

# SR1 and Trap Shooters Road Planning Study

## Public Advisory Committee (PAC) Briefing

June 8, 2023

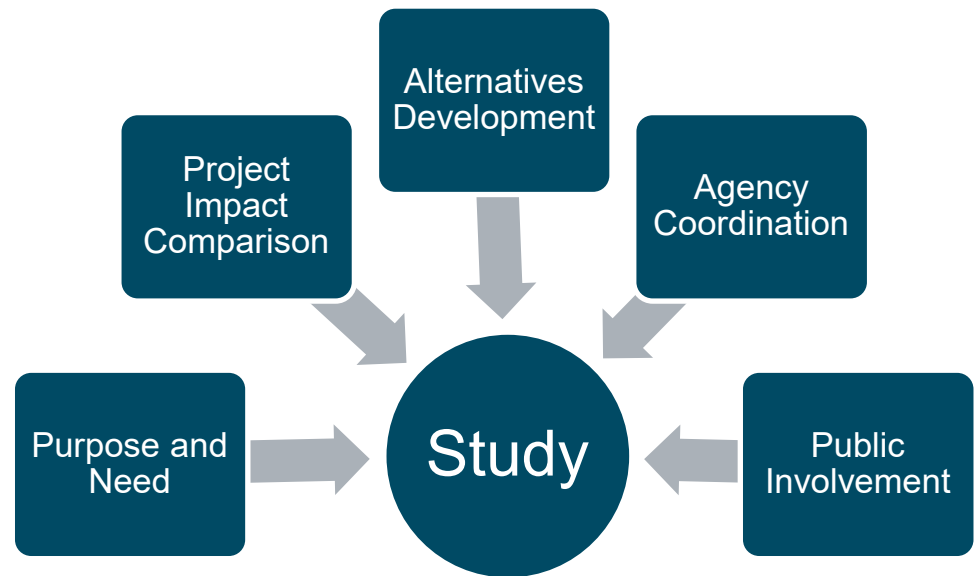


# Study Area

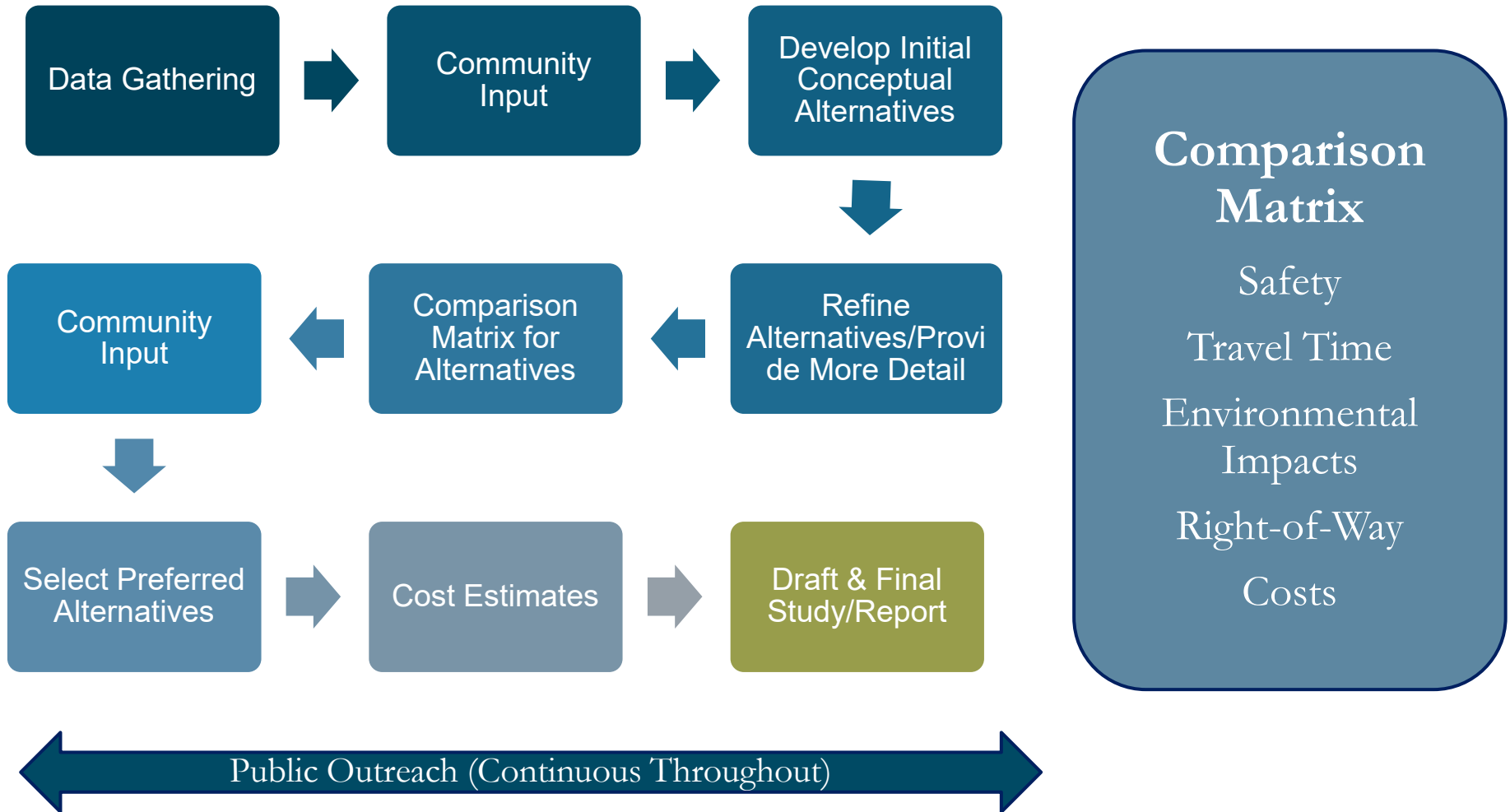


# Purpose and Need

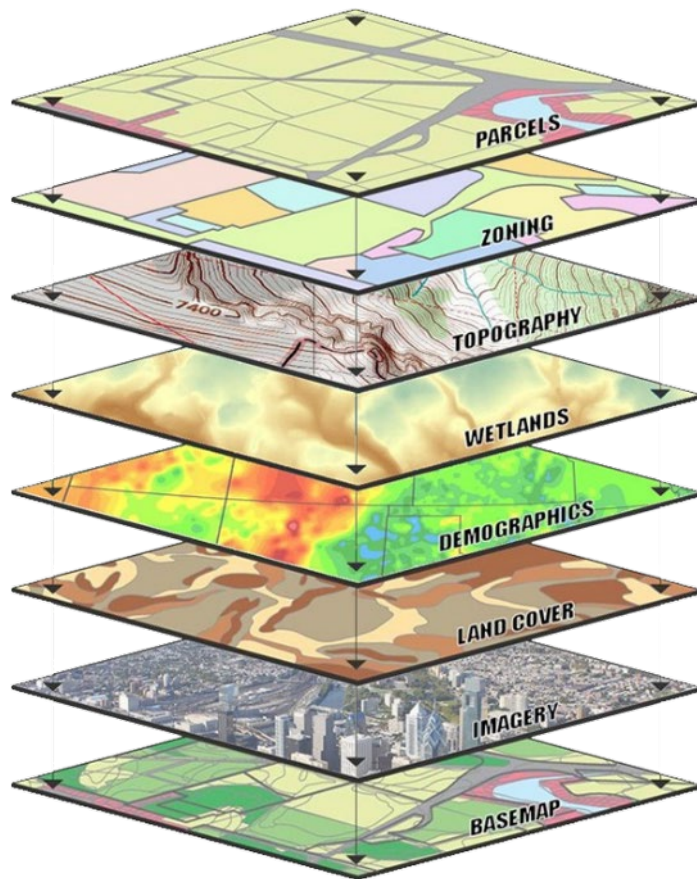
- Purpose
  - Improve safety and capacity at the intersection of SR1 and Trap Shooters Road
- Need
  - The intersection is experiencing high crash rates
  - The intersection reducing the overall capacity of SR1



# Process



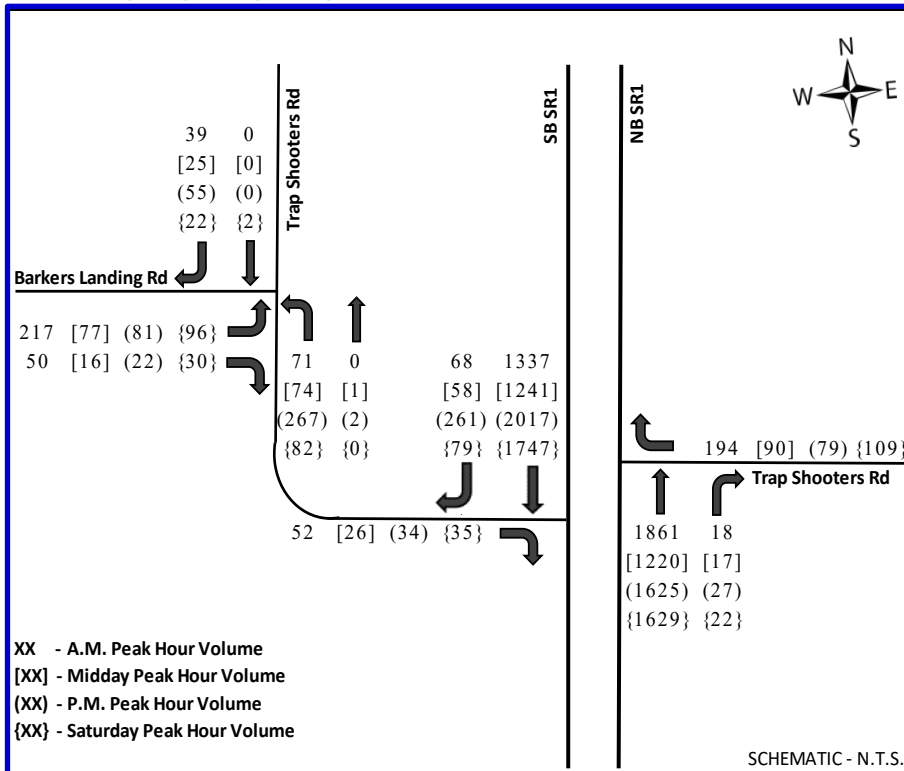
# Existing Conditions



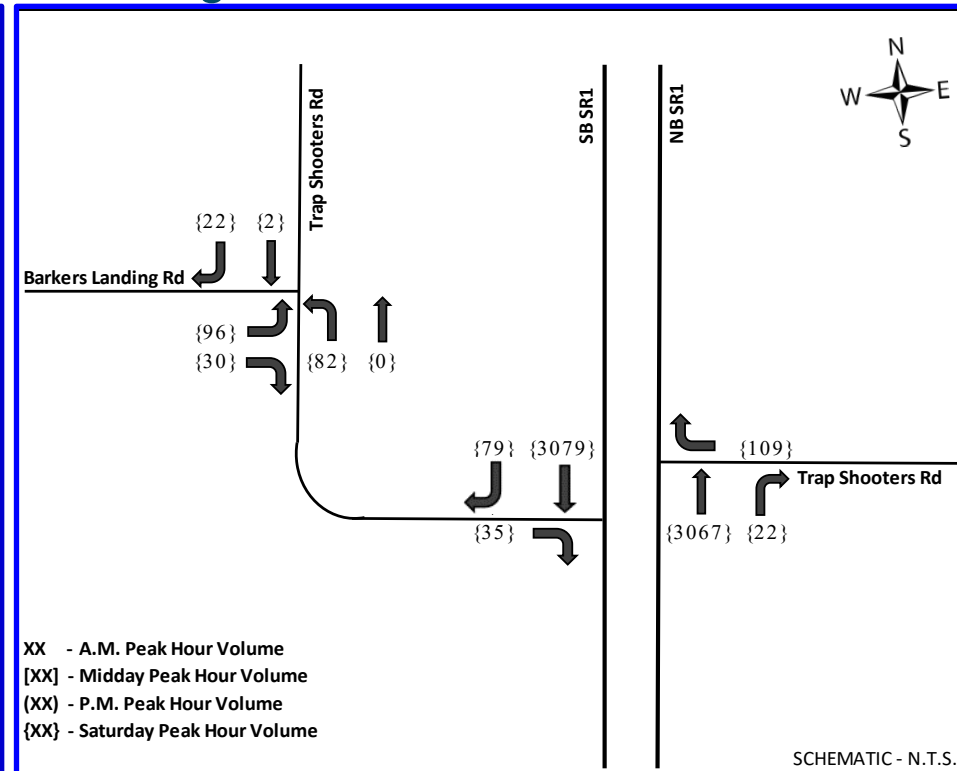
- Data Collection
  - Adjacent Parcel Research
  - State Strategies for State Spending
  - Environmental Inventory
  - Ag land Preservation
  - Crashes / Volumes
  - Zoning
  - Development Trends
  - SR1 Capacity Analysis
  - Current Projects

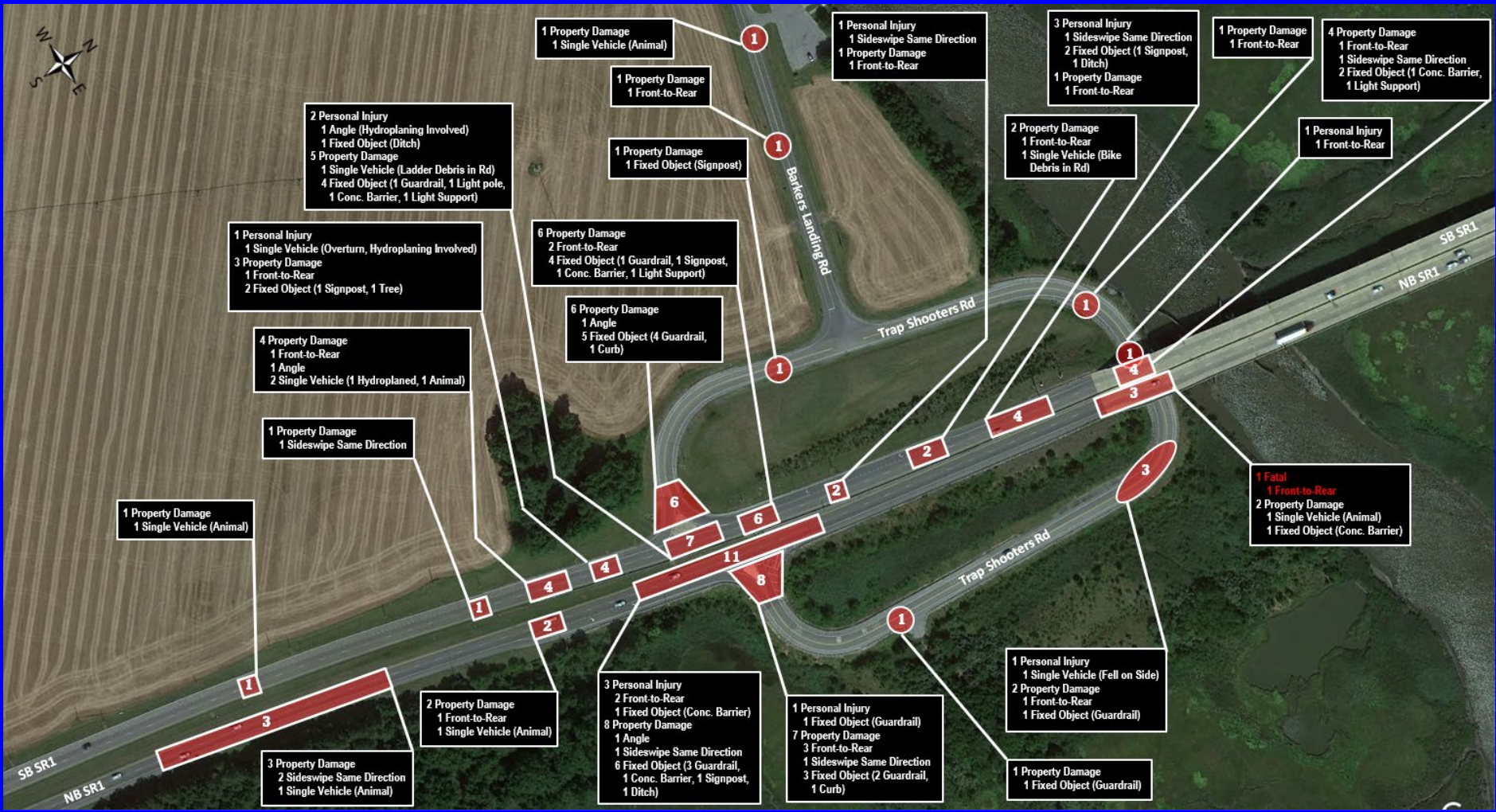
# Existing Conditions

## Non summer peak hour turning movements



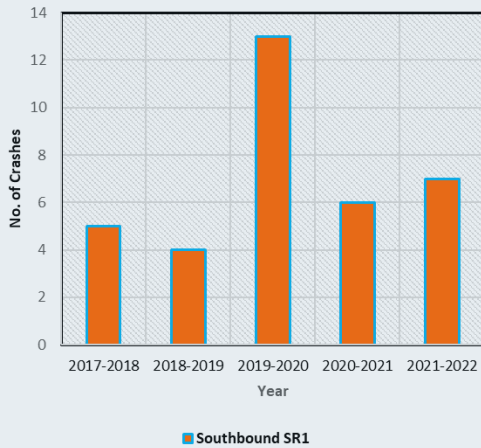
## Summer Saturday peak hour turning movements





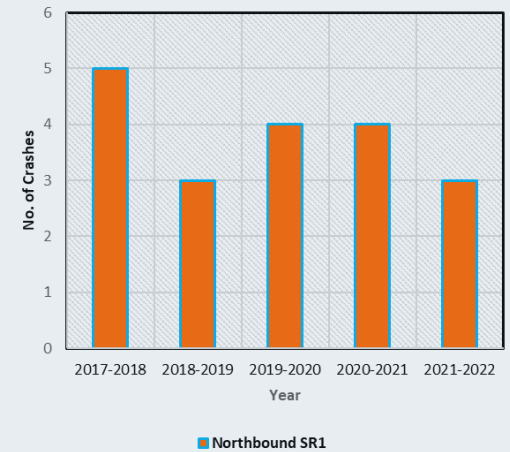
# Existing Conditions

Annual Crashes

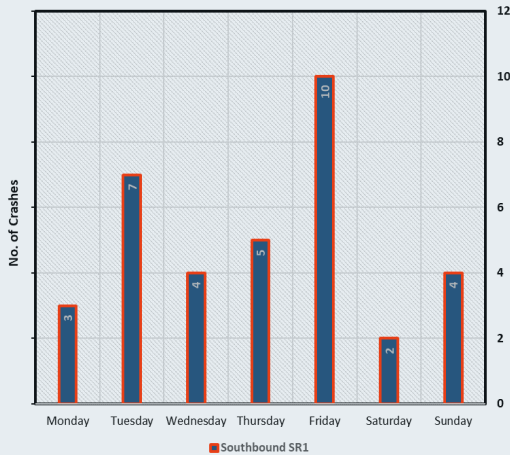


- SR1 Southbound Crashes
  - Total of 35 crashes
  - 2020 experienced an abnormally high number of crashes
  - Friday has a higher number of crashes

Annual Crashes

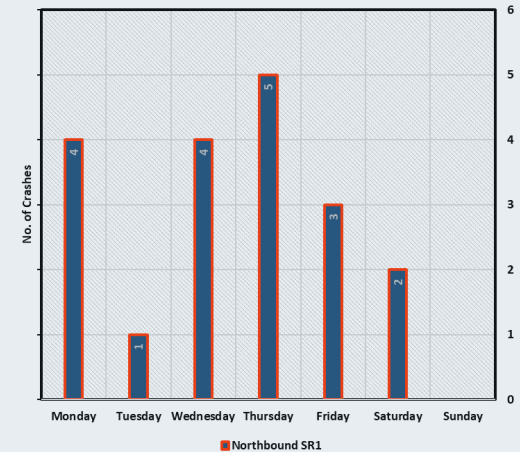


Five Year Day of the Week Crashes



- SR1 Northbound Crashes
  - Total of 19 crashes
  - Relatively consistent number of crashes across the 5 years

Five Year Day of the Week Crashes





# First Community Workshop

- Location: Virtual via Zoom Webinar
- Advertised through over 500 direct mailings, legislative newsletters, MPO website and social media, DeIDOT website.
- PowerPoint presentation including the study area, purpose and need, work plan, existing conditions, current DeIDOT efforts, the proposed study schedule and then took questions after the presentation.
- 13 people registered for the workshop and 8 people attended.
- Community members were engaged and provided good feedback.
- 4 Comments were received



**Trap Shooters Road Public Workshop**

Help us develop the new plan for Trap Shooters Road!

Join us for an informational meeting to understand issues and concerns.

We want to hear from you!

**Join Us!**

**January 23rd**  
**6:00 PM**  
**On Zoom**  
**Register at:**



 **CENTURY**  
ENGINEERING  
A Kleinfelder Company

[https://us02web.zoom.us/join/register/WN\\_NcHs5xtiTuydiSPDA\\_K-Lw](https://us02web.zoom.us/join/register/WN_NcHs5xtiTuydiSPDA_K-Lw)

The flyer includes a map of the study area with labels for Trap Shooters Road, General's Green, Brookdale Heights, Magnolia, Del Haven Estates, Little Haven, Bowers Beach, and Little Hummock. It also features a silhouette of a person at a computer and the text 'Join us for an informational meeting to understand issues and concerns.'

# Second Community Workshop

- Location: In-Person – McIlvaine Elem. School
- Advertised through over 1000 direct mailings, legislative newsletters, MPO website and social media, DeIDOT website.
- Information presented included the study area, project goals, existing traffic volumes, crash data, 4 alternatives, measures of effectiveness, and the anticipated schedule for the study.
- Feedback was gathered from attendees through conversations with staff, questionnaires, and comment forms.
- 39 Attendees
- 26 Comments were received



**SR1 Trap Shooters Road Interchange - Public Workshop #2**

**DeIDOT** Join us for the 2<sup>nd</sup> public workshop to explore possible solutions to traffic safety


**DOVER/KENT COUNTY MPO**  
METROPOLITAN PLANNING ORGANIZATION

**We want to hear from you!**  
Open house format:  
Come anytime to review concepts and ideas and provide your input

**March 28, 2023**  
**McIlvaine Elementary School**  
**11 E. Walnut St.**  
**Magnolia, DE 19962**  
**6:00pm – 7:30pm**

**CENTURY**  
ENGINEERING  
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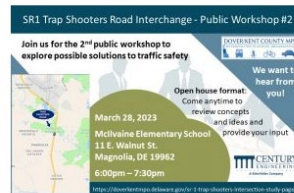
<https://doverkentmpo.delaware.gov/sr-1-trap-shooters-intersection-study-page/>



# Project Website

- MPO Staff developed project website
- Captures the process of the project
- All material from the workshops

## SR 1 / Trap Shooters Intersection Study Page



Century Engineering Presentation of Trap Shooters Rd Study – January 24, 2023 (links below)

[PDF Slides](#)

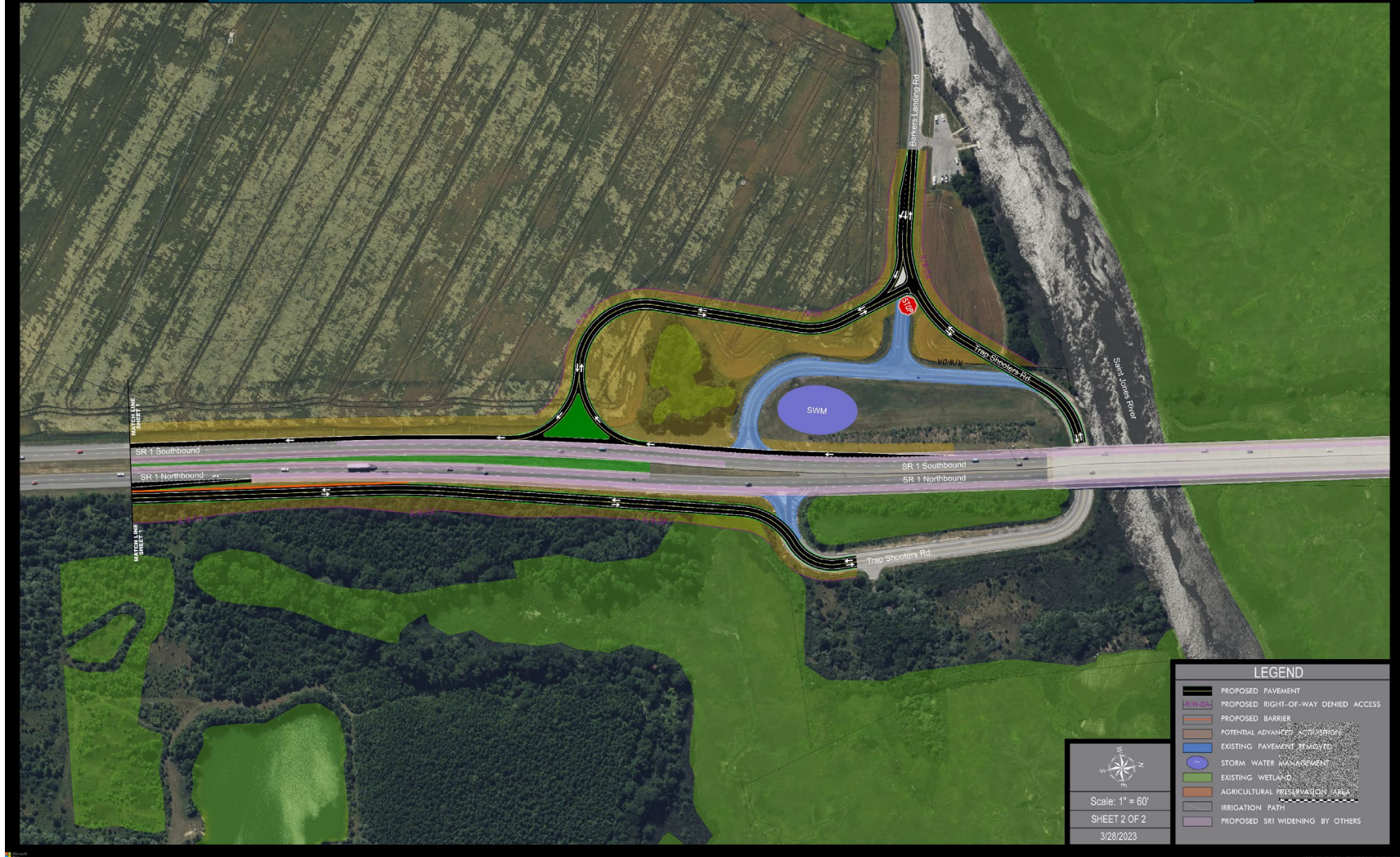
[Video](#)



# TRAP SHOOTERS ROAD - ALTERNATIVES OVERVIEW



**ALTERNATIVE 1 - TRAP SHOOTERS ROAD EXTENDED - WETLAND FILL**



**ALTERNATIVE 1 - TRAP SHOOTERS ROAD EXTENDED - WETLAND FILL**

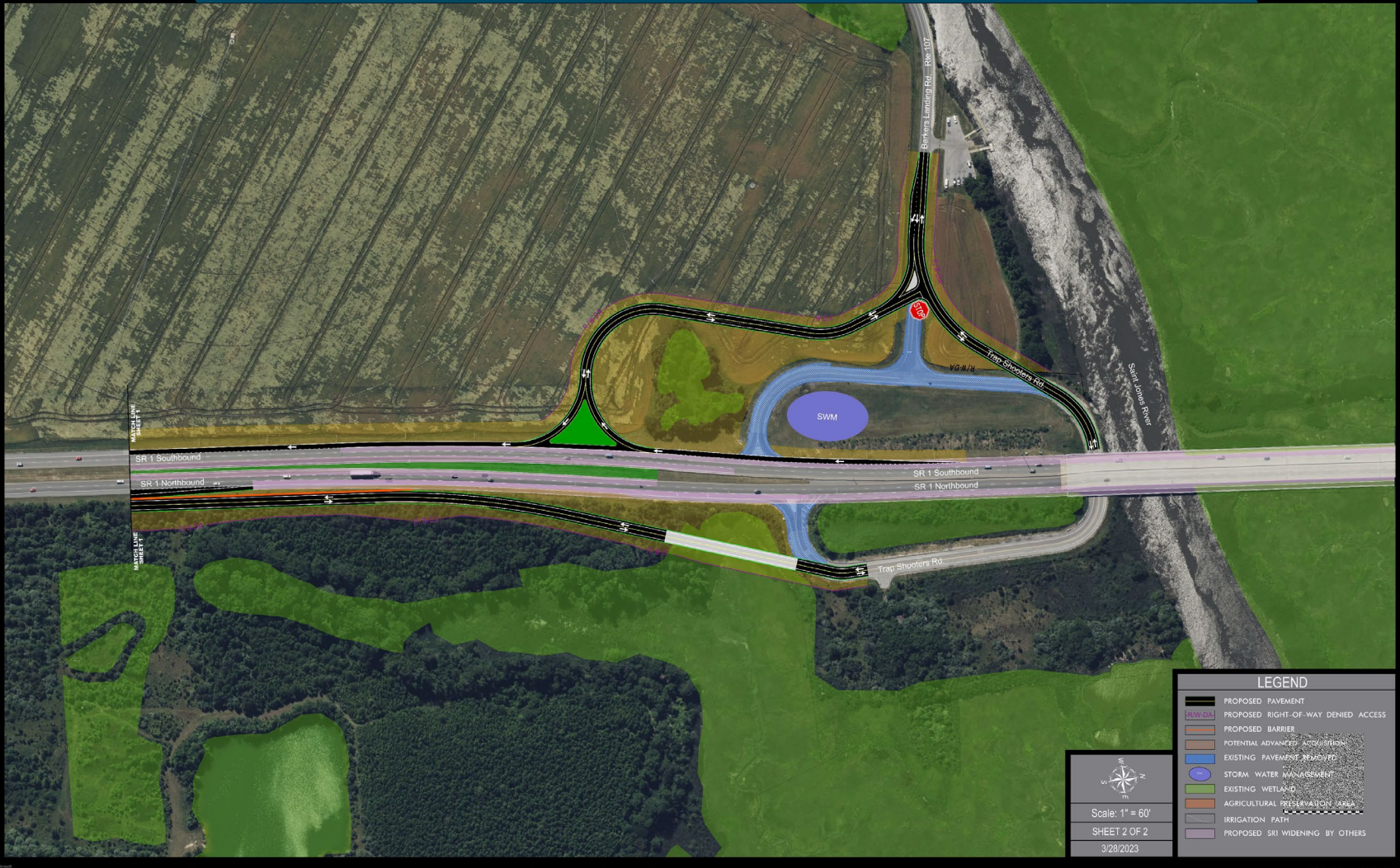


**LEGEND**

	PROPOSED PAVEMENT
	PROPOSED RIGHT-OF-WAY DENIED ACCESS
	PROPOSED BARRIER
	POTENTIAL ADVANCED ACQUISITION
	EXISTING PAVEMENT REMOVED
	STORM WATER MANAGEMENT
	EXISTING WETLAND
	AGRICULTURAL PRESERVATION AREA
	IRRIGATION PATH
	PROPOSED SRI WIDENING BY OTHERS

Scale: 1" = 60'  
SHEET 1 OF 2  
3/28/2023

**ALTERNATE 2 - TRAP SHOOTERS ROAD EXTENDED W/ BRIDGE**



**ALTERNATE 2 - TRAP SHOOTERS ROAD EXTENDED W/ BRIDGE**





# ALTERNATIVE 3 - SPUR ROAD WITH DIAMOND INTERCHANGE



LEGEND	
	PROPOSED PAVEMENT
	PROPOSED RIGHT-OF-WAY DENIED ACCESS
	PROPOSED BARRIER
	POTENTIAL ADVANCED SCOUR/EROSION
	EXISTING PAVEMENT RESURFACED
	STORM WATER MANAGEMENT
	EXISTING WETLAND
	AGRICULTURAL PRESERVATION AREA
	IRRIGATION PATH
	PROPOSED SRI WIDENING BY OTHERS

Scale: 1" = 60'  
SHEET 1 OF 3  
3/28/2023

**ALTERNATIVE 3 - SPUR ROAD WITH DIAMOND INTERCHANGE**



**ALTERNATIVE 3 - SPUR ROAD WITH DIAMOND INTERCHANGE**



# ALTERNATIVE 4 - SPUR ROAD WITH TRUMPET INTERCHANGE



**ALTERNATIVE 4 - SPUR ROAD WITH TRUMPET INTERCHANGE**



**ALTERNATIVE 4 - SPUR ROAD WITH TRUMPET INTERCHANGE**



LEGEND	
	PROPOSED PAVEMENT
	PROPOSED RIGHT-OF-WAY DENIED ACCESS
	PROPOSED BARRIER
	POTENTIAL ADVANCED ACCELERATION
	EXISTING PAVEMENT REPAVEMENT
	STORM WATER MANAGEMENT
	EXISTING WETLAND
	AGRICULTURAL PRESERVATION AREA
	IRRIGATION PATH
	PROPOSED SR1 WIDENING BY OTHERS

Scale: 1" = 60'  
SHEET 3 OF 3  
3/28/2023



# Second Community Workshop

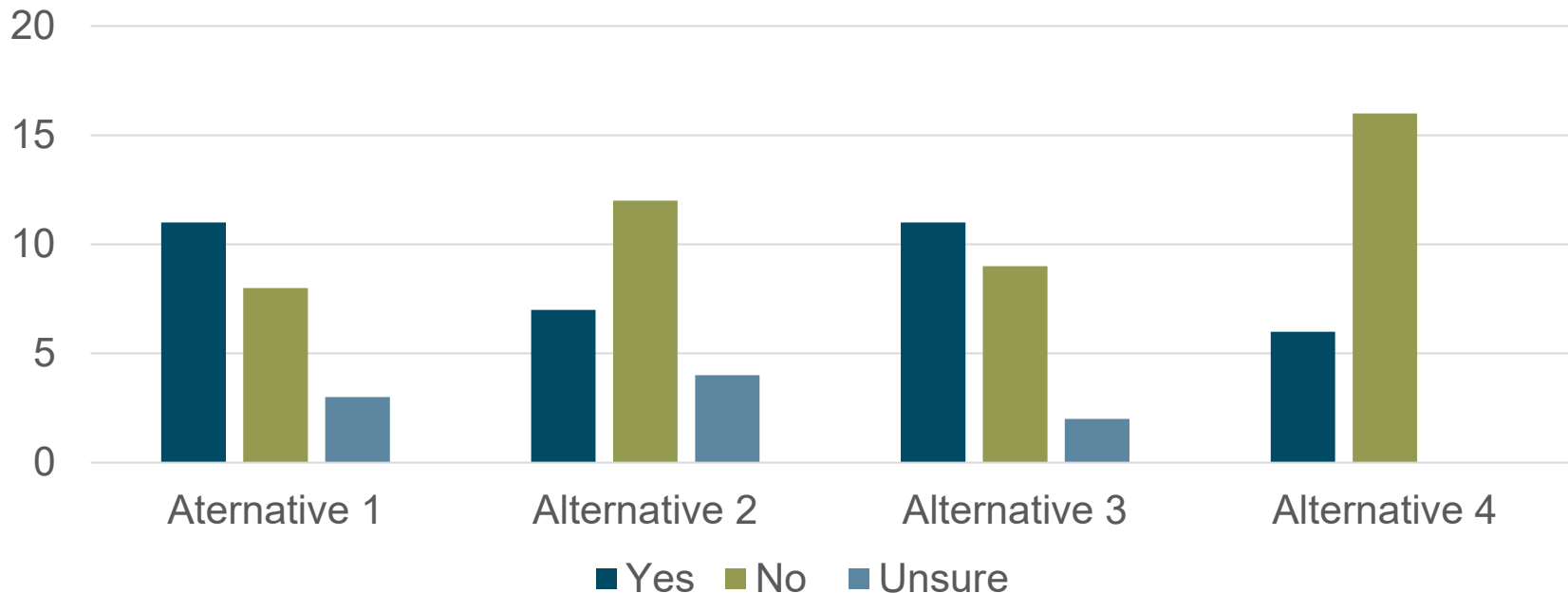
Alternative 1 – Extension of Trap Shooters Road with Wetland Fill

Alternative 2 – Extension of Trap Shooters Road with Bridge Spanning Wetland

Alternative 3 – New Spur Road from Barkers Landing Road to SR1 with Diamond Interchange

Alternative 4 – New Spur Road from Barkers Landing Road to SR1 with Trumpet Interchange

Public Opinion of Alternatives



# Alternatives Comparison Matrix

## Crash Reduction Benefits Due to Project (All Alternatives)

	No. of Vehicles involved in Property Damage Crashes	Injury Crashes	Fatal Crashes	Total Annual Crash Reduction Benefit
<b>2018 through 2021 Calendar Years*</b>	<b>72</b>	<b>11</b>	<b>1</b>	
<b>Crash Modification Factor (CMF)</b>	<b>0.84</b>	<b>0.84</b>	<b>0.84</b>	
<b>Crashes after Project</b>	<b>60.48</b>	<b>9.24</b>	<b>0.84</b>	
<b>Annual Crash Reduction</b>	<b>15.12</b>	<b>2.31</b>	<b>0.21</b>	
<b>USDOT Monetized Value per crash**</b>	<b>\$4,800.00</b>	<b>\$307,800.00</b>	<b>\$13,046,800.00</b>	
<b>Annual Crash Reduction Benefit</b>	<b>\$72,576.00</b>	<b>\$711,018.00</b>	<b>\$2,739,828.00</b>	

\* Excluding Crashes with animals as they are not susceptible to reduction with any geometric changes

\*\* 2021 Base Year Dollars

## Travel Time Change with Magnolia Origin-Destination

Travel Time Change (Seconds)	Alt 1 Geometry				Alt 2 Geometry				Alt 3 Geometry				Alt 4 Geometry			
	Northbound Trips		Southbound Trip		Northbound Trips		Southbound Trip		Northbound Trips		Southbound Trip		Northbound Trips		Southbound Trip	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
XX = Increase; (XX) = Decrease	11.7	20.6	12.5	6.7	0.2	9.2	9.7	5.7	(72.8)	(72.4)	13.3	(47.5)	(71.9)	(53.2)	12.7	(47.3)

## Travel Time Change with Ponderosa Drive Origin-Destination

Travel Time Change (Seconds)	Alt 1 Geometry				Alt 2 Geometry				Alt 3 Geometry				Alt 4 Geometry			
	Northbound Trips		Southbound Trip		Northbound Trips		Southbound Trip		Northbound Trips		Southbound Trip		Northbound Trips		Southbound Trip	
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound
XX = Increase; (XX) = Decrease	11.7	20.6	12.5	6.7	0.2	9.2	9.7	5.7	(22.6)	(15.9)	63.5	9.0	(21.7)	4.5	62.6	10.4



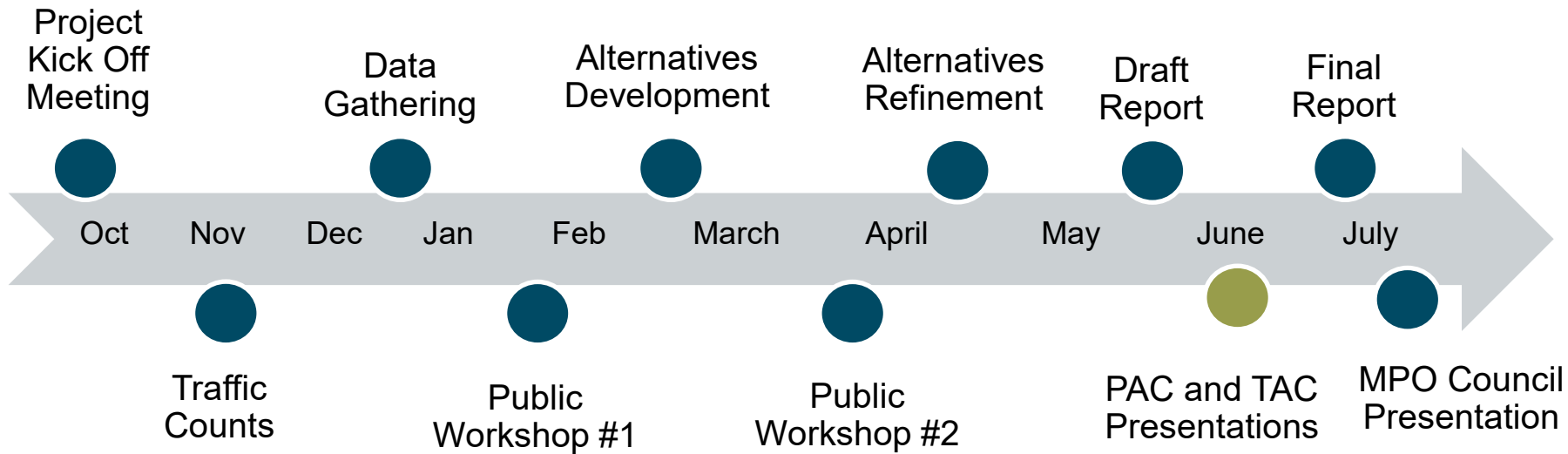
# Alternatives Comparison Matrix

SR1 Trap Shooters Road Interchnage Study									
Measures of Effectiveness - Physical Impacts									
Measure	UOM	Move SR1 Access Points South No Bridge		Move SR1 Access Points South With Bridge		Alternate 3 New Spur Road to SR1 with Diamond Interchnage		Alternate 4 New Spur Road to SR1 with Trumpet Interchnage	
Wetland Impacts Permanent	Square Feet / Ac	10,155	0.23	786	0.02	0	0.00	0	0.00
Wetland Impacts Temp	Square Feet / Ac	0	0.00	6,621	0.15	0	0.00	0	0.00
Forested Land Impacts	Square Feet / Ac	278,036	6.38	287,930	6.61	357,621	8.21	326,427	7.49
Agricultural Land Impacts	Square Feet / Ac	164,408	3.77	164,408	3.77	549,855	12.62	558,526	12.82
Ag. Land Preservation Impacts	Square Feet / Ac	0	0.00	0	0.00	5,294	0.12	5,294	0.12
Irrigation Impacts	Square Feet / Ac	10,482	0.24	10,482	0.24	123,248	2.83	123,248	2.83
Right-of-way Area	Square Feet / Ac	519,455	11.93	553,971	12.72	919,292	21.10	969,772	22.26
Costs	Thousands Dollars	\$17,500,000		\$25,250,000		\$34,500,000		\$31,700,000	

## Final Recommendation

- Alternative 1 provides the greatest Benefit Cost (B/C) Ratio and meets the purpose and need
- Alternative 1 had the least physical impacts the existing land use, but requires wetland fill and mitigation
- Alternative 1 has a slight increase in travel time over existing conditions
- Alternative 1 also received the same public support as Alternative 3
  
- Alternative 1 should be advanced for further project development

# Schedule





<https://doverkentmpo.delaware.gov/sr-1-trap-shooters-intersection-study-page/>



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# Thank You!