# ERPC MPO SPOT SAFETY IMPROVEMENT STUDY SFY 2021

PREPARED BY: ERIE COUNTY REGIONAL PLANNING COMMISSION 2900 COLUMBUS AVENUE SANDUSKY, OH 44870-5554

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#### ERPC MPO SFY 2021 SPOT SAFETY IMPROVEMENT PROGRAM REPORT

As the Metropolitan Planning Organization (MPO) for the Sandusky Urbanized Area, the Erie County Regional Planning Commission is responsible for planning and documenting various aspects of the efficiency and performance of the transportation system. One product of the MPO is the creation of the Spot Safety Improvement Program Study. At times, the occurrence and severity of accidents can be reduced with the application of traffic engineering principles and the implementation of appropriate countermeasures. This can include the implementation of traffic control signals, properly lit roadways, proper signage, and appropriate roadway design features for example. During SFY 2021, ERPC staff continued working with the Ohio Department of Transportation and affected local jurisdictions on implementing recommendations from the US 6 Corridor Planning Study.

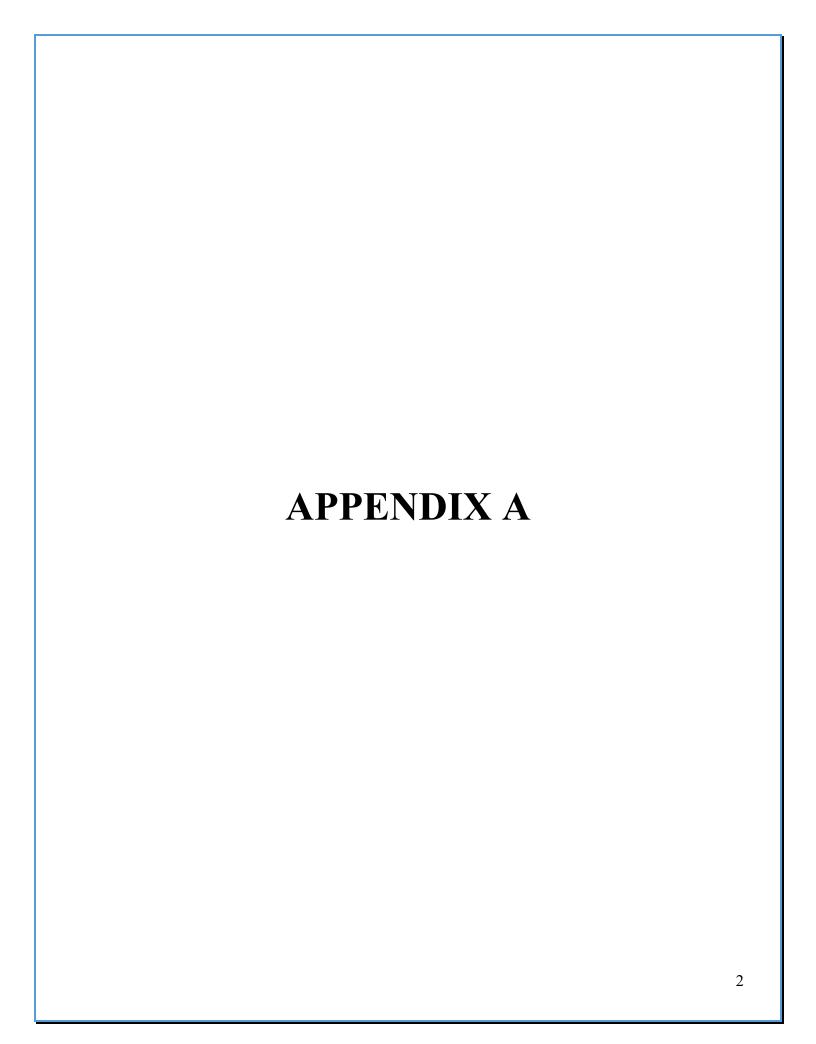
<u>US 6 Corridor Improvements:</u> The U.S. 6 Corridor is an east-west road that runs across the entire ERPC MPO planning area. In most areas, it is classified as a principal arterial and follows the south coast of Lake Erie. The road serves as a main route to various lakefront attractions including Cedar Point Amusement and Sports Force Parks and can experience fluctuations in traffic volumes due to seasonal demand.

A portion of the corridor was studied was studied in 2019 from Sycamore Line (US 250) in Sandusky to Rye Beach Road in Huron. Also, Butler Street in Sandusky from Milan Road (US 250) to Cleveland Road (US 6) was included as part of the study. The study recommended improvements to increase efficiency, enhance safety, and improve multi-modal transportation options.

During SFY 2020, four separate applications for corridor improvements were submitted to ODOT's Central Office of Safety for the consideration of funding through their major safety program. Appendix A contains summaries of analyses as completed by ODOT District 3 personnel. Within this study area, four intersections remain on the MPO's SFY 2021 high crash intersection frequency list.

In SFY 2021, the ODOT Office of Safety did announce they approved funding in the amount of \$4,911,501 for improvements located in the City of Sandusky (total estimated project cost is \$5,170,000). The recommended improvements along this section of the corridor include: signal and visibility improvements at each intersection, left turn lane extensions at Remington Avenue and Sycamore Line Road, conversion of Cedar Point Drive signalized intersection to a roundabout, and other miscellaneous safety and signage improvements. The project is scheduled to begin construction in SFY 2024.

During the remainder of SFY 2021, ERPC continued its collaboration with the Ohio Department of Transportation District Three in determining best paths forward to complete the rest of the improvements.



# SAFETY APPLICATION SUMMARY ERI-6-9.07-10.55

US 6, US 250 to Remington Avenue City of Sandusky, Erie County April 2020



Project Funding							
Project Phase	PE -	PE - Detailed	PE - Right of	Construction			
1 Toject i nase	Environmental	Design	Way / Utilities	Construction	Total		
Fiscal Year	2021	2022	2022	2023			
<b>Previous Safety</b>					\$0		
New Safety	\$1,005,813	\$101,888	\$1,155,770	\$2,648,030	\$4,911,501		
Sponsor Funding	\$52,937	\$5,362	\$60,830	\$139,370	\$258,499		
Total	\$1,058,750	\$107,250	\$1,216,600	\$2,787,400	\$5,170,000		

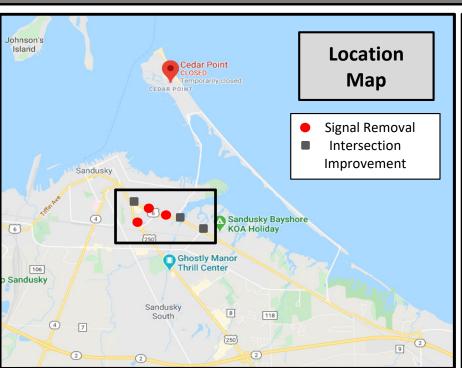
### Crash Statistics (2015-2017)

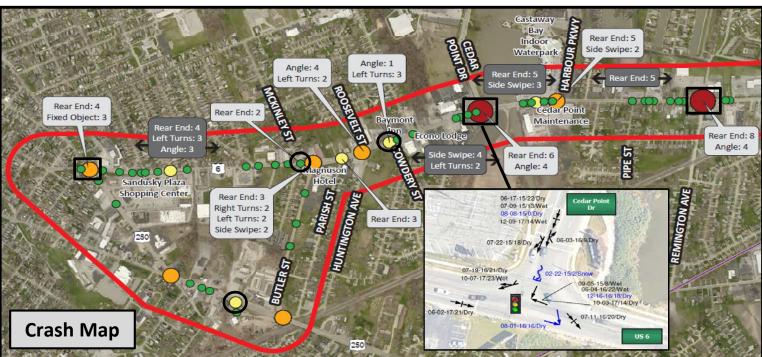
- 45 Total Crashes 2015-2017
- 24% Injury Crashes
- Major Crash Types: 22 Rear End (49%), 11 Angle (24%)
- 78% Crashes occurred May-October
- ERI-6-SLM 10.39-10.49 Urban Non-Freeway #1377

Application Scoring		
Category	Value	Points
Expected Crash Frequency	19.07	10
Observed KA/Total	0.02	1
% Improvement Potential	0.0%	0
Relative Severity Index	\$26,623	4
Equivalent PDO Index	3.05	3
Volume/Capacity Ratio	0.85	8
Benefit/Cost Ratio	0.82	0
Safety Funding % Request	95%	10
Application Sco	re:	36

#### Description

- Convert Cedar Point Dr signalized intersection into a roundabout. A roundabout will reduce serious crash types and overall crash frequency and also reduce congestion.
- Upgrade the signal at Remington Ave and widen to include an EB right turn lane.
- Lengthen SB and WB left turn lanes at US
- Remove 3 unwarranted signals







# SAFETY APPLICATION SUMMARY ERI-6-12.89

US 6 and Perkins Avenue Roundabout Erie County

April 2020



Project Funding						
Project Phase	PE - Environmental	PE - Detailed Design	PE - Right of Way / Utilities	Construction	Total	
Fiscal Year	2021	2022	2022	2024		
Previous Safety					\$0	
New Safety	\$802,300	\$101,700	\$491,550	\$3,440,850	\$4,836,400	
Sponsor Funding					\$0	
Total	\$802,300	\$101,700	\$491,550	\$3,440,850	\$4,836,400	

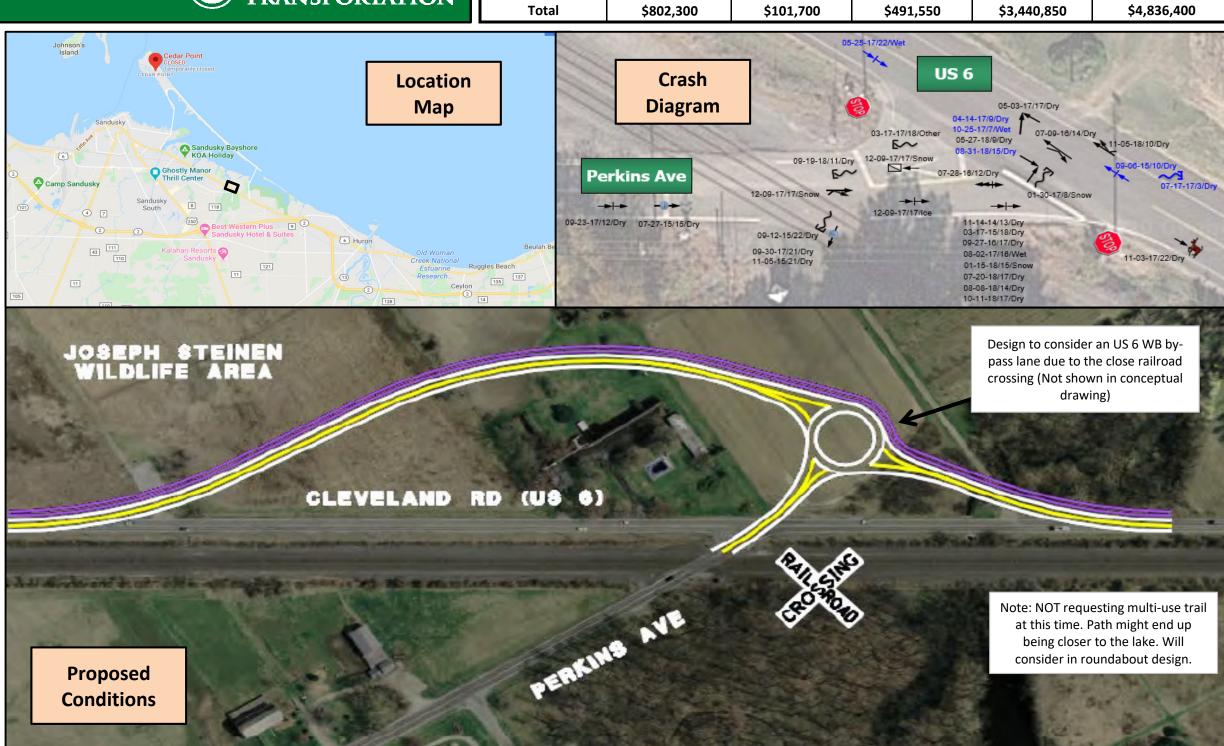
#### Crash Statistics (2014-2018)

- 2018 HSIP Suburban Intersection #248
- 2017 HSIP Suburban Intersection #182
- 31 Total Crashes 2014-2018
- 19% Injury Crashes
- Major Crash Types: 12 Rear End, 6 Angle, and 5 Fixed Object

Application Scoring		
Category	Value	Points
Expected Crash Frequency	6.01	4
Observed KA/Total	0.00	0
% Improvement Potential	8.49%	16
Relative Severity Index	\$63,328	10
Equivalent PDO Index	3.22	3
Volume/Capacity Ratio	0.6	2
Benefit/Cost Ratio	0.51	0
Safety Funding % Request	100%	10
Application Score	<u>:</u>	45

#### Description

- Convert the stop-controlled intersection of Perkins Avenue to a roundabout.
   Roundabouts will reduce serious crash types and overall crash frequency.
- Design to consider an US 6 WB by-pass lane due to the close railroad crossing
- Vertical curvature, extreme skew, and close proximity to a railroad crossing



# SAFETY APPLICATION SUMMARY ERI-6-13.94-15.21

US 6, Camp Road to west of Rye Beach Road Erie County

April 2020



Project Funding							
Project Phase	PE -	PE - Detailed	PE - Right of	Construction To			
110,0001	Environmental	Design	Way / Utilities		Total		
Fiscal Year	2021	2022	2022	2024			
<b>Previous Safety</b>					\$0		
New Safety	\$1,618,442	\$217,808	\$656,530	\$7,474,950	\$9,967,730		
Sponsor Funding					\$0		
Total	\$1,618,442	\$217,808	\$656,530	\$7,474,950	\$9,967,730		

#### Crash Statistics (2014-2018)

- 2018 HSIP Suburban Intersection #235
- 90 Total Crashes 2014-2018
- 24% Injury Crashes
- 46 Rear End Crashes
- 19 Crashes (21%) occurred in July

### **Application Scoring**

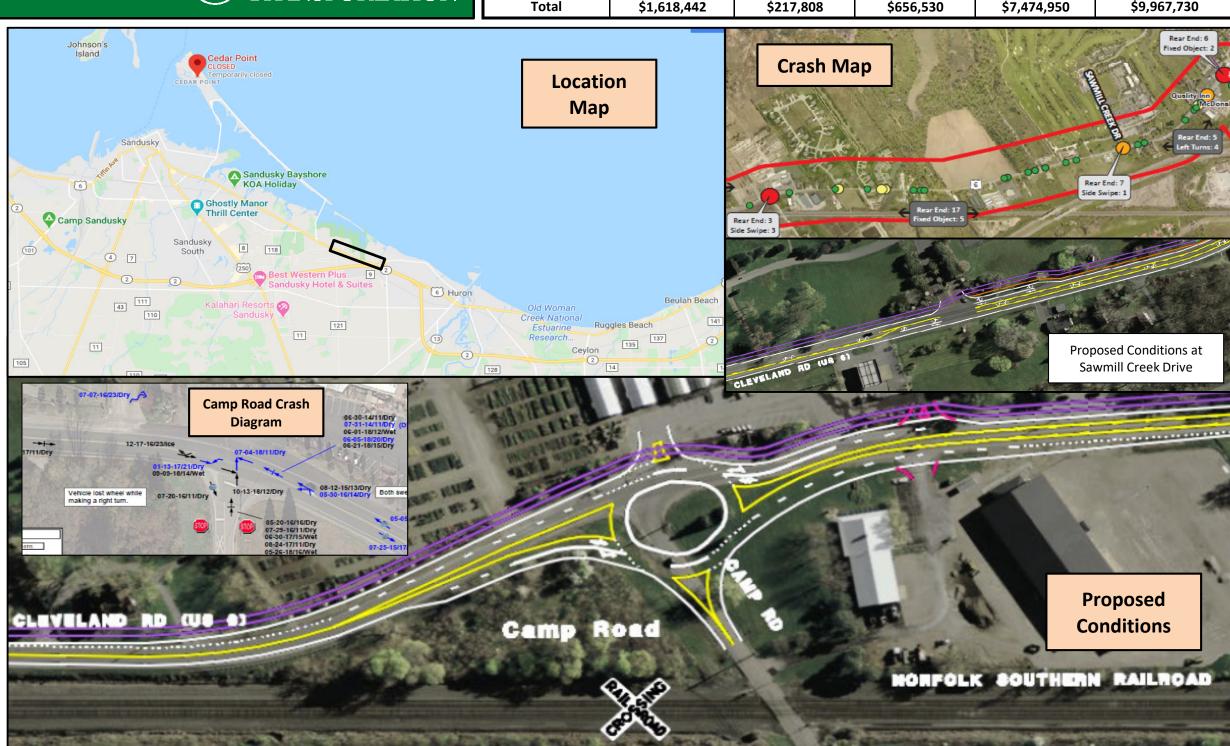
Category	Value	Points
Expected Crash Frequency	11.51	6
Observed KA/Total	0.04	2
% Improvement Potential	5.04%	10
Relative Severity Index	\$54,226	10
Equivalent PDO Index	4.7	4
Volume/Capacity Ratio	1.2	10
Benefit/Cost Ratio	0.39	0
Safety Funding % Request	100%	10

#### Description

 Convert the stop-controlled intersection of Camp Road to a roundabout. Roundabouts will reduce serious crash types and overall crash frequency and also reduce congestion due to Cedar Point Traffic

**Application Score:** 

- Widen US 6 from Camp to Rye Beach to install a TWLTL
- Add EB right turn lane at Sawmill Creek to improve the intersection sight distance



# SAFETY APPLICATION SUMMARY ERI-6-15.33, 15.46, 15.64

US 6 & Rye Beach Road Roundabouts Erie County

April 2020



Project Funding							
Project Phase	PE -	PE - Detailed	PE - Right of	Construction	Total		
	Environmental	Design	Way / Utilities				
Fiscal Year	2021	2022	2022	2024			
<b>Previous Safety</b>					\$0		
New Safety	\$1,487,600	\$194,700	\$1,415,900	\$5,853,500	\$8,951,700		
Sponsor Funding					\$0		
Total	\$1,487,600	\$194,700	\$1,415,900	\$5,853,500	\$8,951,700		

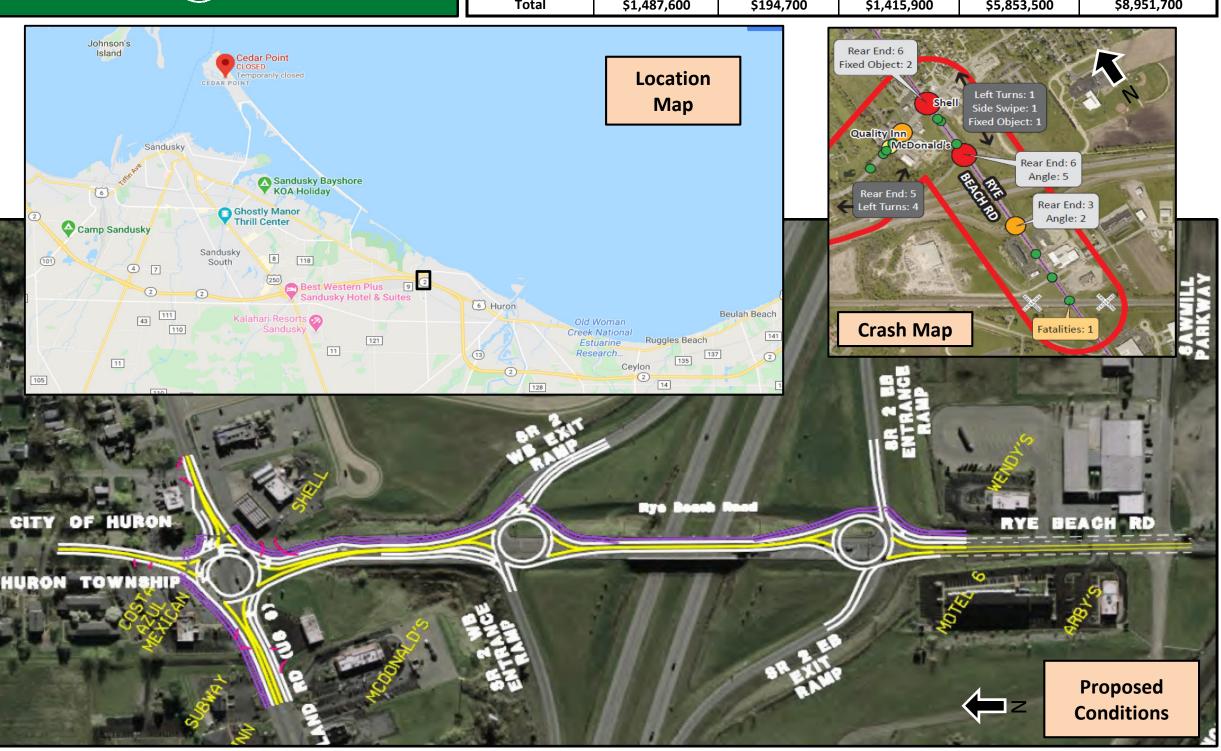
#### Crash Statistics (2015-2018)

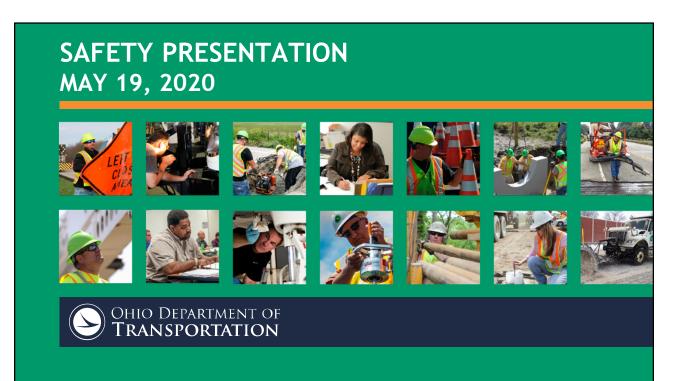
- SR 2 WB Ramps & Rye Beach Road: 2018 HSIP Suburban Intersection #394
- 40 Total Crashes 2015-2018
- 30% Injury Crashes
- 19 Rear End, 10 Angle Crashes
- 21 Crashes occurred on Friday, Saturday, or

Application Scoring		
Category	Value	Points
Expected Crash Frequency	8.9	4
Observed KA/Total	0.00	0
% Improvement Potential	0.0%	0
Relative Severity Index	\$25,818	4
Equivalent PDO Index	2.95	2
Volume/Capacity Ratio	1.0	10
Benefit/Cost Ratio	0.30	0
Safety Funding % Request	100%	10
Application Score:		30

#### Description

- Convert three signalized intersections into roundabouts
- Roundabouts will reduce serious crash types and overall crash frequency
- Reduce congestion and back-ups at the interchange due to Cedar Point traffic





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# ERIE US 6 CORRIDOR US 250 TO RYE BEACH ROAD

Kathryn Sharpnack, P.E. Transportation Engineer ODOT District 3



# **BACKGROUND**

US 6 Corridor Planning Study performed by TranSystems and oversaw by Erie Regional Planning Commission was completed late 2019

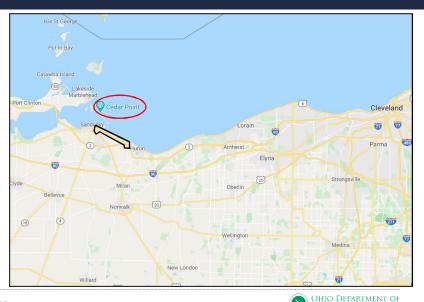
US 6 (Cleveland Road), US 250 to Rye Beach Road

Tourist-oriented area near the lakefront and Cedar Point attractions (amusement park and Sports Force Parks)

#### Study Purpose:

- Increase Efficiency
- Enhance Safety
- Improve multi-modal transportation options

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# APPLICATION BREAKDOWN

#### 4 Applications

- City of Sandusky: Signal removals, turn lane lengthening/additions, roundabout
- 2) Perkins Avenue: Roundabout
- 3) Camp Road and segment to east: Roundabout and TWLTL
- 4) Rye Beach Road: 3 Roundabouts

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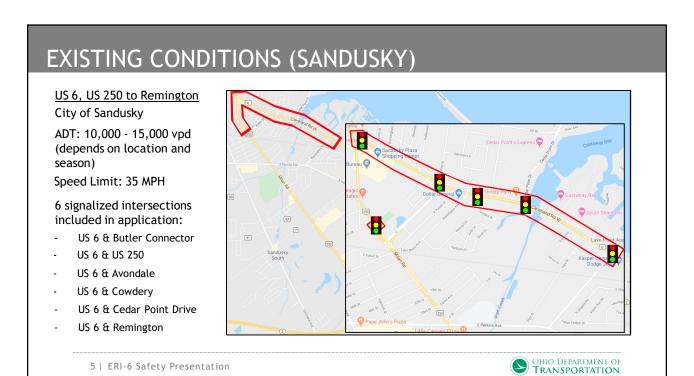
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**TRANSPORTATION** 



CRASH SUMMARY 2015-2017 (SANDUSKY) **CRASH DIAGRAM** Total Crashes (2015-2017): 45 US 250 & Butler Connector: 3 US 6 & US 250: 6 US 6 & Avondale: 3 US 6 & Cowdery: 0 US 6 & Cedar Point: 16 US 6 & Remington: 10 24% injury crashes Major Crash Types: 22 (49%) Rear End 11 (24%) Angle 78% total crashes occurred May-October OHIO DEPARTMENT OF TRANSPORTATION 6 | ERI-6 Safety Presentation

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# CRASH SUMMARY (SANDUSKY)

#### US 6 & Cedar Point Drive

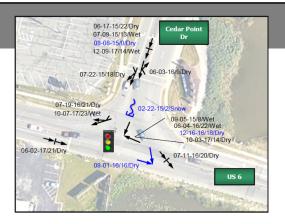
16 Crashes (2015-2017)

- 6 rear end
- 5 angle
- 3 sideswipe-passing
- 1 fixed object
- 1 sideswipe-meeting

25% Injury

- 2 alcohol related
- 1 distracted
- 5 young drivers at-fault (16-25 yo)
- 4 senior drivers at-fault (65+yo)

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#### **Probable Causes**

- Driver Impatience
- Driver Inattention
- Driver Inexperience
  - Signal Visibility



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# CRASH SUMMARY (SANDUSKY)

#### US 6 & Remington

10 Crashes (2015-2017)

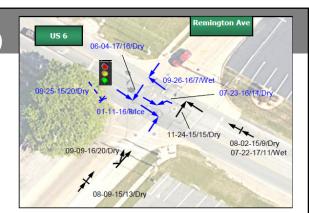
- 4 angle
- 3 rear end
- 1 left turn
- 1 sideswipe-passing
- 1 pedestrian

50% Injury

2 alcohol related

1 distracted

4 young drivers at-fault (16-25 yo)



#### **Probable Causes**

- Driver Impatience
- Driver Inattention
- Driver Inexperience
  - Signal Visibility

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# **COUNTERMEASURES (SANDUSKY)**

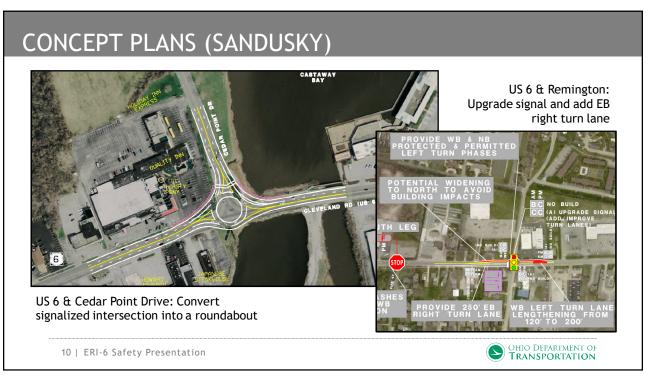
- US 250 & Butler Connector, US 6 & Avondale, US 6 & Cowdery: Remove unwarranted signals
- US 6 & US 250: Lengthen SB and WB left turn lanes
- US 6 & Cedar Point Drive: Convert signalized intersection into a roundabout
- US 6 & Remington: Upgrade signal and add EB right turn lane



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# SCORING(SANDUSKY)

Category	Value	Points
Expected Crashes	19.07	10
KA to Total Crash Ratio	0.02	1
% Improvement	0.00	0
Relative Severity	\$26,623	4
Equivalent PDO Index	3.05	3
Volume/Capacity Ratio	0.85	8
Benefit Cost Ratio	0.82	0
Funding Request %	95	10

Total Score



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# FUNDING/SCHEDULE (SANDUSKY)

Project Phase	PE - Environmental	PE - Detailed Design	Right of Way / Utilities	Construction	Total
Fiscal Year	2021	2022	2022	2023	
Safety Request	\$1,005,813	\$101,888	\$1,155,770	\$2,648,030	\$4,911,501
City of Sandusky	\$52,937	\$5,362	\$60,830	\$139,370	\$258,499
Total	\$1,056,750	\$107,250	\$1,216,600	\$2,787,400	\$5,170,000

Local Let, 5% City Contribution

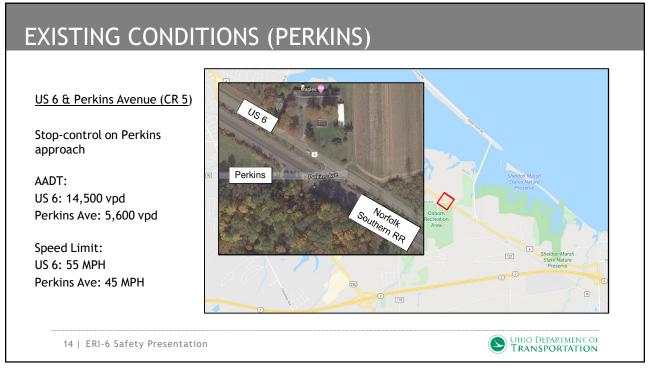
Environmental consultant \$60,000 and SUE \$350,000 included in PE-Environmental phase.

#### DRAFT Schedule Breakdown

- o Authorize Consultant: October 2020
- o Stage 2 Complete: July 2021
- o ROW Acquisition Complete: September 2022
- o Project File: November 2022
- o Construction: Spring 2023







# CRASH SUMMARY 2014-2018 (PERKINS)

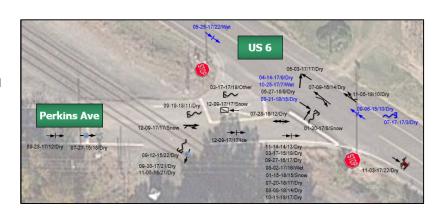
2018 HSIP Suburban Intersection #248, 2017 #182

Total Crashes (2014-2018): 31

19% injury crashes

#### Major Crash Types:

- 12 Rear End
- 6 Angle
- 5 Fixed Object



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# PROBABLE CAUSES (PERKINS)

Railroad Proximity (75')
Perkins Approach Grade
Perkins Approach Skew (45°)







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# NORFOLK SOUTHERN RAILROAD

RR crossing video 9/24/20

15 trains (7AM-12PM)

Just under 3 minutes average blockage time



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# SCORING (PERKINS)

Category	Value	Points
Expected Crashes	6.01	4
KA to Total Crash Ratio	0.00	0
% Improvement	8.49	16
Relative Severity	\$63,328	10
Equivalent PDO Index	3.22	3
Volume/Capacity Ratio	0.6	2
Benefit Cost Ratio	0.51	0
Funding Request %	100	10

Total Score



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# FUNDING/SCHEDULE (PERKINS)

Project Phase	PE - Environmental	PE - Detailed Design	Right of Way / Utilities	Construction	Total
Fiscal Year	2021	2022	2022	2024	
Total	\$802,300	\$101,700	\$491,550	\$3,440,850	\$4,836,400

Environmental consultant \$50,000 and SUE \$150,000 included in PE-Environmental phase.

#### DRAFT Schedule Breakdown

Authorize Consultant: January 2021

o Stage 2 Complete: July 2022

o ROW Acquisition Complete: January 2023

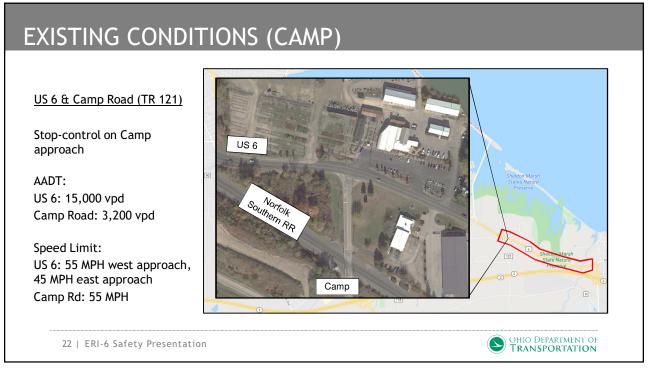
o Project File: July 2023

o Construction: Fall 2023/Spring 2024





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# US 6, Camp Rd to west of Rye Beach

2-12' lanes and 4' paved shoulders

US 6 AADT: 15,000 vpd

Speed Limit: 45 MPH

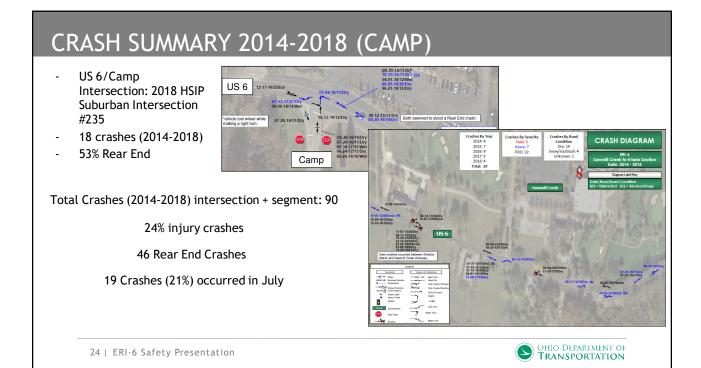
Land Use: Mixture of residential and commercial, potential future development



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# PROBABLE CAUSES (CAMP)

Camp: US 6 Horizontal Curvature
Camp/Segment: US 6 Congestion/Finding Gap
Segment: # of driveways/intersections

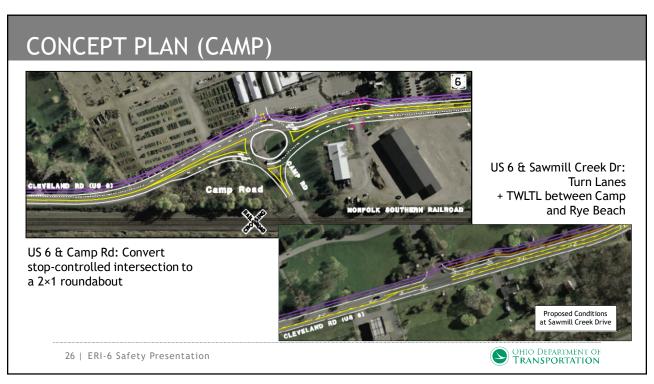




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# SCORING (CAMP)

Category	Value	Points
Expected Crashes	11.51	6
KA to Total Crash Ratio	0.04	2
% Improvement	5.04	10
Relative Severity	\$54,226	10
Equivalent PDO Index	4.7	4
Volume/Capacity Ratio	1.2	10
Benefit Cost Ratio	0.39	0
Funding Request %	100	10

Total Score



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# FUNDING/SCHEDULE (CAMP)

Project Phase	PE - Environmental	PE - Detailed Design	Right of Way / Utilities	Construction	Total
Fiscal Year	2021	2022	2022	2024	
Total	\$1,618,442	\$217,808	\$656,530	\$7,474,950	\$9,967,730

Environmental consultant \$40,000 and SUE \$300,000 included in PE-Environmental phase.

#### DRAFT Schedule Breakdown

Authorize Consultant: January 2021

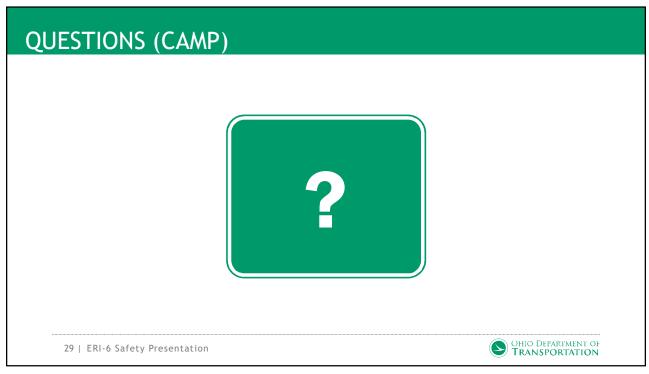
o Stage 2 Complete: July 2022

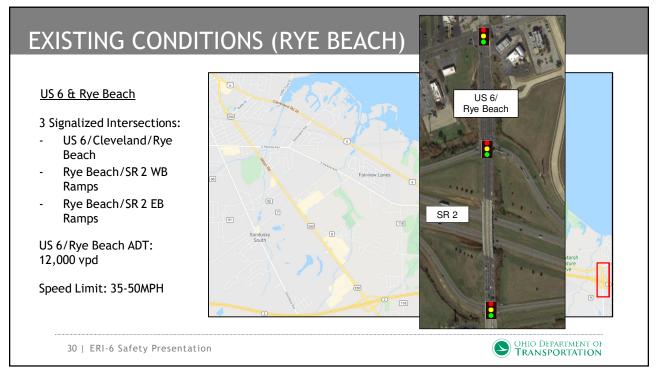
o ROW Acquisition Complete: January 2023

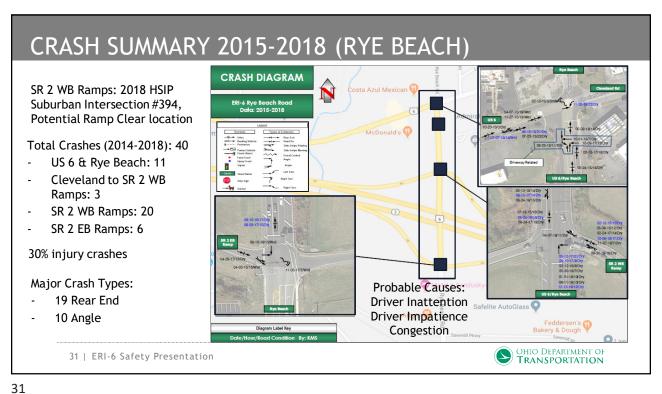
o Project File: July 2023

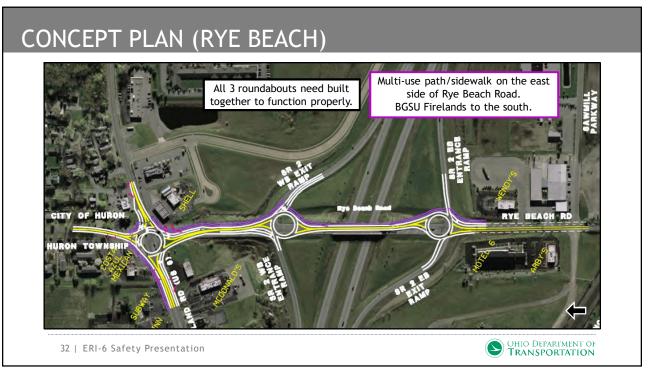
o Construction: Fall 2023/Spring 2024











# SCORING (RYE BEACH)

Category	Value	Points
Expected Crashes	8.9	4
KA to Total Crash Ratio	0.00	0
% Improvement	0.0	0
Relative Severity	\$25,818	4
Equivalent PDO Index	2.95	2
Volume/Capacity Ratio	1.0	10
Benefit Cost Ratio	0.3	0
Funding Request %	100	10

Total Score



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# FUNDING/SCHEDULE (RYE BEACH)

Project Phase	PE - Environmental	PE - Detailed Design	Right of Way / Utilities	Construction	Total
Fiscal Year	2021	2022	2022	2024	
Total	\$1,487,600	\$194,700	\$1,415,900	\$5,853,500	\$8,951,700

Environmental consultant \$40,000 and SUE \$300,000 included in PE-Environmental phase.

#### DRAFT Schedule Breakdown

Authorize Consultant: January 2021

o Stage 2 Complete: July 2022

o ROW Acquisition Complete: January 2023

o Project File: July 2023

o Construction: Fall 2023/Spring 2024





# QUESTIONS - ERI-6 CORRIDOR

Application	Work Description	Project Cost
City of Sandusky	Signal removals, turn lane lengthening/additions, roundabout	\$5,170,000
Perkins	Roundabout	\$4,836,400
Camp + Segment to East	Roundabout, TWLTL	\$9,967,730
Rye Beach/SR 2 Ramps	3 Roundabouts	\$8,951,700
36   ERI-6 Safety Presentation	n	OHIO DEPARTMENT OF TRANSPORTATION