	Improves	Neutral
		PM	16.8	B	49%	13.6	B	66%								
	Red Bank Rd & US 50 EB Ramps	AM	1.0	A		7.2	A									
		PM	1.4	A		2.1	A									
	Red Bank Rd & Wooster Rd/Old Red Bank Rd	AM	21.1	C	5%	15.7	C	42%								
		PM	18.3	C	-23%	14.1	B	55%								





**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure X-4D-1**  
**EXTEND WOOSTER TO TIE  
DIRECTLY INTO RED BANK ROAD**



*Drawing presented at the October 24 & 25 Open House meetings.*



## Extend Wooster to Tie Into Red Bank

- \$2.7M to \$4.1M construction cost
- New R/W needed from 5 parcels; no buildings impacted
- Reduces AM peak delay by approximately 75%; PM peak delay by approximately 45%
- Provides pedestrian and bicycle connectivity from Red Bank to Wooster
- Relocates signalized intersection to the end of the US 50 westbound ramps
- Requires removal of old railroad bed and embankment

## PUBLIC FEEDBACK RATINGS SUMMARY

Strongly Oppose	Dislike	Neutral	Like	Strongly Support
8%	11%	24%	33%	24%

*(percentages have been rounded)*





## Eastern Corridor Segments II and III

Combined Linwood/Eastern Interchange and US 50/Red Bank Interchange Focus Area

### Theme

# US 50/Wooster/Meadowlark

#### Primary Needs identified for this theme:

- P5) Address safety issues related to the end of the freeway section on US 50.
- P6) Address eastbound PM peak-hour queues at the US 50/Meadowlark intersection.
- P7) Address capacity issue for northbound left turn movement at the Wooster/Red Bank intersection.
- P8) Address sight distance within the Wooster/Red Bank intersection.

#### Secondary Needs identified for this theme:

- S13) Address deficient roadway grade just east and west of the Red Bank Road/Wooster Road intersection.
- S14) Address deficient roadway grade at the Wooster/Red Bank intersection.
- S15) Support access to future transit connections.



Concept drawing is presented on the following page.

DESCRIPTION

- Add signage indicating "freeway ends." Add flashing beacon to alert drivers to long queues at the Meadowlark intersection.

NEEDS ADDRESSED

- P5) Address safety issues related to the end of the freeway section on US 50.

5/22 MEETING DISCUSSION AND COMMENTS

- None discussed.

Comments Submitted Following the 5/22 Meeting

(Comments are presented as submitted by Committee members; no edits to content were made.)

- Mariemont supports improved wayfinding and signage.

9/7 MEETING DISCUSSION AND COMMENTS

- A sign noting the end of the US 50 “freeway” would be placed approximately one mile west of Meadowlark Lane.
- The existing flashing beacon would be moved backed as well to be closer to the end of queued traffic.
- No additional comments received following the 9/7 meeting.

12/12 MEETING DISCUSSION AND COMMENTS

- A concern was expressed that posting a sign on US 50 stating “Freeway Ends” may cause people to misconstrue US 50 as a freeway and treat it as such. However, the committee discussed that the wording on the signage can be adjusted. ”Expressway Ends” was suggested.
- The committee agreed that this concept should be advanced as a high priority.

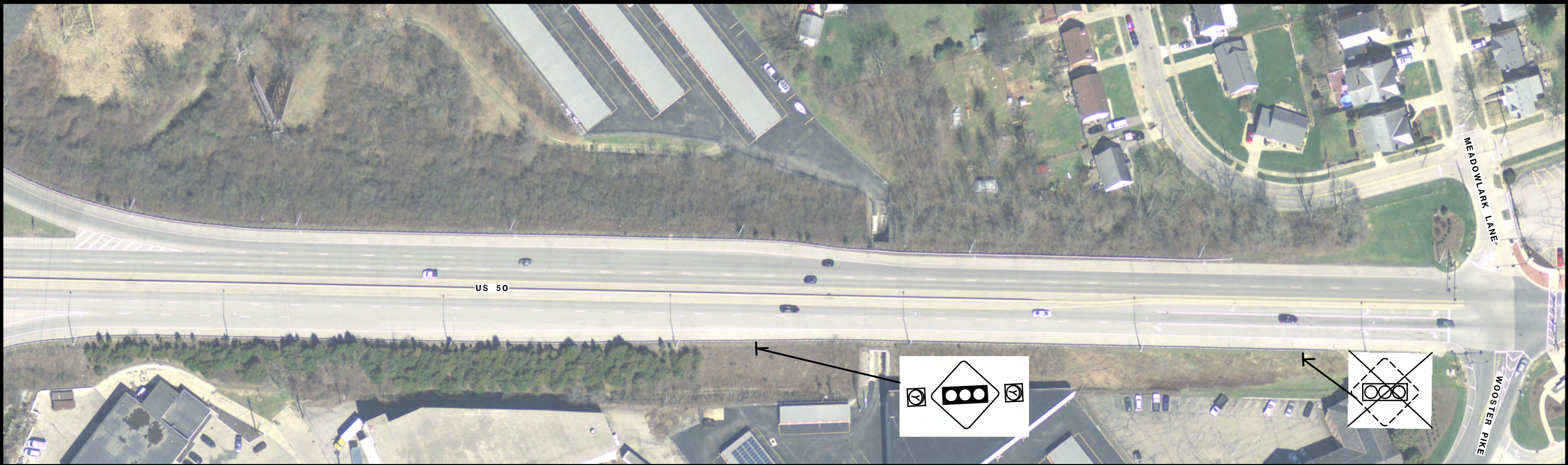
NEXT STEPS/RECOMMENDATION

- Include in the Implementation Plan as a high priority. Can be packaged with signal upgrades on US 50, SR 32 and near Red Bank interchange. Also combine with additional signal backplates on US 50, wayfinding signage at Beechmont Circle and Red Bank, and similar advanced warning signage on US 50 eastbound.
- Possible Highway Safety Improvement Program (HSIP)

Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$10.6K to \$16K	0	\$0	C1	No Impacts	Neutral	Neutral	Neutral

PRIORITY: HIGH





0 50 100 200  
FEET  
September 2018



**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure 50-1**  
ADD WARNING SIGNAGE  
TO US 50 IN ADVANCE OF  
MEADOWLARK LANE



Concept drawing is presented on the following page.

DESCRIPTION

- Add advance signing to alert drivers to right lane reduction on eastbound US 50 at Wooster Pike.

very helpful to drivers.

- No additional comments received following the 9/7 meeting.

NEEDS ADDRESSED

- P5) Address safety issues related to the end of the freeway section on US 50.

12/12 MEETING DISCUSSION AND COMMENTS

- The committee agreed that this concept should be advanced forward as a high priority.

5/22 MEETING DISCUSSION AND COMMENTS

- It’s possible to restrict right turns on red, but there have been no crashes documented at this location.

Comments Submitted Following the 5/22 Meeting

(Comments are presented as submitted by Committee members; no edits to content were made.)

- Mariemont supports improved wayfinding and signage.

NEXT STEPS/RECOMMENDATION

- Include in the Implementation Plan as a high priority. Can be packaged with signal upgrades on US 50, SR 32 and near Red Bank interchange. Also combine with additional signal backplates on US 50, wayfinding signage at Beechmont Circle and Red Bank, and similar advanced warning signage on US 50 eastbound.

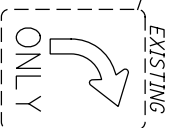
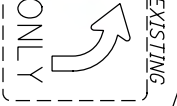
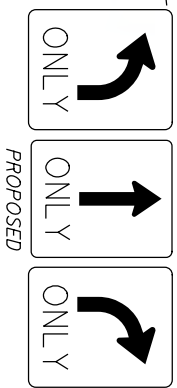
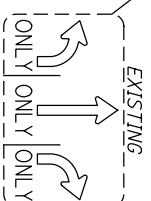
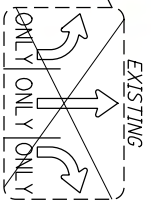
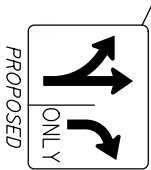
9/7 MEETING DISCUSSION AND COMMENTS

- This concept proposes overhead signage to further alert drivers that the right lane is a turn only lane. It also adds a dotted line pavement marking to indicate the turn lane.
- A committee member expressed that this advanced warning would be

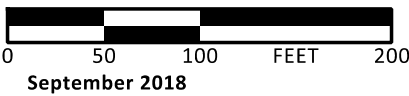
Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$15.4K to \$23.2K	0	\$0	C1	No Impacts	Neutral	Neutral	Neutral

PRIORITY: HIGH





EXISTING SIGNAL SUPPORT



**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure 50-2**  
ADD WARNING SIGNAGE  
TO US 50 IN ADVANCE OF  
DROP LANE



DESCRIPTION

- Address right turn on red from northbound Wooster onto eastbound US 50.
  - Currently, it may be unclear which traffic must be yielded to as a single lane on US 50 begins at the intersection.

NEEDS ADDRESSED

None identified.

5/22 MEETING DISCUSSION AND COMMENTS

- None discussed.
- Comments Submitted Following the 5/22 Meeting  
*(Comments are presented as submitted by Committee members; no edits to content were made.)*
- Figure 1-25a is not included in the Concept Drawing pdf. If this concept is being considered for further study, please provide the Figure to allow for comments.
- ODOT Response:
- Concept I-16a was not drawn.

NEXT STEPS/RECOMMENDATION

- Could install “No Right Turn on Red” restriction if crash trend is identified in the future.
- No further study is recommended.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
IMPROVES	NEUTRAL	SIMPLE	< \$5 MILLION	NONE	MINIMAL (C1/C2)	NEUTRAL	NEUTRAL	NEUTRAL	NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY



Concept drawings are presented on the following pages.

DESCRIPTION

- Install a roundabout at the Meadowlark/US 50 intersection.

Haney Building (formerly Streitman Biscuit Company) and the Mariemont Industrial District are listed on the National Registry of Historic Places, and Section 106 shall be incorporated into the process.

NEEDS ADDRESSED

- P6) Address eastbound PM peak-hour queues at the US 50/Meadowlark intersection.

5/22 MEETING DISCUSSION AND COMMENTS

- A roundabout could serve as a gateway to Fairfax.
- The roundabout could include a truck lane and would be designed to handle trucks and emergency vehicles.
- Roundabouts offer better lane utilization.
- Initial analysis suggests the roundabout would:
  - Reduce morning peak-hour delays by 60 percent.
  - Reduce evening peak-hour delays by 60 percent.
- It’s possible that drivers may try to avoid the roundabout by taking Dragon Way to Watterson; once people become familiar with the roundabout and delays are reduced, this behavior may be insignificant.
- Specific alignments may need to be refined.

Comments Submitted Following the 5/22 Meeting

(Comments are presented as submitted by Committee members; no edits to content were made.)

- Verify roundabout shown is drawn to scale and that it will accommodate life safety and semi-truck traffic. Have all other options for this intersection been eliminated? Additional input from Mariemont businesses will be needed to address other potential concerns. The

ODOT Response:

- Roundabouts can accommodate truck traffic.
- The Federal Highway Administration has identified roundabouts as a proven safety counter-measure.
- All National Environmental Policy Act (NEPA) guidelines will be followed.

9/7 MEETING DISCUSSION AND COMMENTS

- Simulations demonstrate that the roundabout provides better traffic operations than the No Build option.
- A roundabout could also cut down on the number of people who use Dragon Way to try to avoid the existing traffic signal at US 50 and Meadowlark.
- The committee discussed whether the traffic signal at Watterson could back drivers up into the roundabout. Traffic simulations show that for 95 percent of queues, this would not be an issue. However, given signal timing adjustments and the fact that closures on Wooster Pike have resulted in more traffic on US 50, these simulations will need to be re-evaluated once Wooster reopens to ensure that is still the case.
- The committee discussed whether it would be simpler to reconfigure the lanes in front of the Mainliner and eliminate the curb bump-outs to allow for two lanes of westbound traffic. This could provide a more immediate solution, with the roundabout phased in later. Long term, however, the roundabout offers other benefits (slower travel speeds, increased safety) and could serve as a gateway to Fairfax.
- No additional comments received following 9/7 meeting.

12/12 MEETING DISCUSSION AND COMMENTS

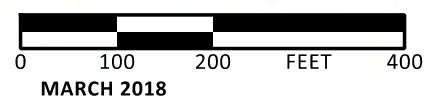
- Public comment appears to be favorable toward the roundabout concept (see Public Feedback Ratings Summary, next page).
- There was some discussion about how the roundabout may impact the ability for vehicles to turn onto US 50 from side streets. ODOT/Stantec acknowledged that turning left onto US 50 during peak hours might be challenging.
- The committee agreed that the best approach going forward would be to implement other, lower-cost traffic improvement concepts first and evaluating their effectiveness before pursuing the construction of a roundabout at this intersection.

NEXT STEPS/RECOMMENDATION

- Include concept in the Implementation Plan as a medium priority.
- Pursue implementation of signage improvements and adding advanced signal detection improvements first before advancing a roundabout at the Meadowlark/US 50 intersection.

Safety ECAT Benefit/ Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
1.0		AM	8.0	A	66%	14.2	B	1%	\$1.2M to \$1.8M	0	\$12.5K to \$25K	D2	Section 4(f)	Neutral	Neutral	Neutral
		PM	8.5	A	66%	16.9	C	55%								



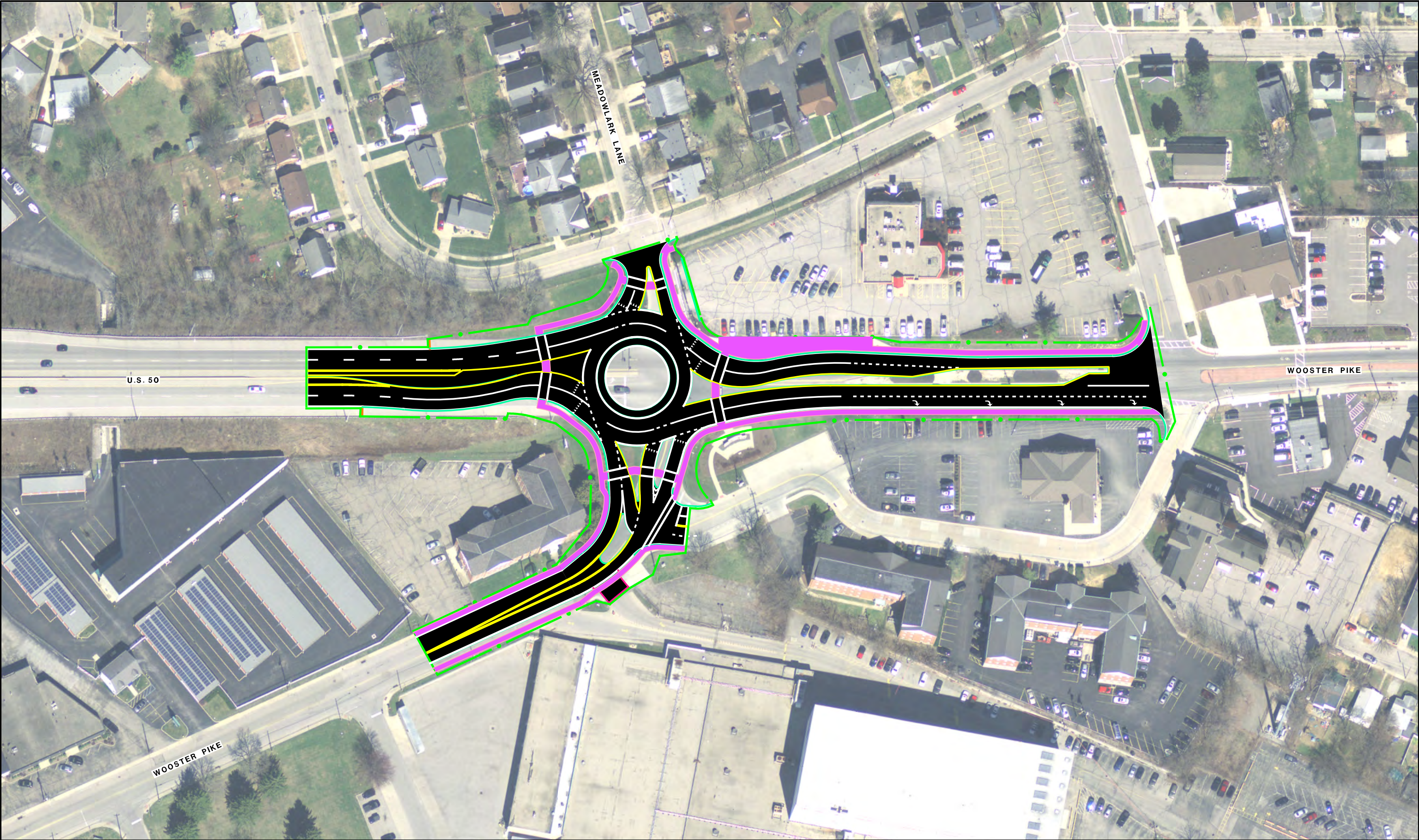


**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure I-16B**

**ROUNDBOUT AT MEADOWLARK LANE  
AND U.S. 50 INTERSECTION**





0 50 100 200  
FEET  
September 2018



**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure I-16B**  
**ROUNDBOUT AT MEADOWLARK LANE  
AND U.S. 50 INTERSECTION**



*Drawing was presented at the October 24 & 25 Open House meetings.*



### Roundabout at Meadowlark and US 50

- \$1.2M to \$1.8M construction cost
- New R/W needed from 3 parcels; no buildings impacted
- Reduces AM peak delay by approximately 35%; PM peak delay by approximately 60%
- Eliminates existing traffic signal
- Provides gateway to Fairfax business district
- Improves safety

### PUBLIC FEEDBACK RATINGS SUMMARY

Strongly Oppose	Dislike	Neutral	Like	Strongly Support
8%	18%	27%	23%	24%

*(percentages have been rounded)*



Concept not drawn.

DESCRIPTION

- Improve signal timing on US 50 and Red Bank in Fairfax.

NEEDS ADDRESSED

- P6) Address eastbound PM peak-hour queues at the US 50/Meadowlark intersection.

5/22 MEETING DISCUSSION AND COMMENTS

- None discussed.

Comments Submitted Following the 5/22 Meeting

(Comments are presented as submitted by Committee members; no edits to content were made.)

- Mariemont supports improved signal timing.

9/7 MEETING DISCUSSION AND COMMENTS

- Signal timing improvements are underway throughout the corridor along SR 32, US 50 and at the Church/Valley intersection in Newtown.
- Continued evaluation is necessary to tweak improvements. There is more traffic in the area now, likely the result of seasonal fluctuations (back to school), current construction on I-275 and temporary road closures within nearby areas.
- ODOT recommends adding advanced detection and wireless signal interconnects at the following locations so that the signals are more responsive and adaptive to fluctuations in traffic.
  - Red Bank & Colbank
  - Red Bank & Wooster
- No additional comments received following the 9/7 meeting.

12/12 MEETING DISCUSSION AND COMMENTS

Matt Crim, Stantec, shared Signal Timing Study updates and discussed how traffic flow has been affected since signal timing adjustments were completed in October and November:

- Earlier this year, Stantec, ODOT’s consultant team, conducted a Signal Timing Study within the Segments II and III study area along the SR 32 and US 50 corridors and in the Village of Newtown (from Newtown Road to Valley Avenue to Round Bottom Road).
- A “before study” was conducted in March and, following comprehensive analysis, a series of timing adjustments were implemented in August and September. Additional fine-tuning adjustments were made in October and November. An “after study” was completed in November.
- Stantec compared data from the “after study” with data from the “before study.” Results included the following:
  - US 50 Corridor: Overall, travel time decreased by 9%, vehicle delays decreased by 32%, stop delays decreased by 42% and the average number of stops decreased by 33%. The average travel speed increased by 13%. Using ODOT’s evaluation metrics, benefits of these improvements were determined to be:
    - Benefit/Cost Ratio: 26:1
    - Delay savings: 49,564 hours / \$1,014,262
    - Emission savings: 2.9 kg / \$10,221
    - Crash Reductions: 5 crashes / \$121,800
    - Fuel Savings: 20,623 gallons / \$45,061

Travel in both east and west directions improved in during morning, mid-afternoon and evening peak travel times.

- Village of Newtown: Overall, travel time decreased by 11%, vehicle delays decreased by 33%, stop delays decreased by 37% and the average number of stops decreased by 33%. The average travel speed increased by 13%. Using ODOT’s evaluation metrics, benefits of these improvements were determined to be:
  - Benefit/Cost Ratio: 51:1
  - Delay savings: 22,868 hours / \$486,045
  - Emission savings: 0.8 kg / \$2,736
  - Crash Reductions: 1 crash / \$13,938
  - Fuel Savings: 3,298 gallons / \$7,205

Travel in both east and west directions improved in during morning, mid-afternoon and evening peak travel times.

- SR 32 Corridor: Overall, travel time decreased by 10%, vehicle

delays decreased by 38%, stop delays decreased by 51% and the average number of stops decreased by 45%. The average travel speed increased by 9%. Using ODOT’s evaluation metrics, benefits of these improvements were determined to be:

- Benefit/Cost Ratio: 28:1
- Delay savings: 21,901 hours / \$490,201
- Emission savings: 0.03 kg / \$2,820
- Crash Reductions: 2 crashes / \$53,205
- Fuel Savings: 6,484 gallons / \$14,166

Travel in both east and west directions improved during morning, mid-afternoon and evening peak travel times. However, westbound traffic (in the off-peak direction) has experienced slight increases in travel time and vehicle delays during the evening peak period. These increases were intentional to improve travel in the peak direction.

- ODOT suggested that additional benefit can be gained by installing additional detection and modems in the controllers to allow the lights to be interconnected and adaptive. With this technology, the lights would be able to better respond to variable traffic conditions and would automatically switch to different timing plans to help improve traffic flow. Committee agreed that considering the cost/benefit ratio, this is a recommendation to continue advancing.

NEXT STEPS/RECOMMENDATION

- Include in Implementation Plan as a high priority.
- Enhance signals to provide advanced detection and wireless signal interconnect. Can be packaged with similar signal upgrades on SR 32 and near Red Bank interchange. Also combine with additional signal backplates on US 50, wayfinding signage at Beechmont Circle and Red bank and advanced warning signage on US 50 eastbound.
- Possible Highway Safety Improvement Program (HSIP) funding.



US-50						
Pre-Study vs Optimized Timings						
Peak Hour Analysis						
Timing	Direction	Travel Time (sec)	Vehicle Delay (sec)	Stopped Delay (sec)	Stops	Average Speed (mph)
CUMULATIVE						
Pre-Study		382	102	66	3.0	23.2
Optimized		349	69	38	2.0	26.3
% Change		-9%	-32%	-42%	-33%	13%
AM Peak						
Pre-Study	EB	336	51	31	1.8	26.2
Optimized	EB	312	27	29	1.2	28.3
EB % Change		-7%	-47%	-6%	-33%	8%
Pre-Study	WB	426	150	97	4.2	21.1
Optimized	WB	347	71	50	1.8	25.5
WB % Change		-19%	-53%	-48%	-57%	21%
MIDDAY Peak						
Pre-Study	EB	376	91	63	3.2	23.5
Optimized	EB	318	33	24	1.6	27.7
EB % Change		-15%	-64%	-62%	-50%	18%
Pre-Study	WB	385	109	62	3.8	22.8
Optimized	WB	397	121	38	1.4	27.3
WB % Change		3%	11%	-39%	-63%	20%
PM Peak						
Pre-Study	EB	390	106	74	4.2	22.7
Optimized	EB	380	95	56	1.6	23.5
EB % Change		-3%	-10%	-24%	-62%	4%
Pre-Study	WB	380	104	68	3.5	23.1
Optimized	WB	342	66	31	1.6	25.6
WB % Change		-10%	-37%	-54%	-54%	11%

	Reduction
	No Change
	Increase

(Note: in the case of average speed, green means an increase in overall travel speed, whereas red means a reduction in overall travel speed)



Estimated Annual Signal Retiming Benefits  
Corridor: US-50

Delay Savings

49,564 Hours  
\$1,014,262



Emissions Savings

2.9 kg  
\$10,221



Crash Reductions

5 Crashes  
\$121,800



Fuel Savings

20,623 Gallons  
\$45,061



Benefit Cost Ratio

26:1



Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$57.5K to \$86.5K	0	\$0	C1	No Impacts	Neutral	Neutral	Neutral



Newtown (Newtown Rd/Valley Ave/Round Bottom Rd)  
*Pre-Study vs Optimized Timings*  
Peak Hour Analysis

Timing	Direction	Travel Time (sec)	Vehicle Delay (sec)	Stopped Delay (sec)	Stops	Average Speed (mph)
CUMULATIVE						
Pre-Study		236	80	76	3.0	19.3
Optimized		211	54	48	2.0	21.8
% Change		-11%	-33%	-37%	-33%	13%
AM Peak						
Pre-Study	NB	237	63	70	2.6	19.2
Optimized	NB	234	60	62	2.0	19.1
NB % Change		-1%	-5%	-11%	-23%	-1%
Pre-Study	SB	273	134	114	3.1	16.5
Optimized	SB	216	76	59	1.6	21.5
SB % Change		-21%	-43%	-48%	-48%	30%
MIDDAY Peak						
Pre-Study	NB	203	28	39	2.7	21.9
Optimized	NB	193	19	39	2.1	23.3
NB % Change		-5%	-32%	0%	-22%	6%
Pre-Study	SB	209	70	48	1.9	21.5
Optimized	SB	191	52	33	1.4	23.8
SB % Change		-9%	-26%	-31%	-26%	11%
PM Peak						
Pre-Study	NB	214	40	57	2.0	20.7
Optimized	NB	187	12	30	1.6	24
NB % Change		-13%	-70%	-47%	-20%	16%
Pre-Study	SB	281	142	126	3.5	16.1
Optimized	SB	242	102	65	2.2	19.2
SB % Change		-14%	-28%	-48%	-37%	19%

	Reduction
	No Change
	Increase



Estimated Annual Signal Retiming Benefits  
Corridor: Newtown Rd/Valley Ave/Round Bottom Rd

Delay Savings

22,868 Hours  
\$486,045



Crash Reductions

1 Crashes  
\$13,938

Emissions Savings

0.8 kg  
\$2,736



Fuel Savings

3,298 Gallons  
\$7,205

Benefit Cost Ratio

51:1





**SR-32**  
***Pre-Study vs Optimized Timings***  
**Peak Hour Analysis**

Timing	Direction	Travel Time (sec)	Vehicle Delay (sec)	Stopped Delay (sec)	Stops	Average Speed (mph)
<b>CUMULATIVE</b>						
Pre-Study		172	45	39	1.1	24.7
Optimized		155	28	19	0.6	26.8
<b>% Change</b>		<b>-10%</b>	<b>-38%</b>	<b>-51%</b>	<b>-45%</b>	<b>9%</b>
<b>AM Peak</b>						
Pre-Study	EB	139	26	11	0.4	29.0
Optimized	EB	139	26	11	0.4	29.1
<b>EB % Change</b>		<b>0%</b>	<b>0%</b>	<b>-1%</b>	<b>-6%</b>	<b>0%</b>
Pre-Study	WB	203	62	50	1.2	21.0
Optimized	WB	182	42	29	1.0	22.9
<b>WB % Change</b>		<b>-10%</b>	<b>-32%</b>	<b>-42%</b>	<b>-17%</b>	<b>9%</b>
<b>MIDDAY Peak</b>						
Pre-Study	EB	142	29	15	0.8	28.3
Optimized	EB	129	16	0	0	30.7
<b>EB % Change</b>		<b>-9%</b>	<b>-45%</b>	<b>-100%</b>	<b>-100%</b>	<b>8%</b>
Pre-Study	WB	170	29	45	1.3	23.8
Optimized	WB	148	7	18	1.0	27.6
<b>WB % Change</b>		<b>-13%</b>	<b>-76%</b>	<b>-60%</b>	<b>-23%</b>	<b>16%</b>
<b>PM Peak</b>						
Pre-Study	EB	210	98	71	1.8	20.1
Optimized	EB	156	43	13	0.5	25.9
<b>EB % Change</b>		<b>-26%</b>	<b>-56%</b>	<b>-82%</b>	<b>-72%</b>	<b>29%</b>
Pre-Study	WB	167	26	44	1.0	25.9
Optimized	WB	174	33	44	1.0	24.7
<b>WB % Change</b>		<b>4%</b>	<b>27%</b>	<b>1%</b>	<b>0%</b>	<b>-5%</b>

Reduction  
 No Change  
 Increase



**Estimated Annual Signal Retiming Benefits**  
**Corridor: SR-32**

**Delay Savings**

21,901 Hours  
\$490,201



**Emissions Savings**

0.03 kg  
\$2,820



**Benefit Cost Ratio**

28:1



**Crash Reductions**

2 Crashes  
\$53,205



**Fuel Savings**

6,484 Gallons  
\$14,166





Concept not drawn.

DESCRIPTION

- Adjust roadway grade deficiencies on Wooster.

NEEDS ADDRESSED

- S13) Address deficient roadway grade just east and west of the Red Bank Road/Wooster Road intersection.
- S14) Address deficient roadway grade at the Wooster/Red Bank intersection.

5/22 MEETING DISCUSSION AND COMMENTS

- None discussed.
- No additional comments received following the 5/22 meeting.

NEXT STEPS/RECOMMENDATION

- While the roadway grade on Wooster is deficient, the roadway is performing satisfactorily, and there is no reason to correct this deficiency. Since this concept addresses only a secondary need and there are no other primary needs being addressed in the area that this concept could be attached to, no further study is recommended.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
	Concept addresses secondary needs only and therefore was not evaluated.								NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY



Concept not drawn.

DESCRIPTION

- Add an extra lane along Wooster Pike to accept a continuous right turn lane from Wooster Road to Wooster Pike.

5/22 MEETING DISCUSSION AND COMMENTS

- The right turn volume does not necessitate free-flow movement.
- No additional comments received following the 5/22 meeting.

NEXT STEPS/RECOMMENDATION

- No further study because the right turn traffic volume does not necessitate free-flow movement.

NEEDS ADDRESSED

- P7) Address capacity issue for northbound left turn movement at the Wooster/Red Bank intersection.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
NEUTRAL	NEUTRAL	SIMPLE	< \$5 MILLION	PROPERTY TAKES	MINIMAL (C1/C2)	NEUTRAL	NEUTRAL	NEUTRAL	NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY



Concept drawings are presented on the following pages.

DESCRIPTION

- Install a roundabout at the Wooster Pike/Red Bank intersection.

NEEDS ADDRESSED

- P7) Address capacity issue for northbound left turn movement at the Wooster/Red Bank intersection.
- S16) Address bicycle and pedestrian connectivity across the railroad tracks to existing Armleder and Lunken bike paths.

5/22 MEETING DISCUSSION AND COMMENTS

- A roundabout would be designed to comfortably accommodate trucks.
- Would only need to use two lanes instead of three on the bridge, and it would be possible to get a bike lane across the bridge over the railroad without widening the existing bridge.
- Initial analysis indicates:
  - No change in delays during morning peak-hours.
  - A 20 percent increase in delays during evening peak-hours.
- Team will consider how best to incorporate multi-use path connections into this concept.
- No additional comments received following the 5/22 meeting.

9/7 MEETING DISCUSSION AND COMMENTS

- No substantive discussion.
- No additional comments received following the 9/7 meeting.

12/12MEETING DISCUSSION AND COMMENTS

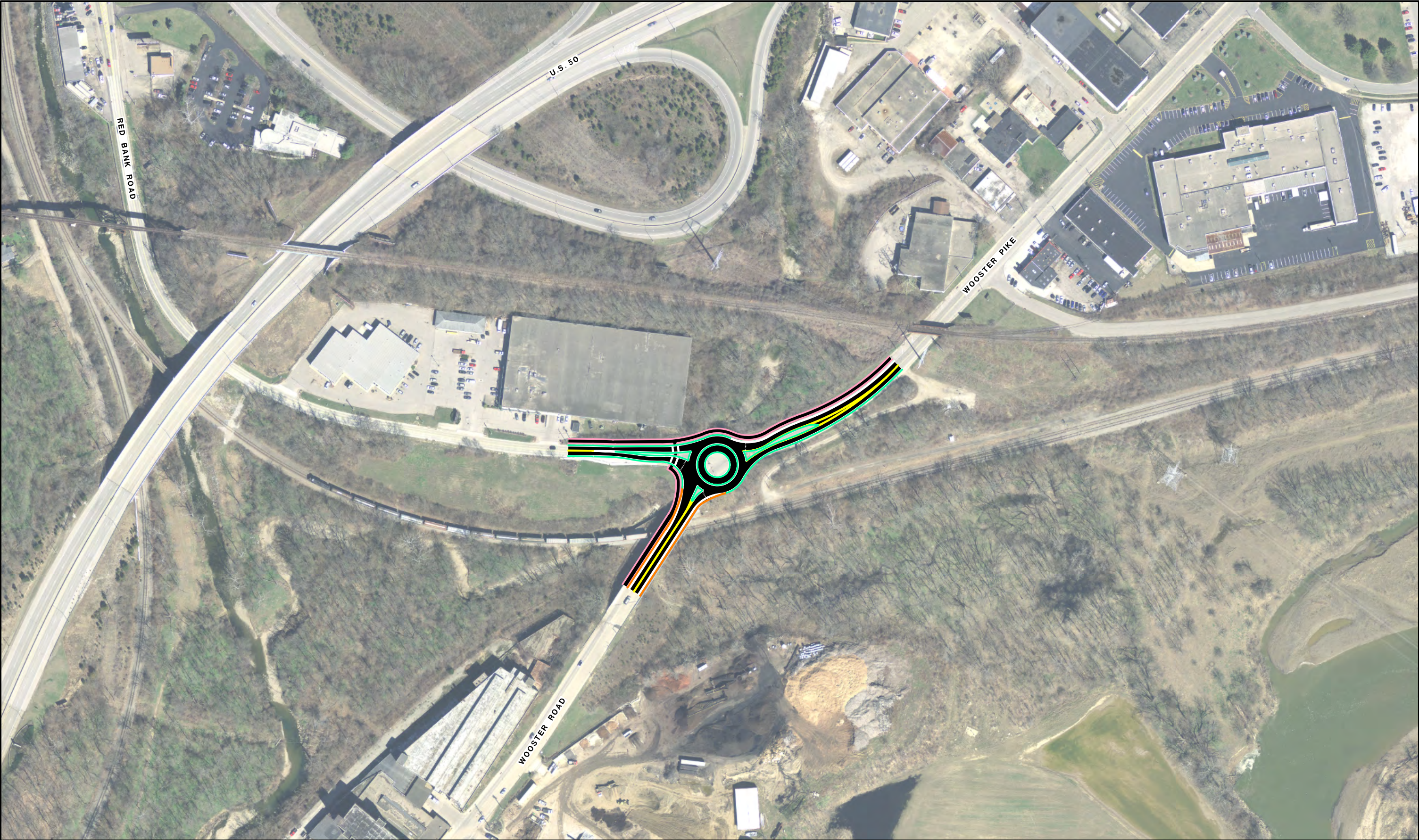
- In general, feedback received from the public on this concept was favorable (see Public Feedback Ratings Summary, next page).
- This roundabout wasn’t specifically proposed to address safety concerns; there are not a lot of accidents recorded in the area. Its purpose is to better manage traffic flow. It would also improve bicycle and pedestrian connections.
- The roundabout will be designed to accommodate truck use.

NEXT STEPS/RECOMMENDATION

- Include in the Implementation Plan as a medium priority.

Safety ECAT Benefit/ Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi- Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
		AM	23.7	C	-6%				\$1.2M to \$1.8M	0	\$40K to \$80K	C2	R/W Impacts, Stream Impacts, Waterway Permit	Improves	Neutral	Neutral
		PM	18.1	C	-21%											

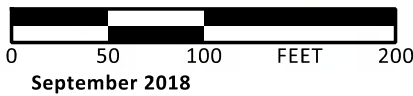
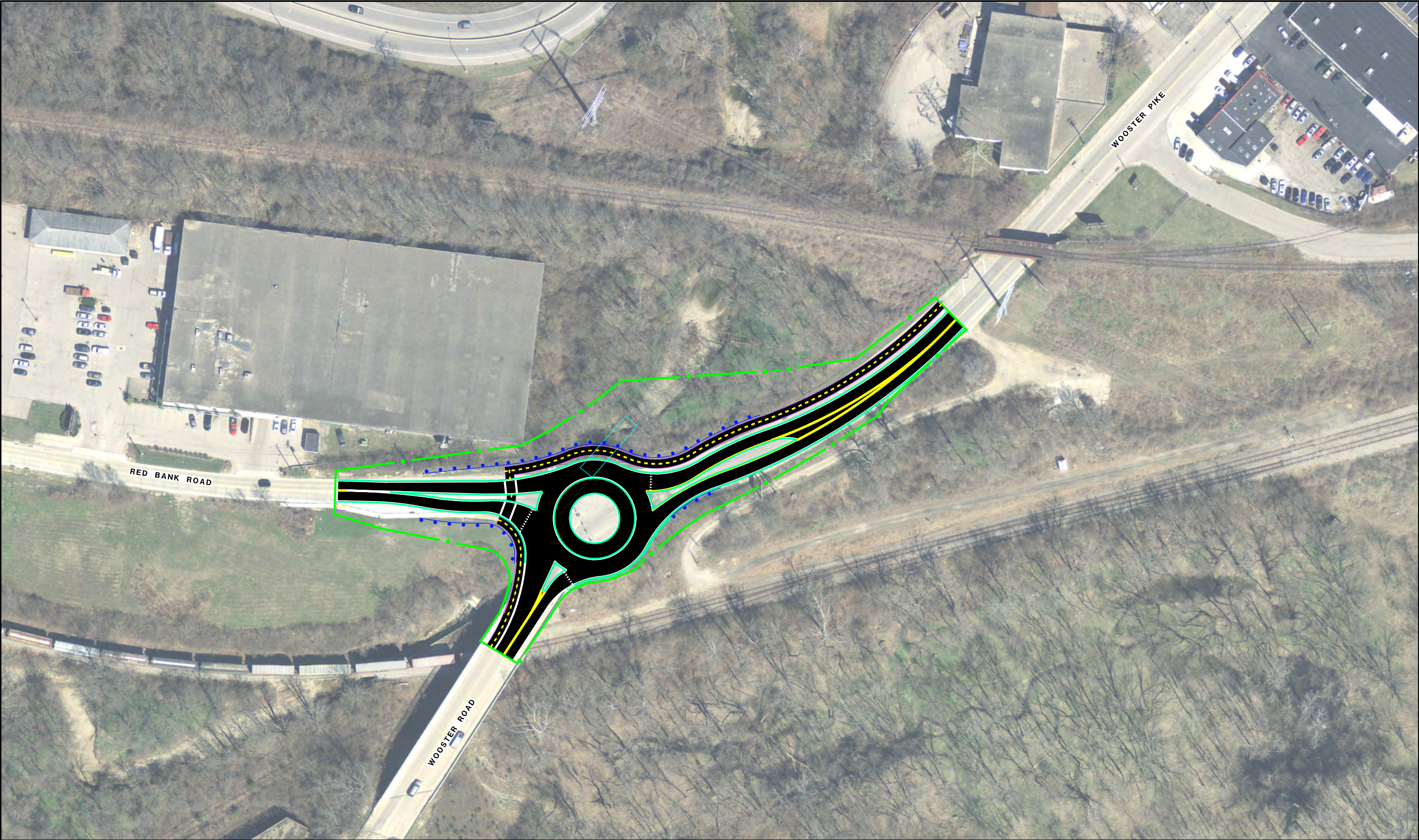




**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure I-20B**  
**ROUNDBOUT AT WOOSTER PIKE  
AND RED BANK ROAD INTERSECTION**



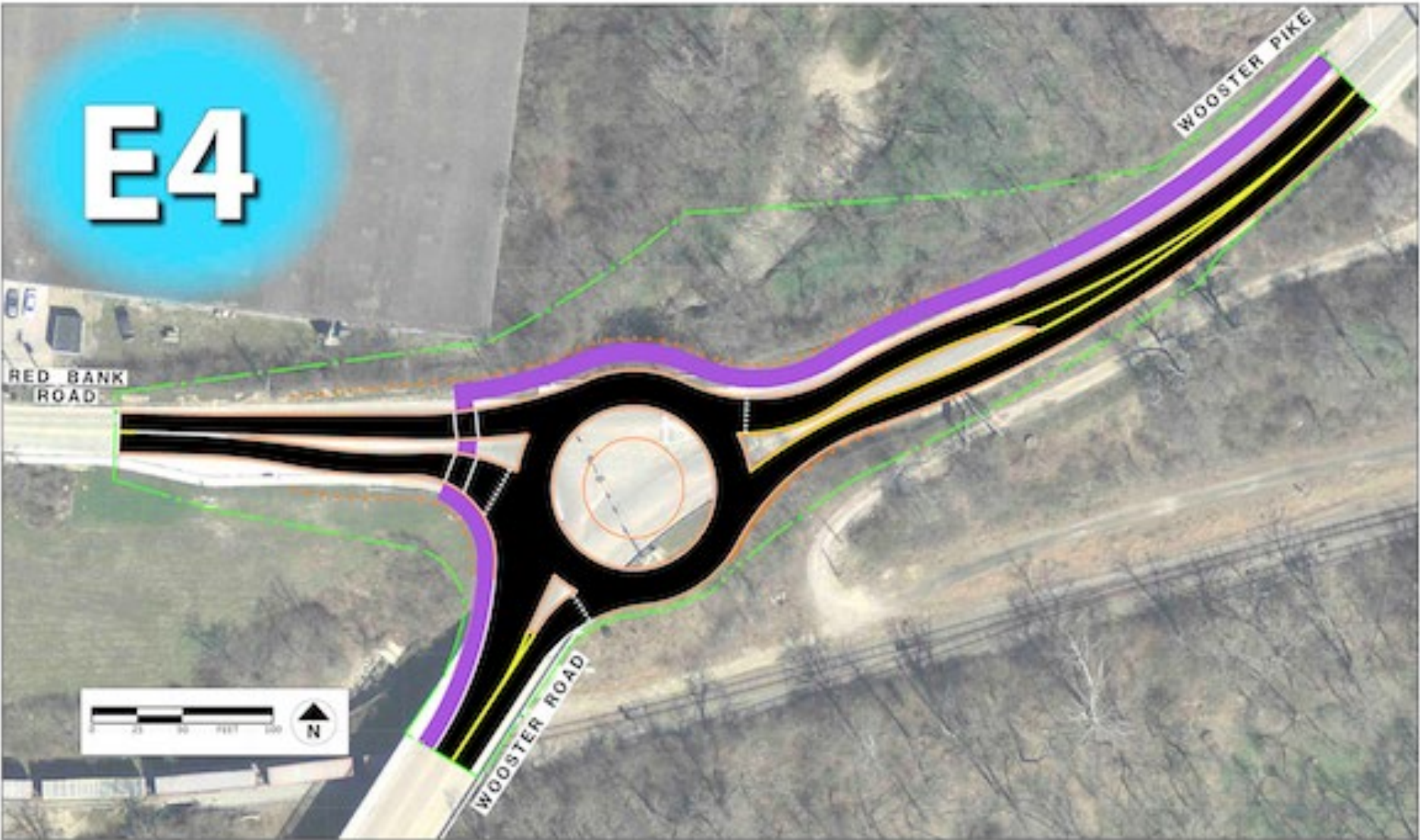


**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure I-20B**  
**ROUNDBOUT AT WOOSTER PIKE  
AND RED BANK ROAD INTERSECTION**



Drawing was presented at the October 24 & 25 Open House meetings.



**Roundabout at Wooster and Red Bank**

- \$1.2M to \$1.8M construction cost
- New R/W needed from 2 parcels; no buildings impacted
- No significant change in peak delay
- Eliminates existing traffic signal
- Improves safety
- Provides room to carry shared-use path across existing bridge

**PUBLIC FEEDBACK RATINGS SUMMARY**

Strongly Oppose	Dislike	Neutral	Like	Strongly Support
7%	5%	26%	31%	31%

(percentages have been rounded)





## Eastern Corridor Segments II and III

Combined Linwood/Eastern Interchange and US 50/Red Bank Interchange Focus Area

Theme

# Bicycle and Pedestrian

### Primary Needs identified for this theme:

- P9) Address pedestrian safety issues crossing SR 125 at bus stops.
- P10) Address bicycle connectivity (designated US Bicycle Route 21).

### Secondary Needs identified for this theme:

- S16) Address bicycle and pedestrian connectivity across the railroad tracks to existing Armleder and Lunken bike paths.



Concept not drawn.

DESCRIPTION

- Add a sidewalk around Beechmont Circle for connectivity of pedestrian traffic to and from the bus stop.

NEEDS ADDRESSED

- P9) Address pedestrian safety issues crossing SR 125 at bus stops.

5/22 MEETING DISCUSSION AND COMMENTS

- A sidewalk already exists to connect the bus stop to residential areas.

Comments Submitted Following the 5/22 Meeting  
*(Comments are presented as submitted by Committee members; no edits to content were made.)*

- Is this slide 18 in the Concept Drawing 052218 pdf? Slide 18 is incomplete and untitled.

ODOT Response:

- No, it is not. This concept was not drawn because a sidewalk already exists to connect the bus stop to residential areas.

NEXT STEPS/RECOMMENDATION

- No further study since a sidewalk already exists to connect the bus stop to residential areas.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
	Concept not evaluated because an existing sidewalk already provides connectivity.								NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY



Concept not drawn.

DESCRIPTION

- Add a HAWK or pedestrian signal on SR 125 at Beechmont Circle.
  - A HAWK is a traffic control device used to stop road traffic and allow pedestrians to cross safely. The HAWK beacon allows protected pedestrian crossings, stopping traffic only as needed.

NEEDS ADDRESSED

- P9) Address pedestrian safety issues crossing SR 125 at bus stops.

5/22 MEETING DISCUSSION AND COMMENTS

- Analysis indicates that a signal is not warranted at this intersection.

Comments Submitted Following the 5/22 Meeting

(Comments are presented as submitted by Committee members; no edits to content were made.)

- Figure X-2c is not included in the Concept Drawing pdf.

ODOT Response:

- Concept X-2c was not drawn.

NEXT STEPS/RECOMMENDATION

- No further study since the pedestrian signal is not warranted based on pedestrian counts in this area.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
DEGRADES	DEGRADES	SIMPLE	< \$5 MILLION	NONE	MINIMAL (C1/C2)	IMPROVES	NEUTRAL	NEUTRAL	NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY



Concept not drawn.

DESCRIPTION

- Add a pedestrian bridge over SR 125 at Beechmont Circle.

NEEDS ADDRESSED

P9) Address pedestrian safety issues crossing SR 125 at bus stops.

5/22 MEETING DISCUSSION AND COMMENTS

- The costs of this concept are expected to outweigh the benefits.

Comments Submitted Following the 5/22 Meeting  
*(Comments are presented as submitted by Committee members; no edits to content were made.)*

- Figure X-2d is not included in the Concept Drawing pdf.

ODOT Response:

- Concept X-2d was not drawn.

NEXT STEPS/RECOMMENDATION

- No further study due to the high costs of this concept relative to the the anticipated benefits.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
IMPROVES	NEUTRAL	MODERATE	\$5 – \$10 MILLION	PROPERTY TAKES	MINIMAL (C1/C2)	IMPROVES	NEUTRAL	NEUTRAL	NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY



Concept not drawn.

DESCRIPTION

- Create a pedestrian connection under SR 125 to connect Beechmont Court to Wilmer Court.

NEEDS ADDRESSED

- P9) Address pedestrian safety issues crossing SR 125 at bus stops.

5/22 MEETING DISCUSSION AND COMMENTS

- The SR 125 profile would not permit an underpass east of the existing walk along Beechmont Circle.

Comments Submitted Following the 5/22 Meeting  
*(Comments are presented as submitted by Committee members; no edits to content were made.)*

- Figure X-2e is not included in the Concept Drawing pdf.

ODOT Response:

- Concept X-2e was not drawn.

NEXT STEPS/RECOMMENDATION

- No further study since there is no room for an underpass under SR 125 to connect Beechmont Circle to Wilmer Court.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
	Concept is infeasible due to lack of room for an underpass, therefore was not evaluated.								NO FURTHER STUDY



Concept drawings are presented on the following pages.

DESCRIPTION

- Add a shared-use path from the Eastern Avenue/Heekin intersection across the railroad tracks into Linwood Park and over the creek to the Wooster Pike/Armleder Road intersection.

NEEDS ADDRESSED

S16) Address bicycle and pedestrian connectivity across the railroad tracks to existing Armleder and Lunken bike paths.

5/22 MEETING DISCUSSION AND COMMENTS

- The suggested shared-use path from Eastern to Wooster goes down a steep slope near Eastern. The path would need to be stairs with a runnel/gutter along the side to use for walking bikes up/down the hillside.
- As drawn, the path from Eastern travels across the access drive to Linwood Park. However, the entrance to this driveway is gated at night.
- Crossing the railroad at grade may not be an option based on rail company allowance.
- The existing pedestrian bridge over the railroad is not bike friendly.
- The Committee expressed interest in placing the bike path along existing streets instead of establishing a new connection through the park and across the creek. The City’s Linwood Plan already discusses adding a bike path along Wooster Road from Beechmont Circle to Armleder.
- Consultant to look at the possibility of building a ramp to facilitate use of the existing pedestrian bridge for bike use.
- No additional comments received following the 5/22 meeting.

9/7 MEETING DISCUSSION AND COMMENTS

- This concept requires constructing two new bridges (one across Eastern Avenue and one across the railroad tracks) and widening the bridge on Wooster that crosses a creek (located between Hutton Street and Armleder Road).
  - It uses the location of the existing pedestrian concrete bridge over the railroad tracks (across from the old school) to add a bike path from Eastern Avenue across the railroad tracks onto Hutton Avenue.
  - The new bike path would loop up through the front yard of the old school and down into Linwood Park (a new access drive to the park would be needed).
  - From there, the path would continue down Hutton to Wooster Pike and then to Armleder Road.
- The existing sidewalk along Wooster Pike would be widened to a shared-use path.
- The BIKE-2a concept has a connection from Eastern to Armleder that accomplishes a similar result but at a more reasonable cost.
- No additional comments received following the 9/7 meeting.

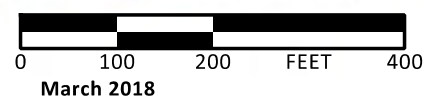
NEXT STEPS/RECOMMENDATION

- No further study due to high costs and impacts. Crossing from BIKE-2a looks more promising and it will become BIKE-1a as a stand-alone project.

Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$3M to \$4.6M	0	\$110K to \$220K	D1	Section 4(f)	Improves	Improves	Improves

RECOMMENDATION: NO FURTHER STUDY





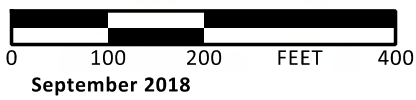
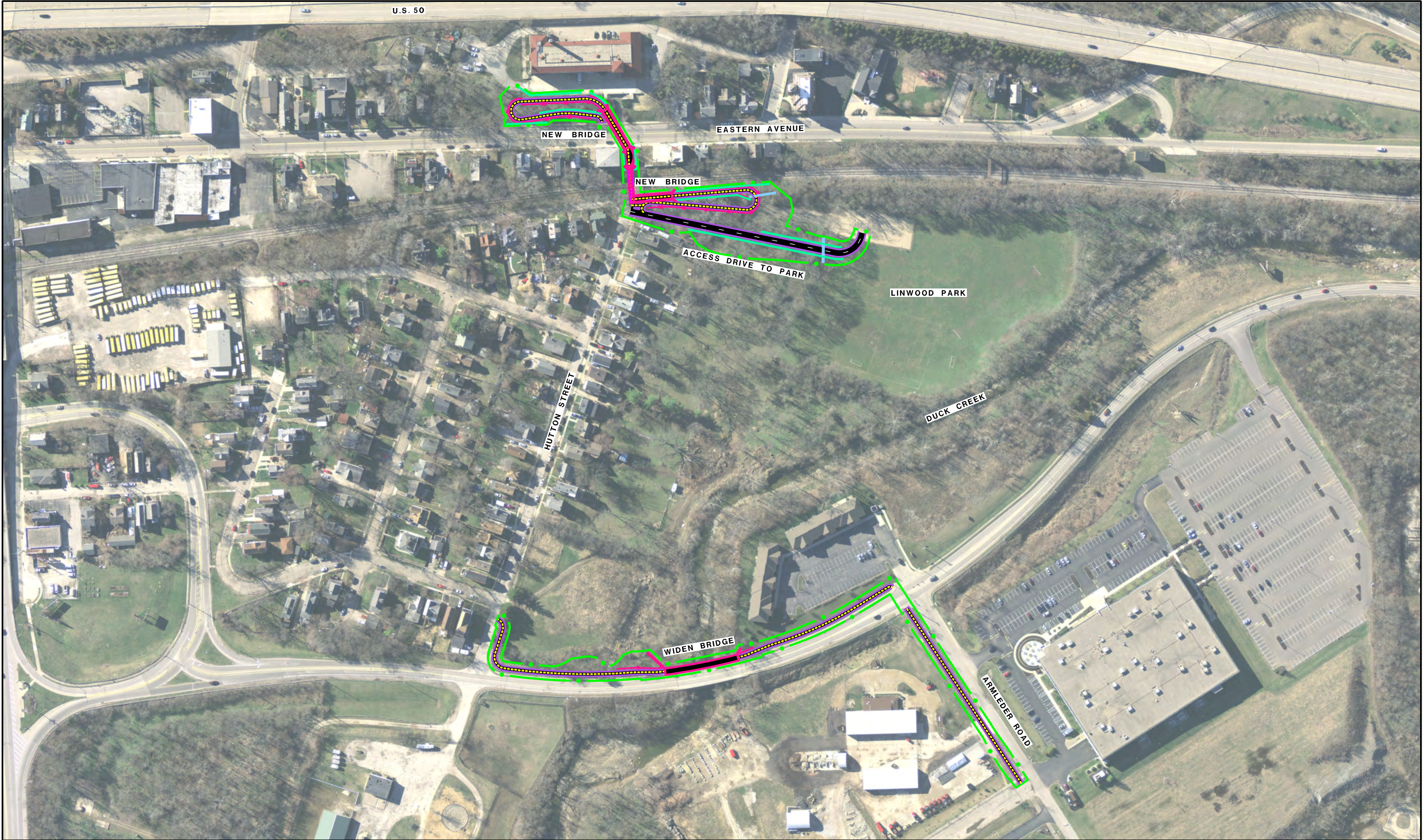
### Concept Drawing

Eastern Corridor Multi-Modal Projects  
Segment II-III (SR 32 Corridor)  
HAM-32F-0.00; PID 86462

### Figure BIKE-1

ACCESS ROAD FROM EASTERN AVENUE TO WOOSTER AT  
US BANK AND PARK ENTRANCE





**Concept Drawing**  
Eastern Corridor Multi-Modal Projects  
Segment II-III (SR 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure BIKE-1**  
SHARED USE PATH FROM EASTERN AVENUE TO  
ARMLEDER ROAD



Concept drawing is presented on the following page.

DESCRIPTION

- Connect Eastern Avenue to Armleder Park with shared-use path east of Linwood Park
- Is a modification of the BIKE-1 concept

NEXT STEPS/RECOMMENDATION

- Include in the Implementation Plan as component of concept BIKE-2a (E5) as a medium priority.

NEEDS ADDRESSED

P10) Address bicycle connectivity (designated US Bicycle Route 21)

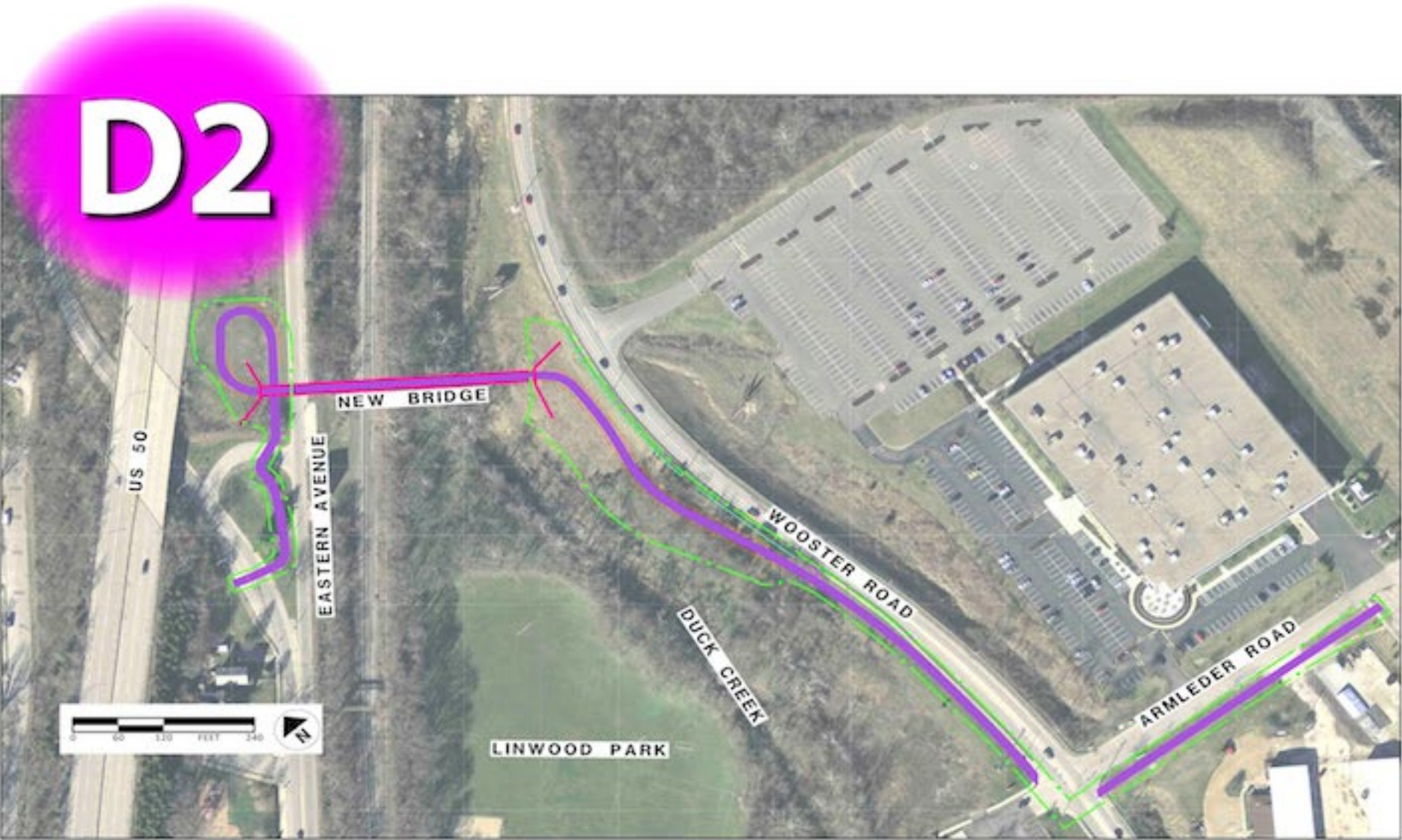
12/12 MEETING DISCUSSION AND COMMENTS

- Public comment on this concept tended toward favorable (see the Public Feedback Ratings Summary, next page).
- ODOT restated the committee’s conclusion from the 9/7 meeting that using the existing pedestrian bridge is not desired because it would need to be retrofitted to accommodate bikes and doing so would be very costly. The bridge also does not cross the creek. Instead, this new concept features a new bridge that spans across Eastern Avenue, the railroad and the creek.
- The City of Cincinnati expressed concern that this new concept does not connect local neighborhoods.
  - It does provide a connection between the Linwood neighborhood and Armleder Park, but not communities north of Eastern Avenue.
- This concept resolves only one piece of bicycle connectivity needs in the area; it is also the only connection being considered that links the neighborhood to Armleder Park.
- This concept should be considered as one piece of a larger, regional bicycle/pedestrian connectivity strategy. It has less utility if not connected to other bicycle/pedestrian projects such as BIKE-2a (E5).

Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$2.25M to \$3.4M	0	\$370K to \$740K	D1	Section 4(f)	Improves	Improves	Improves



Drawing was presented at the October 24 & 25 Open House meetings.



Shared-Use Path from Eastern to Armleder Park

- \$1.4M to \$2.1M\* construction cost
- New R/W needed from 10 parcels; no buildings impacted
- Requires new bridge over Eastern, railroad tracks and Duck Creek

\* Note: The cost estimate for this concept was updated following the Oct. 24 & 25, 2018, Open House meetings to \$2.25M - \$3.4M.

PUBLIC FEEDBACK RATINGS SUMMARY

Strongly Oppose	Dislike	Neutral	Like	Strongly Support
6%	8%	21%	18%	47%

(percentages have been rounded)



Concept drawings are presented on the following pages.

DESCRIPTION

- Connect Wasson Way Trail to the Armleder Road entrance with a shared-use path along US 50.
  - This concept brings Wasson from Ault Park along Columbia Parkway to Eastern, where it could tie into Concept BIKE-1.

NEEDS ADDRESSED

P10) Address bicycle connectivity (designated US Bicycle Route 21).

5/22 MEETING DISCUSSION AND COMMENTS

- A barrier-protected shared-use path would be located along right side of westbound US 50.
- The path would follow the existing exit ramp (5% grade) from US 50 to Eastern Avenue, then cross to Armleder Road using the connection established in the BIKE-1 concept.
- No additional comments received following the 5/22 meeting.

9/7 MEETING DISCUSSION AND COMMENTS

- This concept requires construction of a new bridge crossing from Eastern Avenue to Wooster Road. The bridge would be located immediately east of Linwood Park.
- A shared-use path located next to US 50 would need to be separated by a physical barrier; concrete barriers are proposed. Installing concrete barriers would not impact the hillside or shoulder along US 50, but would require modification of the city gateway.
  - One Committee member expressed concern that cyclists would be traveling a long way without an option to exit the path. Another

suggested that, even with the concrete barrier, cyclists might not feel safe, particularly with children traveling so close to vehicular traffic on US 50.

- The BIKE-2b, BIKE-4a and BIKE-4b concepts would need to be construction in conjunction with other projects to complete a full connection. Cost estimates for the necessary combinations are:
  - BIKE-2a: \$3.1M to \$4.7M
  - BIKE-2b, X-4d-1, BIKE-4a: \$4.53M to \$7M
- BIKE 2b, X-4d-1, BIKE-4b: \$4.43M to \$6.8M
- No additional comments received following the 9/7 meeting.

12/12 MEETING DISCUSSION AND COMMENTS

- This project would connect the bike path to Ault Park’s hiking trails, which opens up a larger commuter network to local neighborhoods.
- Consider incorporating the spur to the Murray Trail (as outlined in concepts E6/E7) into this concept.
- The priority of this concept will depend on the status and advancement of the Wasson Way trail.

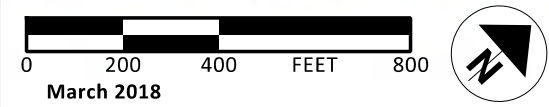
NEXT STEPS/RECOMMENDATION

- Include in the Implementation Plan as a medium priority, including BIKE-2a and BIKE-1a to fully connect Wasson Way Trail to Armleder Park.
- Consider connecting Murray Trail spur.

Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$5.1M to \$7.6M	0		D1	Section 4(f)	Improves	Improves	Improves

PRIORITY: MEDIUM

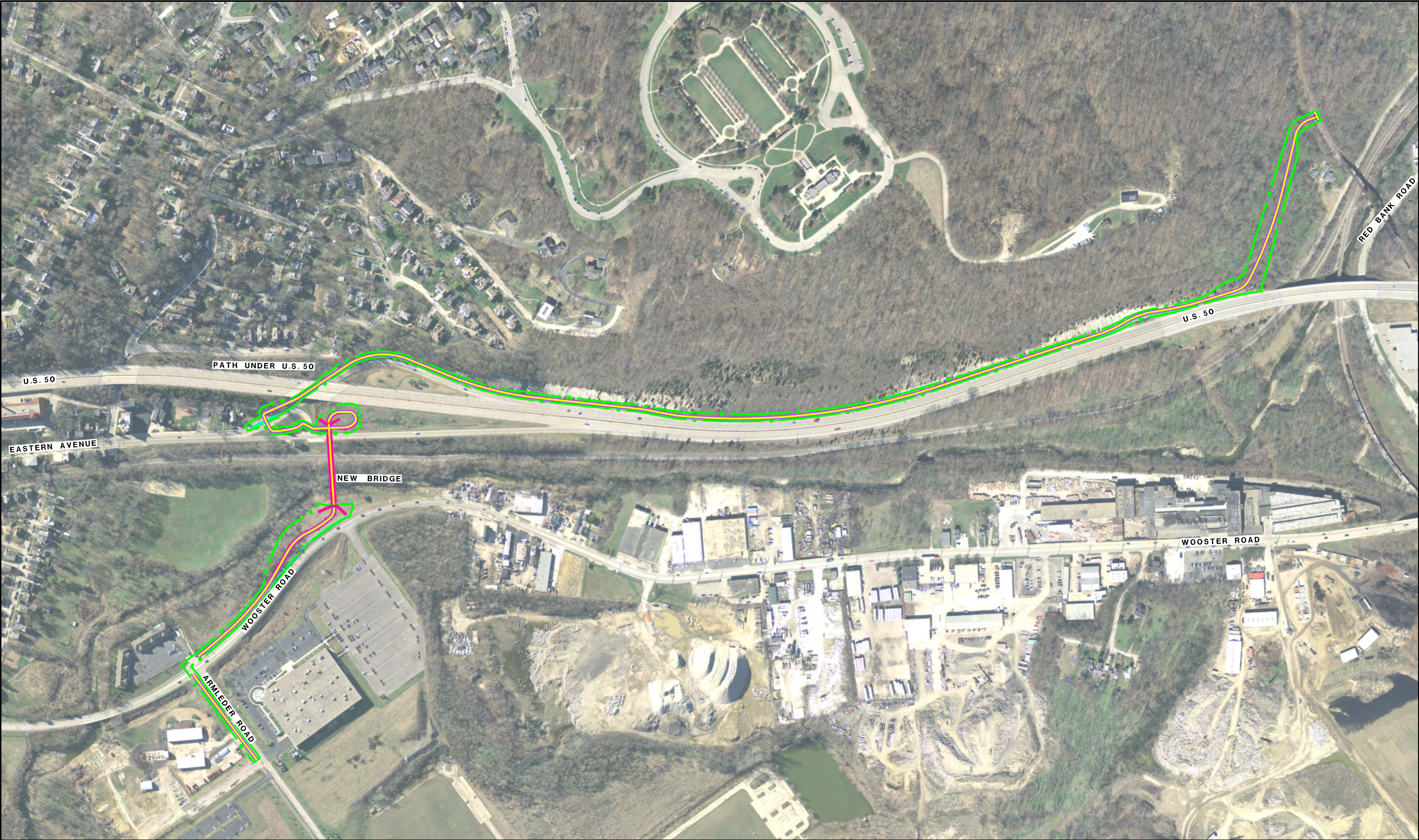




**Concept Drawing**  
Eastern Corridor Multi-Modal Projects  
Segment II-III (SR 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure BIKE-2A**  
SHARED USE PATH FROM WASSON TRAIL  
TO ARMLEDER ROAD







Concept drawings are presented on the following pages. Concept is also shown with BIKE-2a (E5).

DESCRIPTION

- Connect the Wasson Way Trail to Armleder Road with shared-use path running on a gravel path in Ault Park to Old Red Bank Road over to Red Bank.
  - This shared-use path would drop out of Ault Park at the first railroad trestle and follow the tracks north to a connection with Red Bank Road.
- Path would then follow Red Bank south to Wooster Road. Path would continue southwest on Wooster Road to Armleder Road.

NEEDS ADDRESSED

P10) Address bicycle connectivity (designated US Bicycle Route 21).

5/22 MEETING DISCUSSION AND COMMENTS

- An on-street bike path on Wooster would be challenging because businesses are located close to the road on both sides in this area.
- Commercial use of the road would make it a challenge to keep the bike path clean. Road debris (gravel, dirt, sand, trash, etc.) would likely collect in the bike path.
- Running the bike path behind the businesses located on the north side of Wooster may be a challenge. Space availability is limited by a creek and old rail tracks (not used since 1982) and buildings. Ownership of the rail tracks may be split between SORTA and Norfolk Southern.
- The consultant team will confirm whether routing a bike path behind businesses on the north side of Wooster may be an option.
- The consultant team will determine who owns the railroad tracks in this area.
- No additional comments received following the 5/22 meeting.

9/7 MEETING DISCUSSION AND COMMENTS

- This concept would be part of a phased-approach to connecting the Wasson Way Trail to Armleder Road using X-4d-1 (Wooster extension to Colbank with roundabout at Red Bank Road and Wooster Road) and BIKE-4a or BIKE-4b.
- The path would connect with the gravel path in Ault Park, drop under the railroad trestle at the back of the park and go north parallel to Old Red Bank road, then over the creek before turning south to follow along the new X-4d or X-4d-1 connector.
- A Committee member asked if instead of following the new connector, would it be possible to continue the path along Old Red Bank Road US 50 of the US 50 ramp. ODOT shared that there is an existing abutment wall under US 50 that is a barrier to a bike path connection.
- The BIKE-2b, BIKE-4a and BIKE-4b concepts would need to be construction in conjunction with other projects to complete a full connection. Cost estimates for the necessary combinations are:
  - BIKE-2a: \$3.1M to \$4.7M
  - BIKE-2b, X-4d-1,BIKE-4a: \$4.53M to \$7M
  - BIKE 2b, X-4d-1, BIKE-4b: \$4.43M to \$6.8M
- No additional comments received following the 9/7 meeting.

12/12 MEETING DISCUSSION AND COMMENTS

- Of the three bike path options in this area [BIKE-2a (E5), BIKE-4b (E6) and BIKE-4a (E7)], E6 received the highest amount of support from the public.
  - The committee surmised that this is because, as drawn, the bike path would travel along a vegetated corridor and creek before linking with the Armleder bike path.
  - H. Hafner & Sons expressed concern with having the bike path

cross the company’s driveway. They reported that 800 trucks come in and out of the driveway on a daily basis and it is hard to see bikes from the trucks. There is also typically a lot of debris in area.

- E6/E7 estimates do not include the cost of constructing the proposed roundabout at Wooster and Red Bank. If that cost were to be added, the estimates for each would be closer to the cost estimates for concept BIKE-2a (E5).
- The committee discussed eliminating BIKE-4b (E6) due to the concerns of connecting the bike path across the Hafner driveway.
- The committee agreed that concept BIKE-4a (E7) needs to include the proposed roundabout at Wooster and Red Bank. Therefore, the cost estimates for the roundabout should be added to the estimate for BIKE-4a (E7). This will increase the cost significantly. Even so, the committee agreed that this option should still be included in the Implementation Plan for future consideration.
- The priority of this concept will depend on the status and advancement of the Wasson Way trail.
- No further study on E6; include E7 in the Implementation Plan as a medium priority.

NEXT STEPS/RECOMMENDATION

- No further study on concept E6.
- Include E7 in the Implementation Plan as a medium priority. This includes a connection from Wasson Way Trail to Murray Trail, a shared-use path on the X-4d-1 alignment without the roadway improvements and the roundabout at Wooster and Red Bank.

Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$530K to \$800K	0	\$380K to \$760K	C2	R/W Impacts, Stream Impacts, Waterway Permit, Potential T&E, Section 4(f), ESA Issues	Improves	Improves	Improves

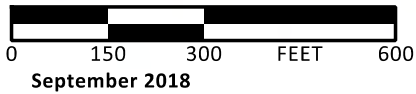




**Concept Drawing**  
Eastern Corridor Multi-Modal Projects  
Segment II-III (SR 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure BIKE-2B**  
SHARED USE PATH FROM WASSON TRAIL  
TO ARMLEDER ROAD



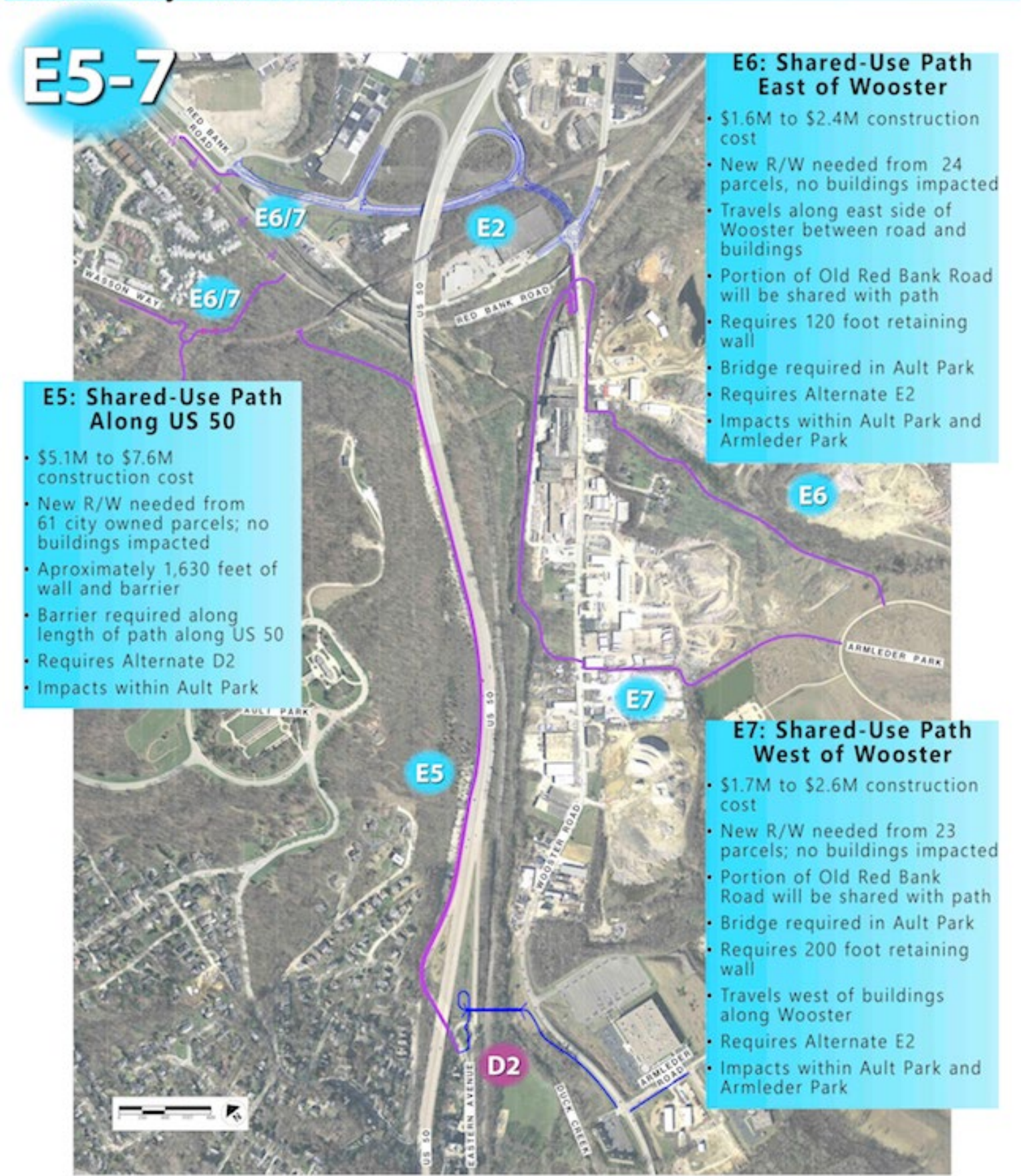


**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure BIKE-2B**  
SHARED USE PATH CONNECTION BETWEEN  
WASSON TRAIL AND ARMLEDER TRAIL



Alternatives to address pedestrian and bicycle connectivity from Wasson Way Trail to Armleder Park



Drawing was presented at the October 24 & 25 Open House meetings.

PUBLIC FEEDBACK RATINGS SUMMARY (E5)

Strongly Oppose	Dislike	Neutral	Like	Strongly Support
6%	11%	24%	23%	36%

(percentages have been rounded)

PUBLIC FEEDBACK RATINGS SUMMARY (E6)

Strongly Oppose	Dislike	Neutral	Like	Strongly Support
9%	2%	23%	25%	42%

(percentages have been rounded)

PUBLIC FEEDBACK RATINGS SUMMARY (E7)

Strongly Oppose	Dislike	Neutral	Like	Strongly Support
14%	3%	29%	20%	34%

(percentages have been rounded)



Concept drawing is presented on the following page.

DESCRIPTION

- Restripe Wooster Road to include bike lanes and/or sharrows.

NEEDS ADDRESSED

- P10) Address bicycle connectivity (designated US Bicycle Route 21).

5/22 MEETING DISCUSSION AND COMMENTS

- This concept would require widening Wooster Road on both sides.
- Commercial use of the road would make it a challenge to keep the bike path clean. Road debris (gravel, dirt, sand, trash, etc.) would likely collect in the bike path.
- Is there any option to route the bike path between Miami Bluff in Mariemont to the back of Armleder?
  - Concern is that the grade is too steep.
  - The consultant team will determine who owns the railroad tracks in this area, and which of these, if any, could potentially be used for a bike path (City of Cincinnati may have some documentation).

Comments Submitted Following the 5/22 Meeting

- (Comments are presented as submitted by Committee members; no edits to content were made.)
- Figure BIKE-3 shows a bike trail extension across Wooster towards Mariemont Avenue near the Mariemont Industrial District. Any proposed bike paths in Mariemont will require Village approval. Also, not bike path information has been provided for the US 50 segment. Mariemont reserves the right to additional comments as this information becomes available from ODOT.

NEXT STEPS/RECOMMENDATION

- No further study due to the high cost of project and right-of-way impacts. Also, it would be difficult to keep the path clear of debris from local truck traffic.

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
IMPROVES	NEUTRAL	SIMPLE	< \$5 MILLION	PROPERTY TAKES	MINIMAL (C1/C2)	IMPROVES	NEUTRAL	NEUTRAL	NO FURTHER STUDY

RECOMMENDATION: NO FURTHER STUDY





<p>0 250 500 FEET 1000</p> <p>MARCH 2018</p>		<p><b>Concept Drawing</b> Eastern Corridor Projects Segment II-III (S.R. 32 Corridor) HAM-32F-0.00; PID 86462</p>	<p><b>Figure BIKE-3</b> WOOSTER ROAD TO INCLUDE BIKE LANES</p>
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Concept drawing is presented on the following page.

DESCRIPTION

- Improve Wooster Road to include a shared-use path.

NEEDS ADDRESSED

- P10) Address bicycle connectivity (designated US Bicycle Route 21).

5/22 MEETING DISCUSSION AND COMMENTS

- None discussed.

Comments Submitted Following the 5/22 Meeting

(Comments are presented as submitted by Committee members; no edits to content were made.)

- Figure BIKE-4 shows a bike trail extension across Wooster towards Mariemont Avenue near the Mariemont Industrial District. Any proposed bike paths in Mariemont will require Village approval. Also, not bike path information has been provided for the US 50 segment. Mariemont reserves the right to additional comments as this information becomes available from ODOT.

9/7 MEETING DISCUSSION AND COMMENTS

- Concept advanced as BIKE-4a and BIKE-4b (described on following pages).
- No additional comment received following the 9/7 meeting.

NEXT STEPS/RECOMMENDATION

- Incorporate concept into BIKE-2b; BIKE-4a becomes part of BIKE-2b (E7), while BIKE-4b becomes part of BIKE-2b (E6).

Safety	Traffic Operations	Constructability Issues	Construction Cost	R/W Impacts	Environmental / Community Impacts	Supports and/or Facilitates Multi-Modal	Improve Regional Connectivity	Improve Local Access	RECOMMENDATION
IMPROVES	NEUTRAL	SIMPLE	< \$5 MILLION	PROPERTY TAKES	MODERATE (D1/D2)	IMPROVES	NEUTRAL	IMPROVES	ADVANCE

RECOMMENDATION: ADVANCE WITH BIKE-2B (E6/E7).





**Concept Drawing**  
Eastern Corridor Projects  
Segment II-III (S.R. 32 Corridor)  
HAM-32F-0.00; PID 86462

**Figure BIKE-4**  
**SHARED USE PATH ALONG WOOSTER ROAD**



Concept drawing is presented on the following page; Concept also shown with BIKE-2b (E6 and E7).

DESCRIPTION

- Add shared-use path along Wooster Pike behind Cincinnati Paperboard and then crossing Wooster at the greenspace to the Armleder Trail loop.

NEEDS ADDRESSED

P10) Address bicycle connectivity (designated US Bicycle Route 21).

9/7 MEETING DISCUSSION AND COMMENTS

- This concept could be combined with X-4d-1 (Wooster extension to Colbank with roundabout at Red Bank Road and Wooster Road) and BIKE-2b to connect the Wasson Way Trail to the Armleder Trail Loop.
- This concept would include a mid-block crossing on Wooster (west of Cincinnati Paperboard’s greenspace) with a rectangular rapid flash beacon (RRFB).
- Running the shared-use path behind Cincinnati Paperboard but south of the creek is a tight fit.
- A Committee member asked if it might be possible to take the trail through the existing Norfolk-Southern railyard in Mariemont (Clare Yard). It was reported however, that that area is being preserved for potential future rail use.
- A Committee member asked whether it was possible to rate Concept BIKE-4a and BIKE-4b as to which is more feasible from a construction

standpoint. Additional engineering analysis would be required in order to make that determination.

- The BIKE-2b, BIKE-4a and BIKE-4b concepts would need to be construction in conjunction with other projects to complete a full connection. Cost estimates for the necessary combinations are:
  - BIKE-2a: \$3.1M to \$4.7M
  - BIKE-2b, X-4d-1, BIKE-4a: \$4.53M to \$7M
  - BIKE 2b, X-4d-1, BIKE-4b: \$4.43M to \$6.8M
- No additional comments received following the 9/7 meeting.

12/12 MEETING DISCUSSION AND COMMENTS

The following notes as the same as those documented under BIKE-2b (E6, E7):

- Of the three bike path options in this area (E5, E6 and E7), E6 received the highest amount of support from the public.
- The committee surmised that this is because, as drawn, the bike path would travel along a vegetated corridor and creek before linking with the Armleder bike path.
- H. Hafner & Sons expressed concern with having the bike path cross the company’s driveway. They reported that 800 trucks come in and out of the driveway on a daily basis and it is hard to see bikes from the trucks. There is also typically a lot of debris in area.
- E6/E7 estimates do not include the cost of constructing the proposed roundabout at Wooster and Red Bank. If that cost were to be added,

the estimates for each would be closer to the cost estimates for concept BIKE-1 (E6).

- The committee discussed eliminating E6 due to the concerns of connecting the bike path across the Hafner driveway.
- The committee agreed that concept E7 needs to be include the proposed roundabout at Wooster and Red Bank. Therefore, the cost estimates for the roundabout should be added to the estimate for E7. This will increase the cost significantly. Even so, the committee agreed that this option should still be included in the Implementation Plan for future consideration.
- The priority of this concept will depend on the status and advancement of the Wasson Way trail.

NEXT STEPS/RECOMMENDATION




- Include in the Implementation Plan as part of E7 as a medium priority.

Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$1.3M to \$2M	0	\$390K to \$780K	C2	R/W Impacts, Stream Impacts, Waterway Permit, Potential T&E, Section 4(f), ESA Issues	Improves	Improves	Improves

PRIORITY: MEDIUM





 <p>0 150 300 FEET 600</p> <p>September 2018</p> 	 <p><b>Stantec</b></p>	<p><b>Concept Drawing</b> Eastern Corridor Projects Segment II-III (S.R. 32 Corridor) HAM-32F-0.00; PID 86462</p>	<p><b>Figure BIKE-4A</b> SHARED USE PATH BETWEEN RED BANK ROAD AND ARMLEDER TRAIL</p>
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Concept drawing is presented on the following page. Concept is also shown with Concept BIKE-2b (E6 and E7).

DESCRIPTION

- Add shared-use path along the south side of Wooster Pike past Hafner parcel to Armleder Trail Loop.

NEEDS ADDRESSED

P10) Address bicycle connectivity (designated US Bicycle Route 21).

9/7 MEETING DISCUSSION AND COMMENTS

- This concept could be combined with X-4d-1 (Wooster extension to Colbank with roundabout at Red Bank Road and Wooster Road) and BIKE-2b to connect the Wasson Way Trail to the Armleder Trail Loop.
- This concept uses the existing Wooster bridge and then crosses under the bridge to get to the east side of Wooster, near the Hafner driveway.
- The path would weave between parking lots, past the Miami Avenue residential area and follow a swale to an eventual connection with the Armleder trail.
- A Committee member asked whether it was possible to rate Concept 4-a and Concept 4-b as to which was more feasible from a construction standpoint. However, additional engineering analysis would be required in order to make that determination.

- The BIKE-2b, BIKE-4a and BIKE-4b concepts would need to be construction in conjunction with other projects to complete a full connection. Cost estimates for the necessary combinations are:
  - BIKE-2a: \$3.1M to \$4.7M
  - BIKE-2b, X-4d-1, BIKE-4a: \$4.53M to \$7M
  - BIKE 2b, X-4d-1, BIKE-4b: \$4.43M to \$6.8M
- No additional comments received following the 9/7 meeting.

12/12 MEETING DISCUSSION AND NOTES

The following notes as the same as those documented under BIKE-2b (E6, E7):

- Of the three bike path options in this area (E5, E6 and E7), E6 received the highest amount of support from the public.
- The committee surmised that this is because, as drawn, the bike path would travel along a vegetated corridor and creek before linking with the Armleder bike path.
- H. Hafner & Sons expressed concern with having the bike path cross the company’s driveway. They reported that 800 trucks come in and out of the driveway on a daily basis and it is hard to see bikes from the trucks. There is also typically a lot of debris in area.
- E6/E7 estimates do not include the cost of constructing the proposed roundabout at Wooster and Red Bank. If that cost were to be added, the estimates for each would be closer to the cost estimates for concept BIKE-1 (E6).

- The committee discussed eliminating E6 due to the concerns of connecting the bike path across the Hafner driveway.
- The committee agreed that concept E7 needs to be include the proposed roundabout at Wooster and Red Bank. Therefore, the cost estimates for the roundabout should be added to the estimate for E7. This will increase the cost significantly. Even so, the committee agreed that this option should still be included in the Implementation Plan for future consideration.
- The priority of this concept will depend on the status and advancement of the Wasson Way trail.

NEXT STEPS/RECOMMENDATION

- No further study.

Safety ECAT Benefit /Cost Ratio	Location	Traffic Operations							Construction Cost	R/W Impacts		Environmental Impacts		Support and/or Facilitate Multi-Modal	Improve Regional Connectivity	Improve Local Access
		Time Period	HCS Results			TransModeler Results				Number of Relocations	R/W Cost	Anticipated Environmental Document	Red Flag Triggers			
			2042 Delay (seconds)	2042 LOS	% Reduction from No Build	2042 Delay (seconds)	2042 LOS	% Reduction from No Build								
									\$1.2M to \$1.8M	0	\$450K to \$900K	C2	R/W Impacts, Stream Impacts, Waterway Permit, Potential T&E, Section 4(f), ESA Issues	Improves	Improves	Improves

RECOMMENDATION: NO FURTHER STUDY





0 150 300 600  
FEET  
September 2018



**Concept Drawing**  
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**Figure BIKE-4B**  
SHARED USE PATH BETWEEN  
RED BANK ROAD AND ARMLEDER TRAIL