

ODOT Systemic Safety Application for Roadway Departure

Bethany Road RdD – Butler County, Ohio

August 2025

The BCEO is submitting a 0.83-mile segment of Bethany Road in Liberty Township for consideration of ODOT's Systemic Safety funding to help reduce roadway departure crashes. The segment of Bethany Road from just east of I-75 overpass to 300 feet west of Butler Warren Road is a critical/high priority safety project to combat roadway departure crashes. The existing section consists of 10' lanes, 0-1' paved shoulders, 8,900 AADT, and 55 mph statutory speed limit in fast-growing, suburban Liberty Township. In the last 3 years, 60% of the 25 crashes have been either roadway departures or left of center crashes. In the past 3 years, there have been 10 injury crashes with one serious injury crash. BCEO has included a summary of the crashes and collision diagram.

The BCEO has received numerous public requests/complaints to improve safety and lower the speed limit along Bethany Road. Liberty Township officials support a safety project to reduce roadway departure crashes and implement traffic calming measures like the construction of a single-lane roundabout at Winter Hazel Drive/Cherry Laurel Drive.

The BCEO is proposing several proven countermeasures to reduce roadway departure, rear end, and left of center crashes. Recommended proven countermeasures include widening to 11-foot lanes with 2-foot paved shoulders, removing fixed objects/obstructions along roadside, submitting speed evaluation to reduce statutory 55-mph speed zone to 45-mph, and constructing a single lane modern roundabout.

Previous countermeasures by Liberty Township have included granular back-filling the edge of pavement and removing protruding headwalls that were close to the traveled way.

The BCEO will perform PE Environmental, PE Design, and Right of Way acquisitions in-house. Therefore, the BCEO's and Township's sponsor funding percentage for the project will be greater than 20%.

I will forward ODOT a copy of our estimate as soon as it is completed.

Thank you for considering BCEO's Systemic Safety application to fund proven countermeasures on Bethany Road to get closer to achieving the goal of Vision Zero. Please let BCEO know if additional information is needed.

General Project Information

Project Sponsoring Agency	Butler County Engineer's Office
Project Name	Bethany Road Systemic Rwd
PID (if available)	
Project Manager	Matthew J. Loeffler, PE
Applicant Name	Matthew J. Loeffler, PE
Applicant Title	Traffic Engineer
Contact Phone	513-785-4109
Contact Email	loefflerm@bceo.org

Location Information

ODOT District	8	County	Butler
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Project Description

Summary of Project

The BCEO is happy to submit a 0.83-mile segment of Bethany Road in Liberty Township for consideration of ODOT's Systemic Safety funding to help reduce roadway departure crashes. The BCEO is proposing several proven countermeasures to reduce the number of roadway departures, rear end, and crossing center line type crashes. Recommended proven countermeasures include widening to 11-foot lanes with 2-foot shoulders, removing fixed objects/obstructions along roadside, submitting speed evaluation to reduce statutory 55-mph speed zone to 45-mph, and construct a single lane roundabout. The narrow 10-foot lanes and less than 1-foot shoulder in combination with high travel speeds has contributed to 15 roadway departure/head-on crashes out of a total of 25 crashes in a 3-year period (2022-2024).

Project Priority Information

The segment of Bethany Road from just east of I-75 overpass to 300 feet west of Butler Warren Road meets the 'Critical/High' priority level as defined by rural roadway departure priorities for systemic safety funding. The existing section consists of 10' lanes, 0-1' paved shoulders, 8,900 AADT, and 55 mph statutory speed limit. In the last 3 years, 60% of the 25 crashes have been either roadway departures or left of center crashes. In the past 3 years, there have been 10 injury crashes, one was a serious injury crash. BCEO has included a summary of the crashes and collision diagram. A preliminary safety priority analysis of Butler County roadway segments that was recently completed ranks Bethany Road 8th. The BCEO has received numerous public requests to improve safety and lower the existing speed limit along Bethany Road. Liberty Township officials support a safety project to reduce roadway departure crashes and implement traffic calming measures like the construction of a single-lane roundabout at Winter Hazel Drive/Cherry Laurel Drive.

Project Funding

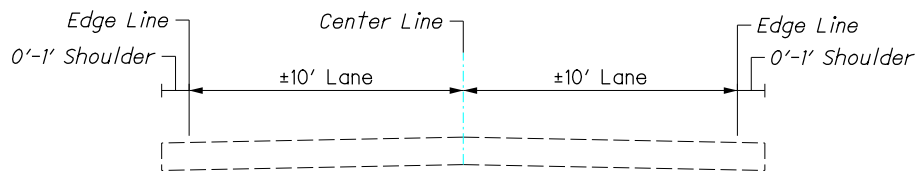
Project Phase	Safety Study / Systemic Analysis	PE - Environmental	PE - Detailed Design	Right of Way /Utilities	Construction	Total
Fiscal Year		2026	2027	2027	2028	
Project Phase Completed					N/A	
Previous Safety						\$0.00
New Safety					\$2,789,191.00	\$2,789,191.00
Sponsor Funding		\$20,000.00	\$309,910.00	\$20,000.00	\$309,910.00	\$659,820.00
Total	\$0.00	\$20,000.00	\$309,910.00	\$20,000.00	\$3,099,101.00	\$3,449,011.00

Additional Funding Detail

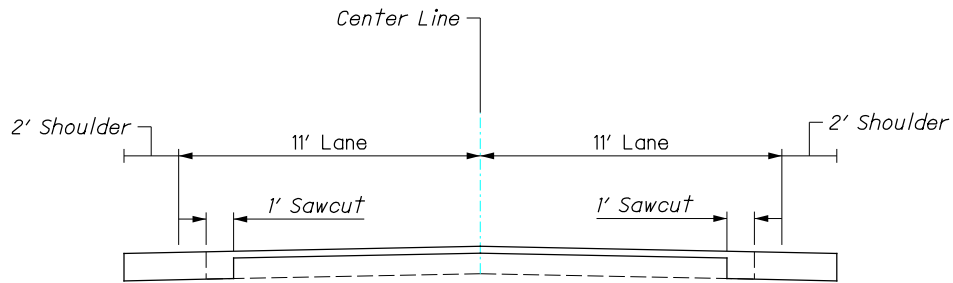
Liberty Township will contribute 10% of construction cost plus BCEO will contribute 100% of PE-Environmental, PE-Design, and Right of Way costs. The total local sponsorship funding percentage will be approximately 19% of total project cost. (BCEO is aware that the roundabout may be excluded from the funding award as it may be viewed as not directly impacting roadway departures, but BCEO believes the roundabout compliments the roadway widening to encourage safer speeds to help eliminate roadway departures.)

Location Information:																				ROADWAY				SIGNAGE		CLEAR ZONE						
Location Priority:	Location Name:	NLFID	County:	Route:	Begin Log Point	End Log point (for segments)	Maintenance Authority	Intersection Approach (if applicable)	Google Maps Link	Latitude:	Longitude:	Functional Classification	Posted Speed Limit	AT Need Score	AT Demand Score	AADT	Bicycle LTS Before	Bicycle LTS After	TOAST Score	Location Equity Measure	Lane Widening	Shoulder Widening	Rumble Strips	Road Diet	Curve Warning Signs	Advisory Speed Signs	Hazard Removal and/or Relocation	Modifying Ditches	Removing Type A Guardrail	Adjusting End Condition Slopes	Description	Estimated Cost:
1	Bethany Rd Systemic RWD	TBUTTR00132**C	Butler	TR132	0.68	1.51	Liberty Township		https://maps.app.goo.gl/E5dFd48EdMQLkafj8	39.383155	-84.353259	Major Collector (5)	55	2	1	8,910			N/A	<10%	X	X				X	X				See App info & one-page summary	\$ 3,449,011
2	Ross Hanover Rd Systemic RWD @ 1.23	CBUTCR00178**C	Butler	CR178	1.17	1.29	BCEO		https://maps.app.goo.gl/2EuF34mm5XYjhrwJ7	39.391335	-84.632449	Minor Arterial (4)	45	1/2	1	4,600			N/A	<10%	X	X				X				See App info & one-page summary	\$ 912,808	
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EXISTING SECTION



PROPOSED SALVAGE SECTION



ROW ID	CRASH SEVERITY	TYPE OF CRASH	CRASH DT	HOUR	DAY	LIGHT CONDITION	ROAD CONDITION	LOCATION	CONTRIBUTING FACTOR1	ACTION1	DIRECTION FROM1	DIRECTION TO1	DRIVER ALCOHOL1	ACTION2	DIRECTION FROM2	DIRECTION TO2	ROAD CONTOUR	ACCIDENT NBR	LOCAL REPORT NBR	LOGPOINT	WEATHER CONDITION
1	PDO	Fixed Object	20230513	13	(7) Saturday	Daylight	Wet	Not An Intersection	Drove off Road	Straight Ahead	East	West	No				Straight Grade	20236085861	2023050220	0.68	Cloudy
2	PDO	Fixed Object	20240617	8	(2) Monday	Other / Unknown	Other / Unknown	Not An Intersection	Drove off Road	Other / Unknown	West	East	No				Straight Level	20246109068	2024060299	0.683	Data Not Valid or No
3	Injury Crash	Fixed Object	20220224	15	(5) Thursday	Daylight	Dry	Not An Intersection	Drove off Road	Straight Ahead	West	East	No				Straight Grade	20226032156	2022020379	0.825	Cloudy
4	PDO	Fixed Object	20221217	11	(7) Saturday	Other / Unknown	Dry	Not An Intersection	Drove off Road	Other / Unknown	East	West	No				Straight Level	20226250770	2022120303	0.855	Cloudy
5	PDO	Sideswipe - Meet	20230522	22	(2) Monday	Dawn/Dusk	Dry	Not An Intersection	Left of Center	Straight Ahead	East	West	Yes	Straight Ahead	West	East	Straight Level	20236131624	2023050389	0.866	Clear
6	PDO	Fixed Object	20230728	2	(6) Friday	Dark - Roadway N	Wet	Not An Intersection	Drove off Road	Straight Ahead	East	West	Yes				Straight Level	20236130555	2023070496	0.902	Rain
7	PDO	Fixed Object	20240219	12	(2) Monday	Daylight	Dry	Not An Intersection	Drove off Road	Straight Ahead	East	West	No				Straight Level	20246029015	2024020332	0.922	Clear
8	PDO	Rear End	20240625	10	(3) Tuesday	Daylight	Dry	Not An Intersection	Following Too Closely/ACC	Straight Ahead	West	East	No	Slowing or Stopped In	West	East	Straight Level	20246113291	2024060427	0.949	Clear
9	PDO	Sideswipe - Passi	20221104	11	(6) Friday	Daylight	Dry	Private Drive	Improper Passing	Overtaking/Passing	East	West	No	Making Left Turn	East	South	Straight Level	20226210715	2022110069	0.965	Clear
10	PDO	Angle	20220213	18	(1) Sunday	Dawn/Dusk	Snow	Not An Intersection	Unsafe Speed	Straight Ahead	East	West	No	Straight Ahead	West	East	Straight Level	20226027954	2022020225	0.966	Snow
11	PDO	Fixed Object	20240119	8	(6) Friday	Daylight	Snow	Not An Intersection	Drove off Road	Straight Ahead	East	West	No				Straight Grade	20246009825	2024010332	0.966	Snow
12	Injury Crash	Fixed Object	20221227	3	(3) Tuesday	Dark - Lighted Roa	Slush	Not An Intersection	Drove off Road	Straight Ahead	West	East	Yes				Straight Level	20226256334	2022120459	1.003	Clear
13	PDO	Angle	20220812	8	(6) Friday	Daylight	Dry	Four-Way Intersection	Failure to Yield	Making Left Turn	South	West	No	Straight Ahead	East	West	Straight Level	20226150354	2022080188	1.107	Clear
14	Injury Crash	Rear End	20230306	7	(2) Monday	Daylight	Dry	Four-Way Intersection	Following Too Closely/ACC	Straight Ahead	West	East	No	Slowing or Stopped In	West	East	Straight Grade	20236035003	2023030081	1.107	Clear
15	PDO	Angle	20240429	16	(2) Monday	Daylight	Dry	Four-Way Intersection	Failure to Yield	Making Left Turn	South	West	No	Making Left Turn	East	South	Straight Level	20246074093	2024040509	1.107	Cloudy
16	Injury Crash	Fixed Object	20220220	15	(1) Sunday	Daylight	Dry	Not An Intersection	Drove off Road	Straight Ahead	East	West	No				Straight Grade	20226030843	2022020314	1.255	Clear
17	Injury Crash	Head On	20240502	15	(5) Thursday	Daylight	Dry	Not An Intersection	Left of Center	Straight Ahead	East	West	No	Straight Ahead	West	East	Straight Level	20246075155	2024050032	1.28	Clear
18	Injury Crash	Fixed Object	20220605	12	(1) Sunday	Daylight	Dry	Not An Intersection	Drove off Road	Straight Ahead	East	West	No				Straight Level	20226103765	2022060087	1.281	Cloudy
19	Injury Crash	Head On	20240905	7	(5) Thursday	Daylight	Dry	Not An Intersection	Left of Center	Straight Ahead	East	West	No	Straight Ahead	West	East	Straight Grade	20246156073	2024090079	1.348	Clear
20	PDO	Fixed Object	20230128	13	(7) Saturday	Daylight	Dry	Not An Intersection	Drove off Road	Straight Ahead	East	West	No				Straight Level	20236014511	2023010502	1.355	Clear
21	Injury Crash	Fixed Object	20220420	11	(4) Wednesday	Daylight	Dry	Not An Intersection	Drove off Road	Straight Ahead	East	West	No				Straight Grade	20226068657	2022040351	1.387	Clear
22	Injury Crash	Angle	20220829	17	(2) Monday	Daylight	Dry	T Intersection	Failure to Yield	Making Left Turn	South	West	No	Straight Ahead	West	East	Straight Level	20226160391	2022080540	1.459	Cloudy
23	PDO	Rear End	20221027	16	(5) Thursday	Daylight	Dry	T Intersection	Following Too Closely/ACC	Straight Ahead	East	West	No	Slowing or Stopped In	East	West	Straight Level	20226205588	2022100481	1.468	Clear
24	Injury Crash	Rear End	20230831	14	(5) Thursday	Daylight	Dry	Not An Intersection	Following Too Closely/ACC	Straight Ahead	West	East	No	Slowing or Stopped In	West	East	Straight Level	20236151009	2023080637	1.498	Clear
25	PDO	Rear End	20220612	13	(1) Sunday	Daylight	Wet	Not An Intersection	Following Too Closely/ACC	Straight Ahead	West	East	No	Slowing or Stopped In	West	East	Straight Level	20226108148	2022060218	1.511	Rain

Bethany - 0.68 Miles East of Cincinnati Dayton to 300' west of Butler Warren (1.51)

Crash Summary Sheet

Fatalities	0
Serious Injuries	1
Other Injuries	15

Crash Severity	Crashes	%
(2) Serious Injury Suspected	1	4.00%
(3) Minor Injury Suspected	5	20.00%
(4) Injury Possible	4	16.00%
(5) PDO/No Injury	15	60.00%
Grand Total	25	100.00%

Day of Week	Crashes	%
(1) Sunday	4	16.00%
(2) Monday	6	24.00%
(3) Tuesday	2	8.00%
(4) Wednesday	1	4.00%
(5) Thursday	5	20.00%
(6) Friday	4	16.00%
(7) Saturday	3	12.00%
Grand Total	25	100.00%

Hour of Day	Crashes	%
2	1	4.00%
3	1	4.00%
7	2	8.00%
8	3	12.00%
10	1	4.00%
11	3	12.00%
12	2	8.00%
13	3	12.00%
14	1	4.00%
15	3	12.00%
16	2	8.00%
17	1	4.00%
18	1	4.00%
22	1	4.00%
Grand Total	25	100.00%

Crashes Per Year	8.33
Fatal and All Injury Crashes	10
Percent Injury	40.0%
Equivalent PDO Index Value	4.43

Year	Crashes	%
2022	12	48.00%
2023	6	24.00%
2024	7	28.00%
Grand Total	25	100.00%

Crash Type	Crashes	%
Fixed Object	12	48.00%
Rear End	5	20.00%
Angle	4	16.00%
Head On	2	8.00%
Sideswipe - Passing	1	4.00%
Sideswipe - Meeting	1	4.00%
Grand Total	25	100.00%

Month	Crashes	%
1	2	8.00%
2	4	16.00%
3	1	4.00%
4	2	8.00%
5	3	12.00%
6	4	16.00%
7	1	4.00%
8	3	12.00%
9	1	4.00%
10	1	4.00%
11	1	4.00%
12	2	8.00%
Grand Total	25	100.00%

Bethany - 0.68 Miles East of Cincinnati Dayton to 300' west of Butler Warren (1.51)

Crash Summary Sheet

Weather Condition	Crashes	%
Clear	14	56.00%
Cloudy	6	24.00%
Rain	2	8.00%
Snow	2	8.00%
Data Not Valid or Not Provided	1	4.00%
Grand Total	25	100.00%

Road Condition	Crashes	%
Dry	18	72.00%
Wet	3	12.00%
Snow	2	8.00%
Other / Unknown	1	4.00%
Slush	1	4.00%
Grand Total	25	100.00%

Light Condition	Crashes	%
Daylight	19	76.00%
Other / Unknown	2	8.00%
Dawn/Dusk	2	8.00%
Dark - Lighted Roadway	1	4.00%
Dark - Roadway Not Lighted	1	4.00%
Grand Total	25	100.00%

Number of Units	Crashes	%
2	13	52.00%
1	12	48.00%
Grand Total	25	100.00%

ODOT Location	Crashes	%
Not An Intersection	19	76.00%
Four-Way Intersection	3	12.00%
T Intersection	2	8.00%
Private Drive	1	4.00%
Grand Total	25	100.00%

Work Zone Related	Crashes	%
No	25	100.00%
Grand Total	25	100.00%

Alcohol Related	Crashes	%
No	22	88.00%
Yes	3	12.00%
Grand Total	25	100.00%

Drug Related (Inc. Marijuana)	Crashes	%
No	25	100.00%
Grand Total	25	100.00%

Contour	Crashes	%
Straight Grade	7	28.00%
Straight Level	18	72.00%
Grand Total	25	100.00%

Marijuana Related	Crashes	%
No	25	100.00%
Grand Total	25	100.00%

Roadway Departure	Crashes	%
No	10	40.00%
Yes	15	60.00%
Grand Total	25	100.00%

Older Driver (65+)	Crashes	%
No	22	88.00%
Yes	3	12.00%
Grand Total	25	100.00%

Intersection Related	Crashes	%
Yes	4	16.00%
No	21	84.00%
Grand Total	25	100.00%

Young Driver (15-25)	Crashes	%
No	16	64.00%
Yes	9	36.00%
Grand Total	25	100.00%

Speed Related	Crashes	%
No	23	92.00%
Yes	2	8.00%
Grand Total	25	100.00%

Motorcycle Involved	Crashes	%
No	24	96.00%
Yes	1	4.00%
Grand Total	25	100.00%

Bethany - 0.68 Miles East of Cincinnati Dayton to 300' west of Butler Warren (1.51)

Crash Summary Sheet

Unit 1 Summary

Unit 1 Pre-Crash Action	Crashes	%
Straight Ahead	19	76.00%
Making Left Turn	3	12.00%
Other / Unknown	2	8.00%
Overtaking/Passing	1	4.00%
Grand Total	25	100.00%

Unit 1 Object Struck	Crashes	%
Nothing Struck	11	44.00%
Utility Pole	8	32.00%
Ditch	2	8.00%
Fence	1	4.00%
Tree	1	4.00%
Fire Hydrant	1	4.00%
Guardrail Face	1	4.00%
Grand Total	25	100.00%

Unit 1 Estimated Speed	Crashes	%
<15	6	24.00%
30-34	2	8.00%
35-39	4	16.00%
40-44	1	4.00%
45-49	6	24.00%
50-54	1	4.00%
55-59	5	20.00%
Grand Total	25	100.00%

Unit 1 Direction From	Crashes	%
East	15	60.00%
West	7	28.00%
South	3	12.00%
Grand Total	25	100.00%

Unit 1 Type	Crashes	%
Sport Utility Vehicle	11	44.00%
Passenger Car	11	44.00%
Pick up	1	4.00%
Other Vehicle	1	4.00%
Passenger Van (minivan)	1	4.00%
Grand Total	25	100.00%

Unit 1 Contributing Factor	Crashes	%
Drove off Road	12	48.00%
Following Too Closely/ACDA	5	20.00%
Failure to Yield	3	12.00%
Left of Center	3	12.00%
Unsafe Speed	1	4.00%
Improper Passing	1	4.00%
Grand Total	25	100.00%

Unit 1 Traffic Control	Crashes	%
No Control	22	88.00%
Stop Sign	3	12.00%
Grand Total	25	100.00%

Unit 1 Posted Speed	Crashes	%
0	1	4.00%
25	2	8.00%
45	1	4.00%
55	21	84.00%
Grand Total	25	100.00%

Unit 1 Direction To	Crashes	%
West	18	72.00%
East	7	28.00%
Grand Total	25	100.00%

Unit 1 Special Function	Crashes	%
None	23	92.00%
Towing	1	4.00%
Other / Unknown	1	4.00%
Grand Total	25	100.00%

Bethany - 0.68 Miles East of Cincinnati Dayton to 300' west of Butler Warren (1.51)

Crash Summary Sheet

Unit 2 Summary

Unit 2 Pre-Crash Action	Crashes	%
	12	48.00%
Straight Ahead	6	24.00%
Slowing or Stopped In Traffic	5	20.00%
Making Left Turn	2	8.00%
Grand Total	25	100.00%

Unit 2 Contributing Factor	Crashes	%
None	13	52.00%
	12	48.00%
Grand Total	25	100.00%

Unit 2 Direction From	Crashes	%
	12	48.00%
East	4	16.00%
West	9	36.00%
Grand Total	25	100.00%

Unit 2 Direction To	Crashes	%
	12	48.00%
East	9	36.00%
South	2	8.00%
West	2	8.00%
Grand Total	25	100.00%

Unit 2 Type	Crashes	%
	12	48.00%
Sport Utility Vehicle	5	20.00%
Passenger Car	3	12.00%
Pick up	2	8.00%
Motorcycle 2 Wheeled	1	4.00%
Cargo Van	1	4.00%
Passenger Van (minivan)	1	4.00%
Grand Total	25	100.00%

Unit 2 Special Function	Crashes	%
	12	48.00%
None	11	44.00%
Other / Unknown	2	8.00%
Grand Total	25	100.00%