

Impact/Benefit Analysis of Truck Access Improvements in the Port of Wilmington Area

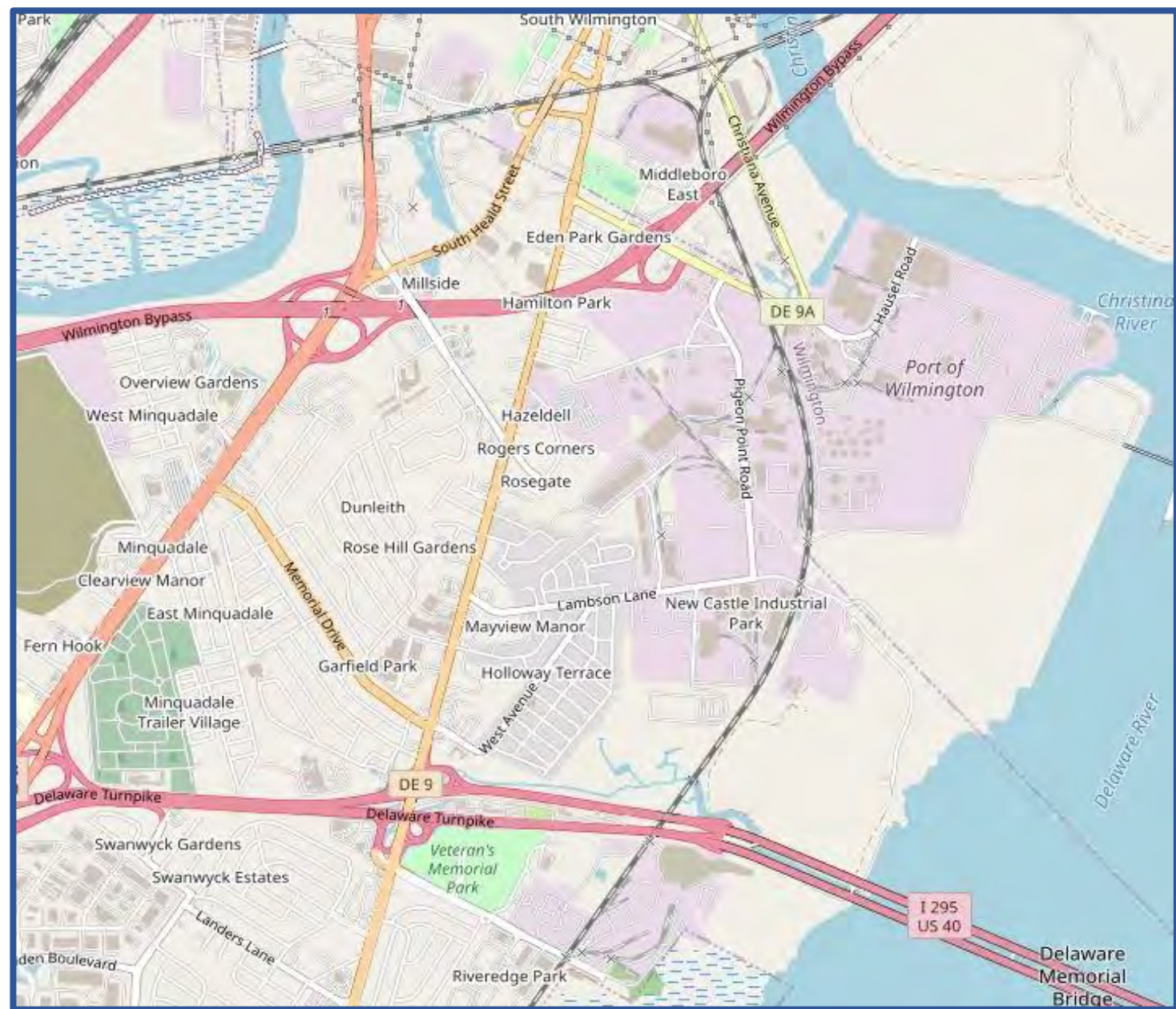
March 23, 2022



Agenda

- Registration/Login
- Welcome/Introductions (6:10)
- Review of Study Goals
- Review of Options Developed
- Review of Analysis Results
- Next Steps
- Open Q&A

Study Area



Polling

Did you attend the first public workshop on March 24, 2021?

A. Yes

B. No

Polling

What category best describes you?

- A. Area resident
- B. Business owner/affiliate
- C. Truck driver
- D. Elected official
- E. Government/agency representative
- F. Other

Study Goals

Help truck circulation in and around the Port of Wilmington

- Assemble recommendations from previous efforts
- Assemble new ideas
- Refine all ideas into a series of possible improvements

Study Goals

Alternatives Assessment

- Assess recommendations using identified measures of effectiveness and a “what if” scenario to determine which improvement(s) work best
- Determine impact to the efficiency of the transportation system
- Provide cost estimates for these recommended improvements short/long term and low/high-cost options
- Determine feasibility of options and develop recommendations

Study Goals

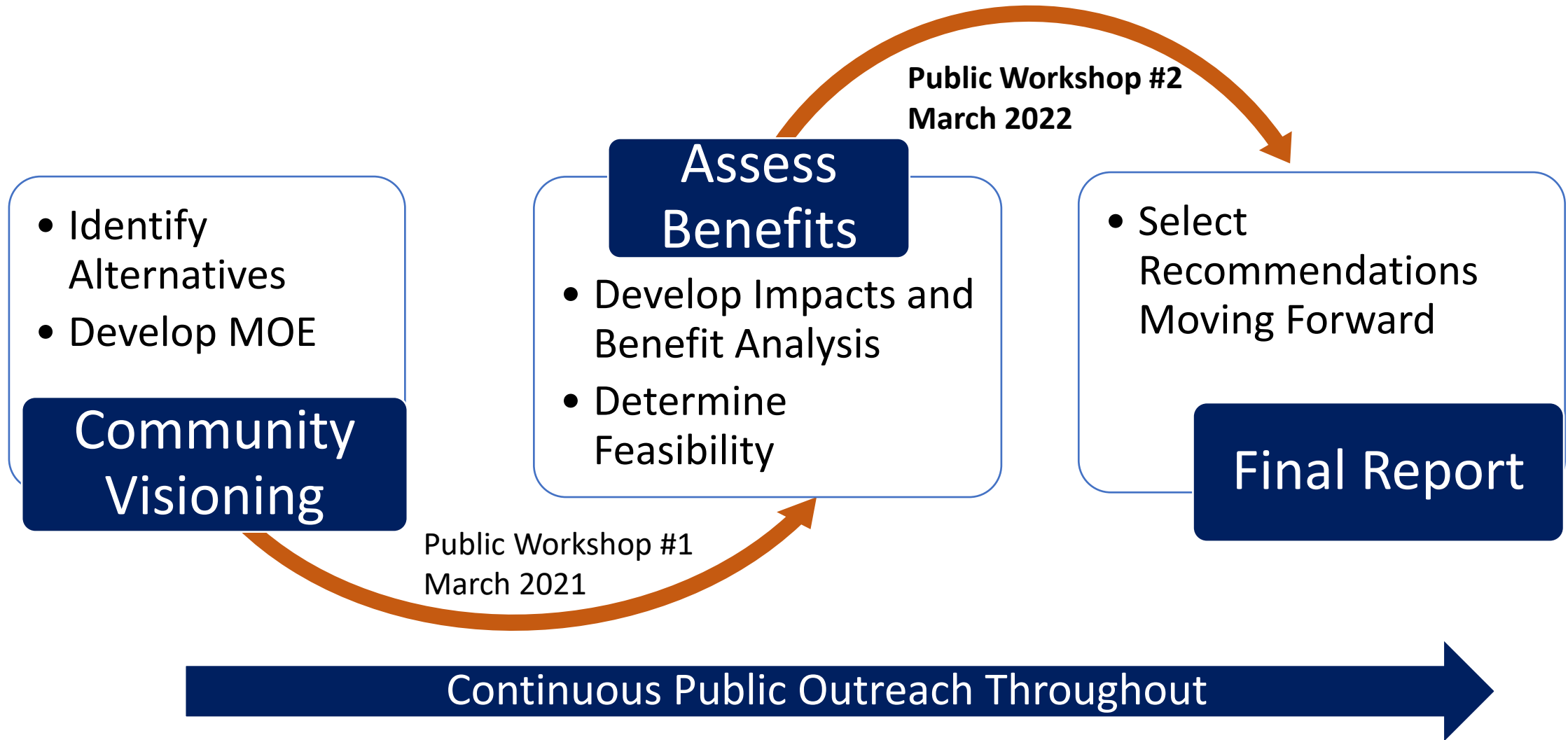
Establish Future Capital Projects

- Regional Transportation Plan
- Capital Transportation Program

Explore Possible Funding Opportunities

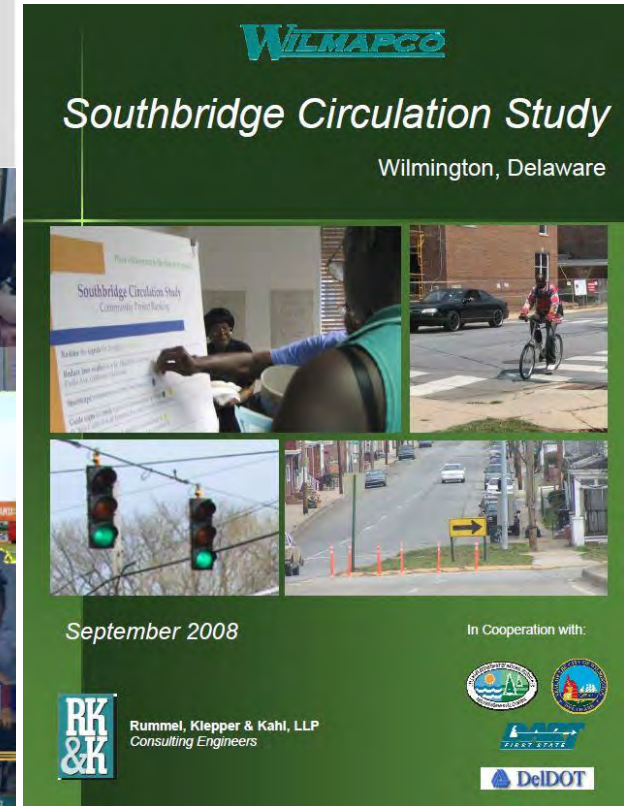
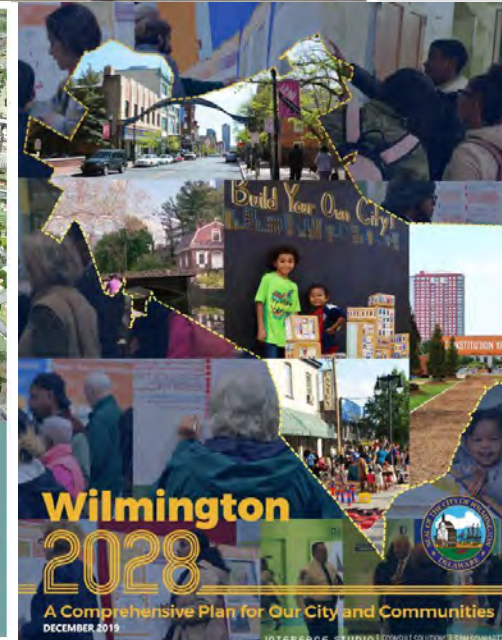
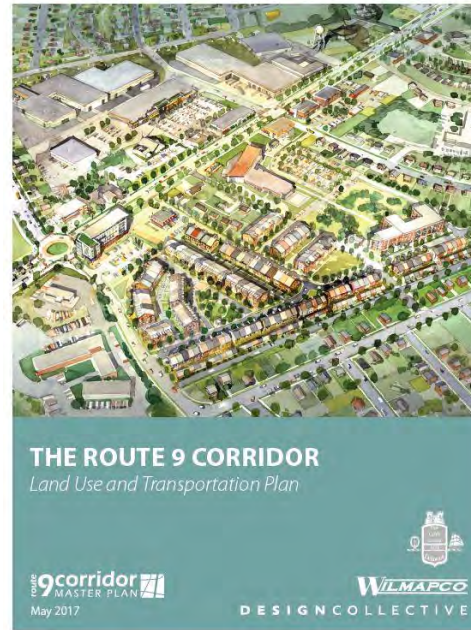
- Bipartisan Infrastructure Investment and Jobs Act (IIJA)
- RAISE Grant
- INFRA Grant
- Others

Work Plan








Alternatives Studied

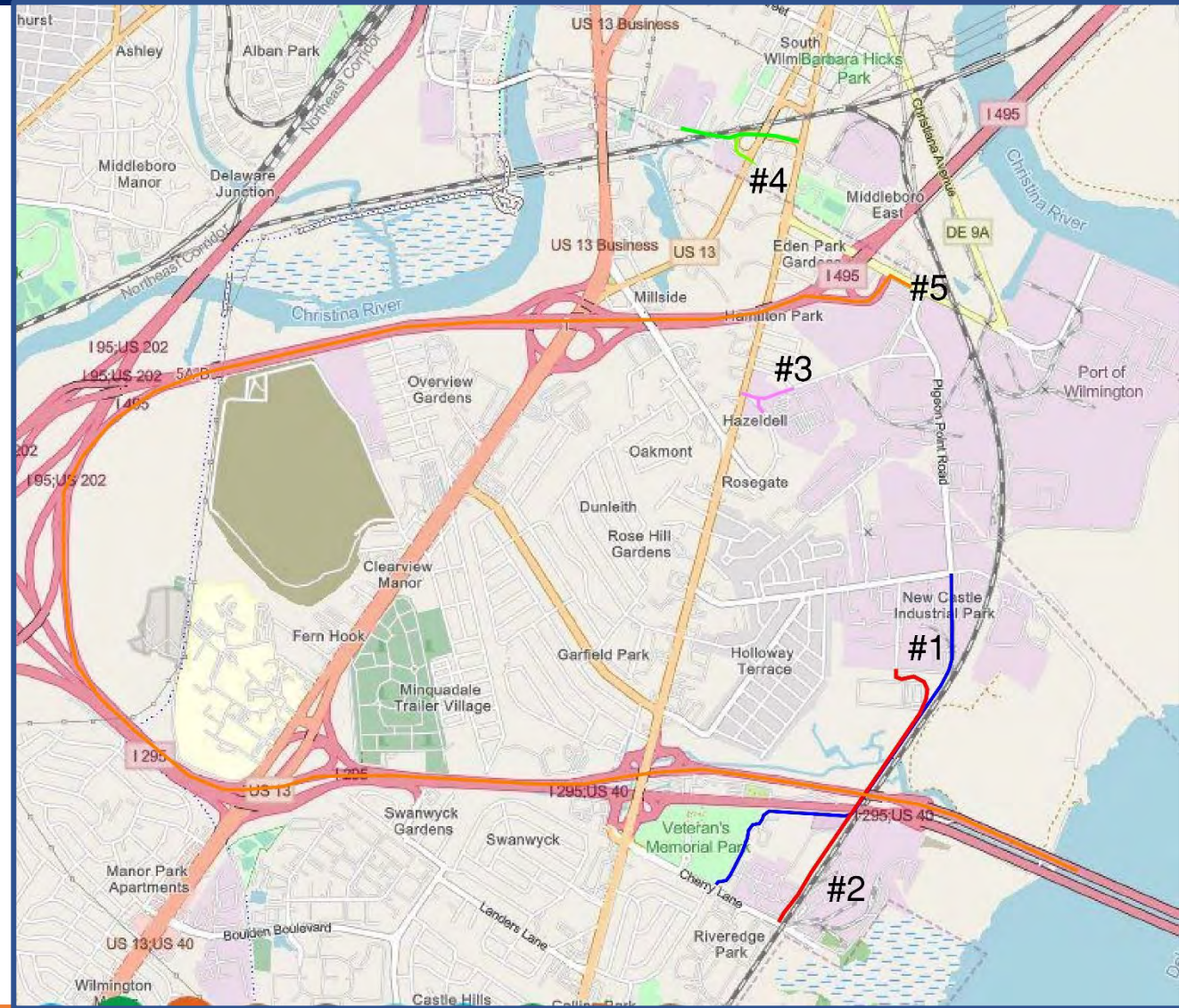
- History
- Past Planning Efforts
- Maintaining the Vision



Alternatives Studied

The traffic operational analysis was performed using Synchro 10 traffic analysis software. Six scenarios were analyzed as follows:

1. Existing Conditions to serve as the basis of comparison of the benefits of the alternatives
2. Alternative 1 – Pigeon Point Option 1 
3. Alternative 2 – Pigeon Point Option 2 
4. Alternative 3 – Pyles Lane Extension 
5. Alternative 4 – Garasches Lane 
6. Alternative 5 – Sign and Reroute All Port Traffic on I-295 and I-495 



Measures of Effectiveness

The MOE obtained for each alternative was compared to the existing conditions MOE to assess the benefits/disbenefits of each.

1. Bidirectional travel time on New Castle Avenue from D Street to Cherry Lane.
2. Truck reduction at intersections on New Castle Avenue and on Terminal Avenue west of the 1-495 ramps.
3. A.M. and P.M. peak hour intersection Level of Service (LOS) for all applicable intersections on New Castle Avenue, Terminal Avenue, and Heald Street (US13).
4. Fuel consumption reduction on New Castle Avenue from D Street to Cherry Lane.

Annual Travel Time & Fuel Consumption Reduction for Weekday AM and PM Peak Hours

Scenario	¹ Annual Travel Time Reduction on New Castle Avenue (Hours)	Benefit Score (5 Max)	Annual Fuel Reduction for New Castle Avenue Vehicles ²	Benefit Score (5 Max)
Alternative 1	1,820	2.33	3,640	2.92
Alternative 2	1,820	2.33	3,640	2.92
Alternative 3	780	1.00	1,560	1.25
Alternative 4	2,860	3.67	4,420	3.54
Alternative 5	3,900	5.00	6,240	5.00

1 - Represents the travel time reduction for all vehicles

2 - Air Quality Impacts – There is a connection between reduced fuel consumption and reduced emissions. It can be assumed that there will be reductions in CO, NOx, and VOC.



Truck Reduction at Intersections on New Castle Avenue and on Terminal Avenue West of the I-495 ramps.

Weekday AM and PM Peak Hours Truck Reduction

Intersection / Location	Truck Reduction?				
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
New Castle Ave & D St	NO	NO	NO	NO	NO
New Castle Ave & Connector Rd	NO	NO	NO	NO	NO
New Castle Ave & Garasches Ln	NO	NO	NO	NO	NO
New Castle Ave & Terminal Ave	YES	YES	YES	NO	YES
New Castle Ave & Pyles Ln	YES	YES	YES	YES	YES
New Castle Ave & Old Ferry Rd/ Pyles Ln Extension	YES	YES	NO	YES	YES
New Castle Ave & Rogers Rd	YES	YES	NO	YES	YES
New Castle Ave & Lambson Ln	YES	YES	NO	YES	YES
New Castle Ave & Morehouse Dr	YES	YES	NO	YES	YES
New Castle Ave & Memorial Dr	YES	YES	NO	YES	YES
New Castle Ave & Halcyon Dr	YES	YES	NO	YES	YES
New Castle Ave & Cherry Ln	NO	NO	NO	NO	NO
Terminal Avenue West of I-495 Ramps	YES	YES	YES	NO	YES
New Castle Ave Truck Reduction Locations	9	9	3	7	9
New Castle Ave Benefit Score (12 Maximum)	8.00	8.00	2.00	6.00	8.00
Terminal Ave Benefit Score (1 Maximum)	1.00	1.00	1.00	0.00	1.00



Truck Reduction at Intersections on New Castle Avenue and on Terminal Avenue West of the I-495 ramps.

No.	Location	Percent Truck Reduction (-) / Increase									
		Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	New Castle Avenue at The Connector (from S Heald St Exit Ramp)	0%	0%	0%	0%	0%	0%	177%	238%	0%	0%
2	New Castle Avenue at New York Avenue	0%	0%	0%	0%	0%	0%	170%	174%	0%	0%
4	S Heald St at Garasches Lane	0%	0%	0%	0%	0%	0%	340%	297%	0%	0%
5	New Castle Avenue at Garasches Lane	0%	0%	0%	0%	0%	0%	263%	276%	0%	0%
6	New Castle Avenue at Terminal Ave (Signal Permit No. N264)	-60%	-50%	-60%	-50%	-60%	-50%	0%	0%	-60%	-50%
7	Terminal Avenue at SB I-495 Ramps	-28%	-32%	-28%	-32%	-28%	-32%	0%	0%	-19%	-14%
8	Terminal Avenue at NB I-495 Ramps	-17%	-28%	-17%	-28%	-17%	-28%	0%	0%	16%	12%
9	Terminal Avenue at Pigeon Point Road (Signal Permit No. N826)	8%	0%	8%	0%	8%	0%	0%	0%	0%	0%
10	S Heald St at Rogers Road (Signal Permit No. N177)	0%	0%	0%	0%	0%	0%	135%	615%	0%	0%
11	New Castle Avenue at Pyles Lane	-55%	-75%	-55%	-75%	-55%	-75%	-55%	-75%	-55%	-75%
12	New Castle Avenue at Rogers Road (Signal Permit No. N175)	-48%	-66%	-48%	-66%	0%	0%	-48%	-66%	-48%	-66%
13	New Castle Avenue at Lambson Lane (Signal Permit No. N174)	-53%	-68%	-53%	-68%	0%	0%	-53%	-68%	-53%	-68%
14	New Castle Avenue at Moorehouse Dr. (Signal Permit No. N384)	-54%	-68%	-54%	-68%	0%	0%	-54%	-68%	-54%	-68%
15	New Castle Avenue at Memorial Drive (Signal Permit No. N173)	-53%	-67%	-53%	-67%	0%	0%	-53%	-67%	-53%	-67%
16	New Castle Avenue at Halcyon Drive	-59%	-78%	-59%	-78%	0%	0%	-59%	-78%	-59%	-78%
17	New Castle Avenue at Cherry Lane (Signal Permit No. N313)	242%	727%	242%	727%	0%	0%	0%	0%	0%	0%
18	Pigeon Point Road at Pyles Lane	34%	41%	34%	41%	34%	41%	-34%	0%	0%	0%
19	New Castle Avenue at Old Ferry Road	-65%	-74%	-65%	-74%	0%	0%	-65%	-74%	-65%	-74%
20	Pigeon Point Road at Lambson	92%	58%	92%	58%	0%	0%	0%	0%	0%	0%
21	US13 at Ramp to Rogers Rd	0%	0%	0%	0%	0%	0%	336%	262%	0%	0%



A.M. Peak Hour Level Of Service (LOS) Improvement

Intersection	Existing Rd Network	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
New Castle Ave & D St	A	A	A	A	A	A
New Castle Ave & Connector Rd/ Garasches Ln Extension	A	A	A	A	A	A
New Castle Ave & Garasches Ln	A	A	A	A	A	A
New Castle Ave & Terminal Ave	C	C	C	C	C	C
New Castle Ave & Pyles Ln	A	A	A	A	A	A
New Castle Ave & Old Ferry Rd/ Pyles Ln Extension	A	A	A	A	A	A
New Castle Ave & Rogers Rd	C	C	C	C	C	C
New Castle Ave & Lambson Ln	A	A	A	A	A	A
New Castle Ave & Morehouse Dr	A	A	A	A	A	A
New Castle Ave & Memorial Dr	D	D	D	D	D	D
New Castle Ave & Halcyon Dr	C	B	B	C	B	B
New Castle Ave & Cherry Ln	D	D	D	D	D	D
Terminal Ave & SB I-495	A	A	A	A	A	A
Terminal Ave & NB I-495	A	A	A	A	A	A
Terminal Ave & Pigeon Point Rd	C	C	C	C	C	C
Pigeon Point Rd & Pyles Ln	A	A	A	A	A	A
Pigeon Point Rd & Lambson Ln	A	A	A	A	A	A
S Heald St & Garasches Ln	A	A	A	A	A	A
Garasches Ln & Grashches Ln Extension	N/A	N/A	N/A	N/A	A	N/A
Heald St & Rogers Rd	C	C	C	C	C	C
Dupont Pkwy & Rogers Rd	B	B	B	B	B	B
LOS Improvement?	N/A	YES	YES	No	YES	YES
Benefit Score (21 Maximum)	N/A	1.00	1.00	0.00	1.00	1.00



P.M. Peak Hour Level Of Service (LOS) Improvement

Intersection	Existing Rd Network	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
New Castle Ave & D St	A	A	A	A	A	A
New Castle Ave & Connector Rd/ Garashces Ln Extension	A	A	A	A	A	A
New Castle Ave & Garasches Ln	A	A	A	A	A	A
New Castle Ave & Terminal Ave	C	C	C	C	C	C
New Castle Ave & Pyles Ln	A	A	A	A	A	A
New Castle Ave & Old Ferry Rd/ Pyles Ln Extension	A	A	A	A	A	A
New Castle Ave & Rogers Rd	C	C	C	C	C	C
New Castle Ave & Lambson Ln	B	B	B	B	B	B
New Castle Ave & Morehouse Dr	A	A	A	A	A	A
New Castle Ave & Memorial Dr	D	D	D	D	D	D
New Castle Ave & Halcyon Dr	C	B	B	C	B	B
New Castle Ave & Cherry Ln	C	C	C	C	C	C
Terminal Ave & SB I-495	A	A	A	A	A	A
Terminal Ave & NB I-495	A	A	A	A	A	A
Terminal Ave & Pigeon Point Rd	B	B	B	B	B	B
Pigeon Point Rd & Pyles Ln	A	A	A	A	A	A
Pigeon Point Rd & Lambson Ln	A	A	A	A	A	A
S Heald St & Garasches Ln	A	A	A	A	A	A
Garasches Ln & Grashches Ln Extension	N/A	N/A	N/A	N/A	A	N/A
Heald St & Rogers Rd	C	C	C	C	C	C
Dupont Pkwy & Rogers Rd	B	B	B	B	B	B
LOS Improvement?	N/A	YES	YES	No	YES	YES
Benefit Score (21 Maximum)	N/A	1.00	1.00	0.00	1.00	1.00



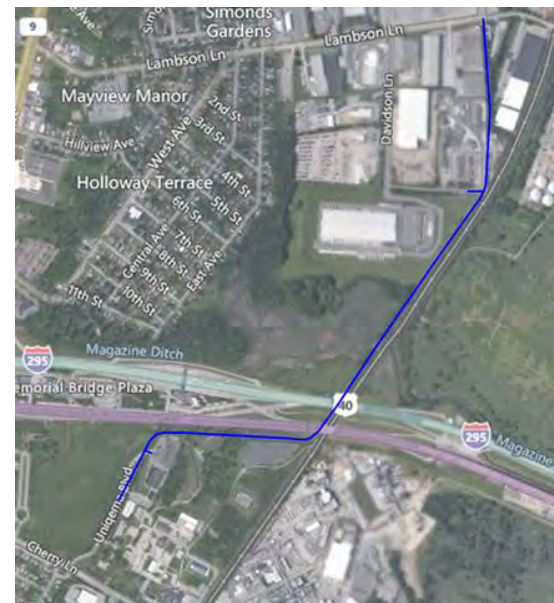
Weekday AM and PM Peak Hours Overall Benefit Scores

Scenario	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Travel Time Reduction	2.33	2.33	1.00	3.67	5.00
Truck Reduction on New Castle Ave	8.00	8.00	2.00	6.00	8.00
Truck Reduction on Terminal Ave West of I-495 Ramps	1.00	1.00	1.00	0.00	1.00
A.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
P.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
Fuel Consumption Reduction	2.92	2.92	1.25	3.54	5.00
Total Benefit Score	16.25	16.25	5.25	15.21	21.00



Alternative #1: Pigeon Point Extension to Cherry Lane

Total Project Estimate	
Construction Cost	\$20,700,000
Right-of-Way Impacts	\$1,000,000
Design Costs	\$3,500,000
Total Costs	\$25,200,000



Scenario	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Travel Time Reduction	2.33	2.33	1.00	3.67	5.00
Truck Reduction on New Castle Ave	8.00	8.00	2.00	6.00	8.00
Truck Reduction on Terminal Ave West of I-495 Ramps	1.00	1.00	1.00	0.00	1.00
A.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
P.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
Fuel Consumption Reduction	2.92	2.92	1.25	3.54	5.00
Total Benefit Score	16.25	16.25	5.25	15.21	21.00
Estimated Project Cost	\$25,200,000	\$23,200,000	\$2,800,000	\$7,925,000	N/A



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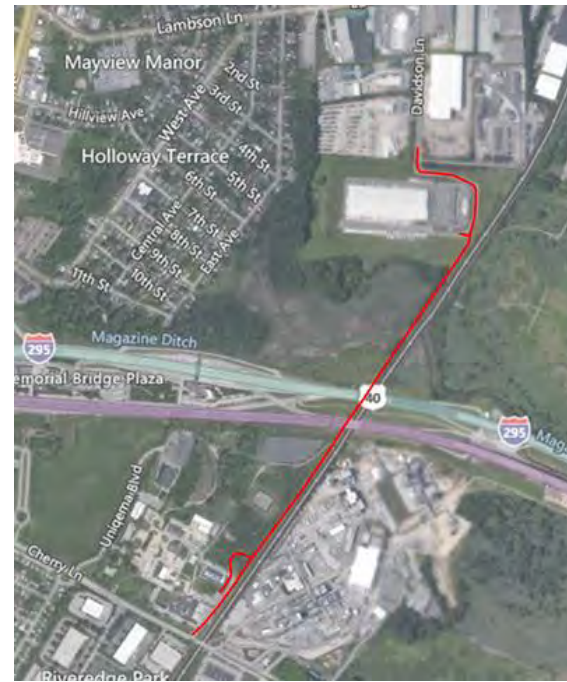
Do you generally support the extension of Pigeon Point Road to Cherry Lane?

- A. Yes
- B. No
- C. Unsure

* You May Submit a Follow Up Question or Comment
Using the Q&A Function

Alternative #2: Pigeon Point Extension to Cherry Lane (via Davison Drive)

Scenario	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Travel Time Reduction	2.33	2.33	1.00	3.67	5.00
Truck Reduction on New Castle Ave	8.00	8.00	2.00	6.00	8.00
Truck Reduction on Terminal Ave West of I-495 Ramps	1.00	1.00	1.00	0.00	1.00
A.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
P.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
Fuel Consumption Reduction	2.92	2.92	1.25	3.54	5.00
Total Benefit Score	16.25	16.25	5.25	15.21	21.00
Estimated Project Cost	\$25,200,000	\$23,200,000	\$2,800,000	\$7,925,000	N/A



Total Project Estimate	
Construction Cost	\$19,200,000
Right-of-Way Impacts	\$800,000
Design Costs	\$3,200,000
Total Costs	\$23,200,000



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Do you generally support the extension of Pigeon Point Road to Cherry Lane – Via Davidson Drive?

A. Yes

B. No

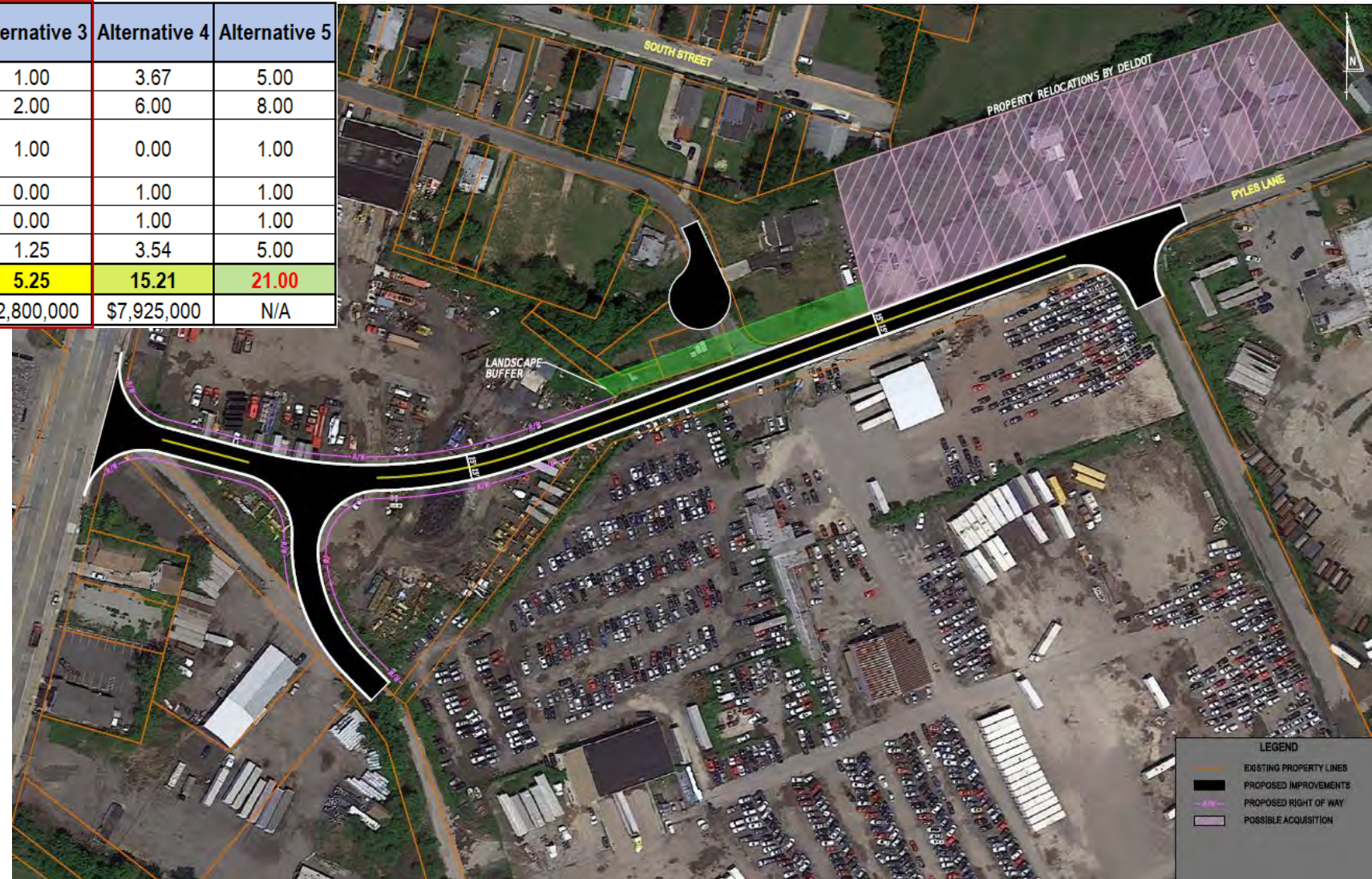
C. Unsure

* You May Submit a Follow Up Question or Comment Using the Q&A Function

Alternative #3: Pyles Lane Reconfiguration

Scenario	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Travel Time Reduction	2.33	2.33	1.00	3.67	5.00
Truck Reduction on New Castle Ave	8.00	8.00	2.00	6.00	8.00
Truck Reduction on Terminal Ave West of I-495 Ramps	1.00	1.00	1.00	0.00	1.00
A.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
P.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
Fuel Consumption Reduction	2.92	2.92	1.25	3.54	5.00
Total Benefit Score	16.25	16.25	5.25	15.21	21.00
Estimated Project Cost	\$25,200,000	\$23,200,000	\$2,800,000	\$7,925,000	N/A

Total Project Estimate	
Construction Cost	\$2,100,000
Right-of-Way Impacts	\$400,000
Design Costs	\$300,000
Total Costs	\$2,800,000



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Do you generally support the reconfiguration of Pyles Lane?

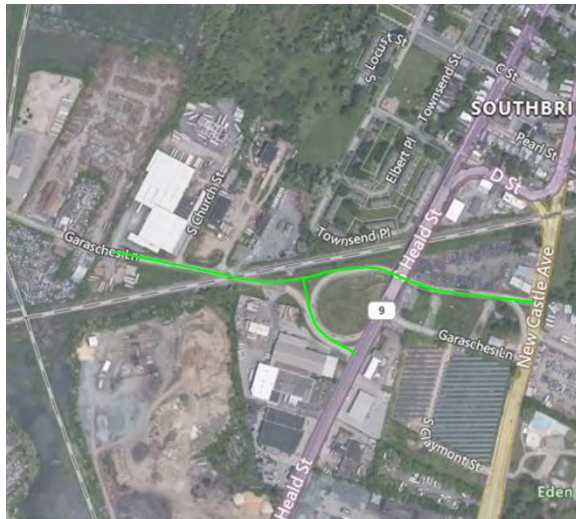
- A. Yes
- B. No
- C. Unsure

* You May Submit a Follow Up Question or Comment Using the Q&A Function

Alternative #4: Garasches Lane Extended

Scenario	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Travel Time Reduction	2.33	2.33	1.00	3.67	5.00
Truck Reduction on New Castle Ave	8.00	8.00	2.00	6.00	8.00
Truck Reduction on Terminal Ave West of I-495 Ramps	1.00	1.00	1.00	0.00	1.00
A.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
P.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
Fuel Consumption Reduction	2.92	2.92	1.25	3.54	5.00
Total Benefit Score	16.25	16.25	5.25	15.21	21.00
Estimated Project Cost	\$25,200,000	\$23,200,000	\$2,800,000	\$7,925,000	N/A

Total Project Estimate	
Construction Cost	\$7,000,000
Right-of-Way Impacts	\$200,000
Design Costs	\$725,000
Total Costs	\$7,925,000



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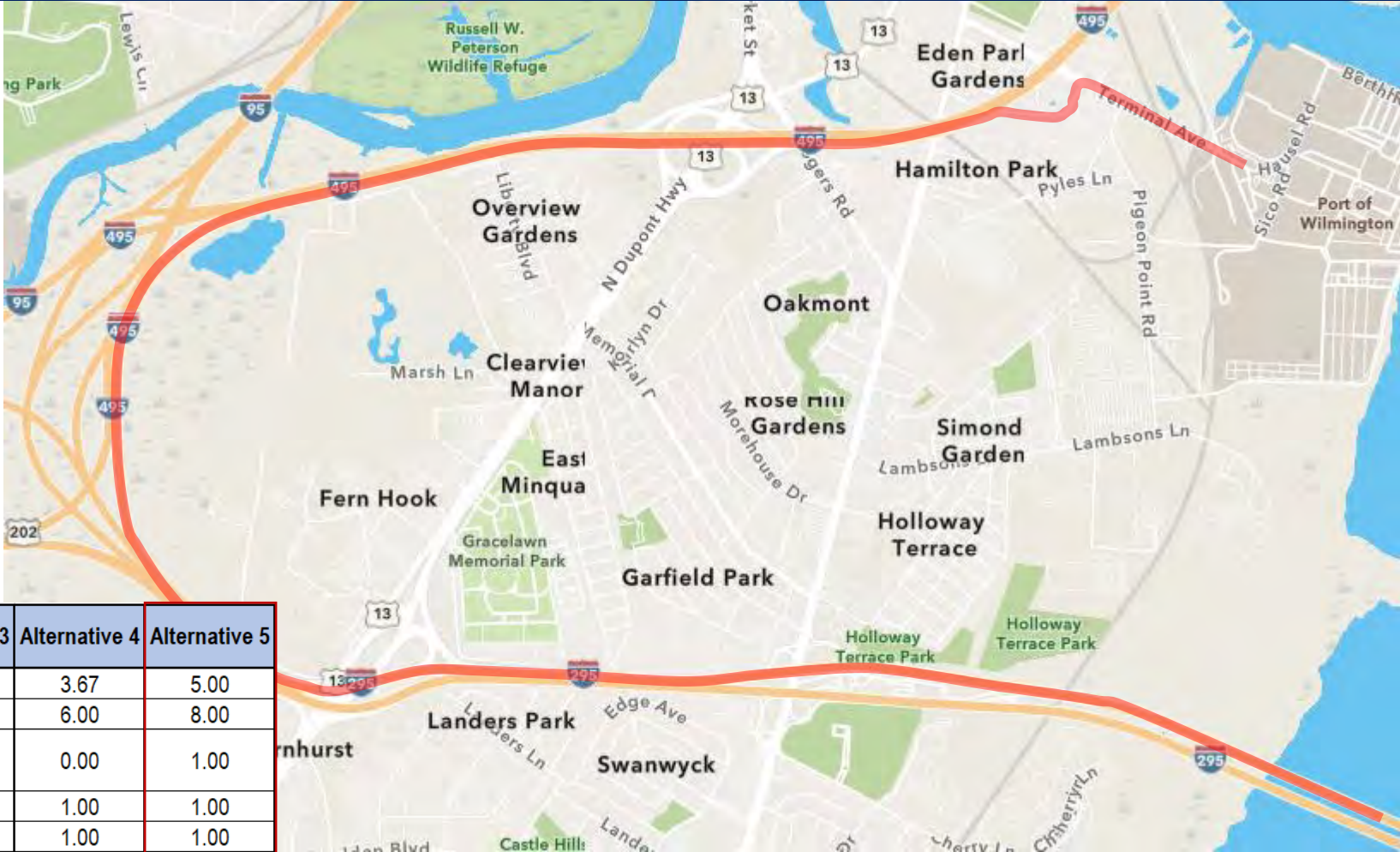
Do you generally support the reconfiguration of Garasches Lane?

- A. Yes
- B. No
- C. Unsure

* You May Submit a Follow Up Question or Comment Using the Q&A Function

Alternative #5: Rerouting of Trucks via I-295/I-495

Total Project Estimate	
Construction Cost	N/A
Right-of-Way Impacts	N/A
Design Costs	N/A
Total Costs	N/A



Scenario	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Travel Time Reduction	2.33	2.33	1.00	3.67	5.00
Truck Reduction on New Castle Ave	8.00	8.00	2.00	6.00	8.00
Truck Reduction on Terminal Ave West of I-495 Ramps	1.00	1.00	1.00	0.00	1.00
A.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
P.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
Fuel Consumption Reduction	2.92	2.92	1.25	3.54	5.00
Total Benefit Score	16.25	16.25	5.25	15.21	21.00
Estimated Project Cost	\$25,200,000	\$23,200,000	\$2,800,000	\$7,925,000	N/A

Alternative #5: Rerouting of Trucks via I-295/I-495

Additional factors that need to be studied in further detail:

- SB 89 SA1, signed into law on June 30, 2021, requires all truck restrictions to be published through the Registrar of Regulations.
- SB 159, signed into law on Sept 15, 2021, allows roadways to be identified for the usage of monitoring systems in order to assist in the enforcement of applicable laws. However, the **Department must ensure proper documentation and devices exist before a roadway becomes eligible.**
- National Network regulation 23 CFR § 658.19 **prohibits denying “reasonable access” for food, fuel, repairs, or rest and prohibit denying access within 1 road-mile of the National Network** using the “most reasonable and practicable route.” National Network routes in Delaware include all interstate highways, US-13, US-40, US-113, and US-301.

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Do you generally support the rerouting of truck traffic to use I-495 to access I-295?

- A. Yes
- B. No
- C. Unsure

* You May Submit a Follow Up Question or Comment Using the Q&A Function

Summary of Analysis

Scenario	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Travel Time Reduction	2.33	2.33	1.00	3.67	5.00
Truck Reduction on New Castle Ave	8.00	8.00	2.00	6.00	8.00
Truck Reduction on Terminal Ave West of I-495 Ramps	1.00	1.00	1.00	0.00	1.00
A.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
P.M. Peak Hour LOS Improvement	1.00	1.00	0.00	1.00	1.00
Fuel Consumption Reduction	2.92	2.92	1.25	3.54	5.00
Total Benefit Score	16.25	16.25	5.25	15.21	21.00
Estimated Project Cost	\$25,200,000	\$23,200,000	\$2,800,000	\$7,925,000	N/A

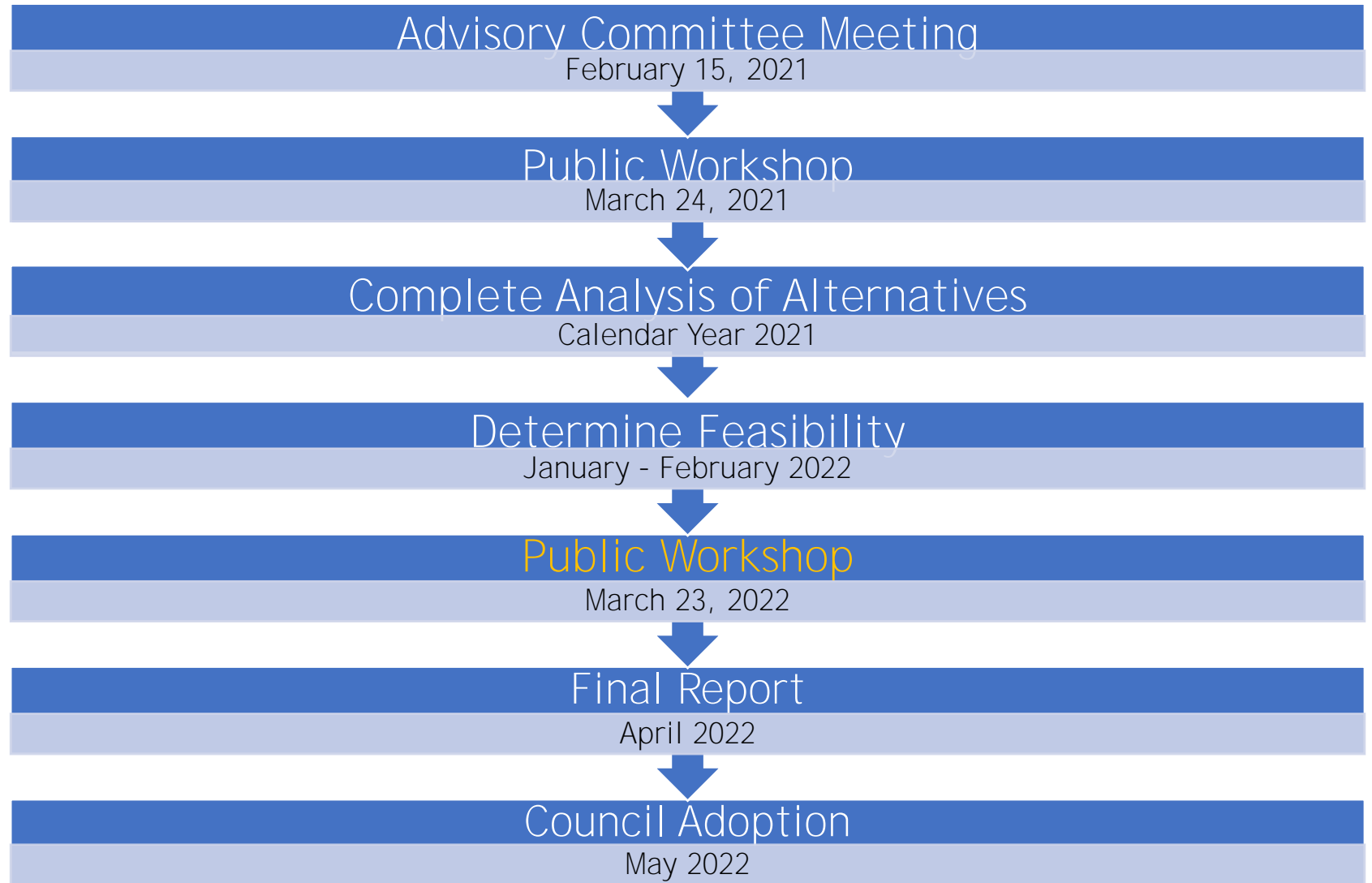
Polling

Which alternative do you prefer most?

- A. Alternative 1 – Pigeon Point Option 1
- B. Alternative 2 – Pigeon Point Option 2
- C. Alternative 3 – Pyles Lane Extension
- D. Alternative 4 – Garasches Lane
- E. Alternative 5 – Sign and Reroute All Port Traffic on I-295 and I-495

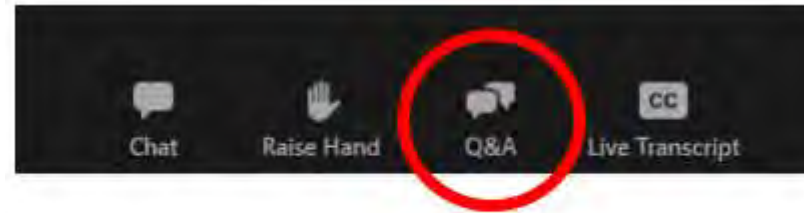
* You May Submit a Follow Up Question or Comment Using the Q&A Function

Schedule And Next Steps



Question and Answer

- Please use the Q&A box to submit questions throughout the evening.



- Or if you are using phone audio please raise your hand.



- *9 – Raise Hand
- *6 – Unmute/Mute





www.wilmapco.org/port_analysis/



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Thank You!

