DCT 272

FY17 Regional Travel Demand Modeling Support

By

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Final Report for FY 17 Modeling, Project Award 16A01548, DCTR 422293.

During the project, three studies were completed, were previously submitted to the DelDOT PM and two are attached to this report

1. New Castle Truck Routes Study – Appendix A
2. Study of I-95 Tolling and Exit 1. – Appendix B
3. Study of Glasgow Area

This serves as the final report for the project.

New Castle Truck Diversion Study

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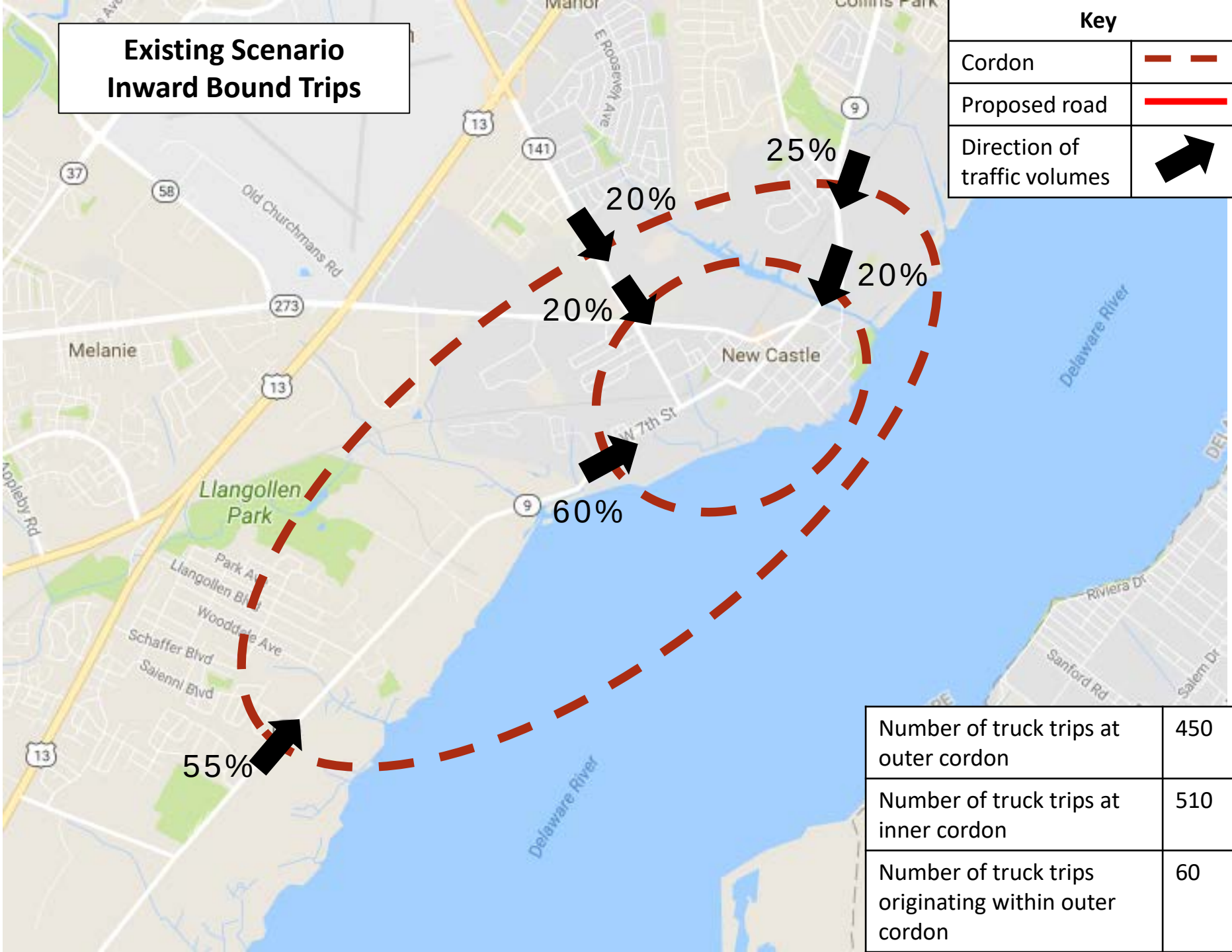
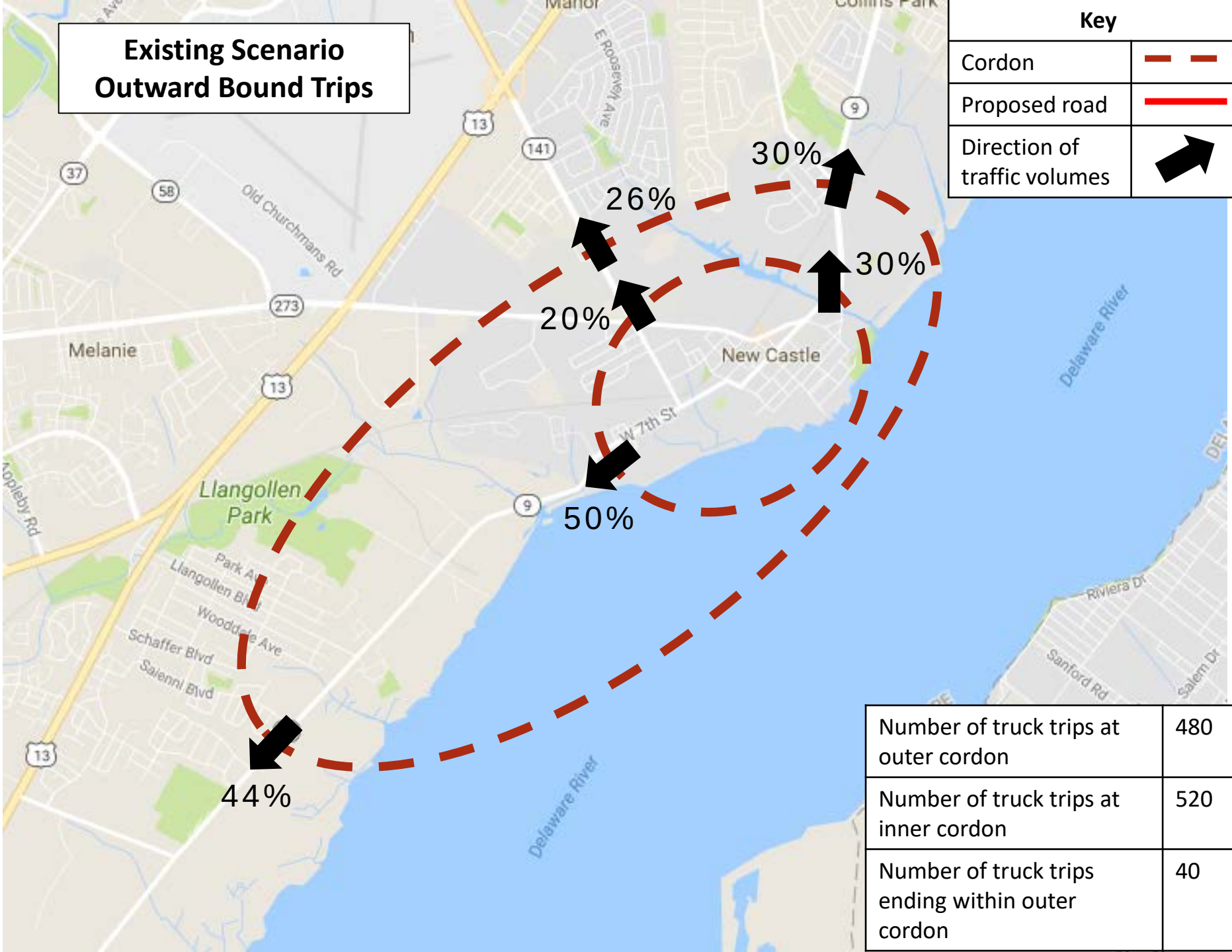
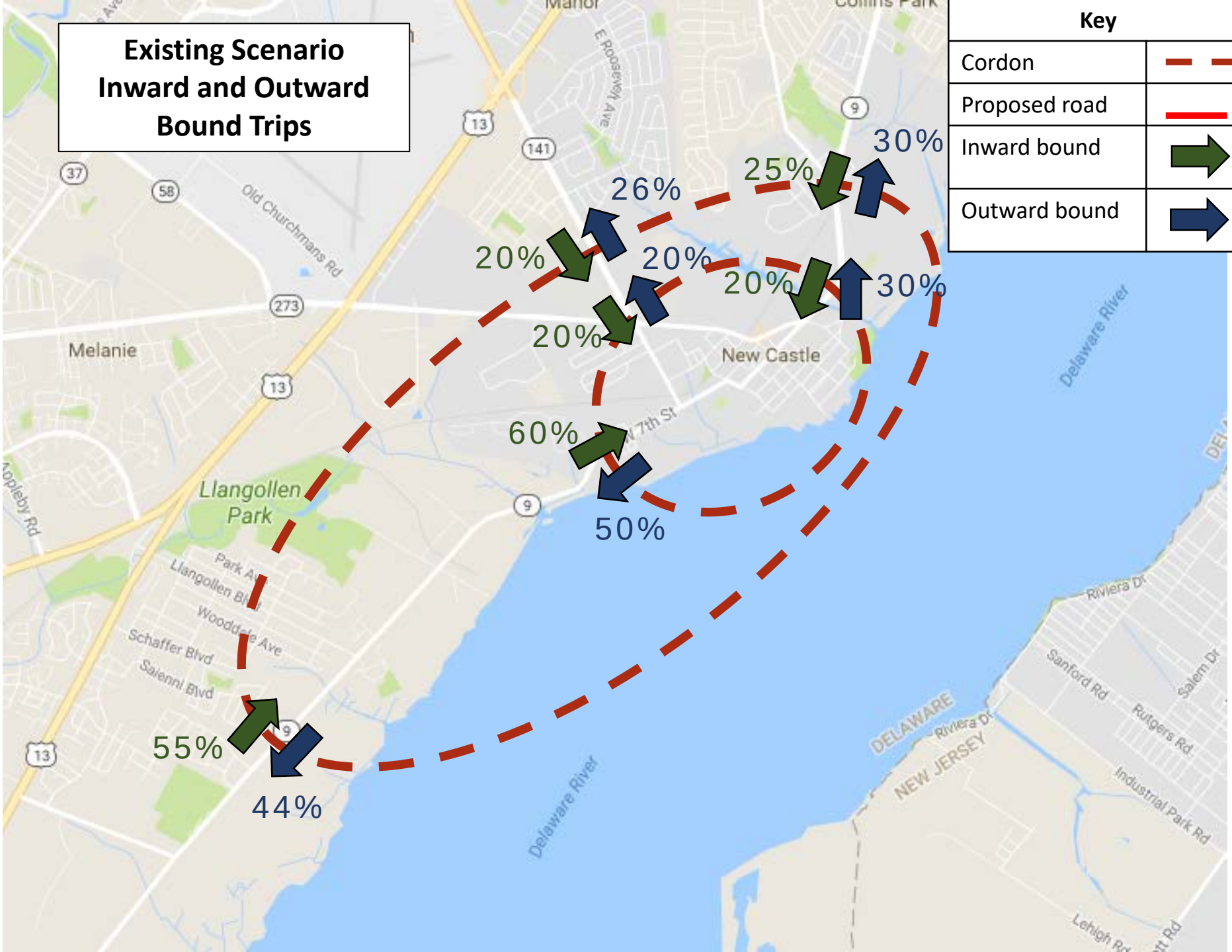
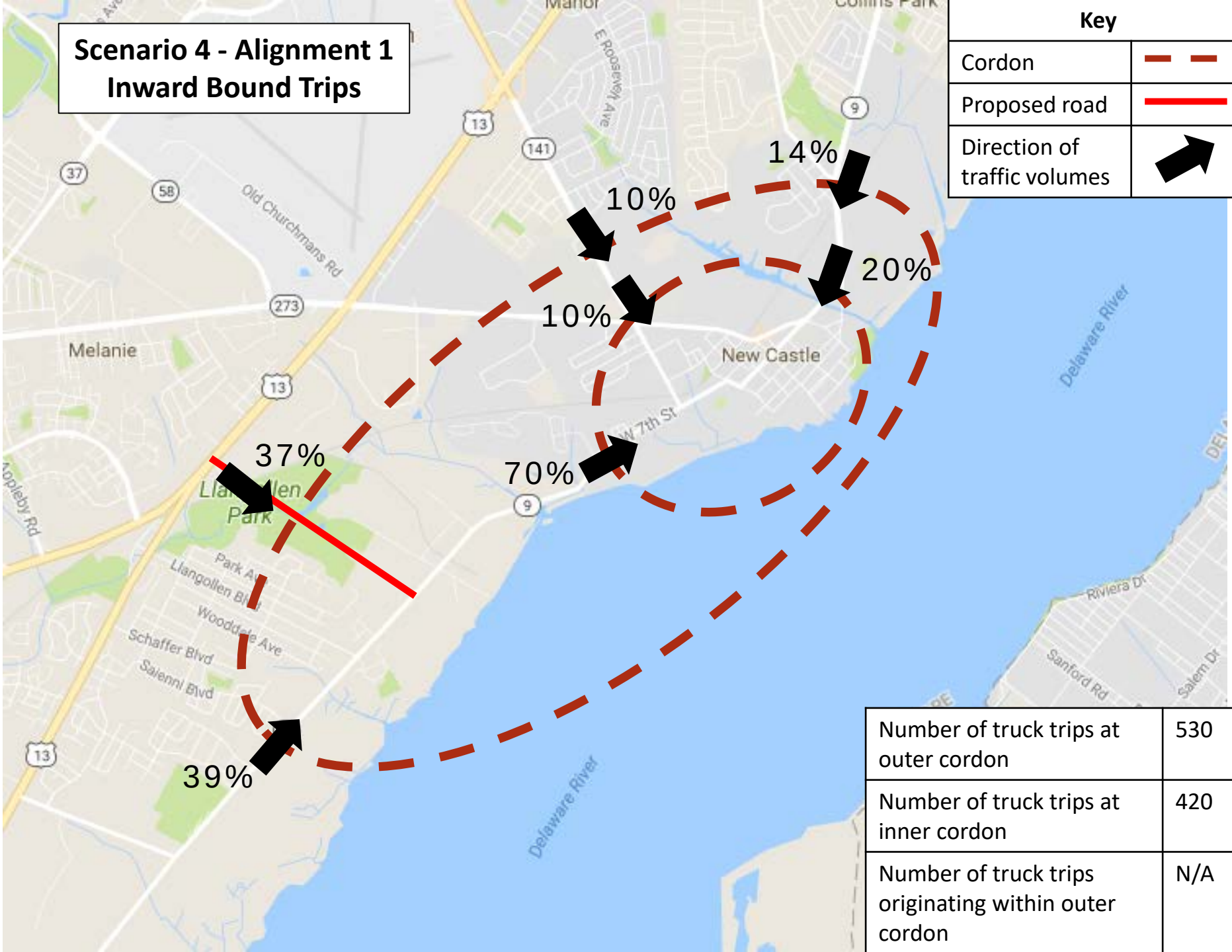

Existing Scenario
Inward Bound Trips
Key
Cordon
Proposed road
Direction of traffic volumes
25%
20%
20%
20%
60%
55%
Melanie
New Castle
Llangollen Park
Delaware River
Old Churchmans Rd
E Roosevelt Ave
W 7th St
Park Ave
Llangollen Blvd
Woodlawn Ave
Schaffer Blvd
Salenni Blvd
Riviera Dr
Sanford Rd
Salem Dr
Appleby Rd
Number of truck trips at outer cordon 450
Number of truck trips at inner cordon 510
Number of truck trips originating within outer cordon 60

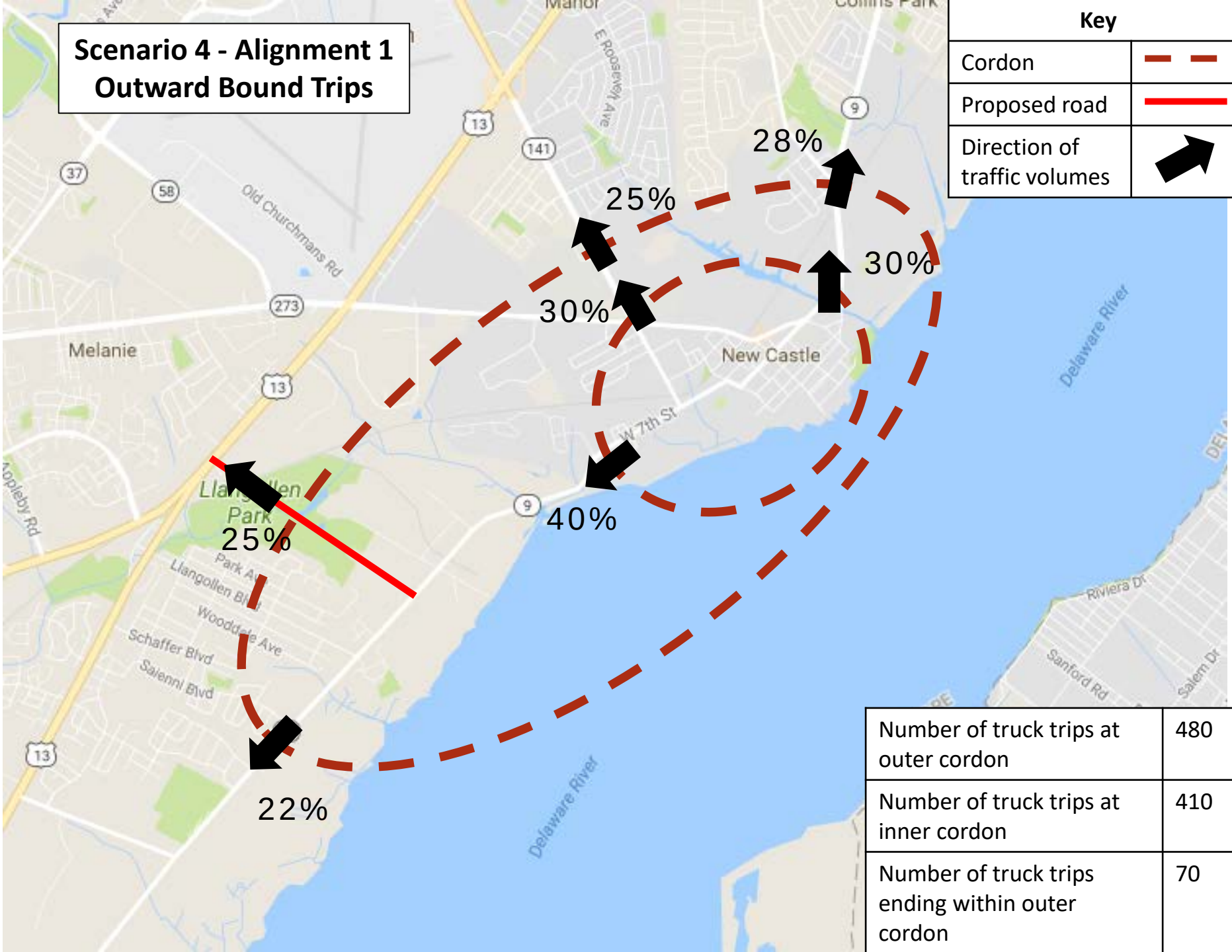


Number of truck trips at outer cordon	480
Number of truck trips at inner cordon	520
Number of truck trips ending within outer cordon	40

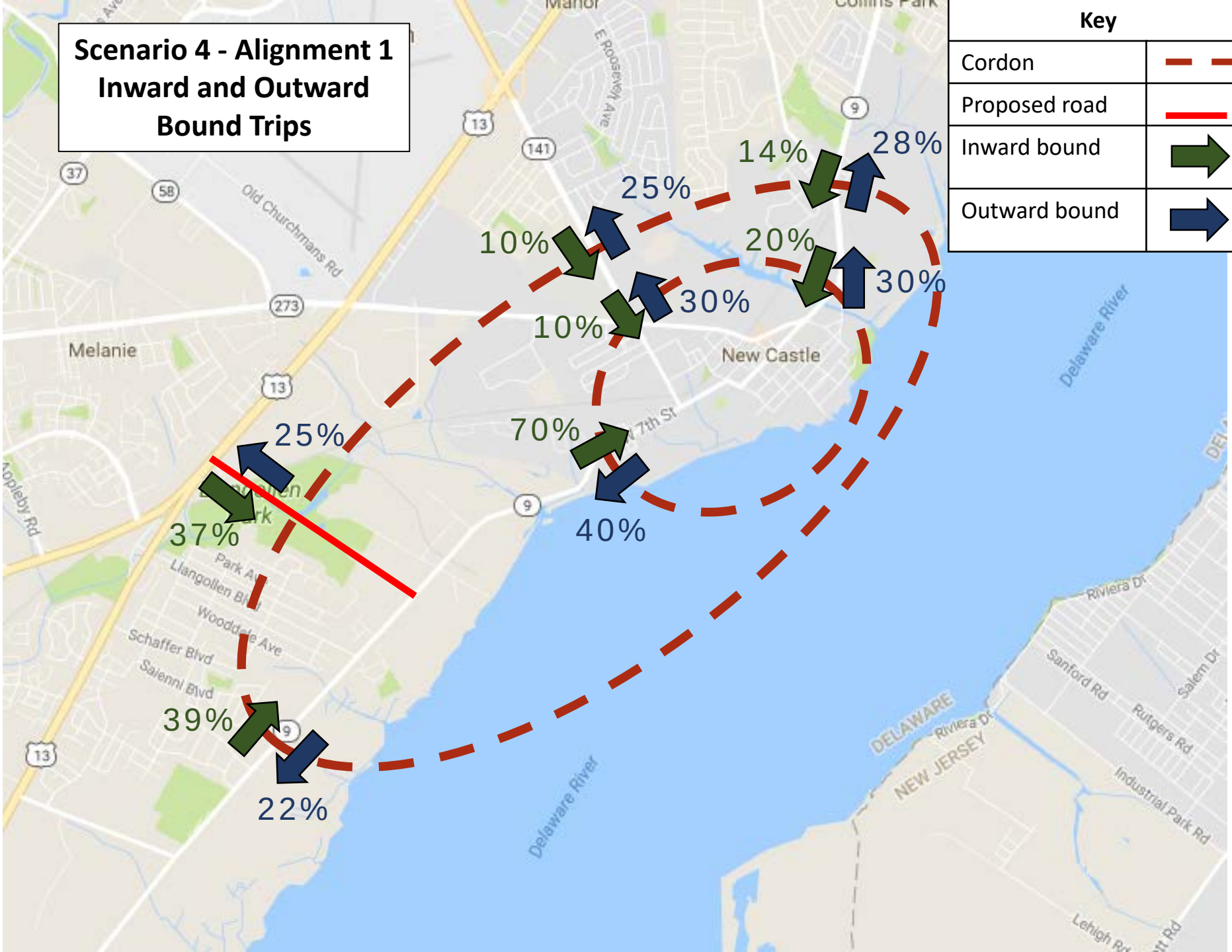

Existing Scenario
Inward and Outward
Bound Trips
Key
Cordon
Proposed road
Inward bound
Outward bound
30%
25%
26%
20%
20%
20%
30%
20%
60%
50%
55%
44%
Melanie
New Castle
Llangollen
Park
Delaware River
Delaware River
DELAWARE
NEW JERSEY
Old Churchmans Rd
E Roosevelt Ave
Park Ave
Llangollen Blvd
Woodside Ave
Schaffer Blvd
Salenni Blvd
Riviera Dr
Sanford Rd
Rutgers Rd
Salem Dr
Industrial Park Rd
Lehigh Rd
37
58
13
141
9
273
13
9
13

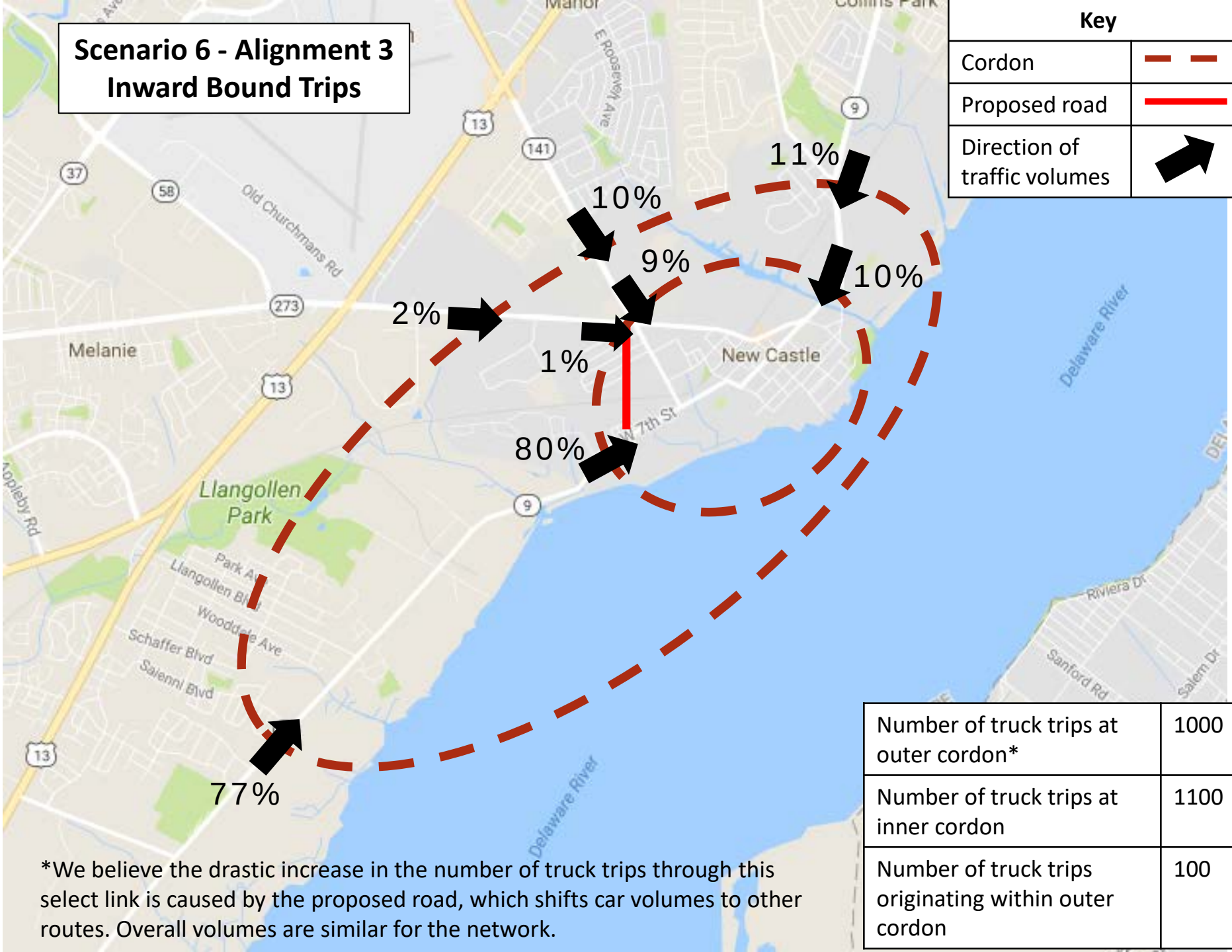


Number of truck trips at outer cordon	530
Number of truck trips at inner cordon	420
Number of truck trips originating within outer cordon	N/A

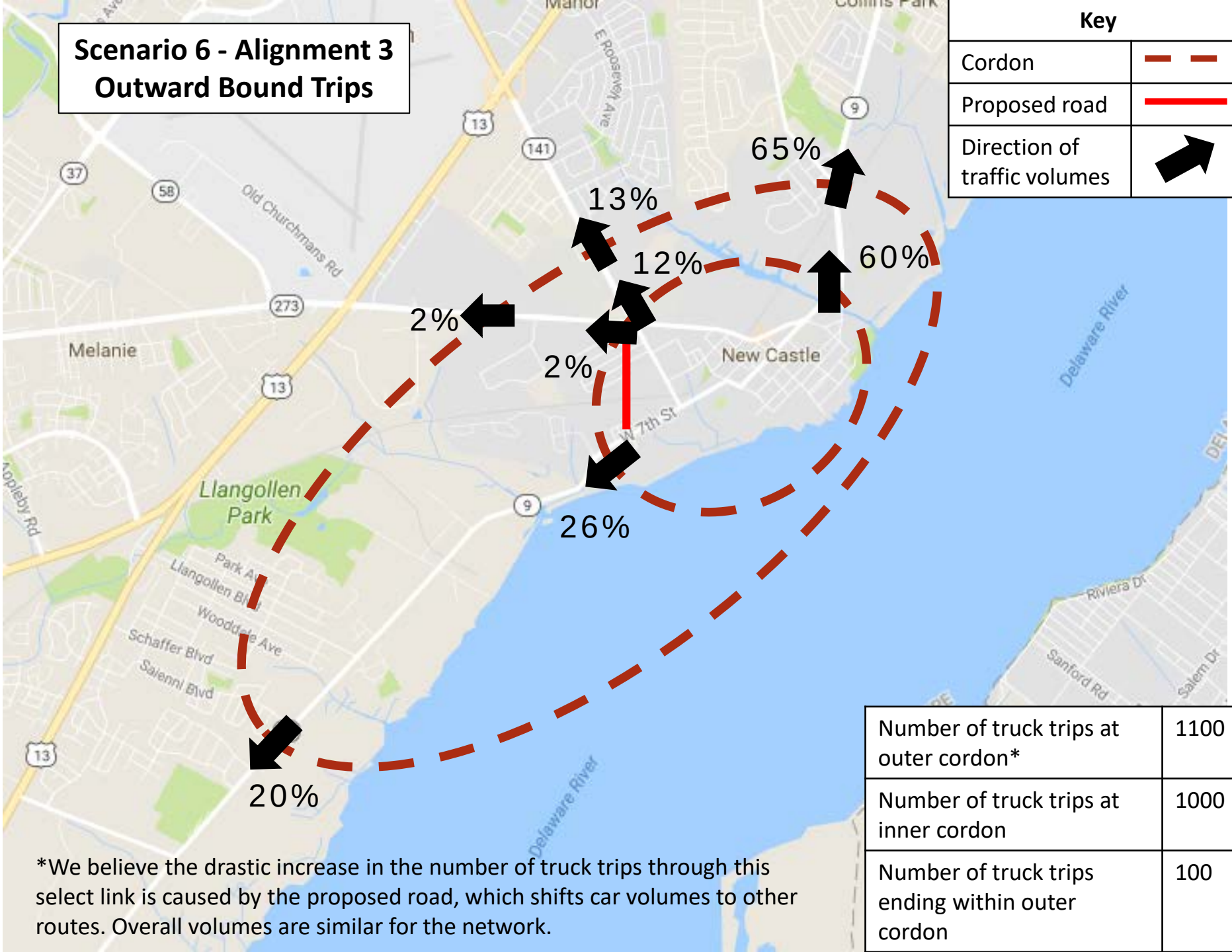


Number of truck trips at outer cordon	480
Number of truck trips at inner cordon	410
Number of truck trips ending within outer cordon	70

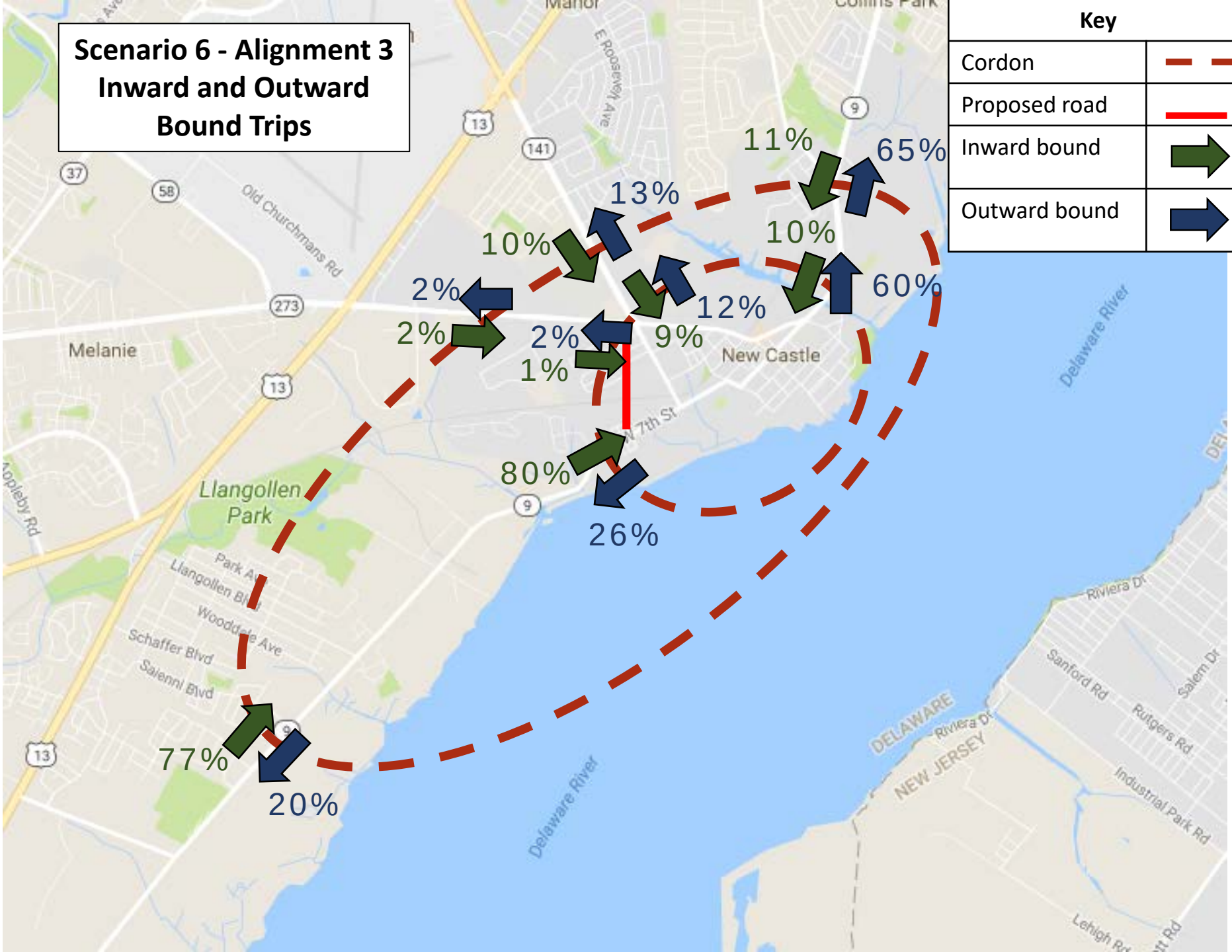

Scenario 4 - Alignment 1
Inward and Outward
Bound Trips
Key
Cordon
Proposed road
Inward bound
Outward bound
14%
28%
25%
10%
20%
30%
30%
10%
25%
70%
37%
40%
39%
22%
Melanie
New Castle
Delaware River
Delaware River
DELAWARE
NEW JERSEY
Old Churchmans Rd
E Roosevelt Ave
Schaffer Blvd
Salenni Blvd
Riviera Dr
Sanford Rd
Rutgers Rd
Industrial Park Rd
Lehigh Rd

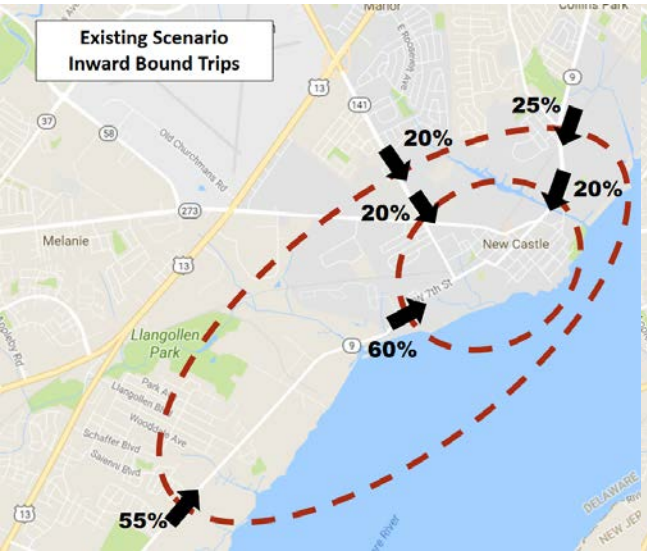


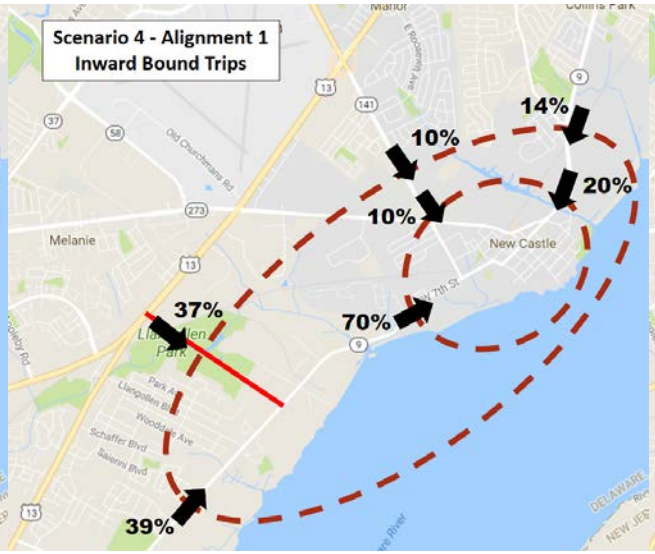
*We believe the drastic increase in the number of truck trips through this select link is caused by the proposed road, which shifts car volumes to other routes. Overall volumes are similar for the network.

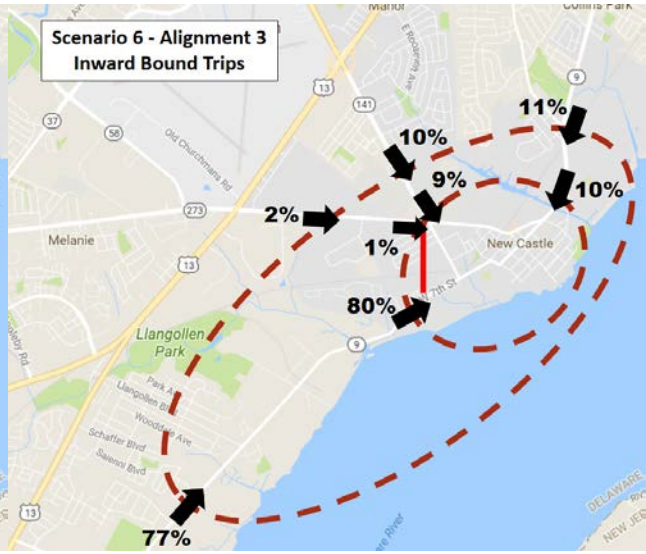


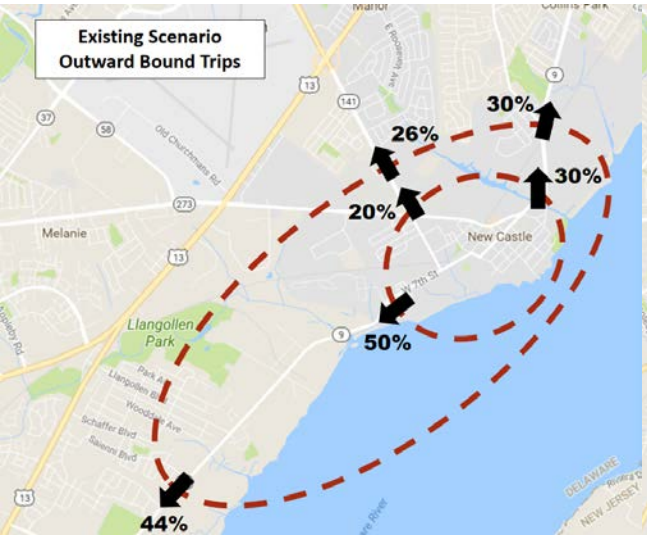
*We believe the drastic increase in the number of truck trips through this select link is caused by the proposed road, which shifts car volumes to other routes. Overall volumes are similar for the network.

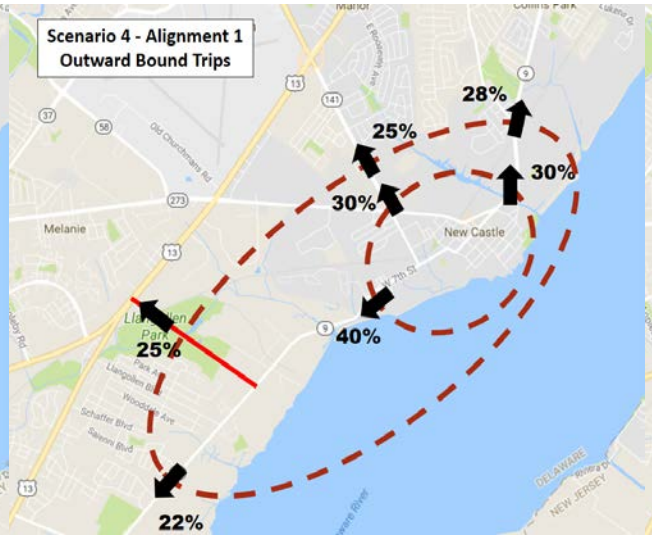

Scenario 6 - Alignment 3
Inward and Outward
Bound Trips
Key
Cordon
Proposed road
Inward bound
Outward bound
11%
65%
13%
10%
10%
60%
2%
12%
2%
2%
9%
1%
80%
26%
77%
20%
Melanie
New Castle
Llangollen
Park
Delaware River
Delaware River
DELAWARE
NEW JERSEY
Old Churchmans Rd
E Roosevelt Ave
W 7th St
Park Ave
Llangollen Blvd
Woodside Ave
Schaffer Blvd
Salenni Blvd
Appleby Rd
Riviera Dr
Sanford Rd
Rutgers Rd
Salem Dr
Industrial Park Rd
Lehigh Rd
37
58
273
13
141
9

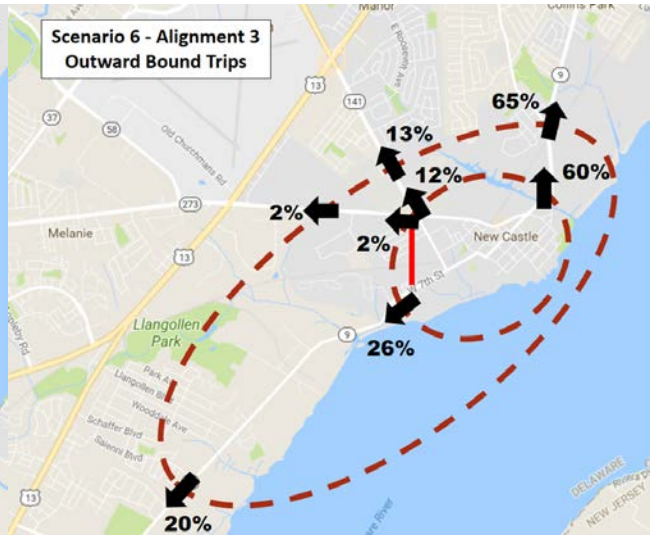

Existing Scenario
Inward Bound Trips
25%
20%
20%
20%
60%
55%
Melanie
New Castle
Llangollen Park


Scenario 4 - Alignment 1
Inward Bound Trips
14%
10%
20%
10%
37%
70%
39%
Melanie
New Castle
Llangollen Park


Scenario 6 - Alignment 3
Inward Bound Trips
11%
10%
9%
10%
2%
1%
80%
77%
Melanie
New Castle
Llangollen Park


Existing Scenario
Outward Bound Trips
30%
26%
30%
20%
50%
44%
Melanie
New Castle
Llangollen Park


Scenario 4 - Alignment 1
Outward Bound Trips
28%
25%
30%
30%
25%
40%
22%
Melanie
New Castle
Llangollen Park


Scenario 6 - Alignment 3
Outward Bound Trips
65%
13%
12%
60%
2%
2%
26%
20%
Melanie
New Castle
Llangollen Park

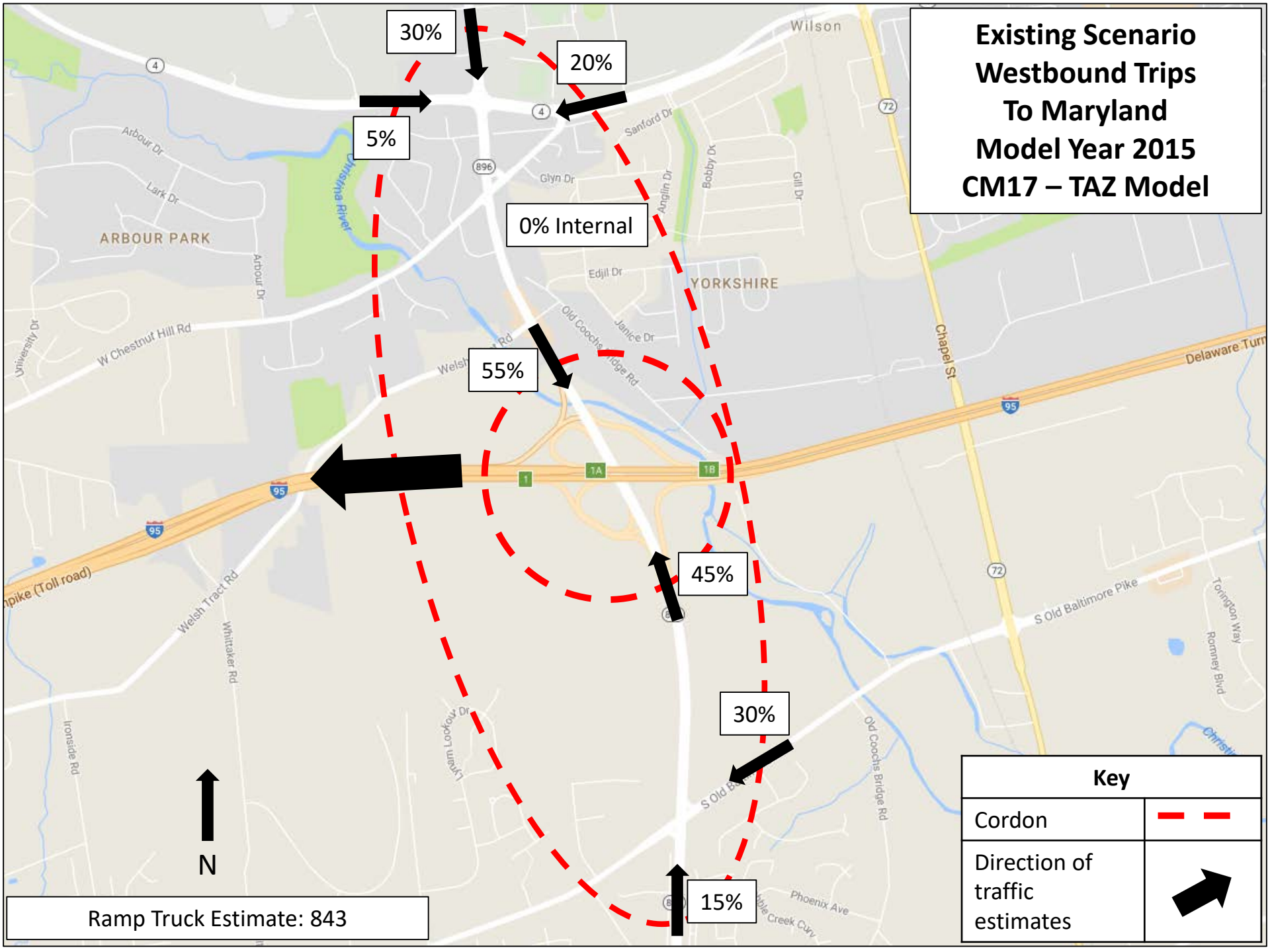
Interchange 1 Ramp Alternatives Study

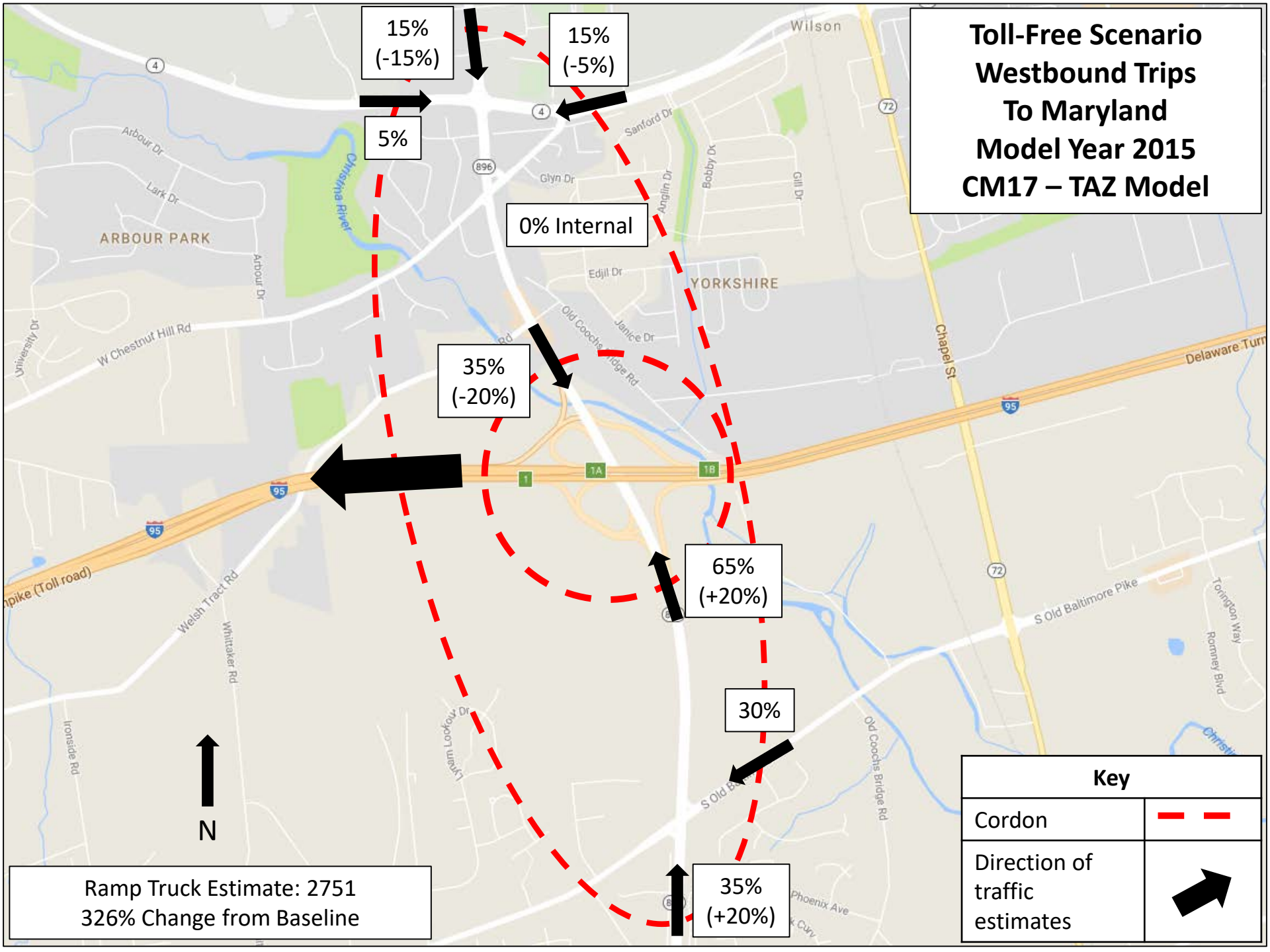
I-95 @ SR 896

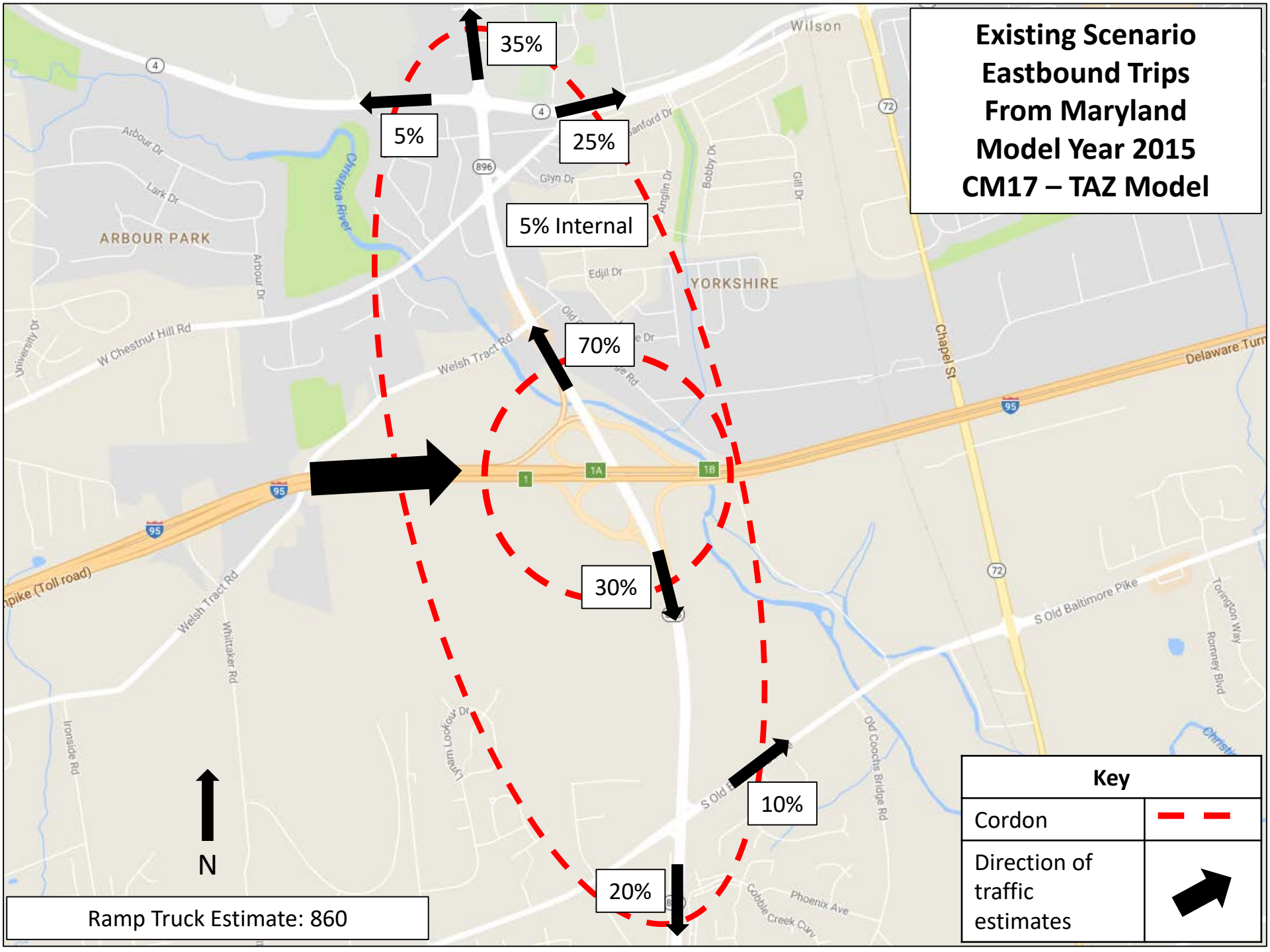
Benjamin Fisher

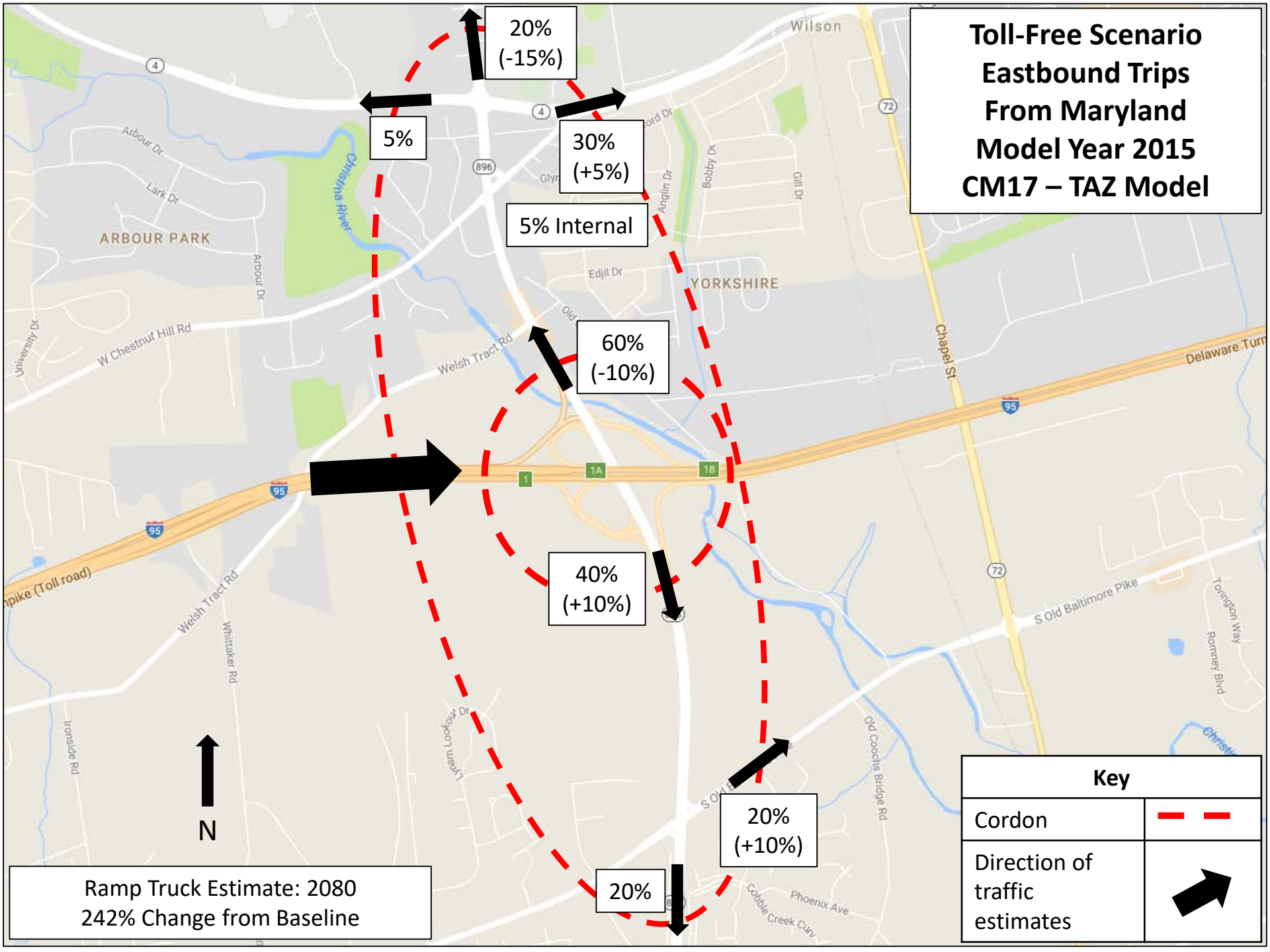
Rachel Chiquoine

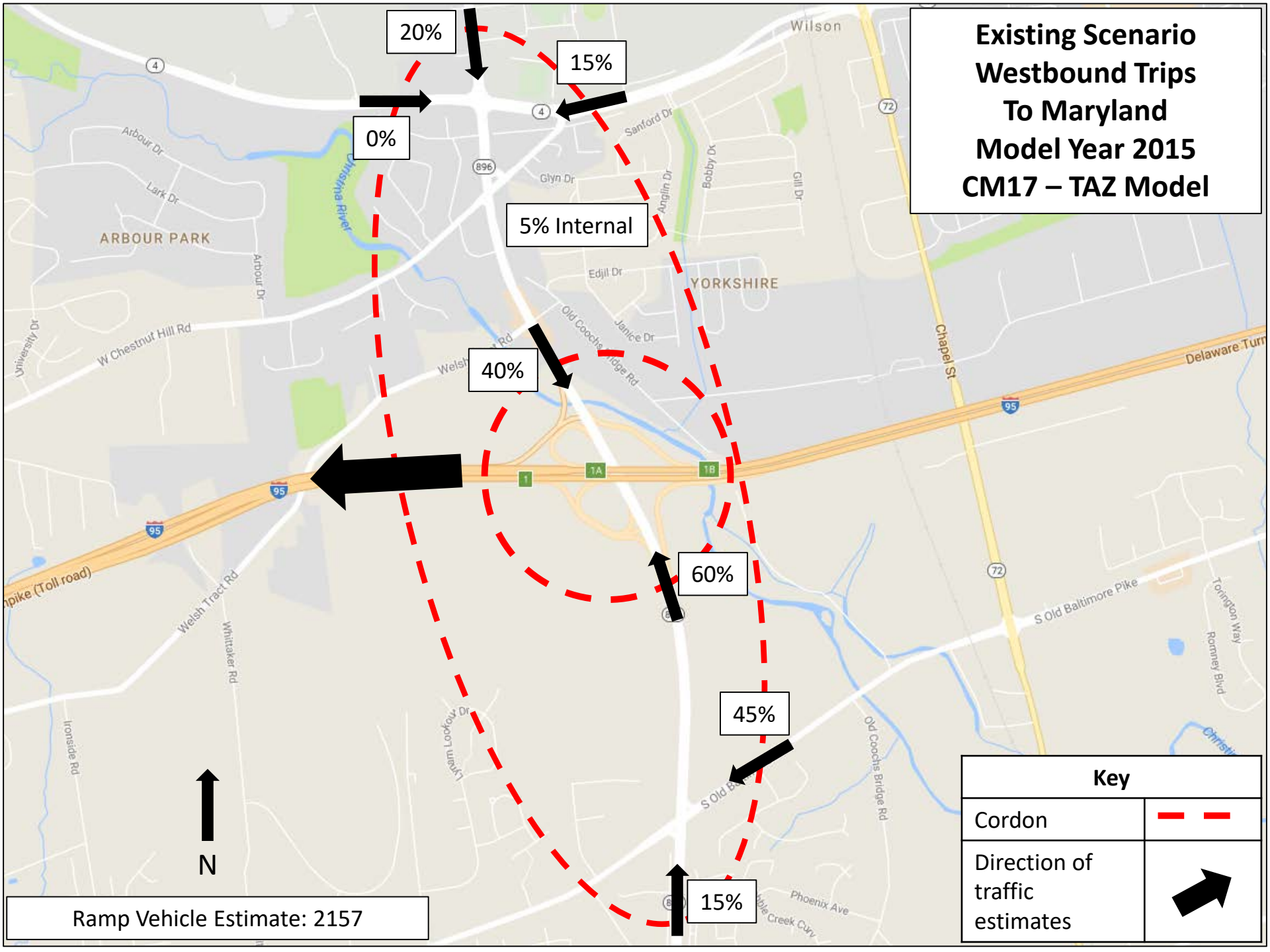
Rusty Lee

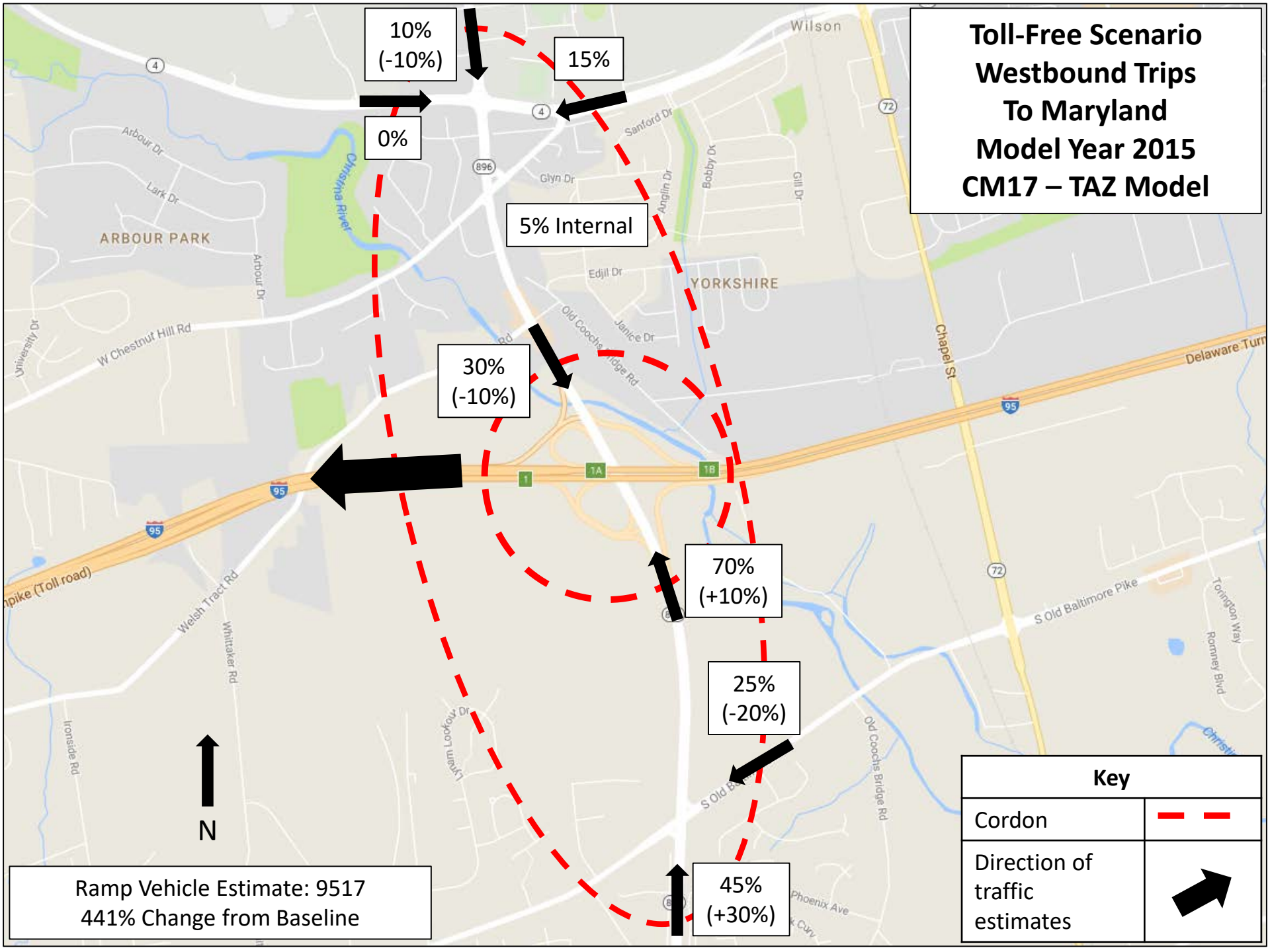

Existing Scenario
Westbound Trips
To Maryland
Model Year 2015
CM17 – TAZ Model
30%
20%
5%
0% Internal
55%
45%
30%
15%
N
Ramp Truck Estimate: 843
Key
Cordon
Direction of traffic estimates
ARBOUR PARK
YORKSHIRE
Wilson
Chapel St
Delaware Turn
S Old Baltimore Pike
Welsh Tract Rd
W Chestnut Hill Rd
Old Coochs Bridge Rd
Phoenix Ave
Ironside Rd
Whittaker Rd
Lynam Lookout Dr
Torington Way
Rommey Blvd
Sanford Dr
Glyn Dr
Edjil Dr
Janice Dr
Anglin Dr
Bobby Dr
Gill Dr
Arbour Dr
Lark Dr
Christina River
University Dr
Welsh Rd
Old Coochs Bridge Rd
Christina
Pike (Toll road)

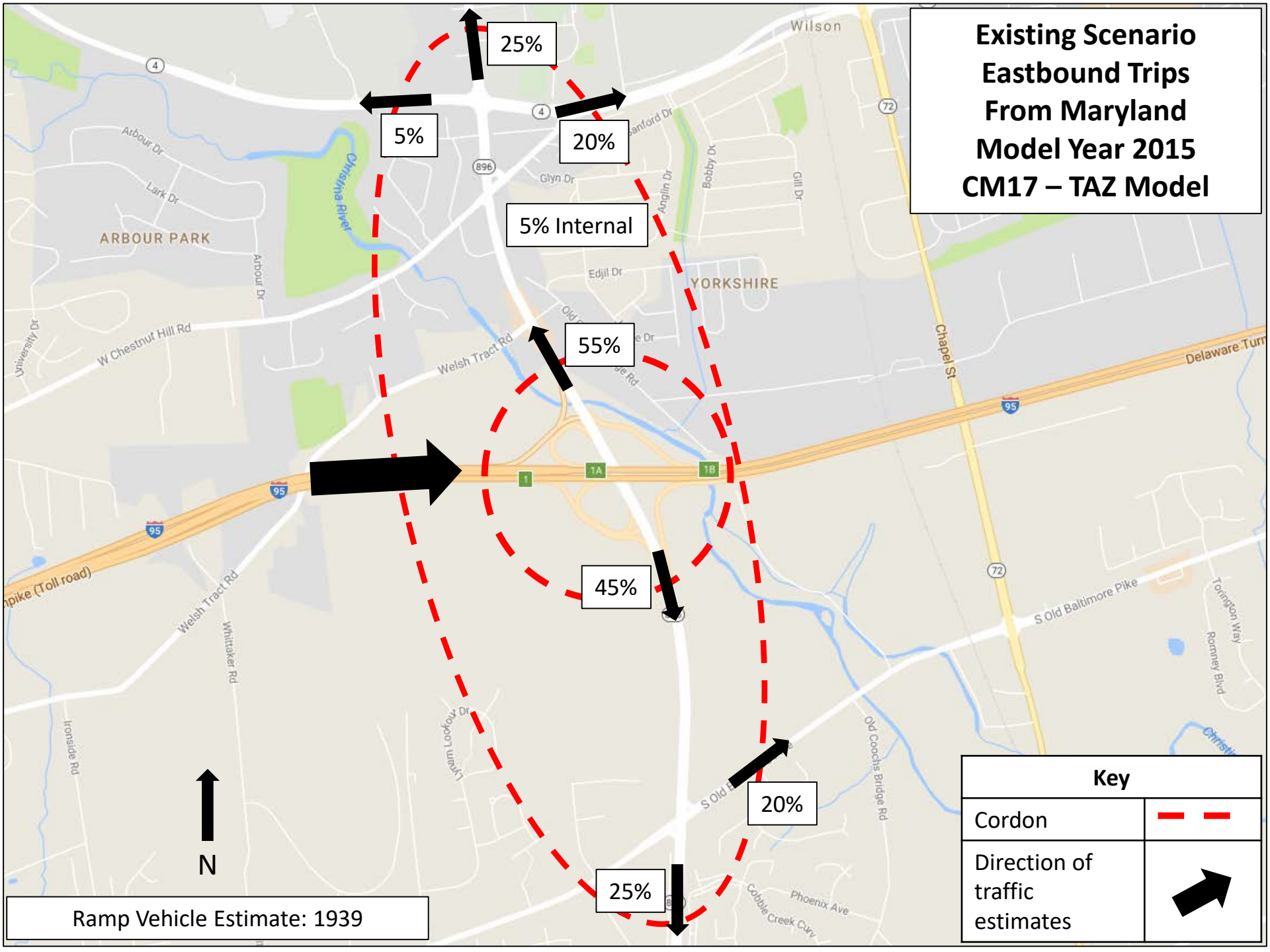

Toll-Free Scenario
Westbound Trips
To Maryland
Model Year 2015
CM17 – TAZ Model
15%
(-15%)
15%
(-5%)
5%
0% Internal
35%
(-20%)
65%
(+20%)
30%
35%
(+20%)
N
Key
Cordon
Direction of traffic estimates
Ramp Truck Estimate: 2751
326% Change from Baseline
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Chapel St
Delaware Turn
S Old Baltimore Pike
Old Coochs Bridge Rd
W Chestnut Hill Rd
Welsh Tract Rd
Whittaker Rd
Ironside Rd
Arbour Dr
Lark Dr
Glyn Dr
Sanford Dr
Anglin Dr
Bobby Dr
Gill Dr
Edjil Dr
Janice Dr
Torington Way
Romney Blvd
Phoenix Ave
Lynam Lookout Dr
University Dr
Pike (Toll road)

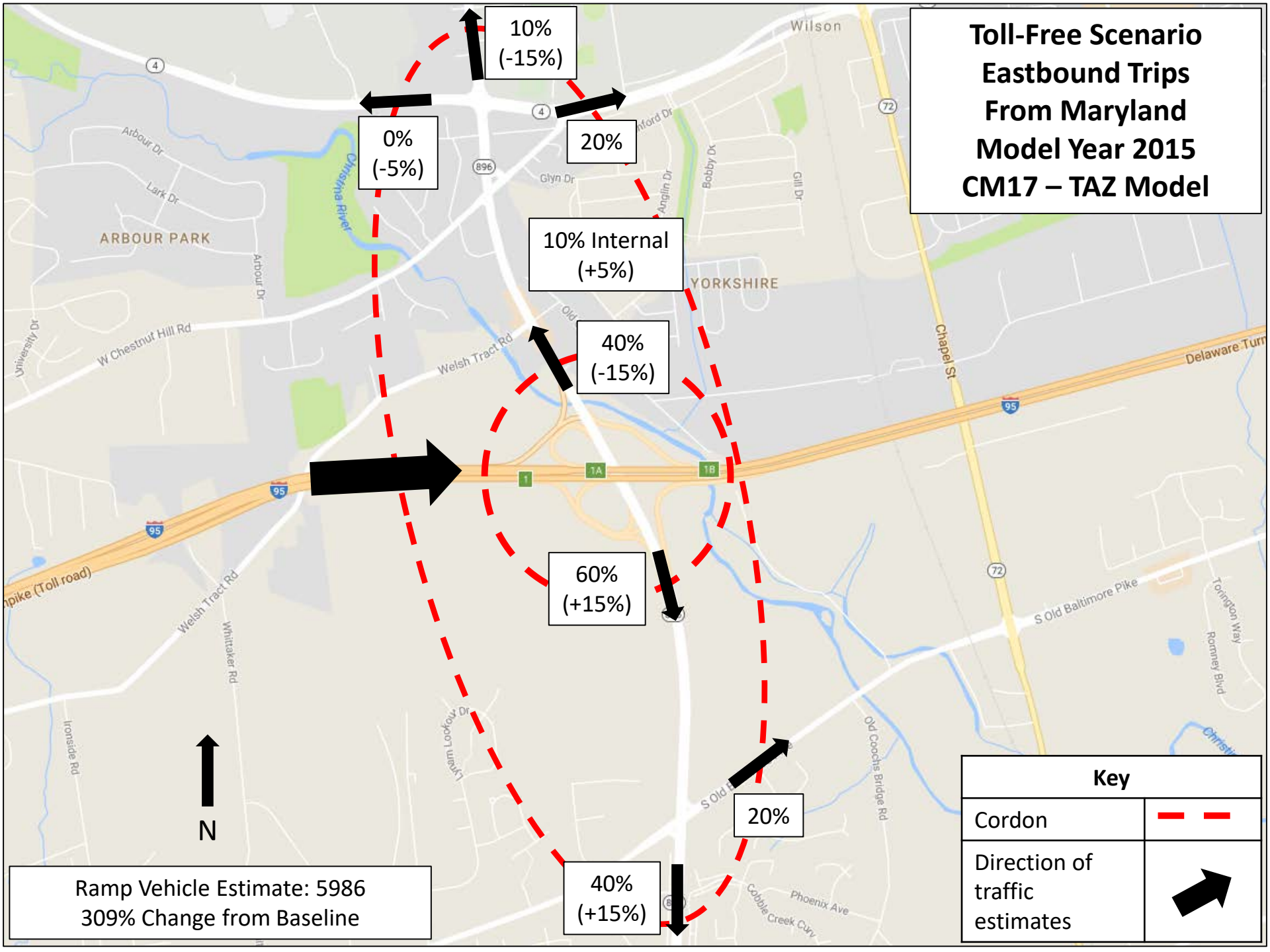

Existing Scenario
Eastbound Trips
From Maryland
Model Year 2015
CM17 – TAZ Model
35%
5%
25%
5% Internal
70%
30%
10%
20%
N
Ramp Truck Estimate: 860
Key
Cordon
Direction of traffic estimates
ARBOUR PARK
YORKSHIRE
Wilson
Chapel St
Delaware Turn
S Old Baltimore Pike
Welsh Tract Rd
W Chestnut Hill Rd
Christina River
Arbour Dr
Lark Dr
Glyn Dr
Edjil Dr
Anglin Dr
Bobby Dr
Gill Dr
Whittaker Rd
Ironside Rd
Old Coochs Bridge Rd
Phoenix Ave
Cobble Creek Cyn
Torrington Way
Romney Blvd
pike (Toll road)


Toll-Free Scenario
Eastbound Trips
From Maryland
Model Year 2015
CM17 – TAZ Model
20%
(-15%)
5%
30%
(+5%)
5% Internal
60%
(-10%)
40%
(+10%)
20%
(+10%)
20%
N
Key
Cordon
Direction of traffic estimates
Ramp Truck Estimate: 2080
242% Change from Baseline
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Welsh Tract Rd
W Chestnut Hill Rd
Chapel St
Delaware Turn
S Old Baltimore Pike
Old Coochs Bridge Rd
Phoenix Ave
Cobble Creek Curv
Ironside Rd
Whittaker Rd
Lynam Lookout Dr
Torington Way
Rommey Blvd
Edjil Dr
Anglin Dr
Bobby Dr
Gill Dr
Arbour Dr
Lark Dr
University Dr
Glyn
Old
1
1A
1B
4
72
896
95

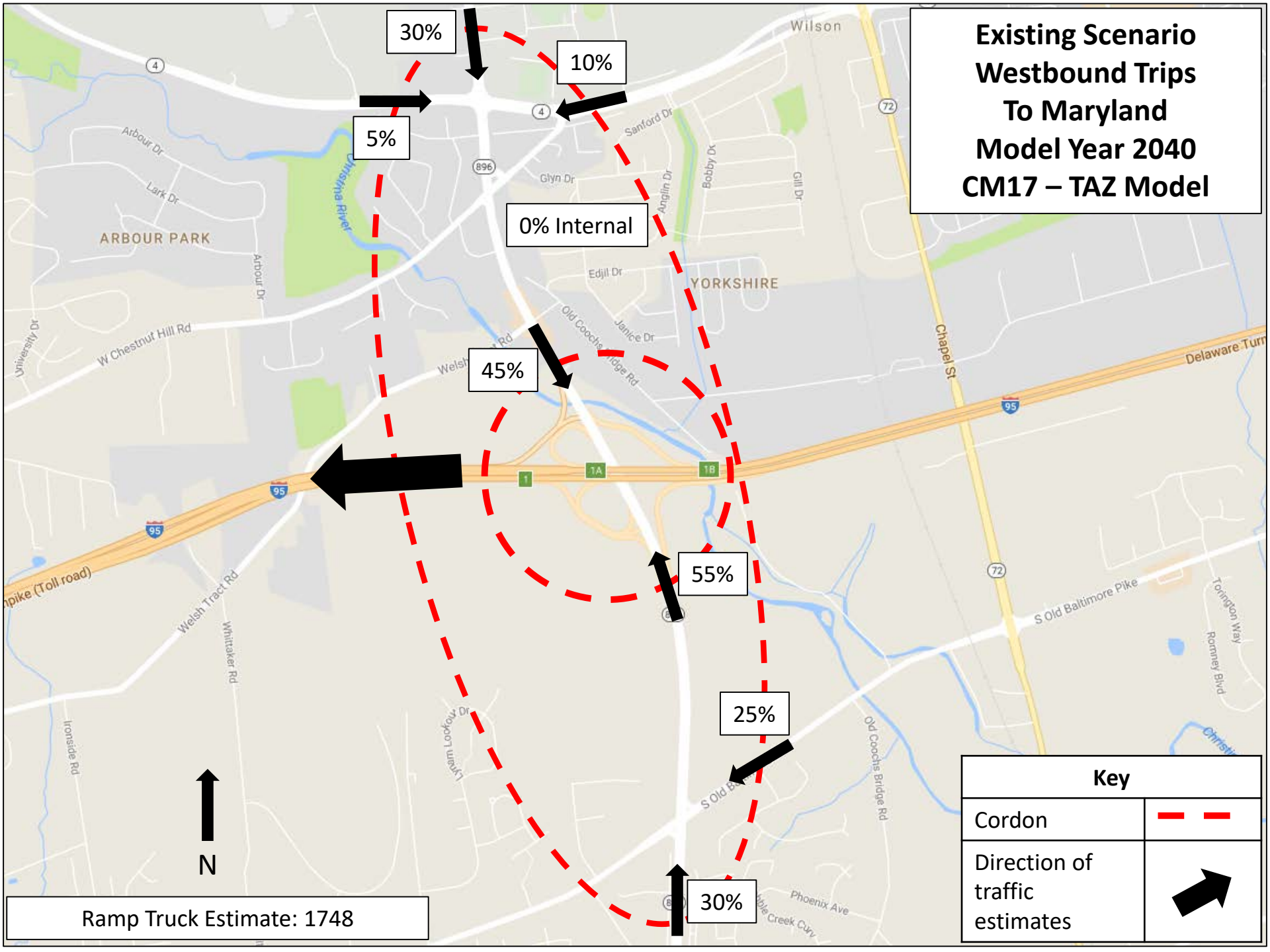

Existing Scenario
Westbound Trips
To Maryland
Model Year 2015
CM17 – TAZ Model
20%
15%
0%
5% Internal
40%
60%
45%
15%
N
Ramp Vehicle Estimate: 2157
Key
Cordon
Direction of traffic estimates
ARBOUR PARK
YORKSHIRE
Wilson
Delaware Turnpike (Toll road)
Chapel St
S Old Baltimore Pike
Welsh Tract Rd
W Chestnut Hill Rd
Old Coochs Bridge Rd
Phoenix Ave

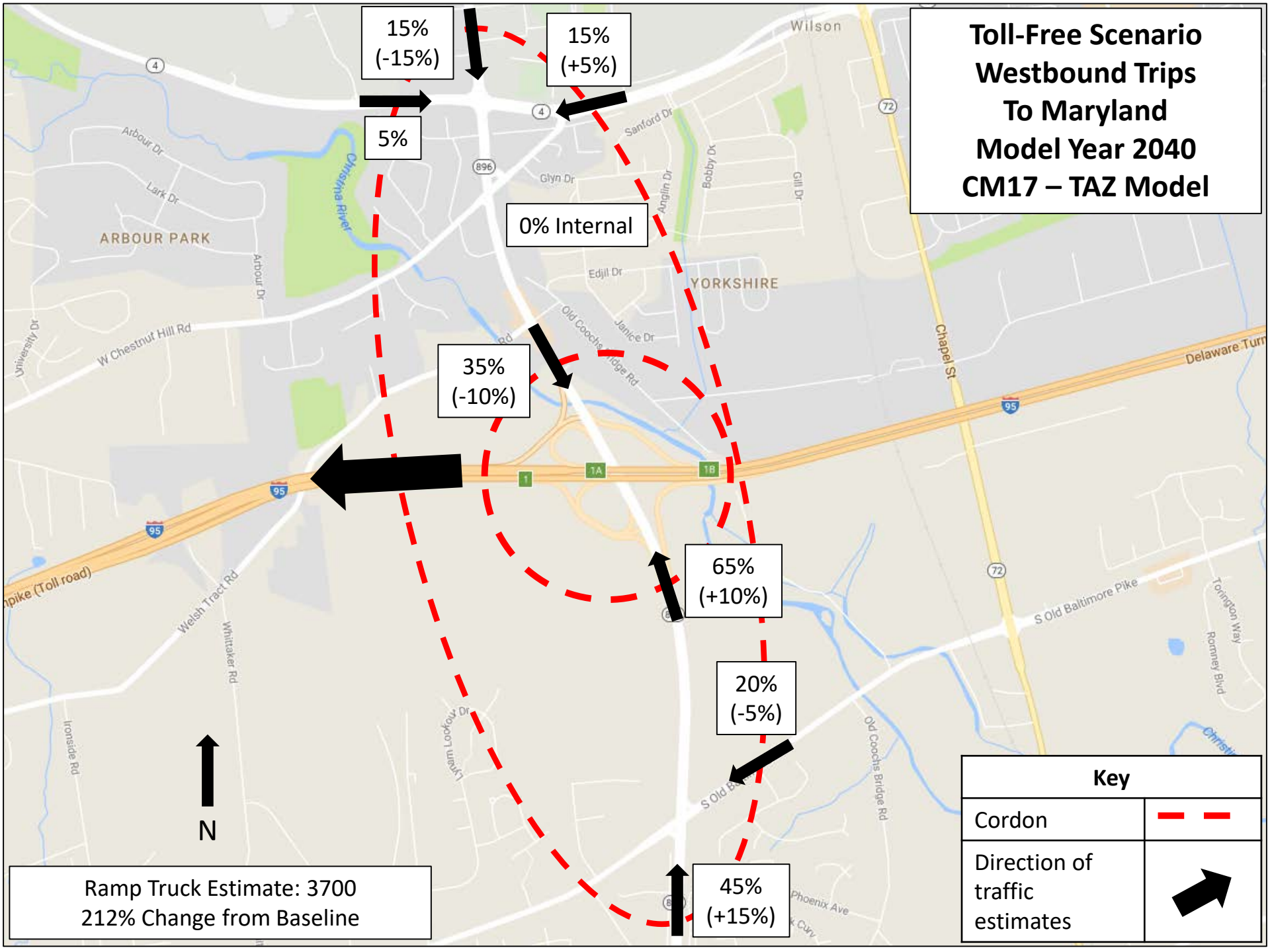

Toll-Free Scenario
Westbound Trips
To Maryland
Model Year 2015
CM17 – TAZ Model
10%
(-10%)
15%
0%
5% Internal
30%
(-10%)
70%
(+10%)
25%
(-20%)
45%
(+30%)
N
Key
Cordon
Direction of traffic estimates
Ramp Vehicle Estimate: 9517
441% Change from Baseline
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Chapel St
Delaware Turn
S Old Baltimore Pike
Old Coochs Bridge Rd
W Chestnut Hill Rd
Welsh Tract Rd
Whittaker Rd
Ironside Rd
Arbour Dr
Lark Dr
Glyn Dr
Sanford Dr
Anglin Dr
Bobby Dr
Gill Dr
Edjil Dr
Janice Dr
Torington Way
Romney Blvd
Phoenix Ave
Lynam Lookout Dr
University Dr
Pike (Toll road)

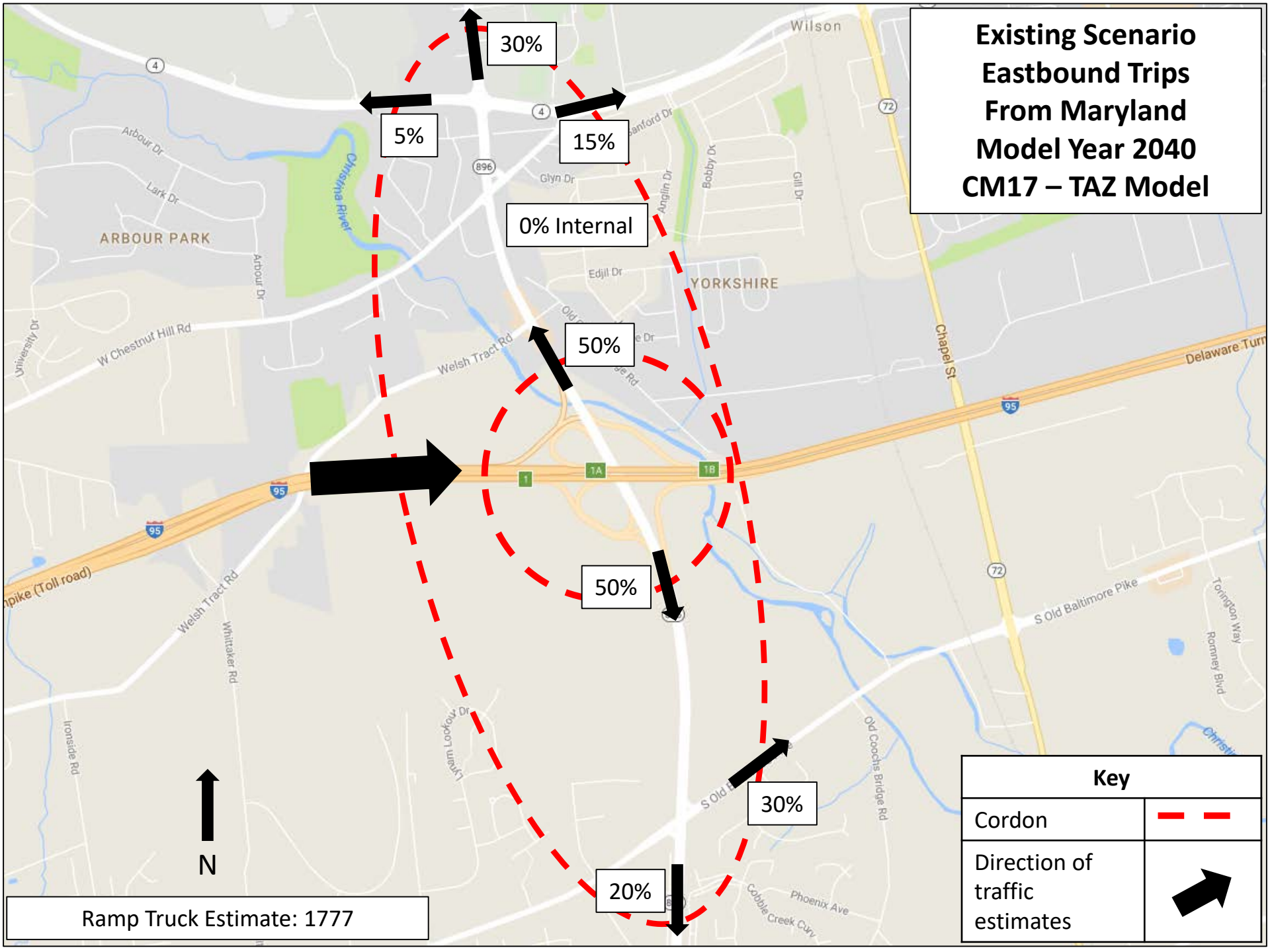

Existing Scenario
Eastbound Trips
From Maryland
Model Year 2015
CM17 – TAZ Model
25%
5%
20%
5% Internal
55%
45%
20%
25%
N
Key
Cordon
Direction of traffic estimates
Ramp Vehicle Estimate: 1939
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Welsh Tract Rd
W Chestnut Hill Rd
Chapel St
Delaware Turn
S Old Baltimore Pike
Old Coochs Bridge Rd
Phoenix Ave
Cobble Creek Curv
Ironside Rd
Whittaker Rd
Glyn Dr
Edjil Dr
Arbour Dr
Lark Dr
Anglin Dr
Bobby Dr
Gill Dr
Torington Way
Rormney Blvd
Lynam Lookout Dr
University Dr
Pike (Toll road)

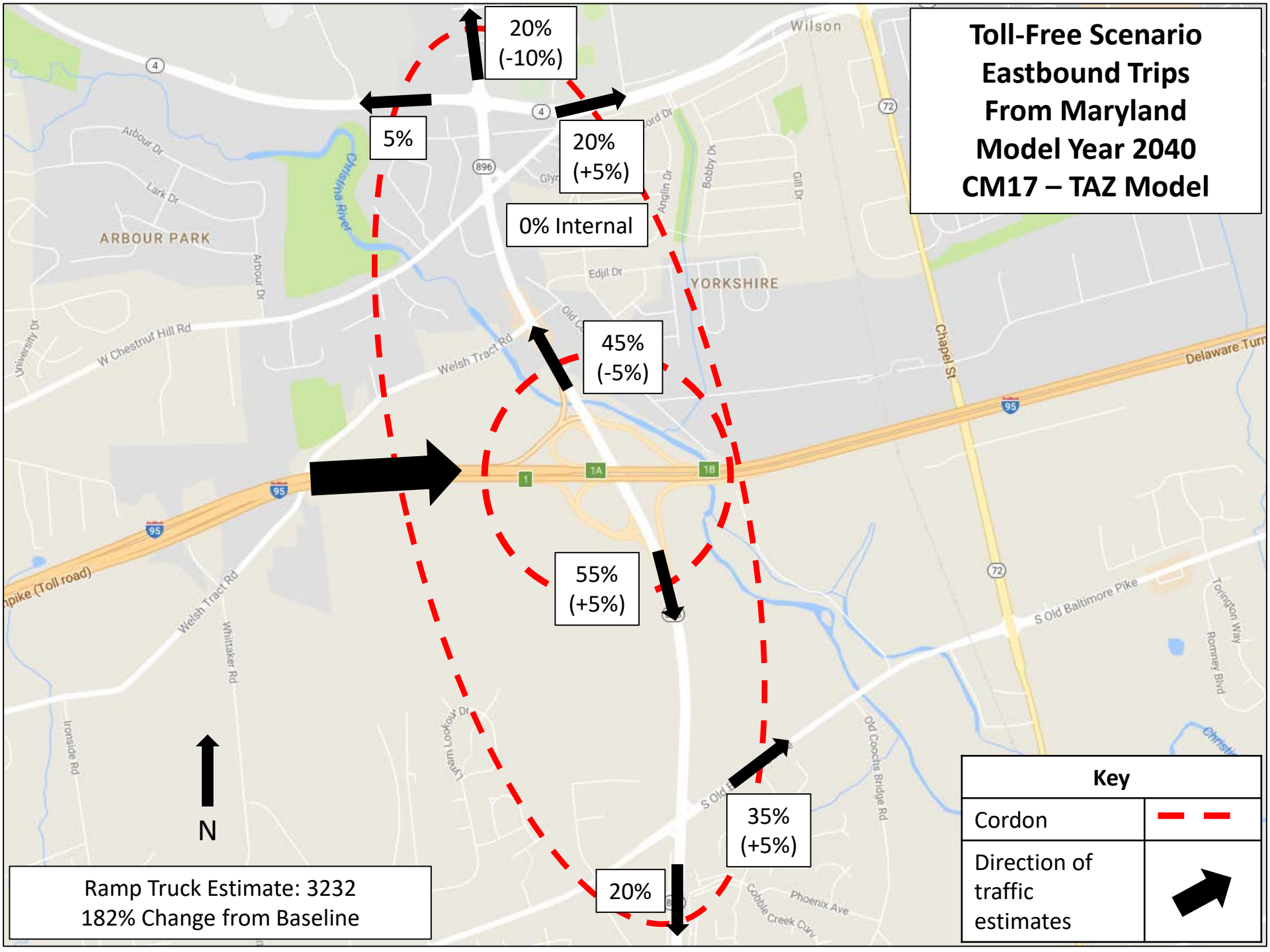

Toll-Free Scenario
Eastbound Trips
From Maryland
Model Year 2015
CM17 – TAZ Model
10%
(-15%)
0%
(-5%)
20%
10% Internal
(+5%)
40%
(-15%)
60%
(+15%)
20%
40%
(+15%)
N
Ramp Vehicle Estimate: 5986
309% Change from Baseline
Key
Cordon
Direction of traffic estimates
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Welsh Tract Rd
W Chestnut Hill Rd
Chapel St
Delaware Turn
S Old Baltimore Pike
Old Coochs Bridge Rd
Phoenix Ave
Cobble Creek Curv
Ironside Rd
Whittaker Rd
Glyn Dr
Arbour Dr
Lark Dr
Bobby Dr
Gill Dr
Anglin Dr
Torington Way
Rommey Blvd
Lynam Lookout Dr
University Dr
Old
1
1A
1B
4
72
896
95

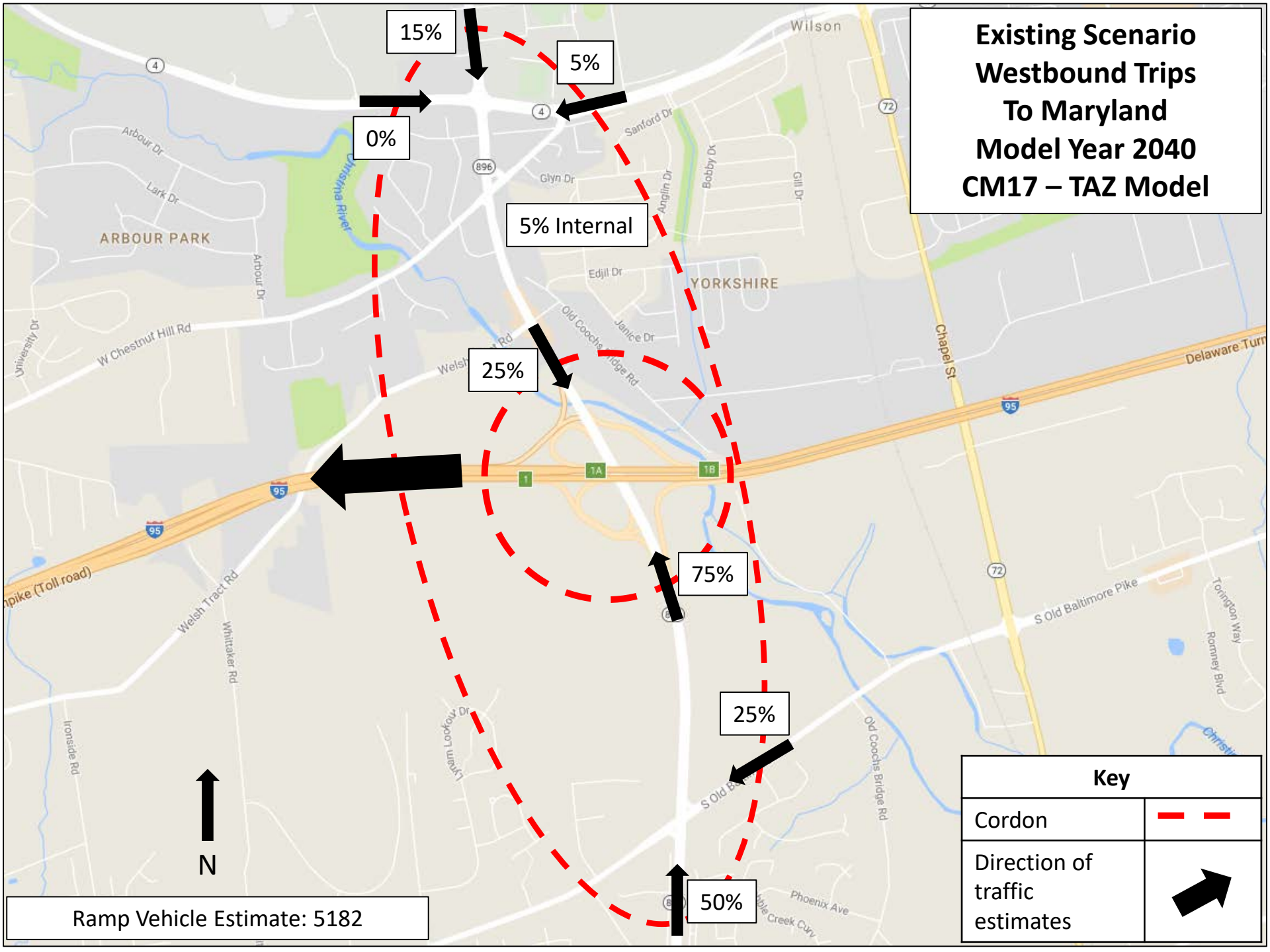
Model Year 2040

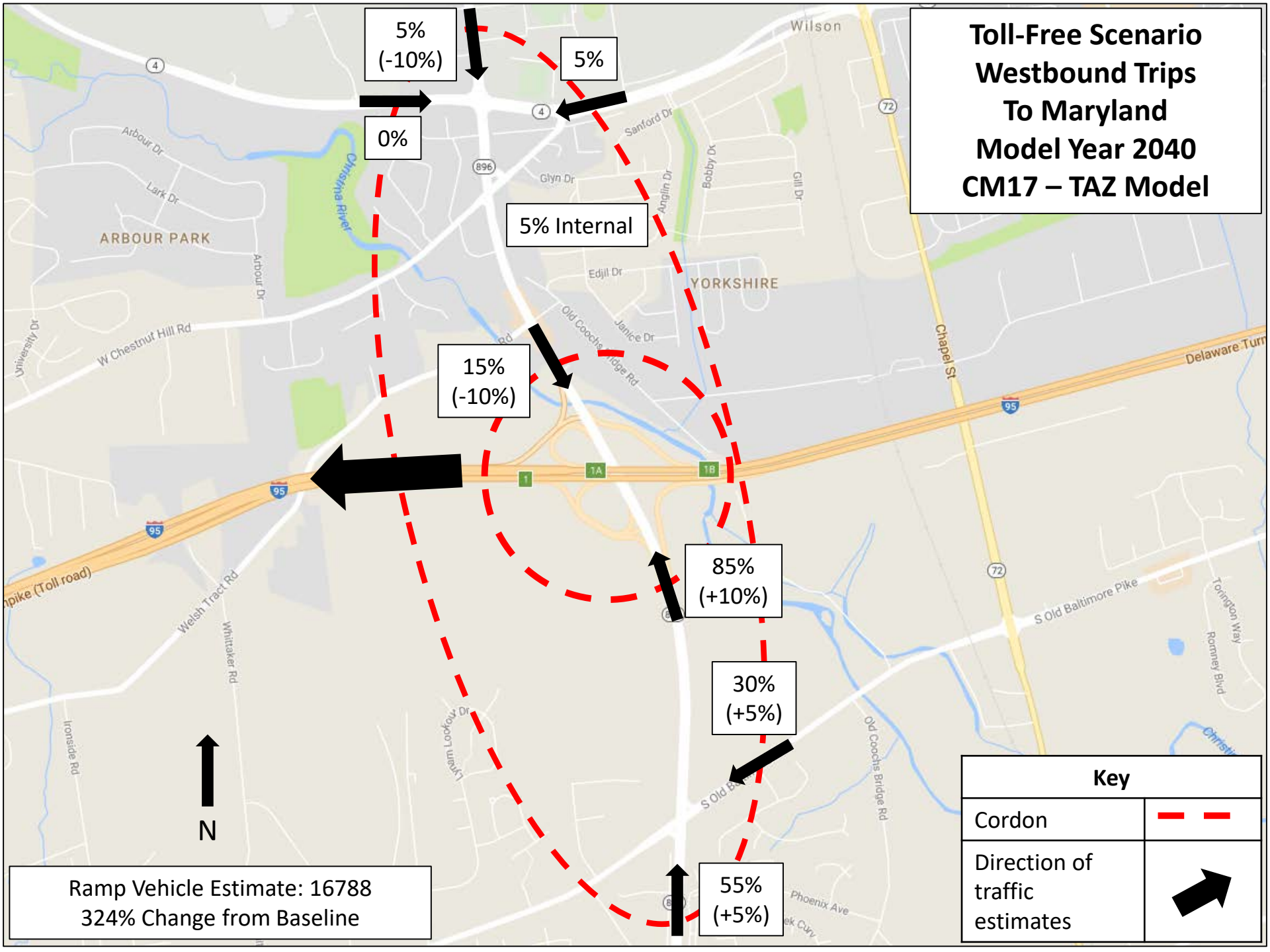

Existing Scenario
Westbound Trips
To Maryland
Model Year 2040
CM17 – TAZ Model
30%
10%
5%
0% Internal
45%
55%
25%
30%
N
Key
Cordon
Direction of traffic estimates
Ramp Truck Estimate: 1748
ARBOUR PARK
YORKSHIRE
Wilson
Chapel St
Delaware Turn
S Old Baltimore Pike
Old Coochs Bridge Rd
Welsh Tract Rd
W Chestnut Hill Rd
Arbour Dr
Lark Dr
Glyn Dr
Sanford Dr
Anglin Dr
Bobby Dr
Gill Dr
Edjil Dr
Janice Dr
Whittaker Rd
Ironside Rd
Lynam Lookout Dr
Phoenix Ave
Torington Way
Rormney Blvd
Christina River
Pike (Toll road)

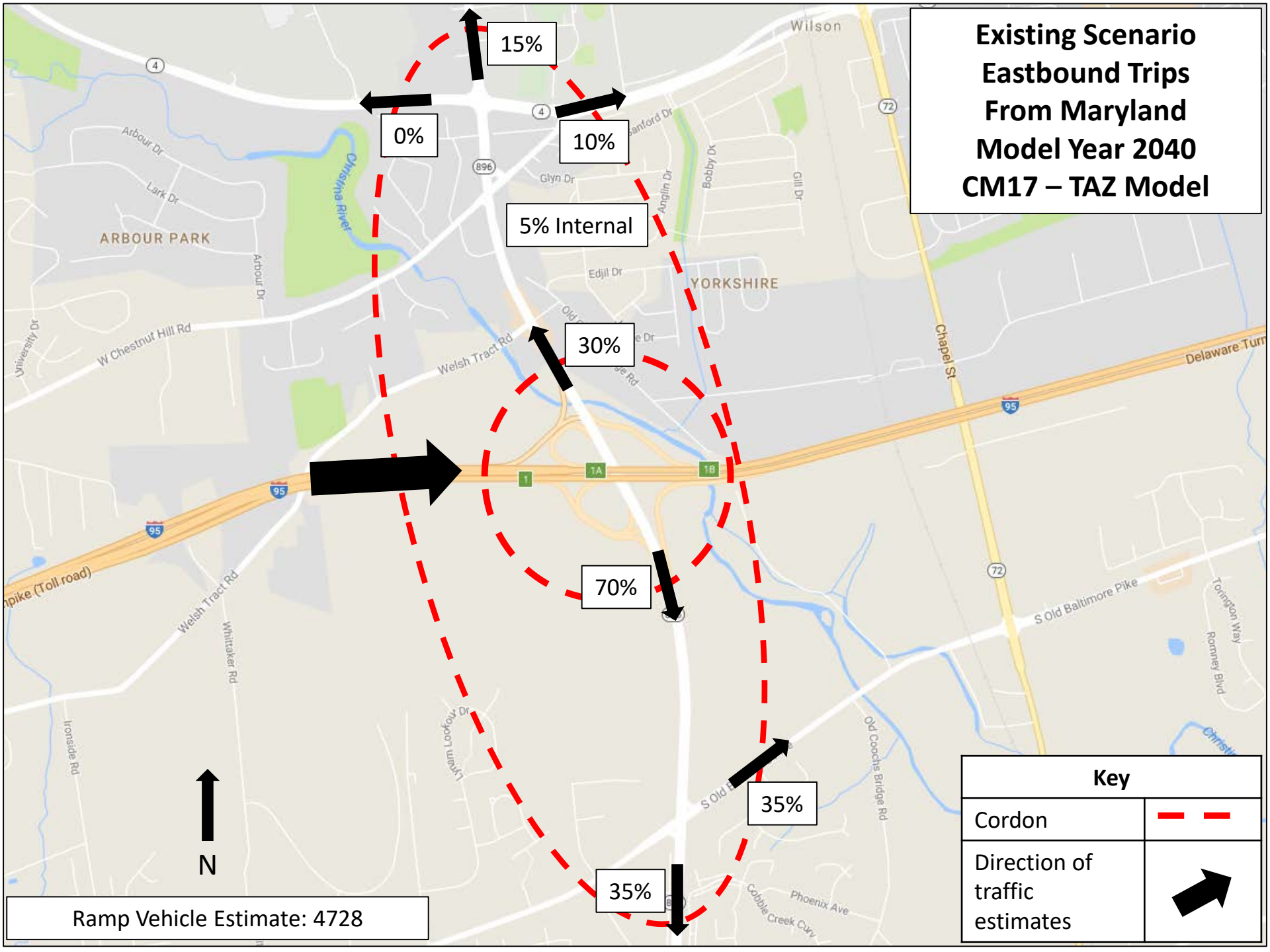

Toll-Free Scenario
Westbound Trips
To Maryland
Model Year 2040
CM17 – TAZ Model
15%
(-15%)
15%
(+5%)
5%
0% Internal
35%
(-10%)
65%
(+10%)
20%
(-5%)
45%
(+15%)
N
Ramp Truck Estimate: 3700
212% Change from Baseline
Key
Cordon
Direction of traffic estimates
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Chapel St
Delaware Turn
S Old Baltimore Pike
Old Coochs Bridge Rd
W Chestnut Hill Rd
Welsh Tract Rd
Whittaker Rd
Ironside Rd
Arbour Dr
Lark Dr
Glyn Dr
Sanford Dr
Anglin Dr
Bobby Dr
Gill Dr
Edjil Dr
Janice Dr
Phoenix Ave
Torington Way
Romney Blvd
Lynam Lookout Dr
University Dr
Pike (Toll road)

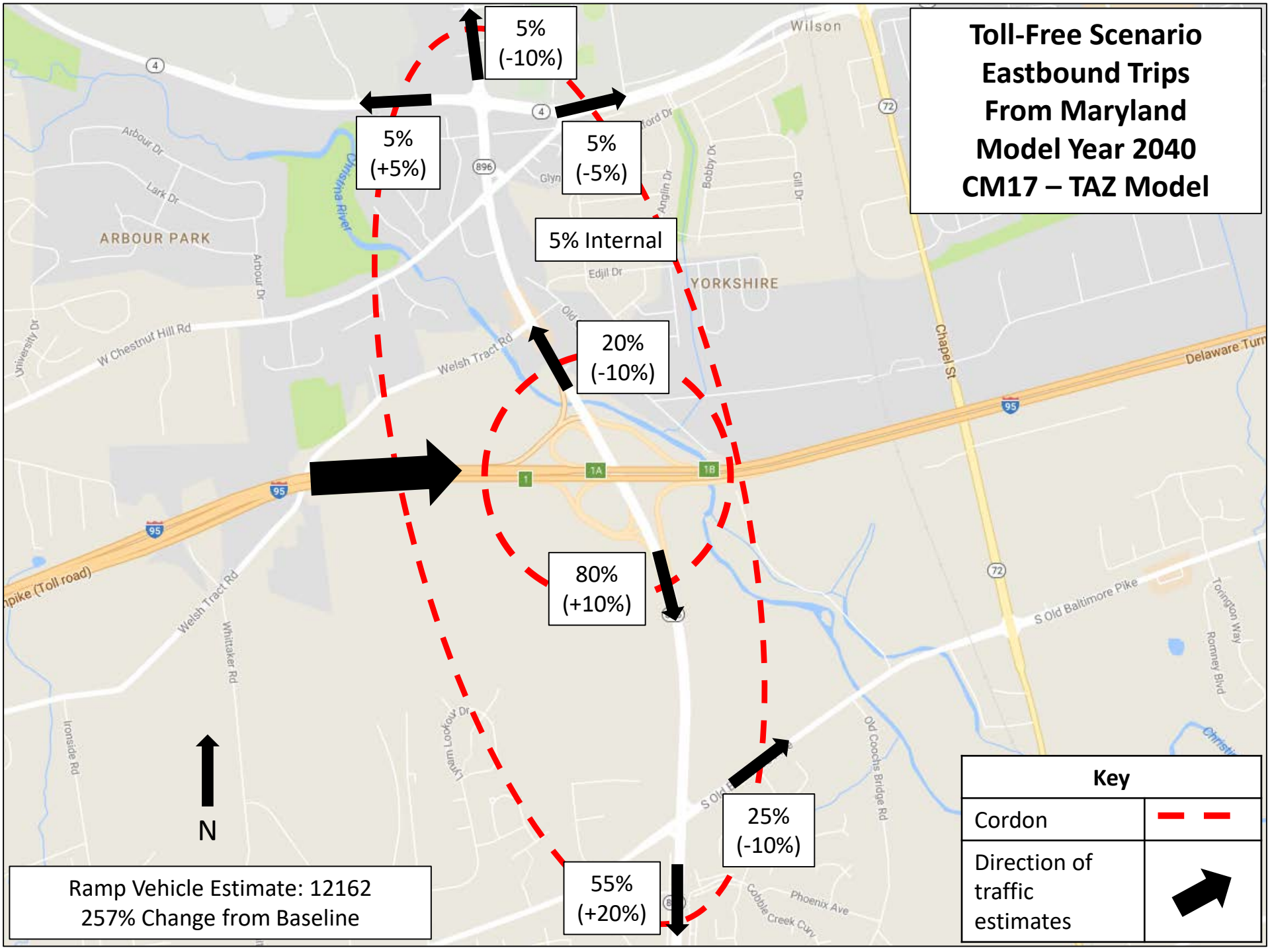

Existing Scenario
Eastbound Trips
From Maryland
Model Year 2040
CM17 – TAZ Model
30%
5%
15%
0% Internal
50%
50%
30%
20%
N
Key
Cordon
Direction of traffic estimates
Ramp Truck Estimate: 1777
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Chapel St
Delaware Turn
S Old Baltimore Pike
Welsh Tract Rd
W Chestnut Hill Rd
Arbour Dr
Lark Dr
Glyn Dr
Edjil Dr
Anglin Dr
Bobby Dr
Gill Dr
Whittaker Rd
Ironside Rd
Lynam Lookout Dr
Old Coochs Bridge Rd
Phoenix Ave
Cobble Creek Curv
Torington Way
Romney Blvd
University Dr
Sanford Dr
Pike (Toll road)


Toll-Free Scenario
Eastbound Trips
From Maryland
Model Year 2040
CM17 – TAZ Model
20%
(-10%)
5%
20%
(+5%)
0% Internal
45%
(-5%)
55%
(+5%)
35%
(+5%)
20%
N
Ramp Truck Estimate: 3232
182% Change from Baseline
Key
Cordon
Direction of traffic estimates
ARBOUR PARK
YORKSHIRE
Wilson
Chesapeake River
Welsh Tract Rd
W Chestnut Hill Rd
Chapel St
S Old Baltimore Pike
Delaware Turnpike (Toll road)
Old Coochs Bridge Rd
Phoenix Ave


Existing Scenario
Westbound Trips
To Maryland
Model Year 2040
CM17 – TAZ Model
15%
5%
0%
5% Internal
25%
75%
25%
50%
N
Ramp Vehicle Estimate: 5182
Key
Cordon
Direction of traffic estimates
ARBOUR PARK
YORKSHIRE
Wilson
Delaware Turnpike (Toll road)
Chapel St
S Old Baltimore Pike
Welsh Tract Rd
W Chestnut Hill Rd
Old Coochs Bridge Rd
Phoenix Ave


Toll-Free Scenario
Westbound Trips
To Maryland
Model Year 2040
CM17 – TAZ Model
5%
(-10%)
5%
0%
5% Internal
15%
(-10%)
85%
(+10%)
30%
(+5%)
55%
(+5%)
N
Ramp Vehicle Estimate: 16788
324% Change from Baseline
Key
Cordon
Direction of traffic estimates
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Chapel St
Delaware Turn
S Old Baltimore Pike
Old Coochs Bridge Rd
W Chestnut Hill Rd
Welsh Tract Rd
Whittaker Rd
Ironside Rd
Phoenix Ave
Torington Way
Rommey Blvd
Sanford Dr
Glyn Dr
Edjil Dr
Janice Dr
Anglin Dr
Bobby Dr
Gill Dr
Arbour Dr
Lark Dr
University Dr
Lynam Lookout Dr
Old Coochs Bridge Rd
Pike (Toll road)


Existing Scenario
Eastbound Trips
From Maryland
Model Year 2040
CM17 – TAZ Model
15%
0%
10%
5% Internal
30%
70%
35%
35%
N
Key
Cordon
Direction of traffic estimates
Ramp Vehicle Estimate: 4728
ARBOUR PARK
YORKSHIRE
Wilson
Christina River
Chapel St
Delaware Turn
S Old Baltimore Pike
Welsh Tract Rd
W Chestnut Hill Rd
Arbour Dr
Lark Dr
Glyn Dr
Edjil Dr
Anglin Dr
Bobby Dr
Gill Dr
Whittaker Rd
Ironside Rd
Lynam Lookout Dr
Old Coochs Bridge Rd
Phoenix Ave
Cobble Creek Curv
Torington Way
Romney Blvd
University Dr
Sanford Dr
Pike (Toll road)


Toll-Free Scenario
Eastbound Trips
From Maryland
Model Year 2040
CM17 – TAZ Model
5%
(-10%)
5%
(+5%)
5%
(-5%)
5% Internal
20%
(-10%)
80%
(+10%)
25%
(-10%)
55%
(+20%)
N
Key
Cordon
Direction of traffic estimates
Ramp Vehicle Estimate: 12162
257% Change from Baseline
ARBOUR PARK
YORKSHIRE
Wilson
Chapel St
Delaware Turn
S Old Baltimore Pike
Welsh Tract Rd
W Chestnut Hill Rd
Christina River
Arbour Dr
Lark Dr
Edjil Dr
Anglin Dr
Bobby Dr
Gill Dr
Whittaker Rd
Ironside Rd
Lynam Lookout Dr
Old Coochs Bridge Rd
Phoenix Ave
Cobble Creek Curv
Torington Way
Romney Blvd
University Dr
Old
1
1A
1B
4
72
896
95

Assumptions

- Truck Volumes Taken from TRKV
- For Toll-Free Ramp Scenarios, a portion of traffic exited and immediately re-entered I-95 as a loophole
  - Remedied by neglecting volume contribution
- Toll-Free Ramp Volumes include traffic entering mainline I-95 toll plaza

Delaware Center for Transportation University of Delaware Newark, Delaware 19716

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Director, Institutional Equity & Title IX Coordinator
305 Hullihen Hall
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(302) 831-8063
titleixcoordinator@udel.edu

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Director, Office of Disability Support Services
Alison Hall, Suite 130,
Newark, DE 19716
(302) 831-4643
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