# Camden Road

## Alternatives Analysis



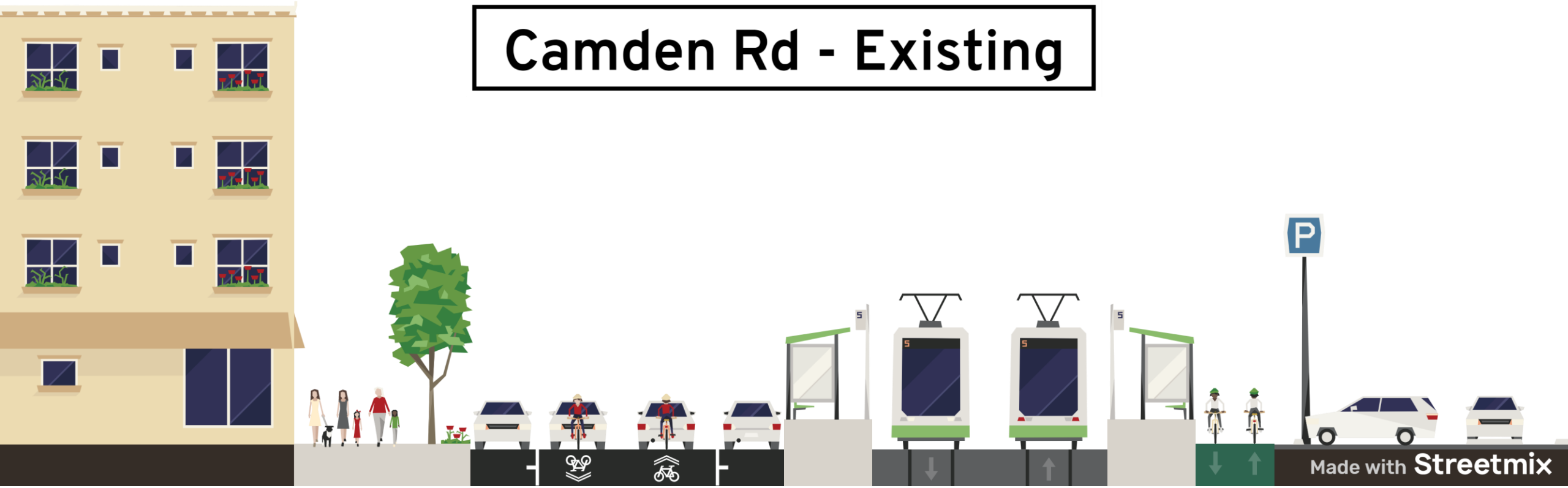

As the heart of South End, it is a place where the community gathers for festivals like the Small Business Saturday and Christmas Tree lighting, and for nightly entertainment, both programmed and improvised.
-SOUTHEND VISION PLAN, 2017

# Why Consider this Project?

- Multimodal Safety
  - Simplify movements at intersections
  - Potential 15% crash reduction
- Maintains Transportation Network Connectivity (Versus Full Closure) and Creates Multi-Modal Corridor
  - Add pedestrian / bicycle capacity
  - Maintains on-street parking
- Potential Traffic Calming Benefits
  - Horizontal shifts, narrow roadway,  creates 'friction' at edges, activates the street
- Can Be Implemented on a Short-Term / Demo Basis
  - Fairly easy to implement with drums, water barrier, signage, etc. Some signal work required.
  - Allows us to test and gather feedback before considering permanent implementation.
  - Place-making opportunity
- COVID
  - Reallocate roadway pavement to support social distancing/outdoor dining, deliveries, curbside pickups, retail overflow.

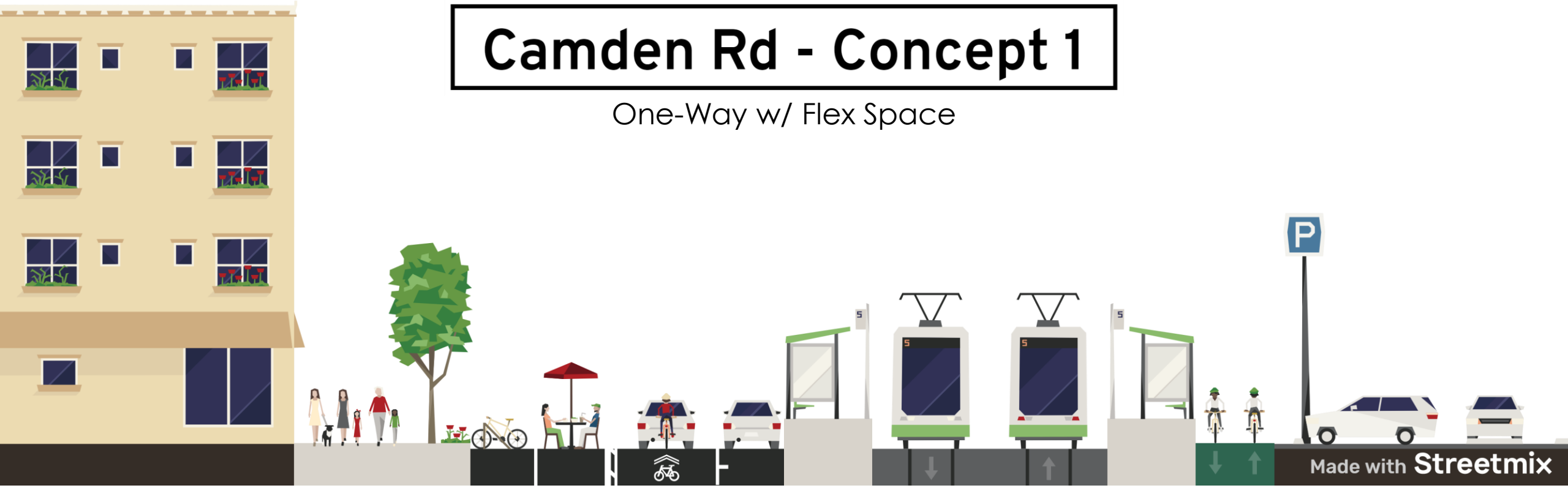
# CONCEPTS

# Camden Rd - Existing



# Camden Rd - Concept 1

One-Way w/ Flex Space




PROS

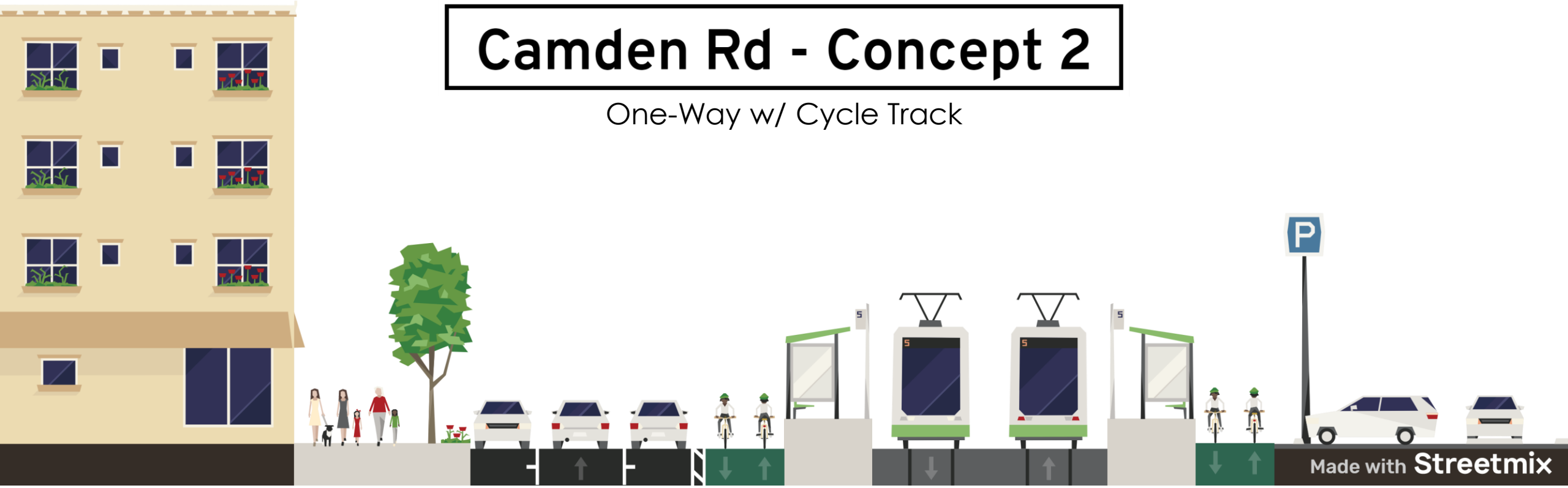
- Flex Space
- One-Way: simple/safer Intx operations

CONS

- Not a complete street
- One-Way: possible speeding, loss of vehicular capacity

# Camden Rd - Concept 2

One-Way w/ Cycle Track




PROS

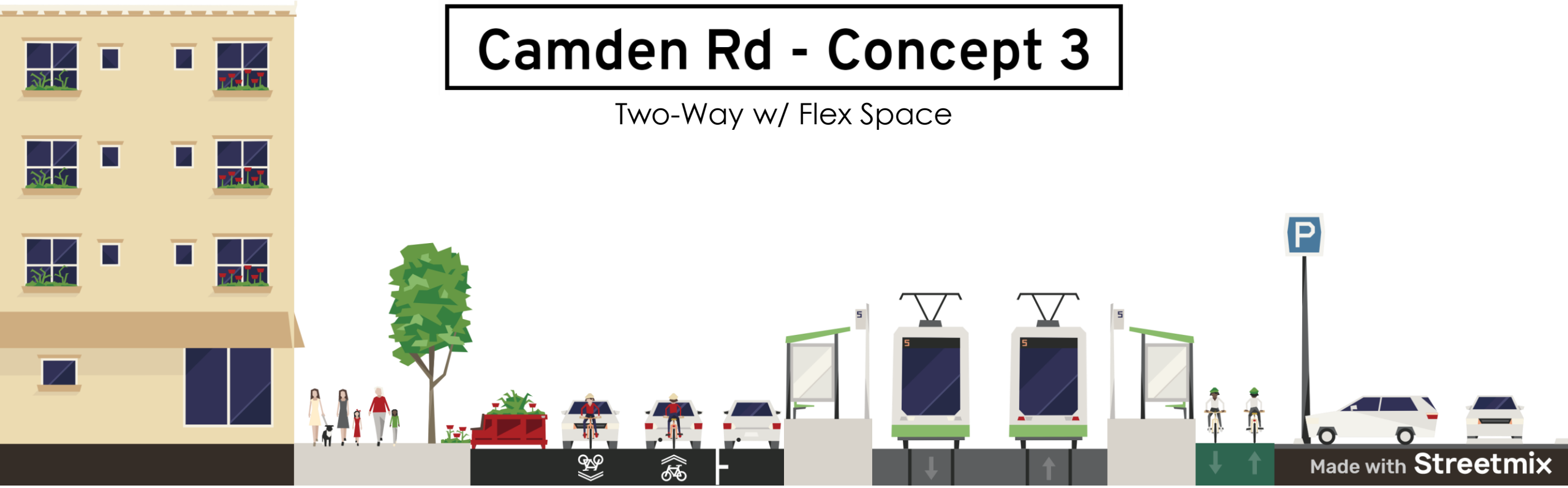
- Complete street/Relieves rail trail congestion
- Flex-space in lieu of parking?
- Maintains > 80% parking
- One-Way: simple/safer Intx operations

CONS

- One-Way: possible speeding, loss of vehicular capacity

# Camden Rd - Concept 3

Two-Way w/ Flex Space




PROS

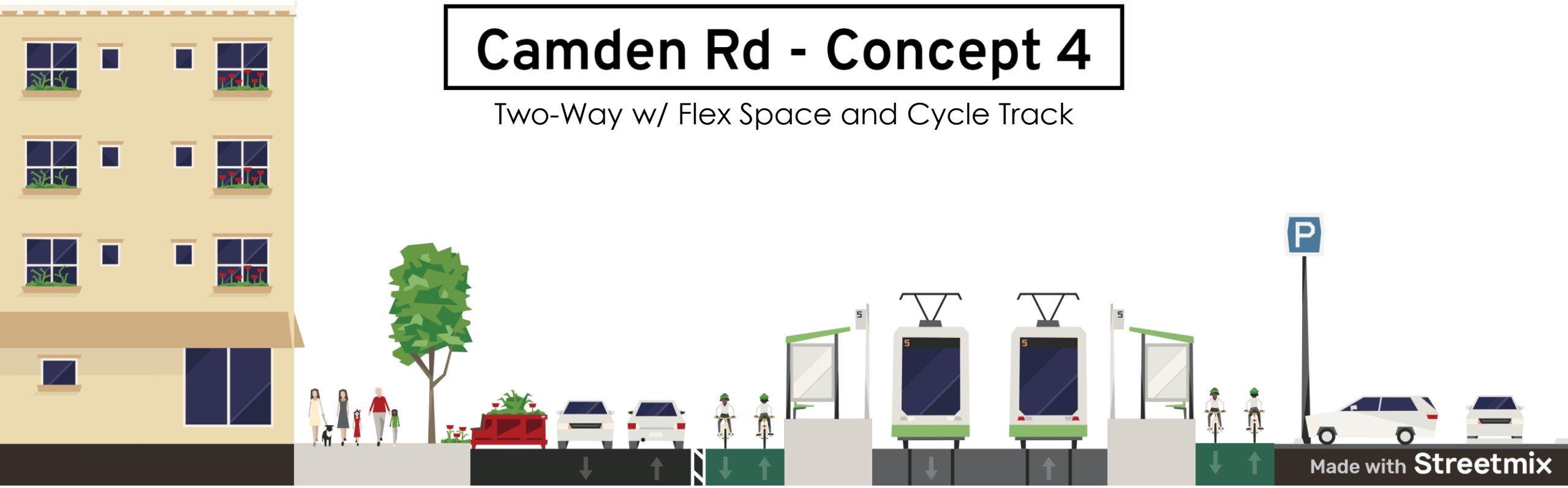
- Two-way operations
- Some flex-space in lieu of parking?
- Maintains > 50% parking

CONS

- Not a complete street
- Lingering intersection safety concerns
- Tighter flex space
- Status quo

# Camden Rd - Concept 4

Two-Way w/ Flex Space and Cycle Track



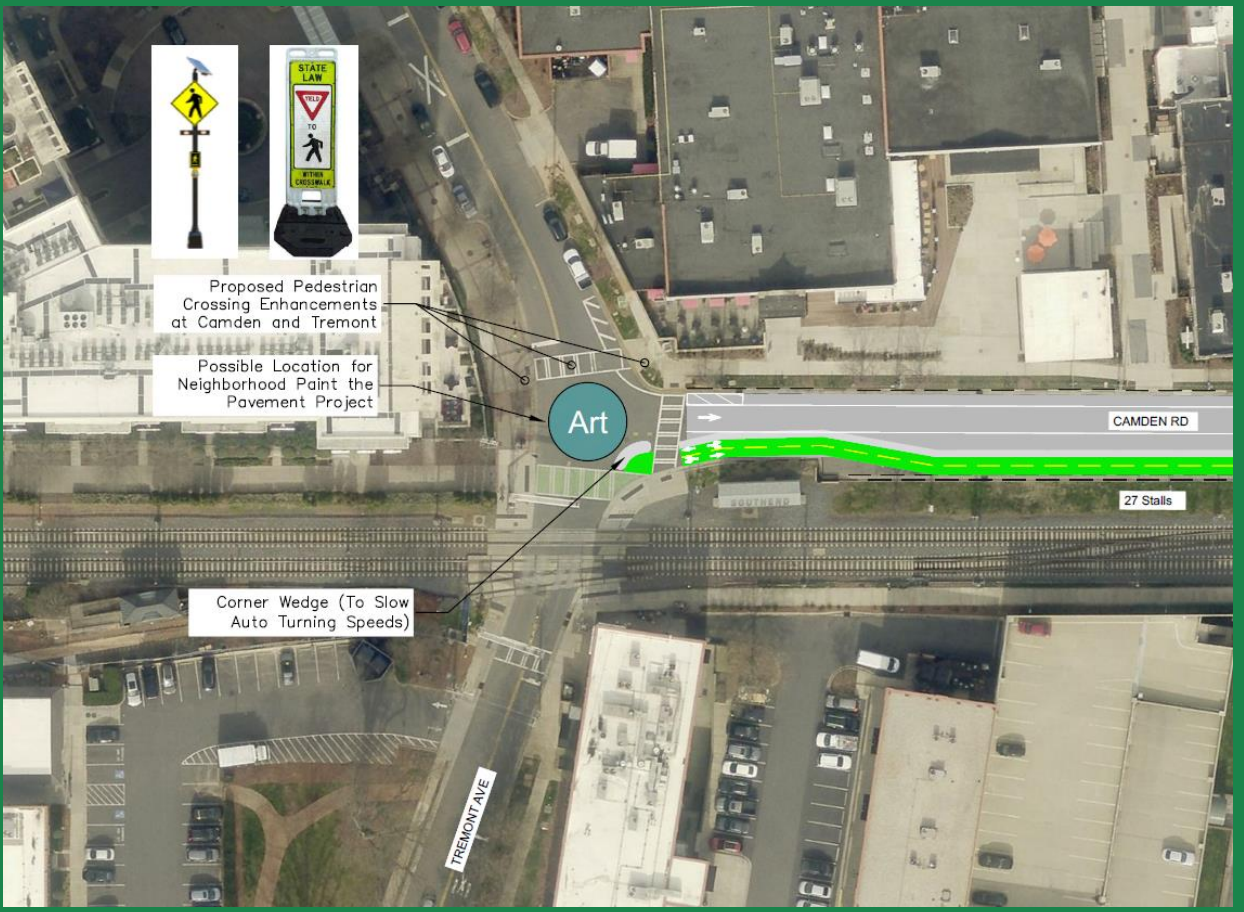

PROS

- Complete street PLUS
- Maintains two-way operation
- Provides some flex space

CONS

- Lingering intersection safety concerns
- Tighter flex space
- Fits everything in, but less-than ideal dimensions

# One-Way & Cycle Track




Tremont Ave




East/West Blvd

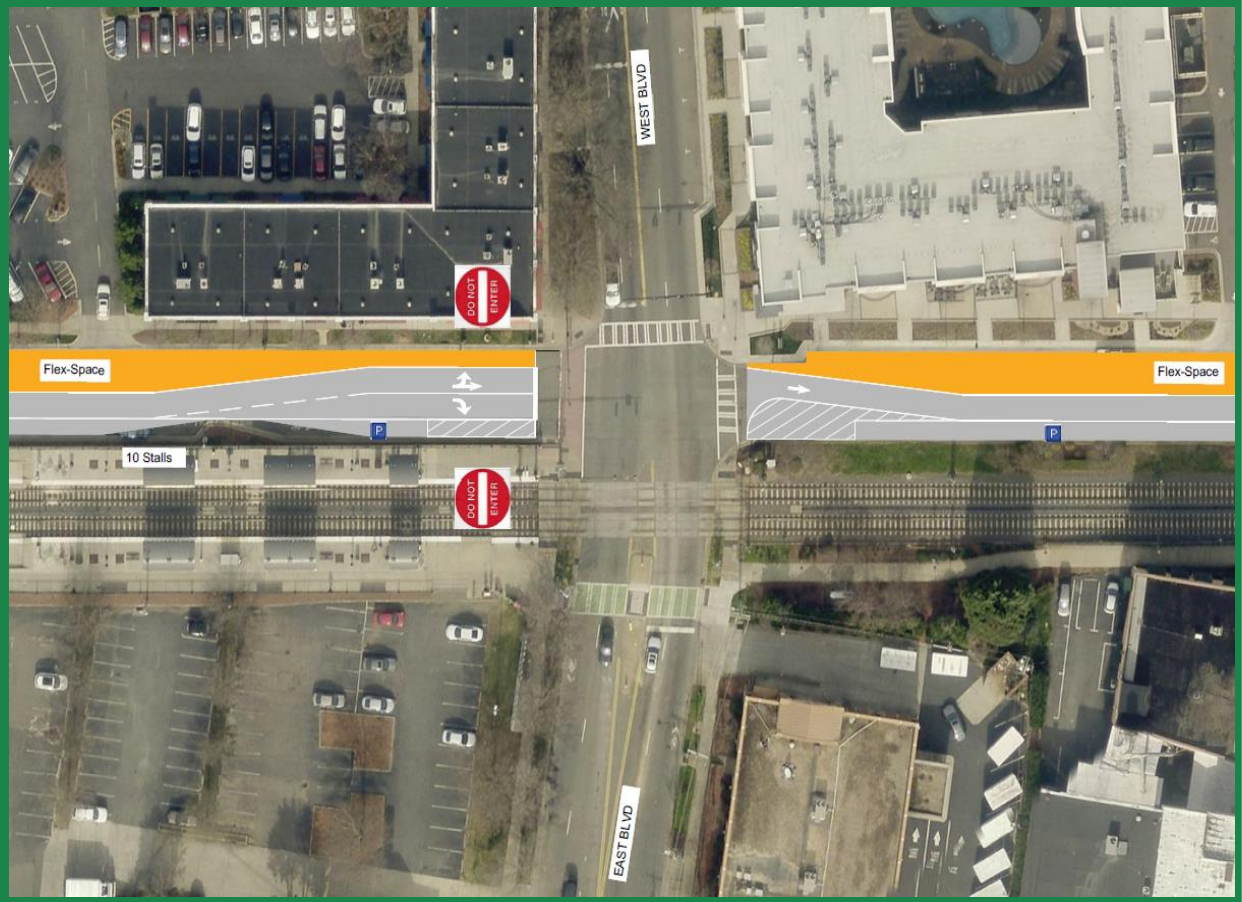
**PARKING SUPPLY**

EXISTING PARKING: 88 STALLS

PROPOSED PARKING: ±79 STALLS

# One-Way & Flex Space



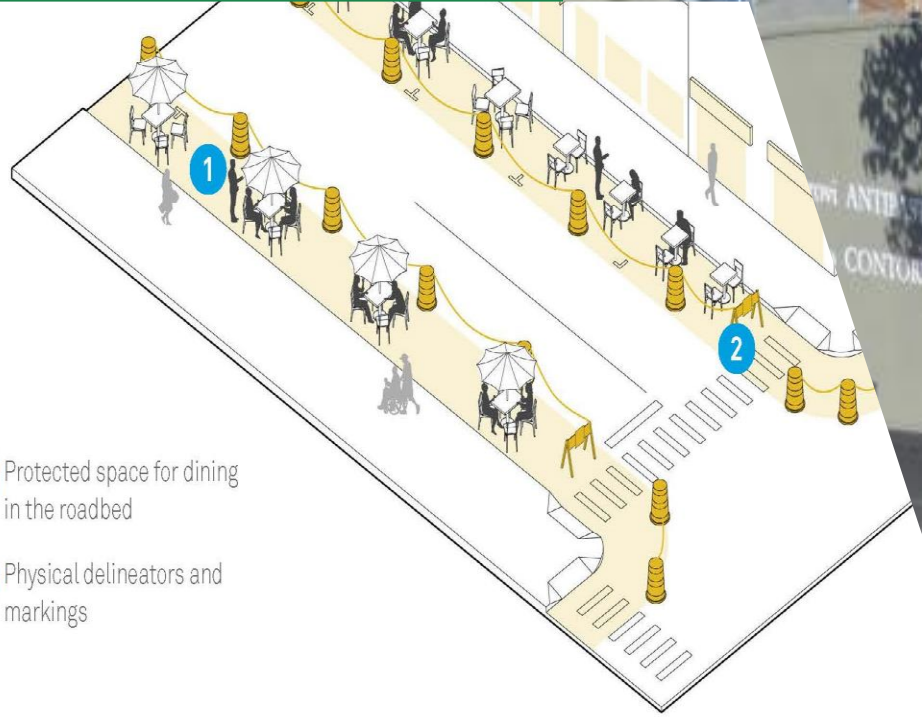




**PARKING SUPPLY**

EXISTING PARKING: 88 STALLS

PROPOSED PARKING: ±58 STALLS

# EXAMPLES




1 Protected space for dining in the roadbed

2 Physical delineators and markings

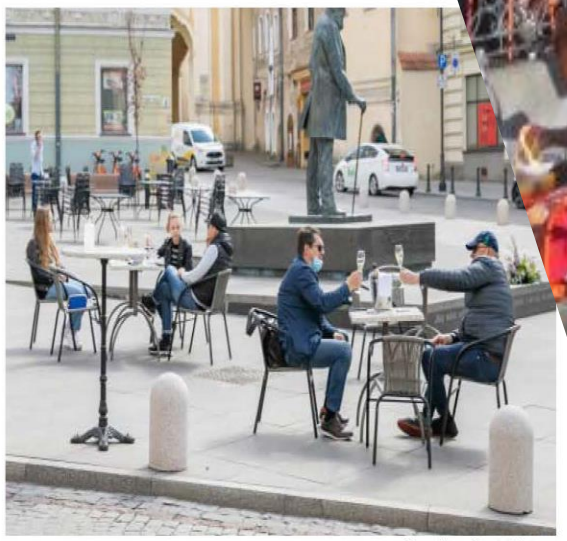
## Provide space for outdoor dining so that restaurants can comply with physical distancing guidelines while resuming dine-in operations.

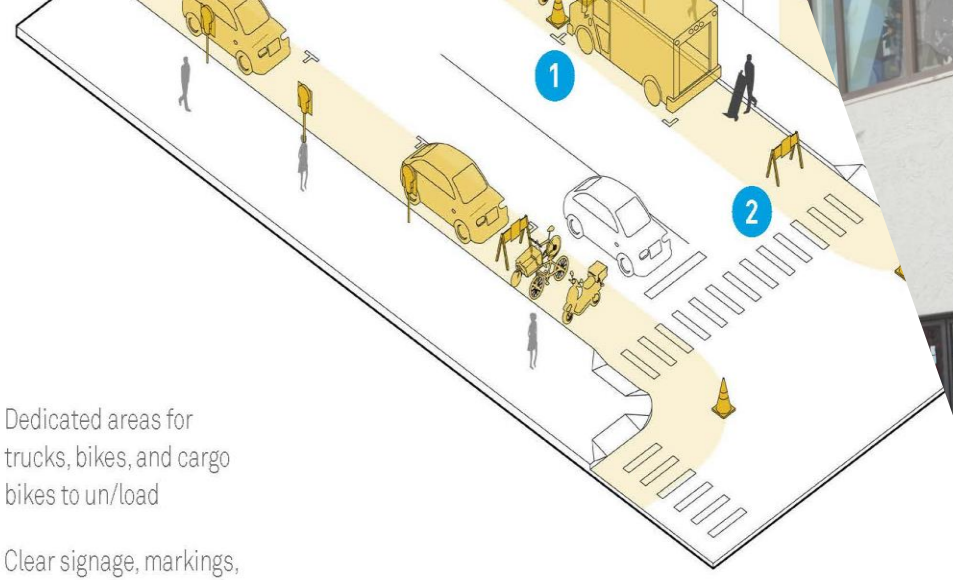
### CONTEXT

- Where restaurants, cafes, food stalls, and/or street food vendors are clustered along several blocks.

### KEY STEPS

- Identify restaurant clusters and designate 'dining street' zones.
- Waive existing permit fees for outdoor dining within preselected zones, as necessary.






1 Dedicated areas for trucks, bikes, and cargo bikes to un/load

2 Clear signage, markings, and protection

## Convert curbside parking spaces or travel lanes to high-turnover pick-up or delivery zones serving essential businesses.

### CONTEXT

- Most relevant at restaurants, laundromats, pharmacies, and other essential services.

### KEY STEPS

- Use spray chalk, paint, stickers, or traffic tape, as needed to delineate space.
- Alter management and enforcement policy, and cover meters or machines.
- Set time limits (~10 minutes max.) to enable turnover/quick access to essential services.




Credit: City of Raleigh

**Raleigh, NC, USA**




Hostess
Will
Seat You


Greenwich
chamber of commerce
SHOP
GREENWICH
TD
256
SALE
40%
OFF


Shop us on Instagram!
70% Off
As Is
20% Off!
30% Off!

# BLOCK-BY-BLOCK


Scooter/Bike Parking?
Pedestrian space?
Extended outdoor dining?
Camden Rd
1920

# Block #1


Scooter/Bike Parking/Seating
Pedestrian space?
Business Support – Event space/retail overflow?
Camden Rd

# Block #2


Outdoor seating/Business Support
Pedestrian Space
Camden Rd

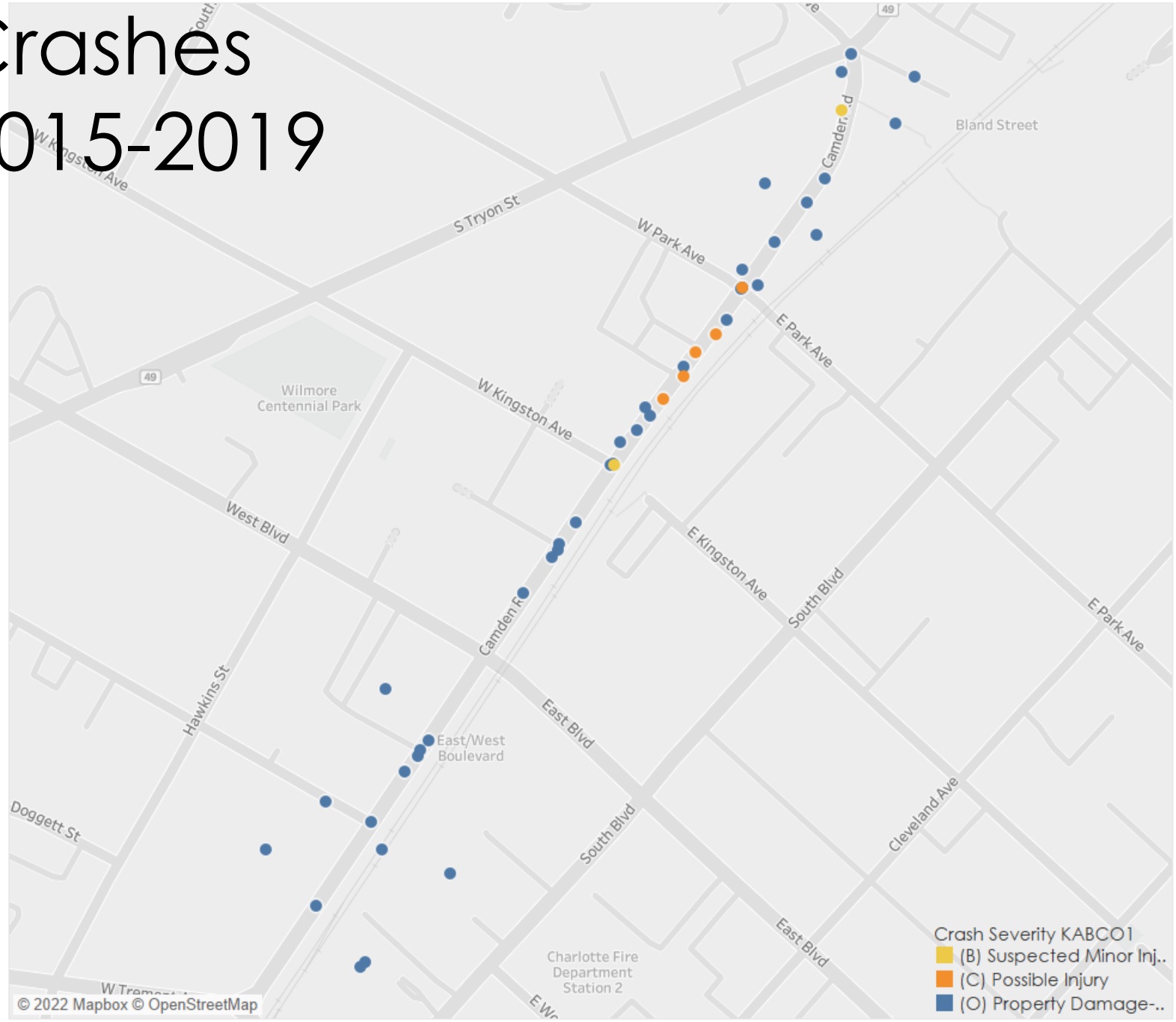
# Block #3



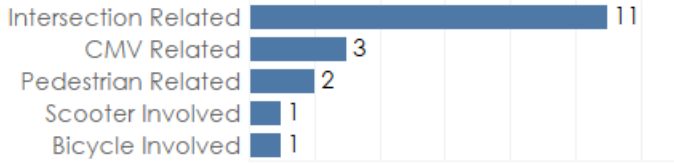

# Block #4

# DATA

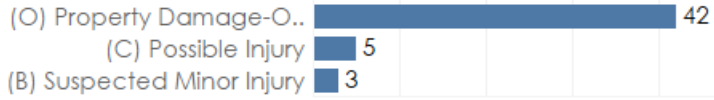
# Crashes 2015-2019



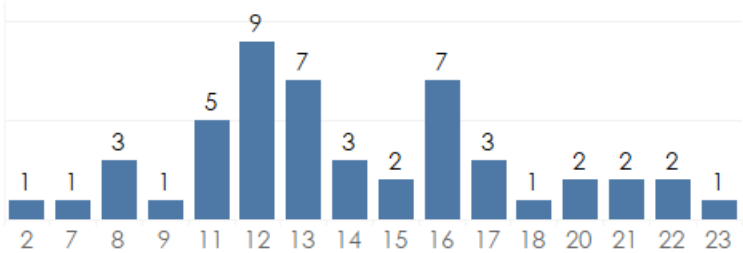

## Summary



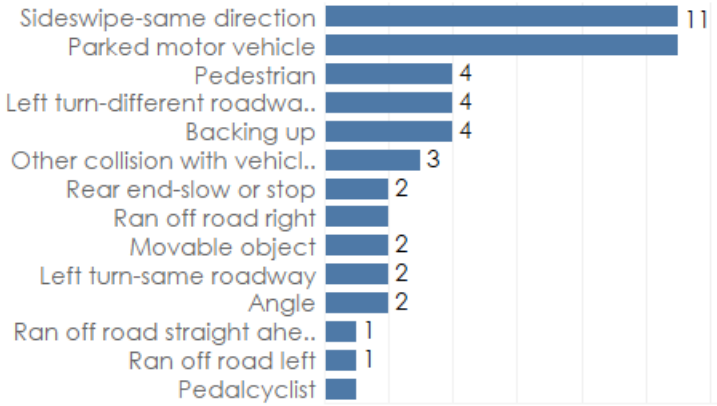

## Severity




## Time



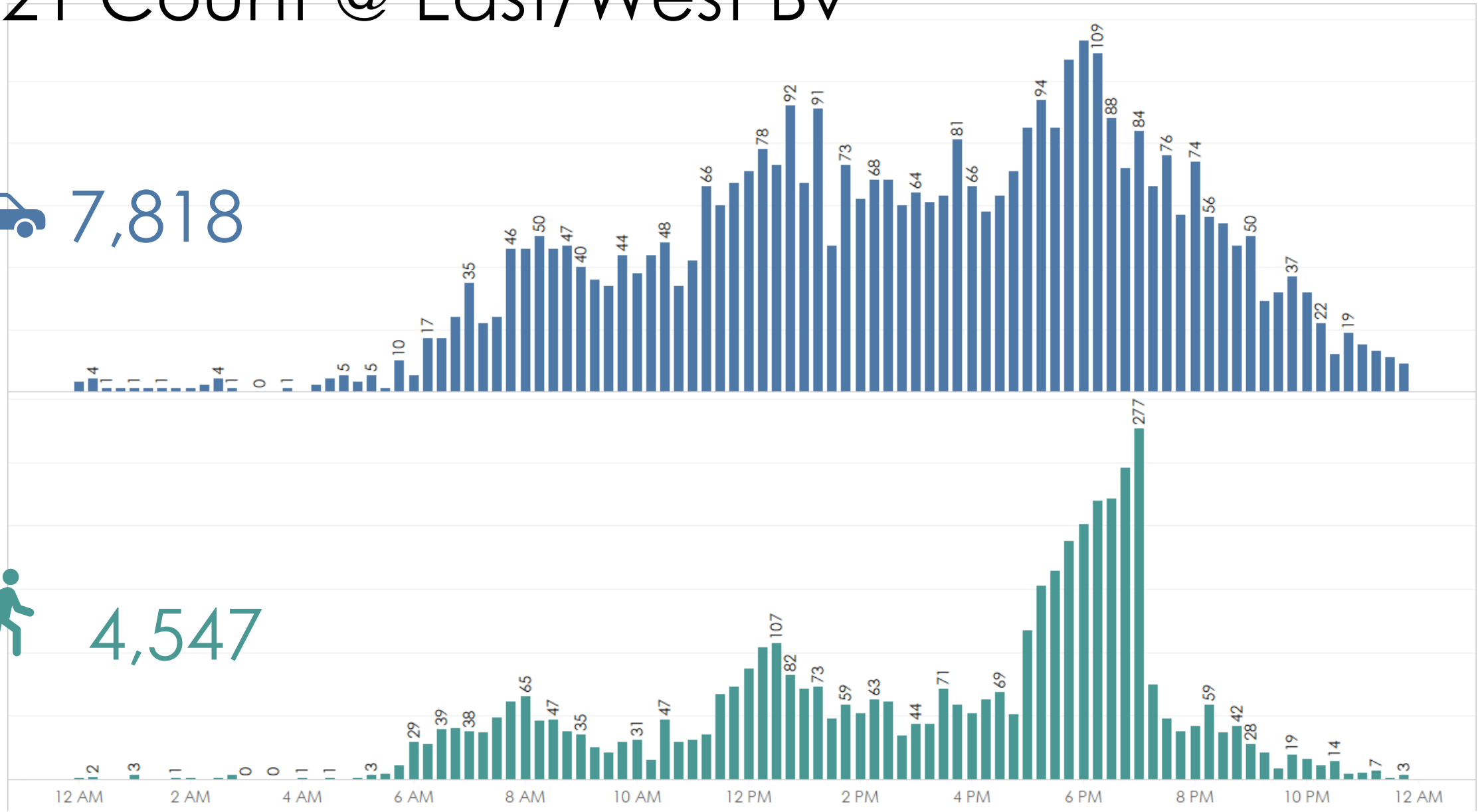

## Type



# 2021 Count @ East/West Bv

7,818

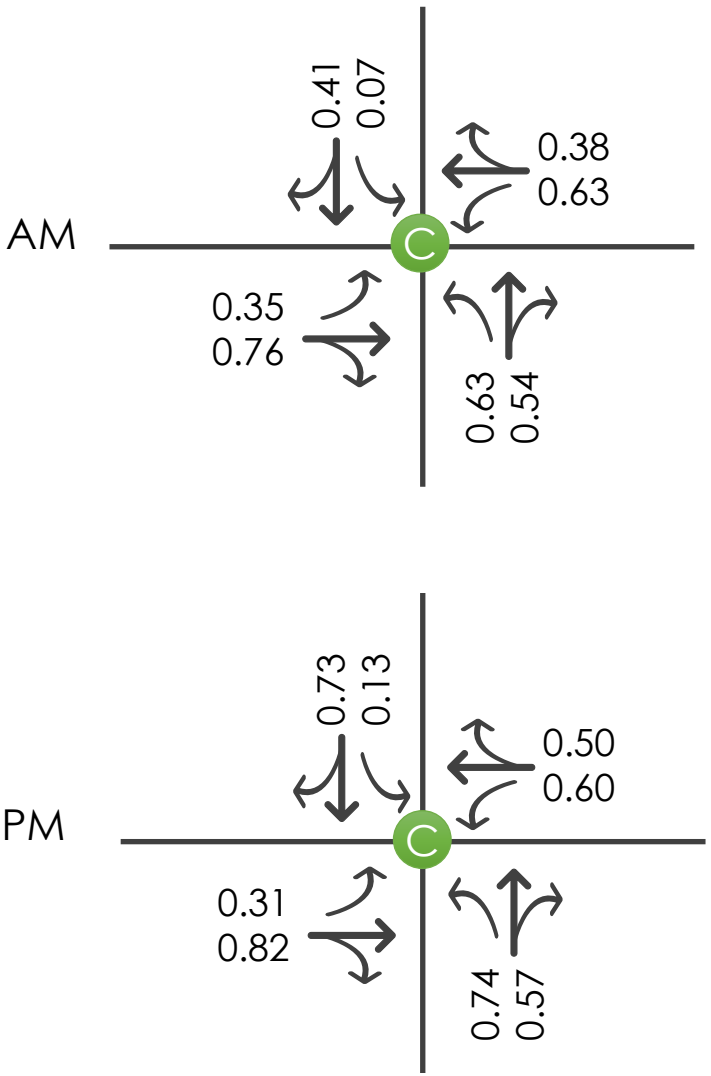
4,547



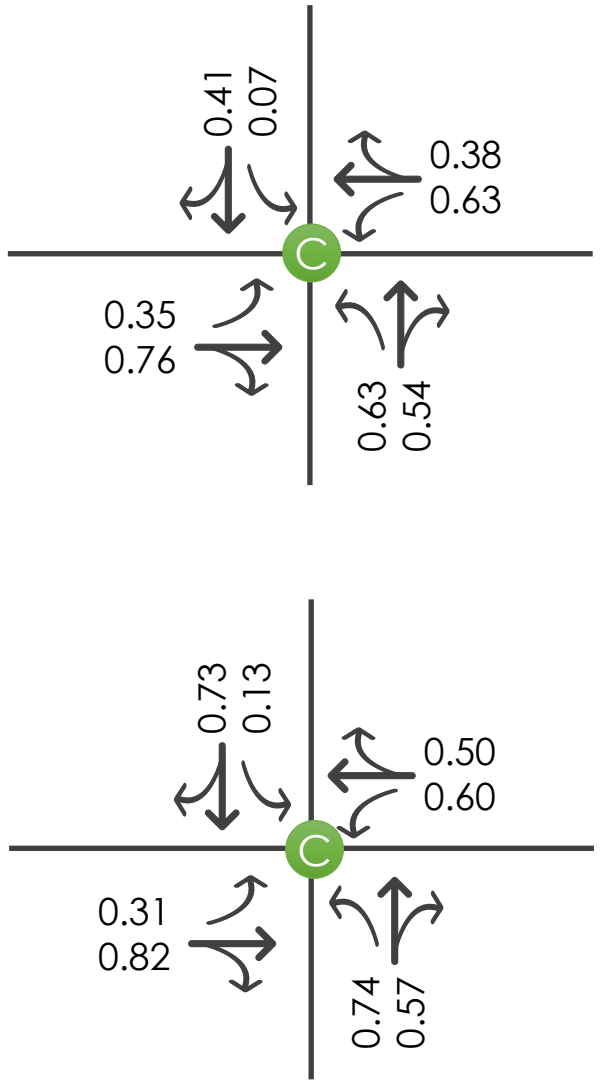
# TRAFFIC

S. Tryon St at West Bv
V/C and Intersection LOS

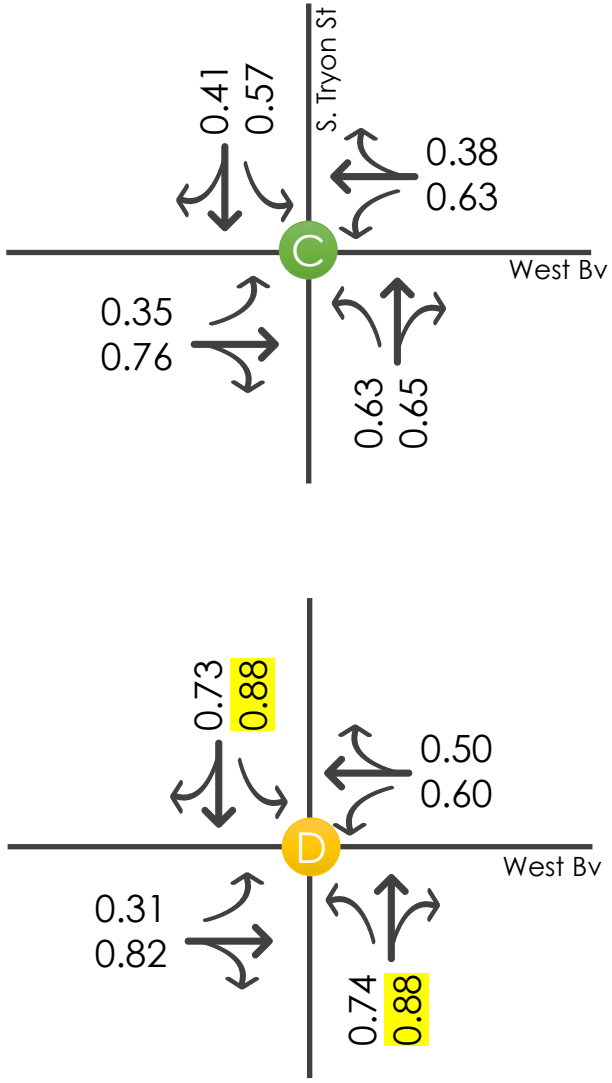
No Build




One-Way
Tremont Av to West Bv



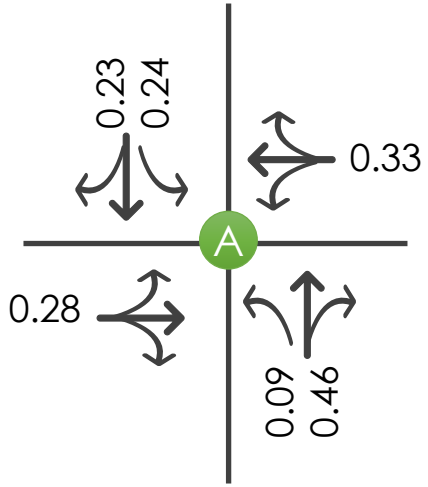

One-Way
Tremont Av to S. Tryon St



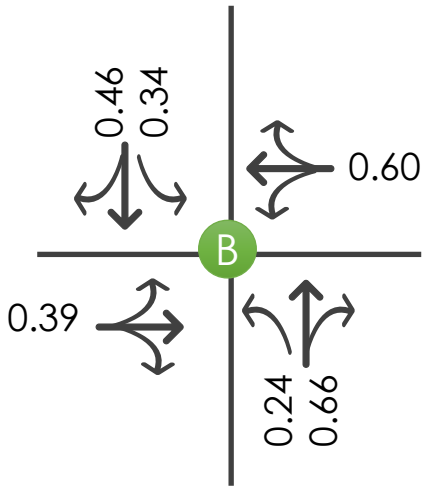
Camden Rd at West Bv
V/C and Intersection LOS

## No Build

AM

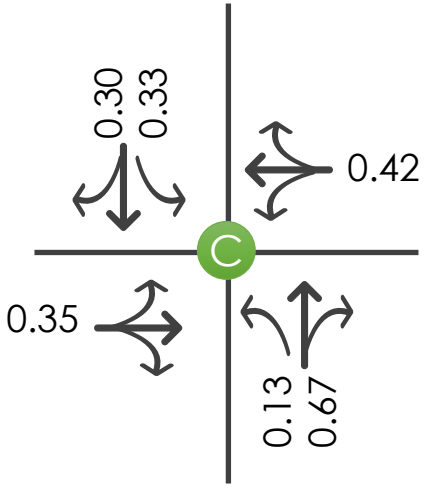



PM

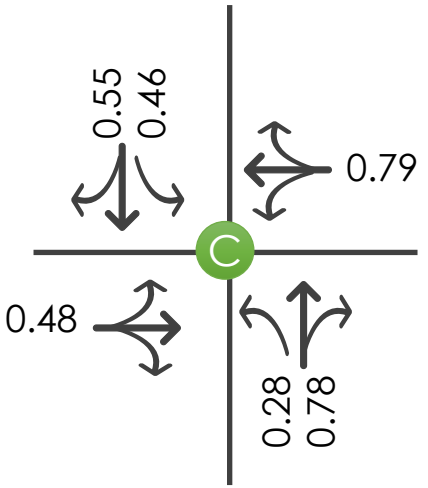



## No Build
## Ped Scramble

AM

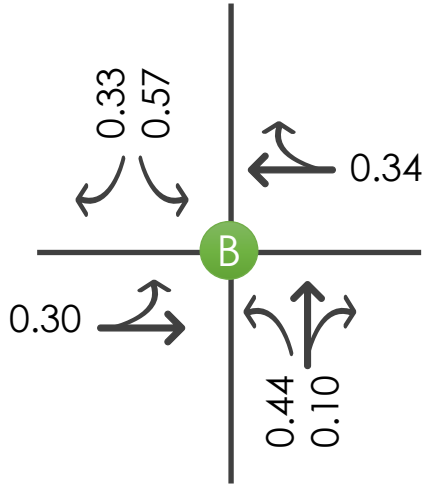



PM

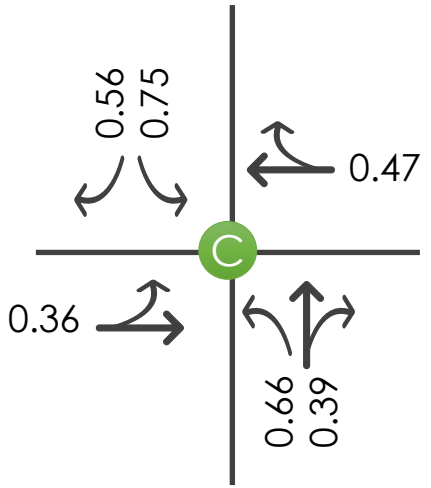



## One-Way
## Tremont Av to West Bv

AM

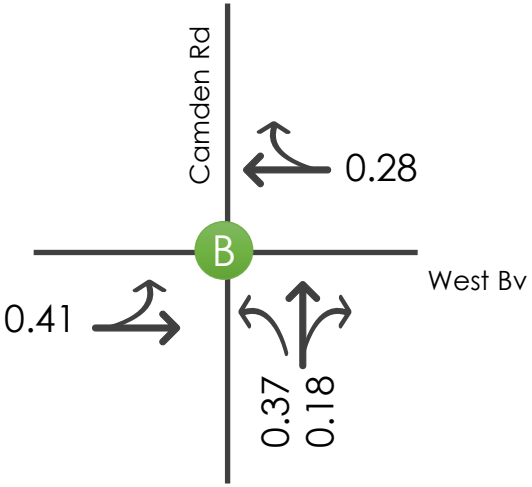



PM

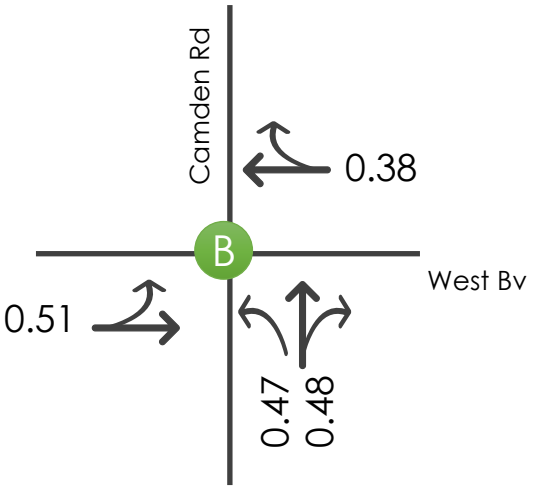



## One-Way
## Tremont Av to S. Tryon St

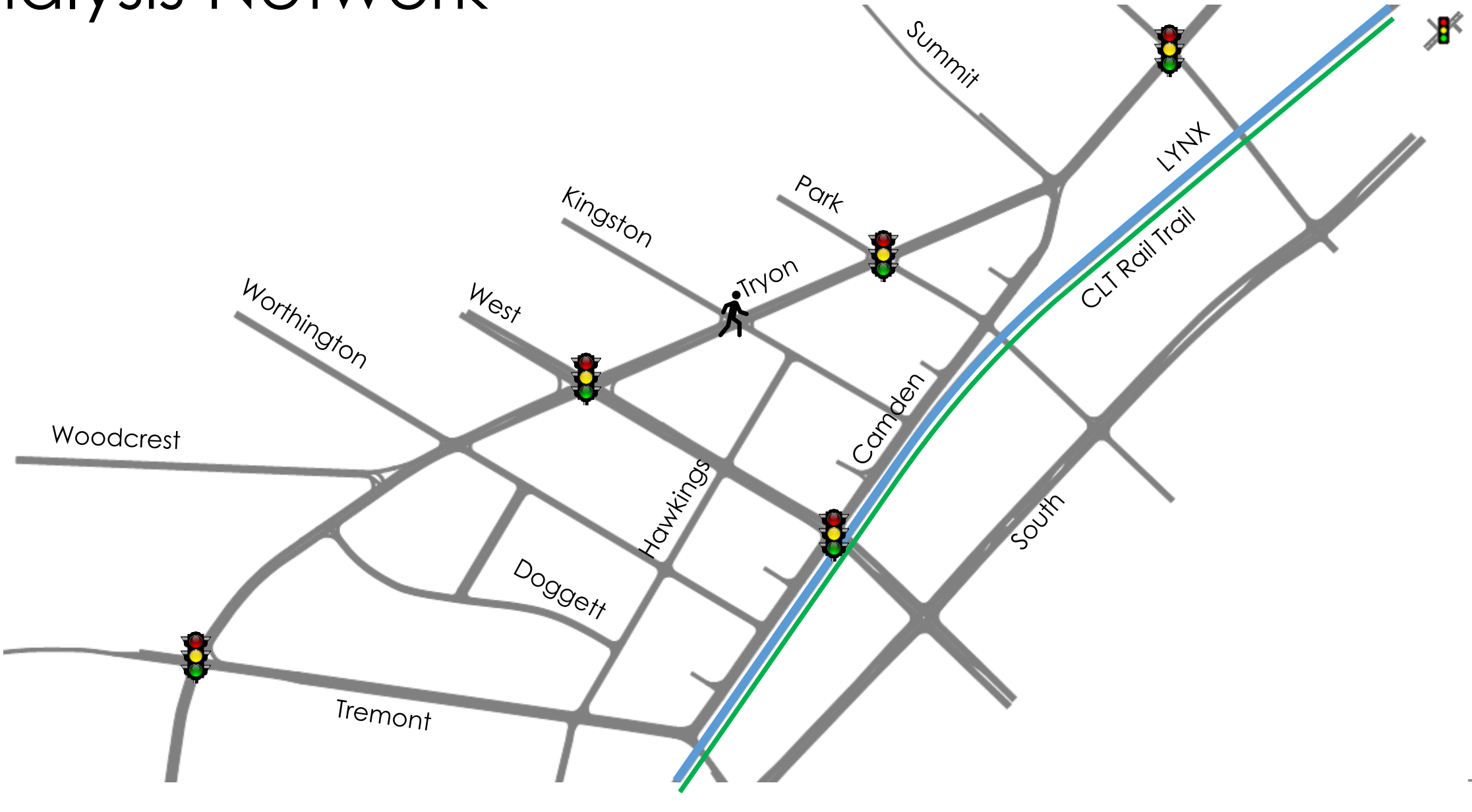
AM




PM

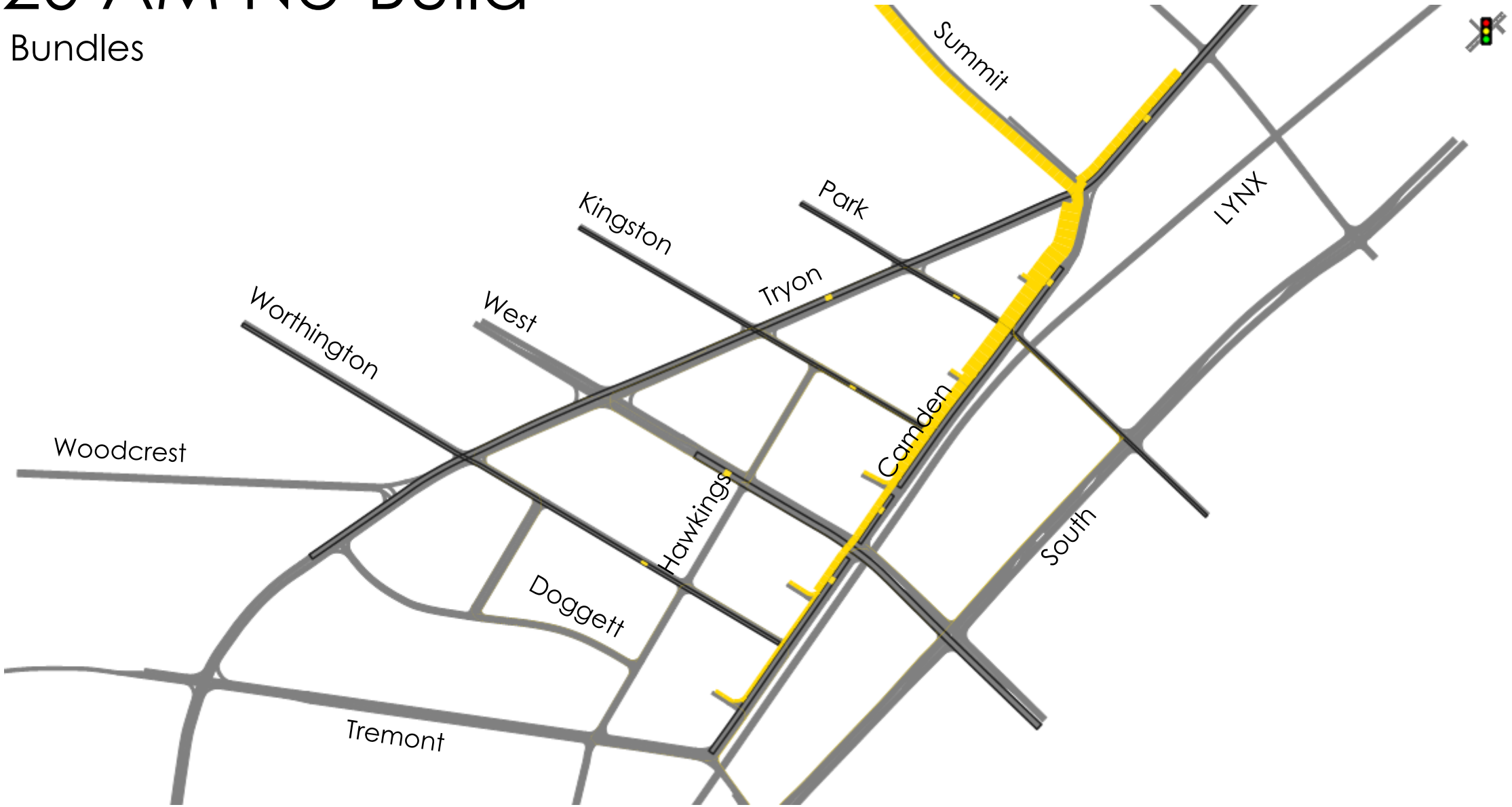


# Analysis Network



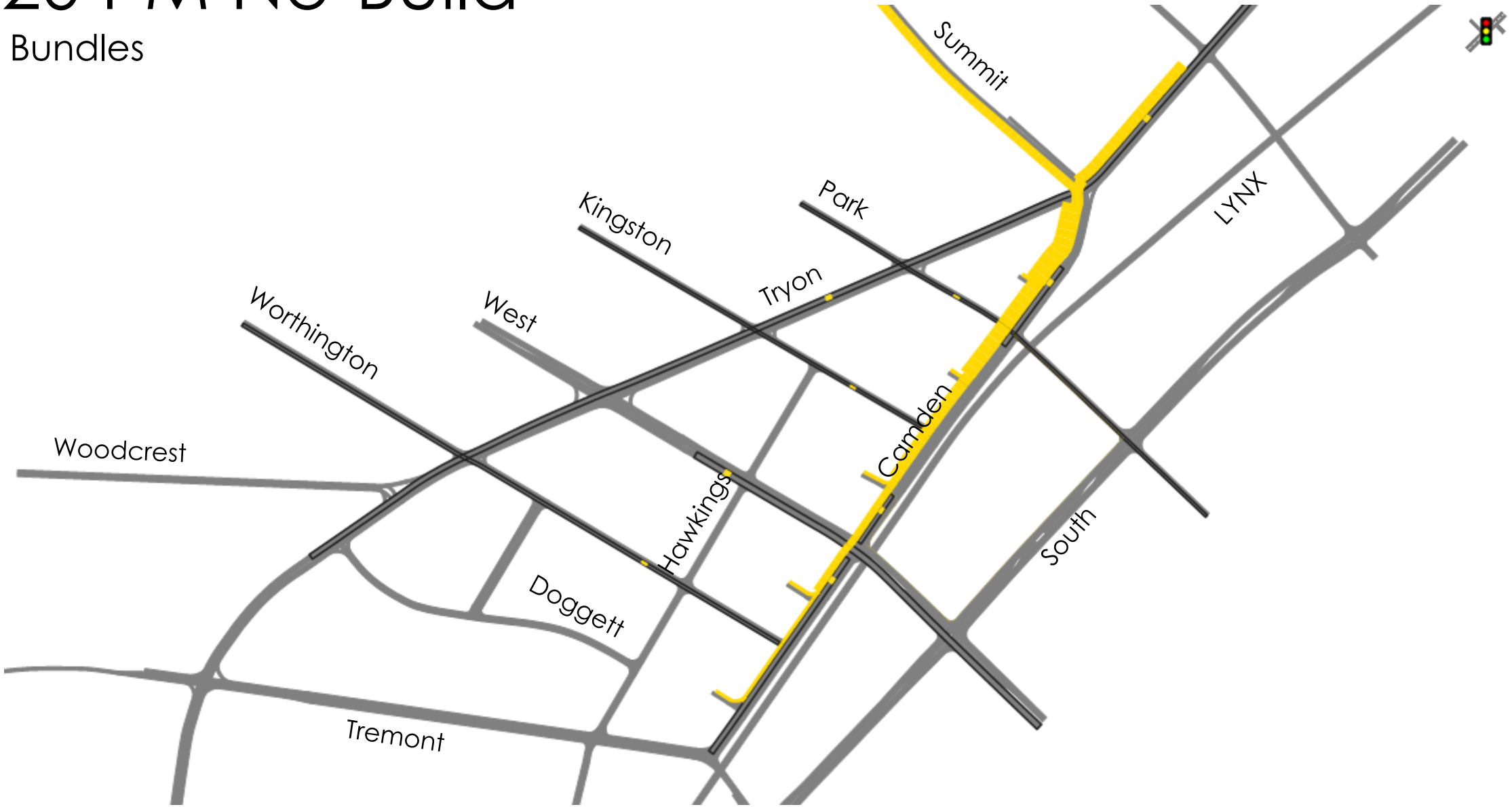
# 2020 AM No-Build

Flow Bundles



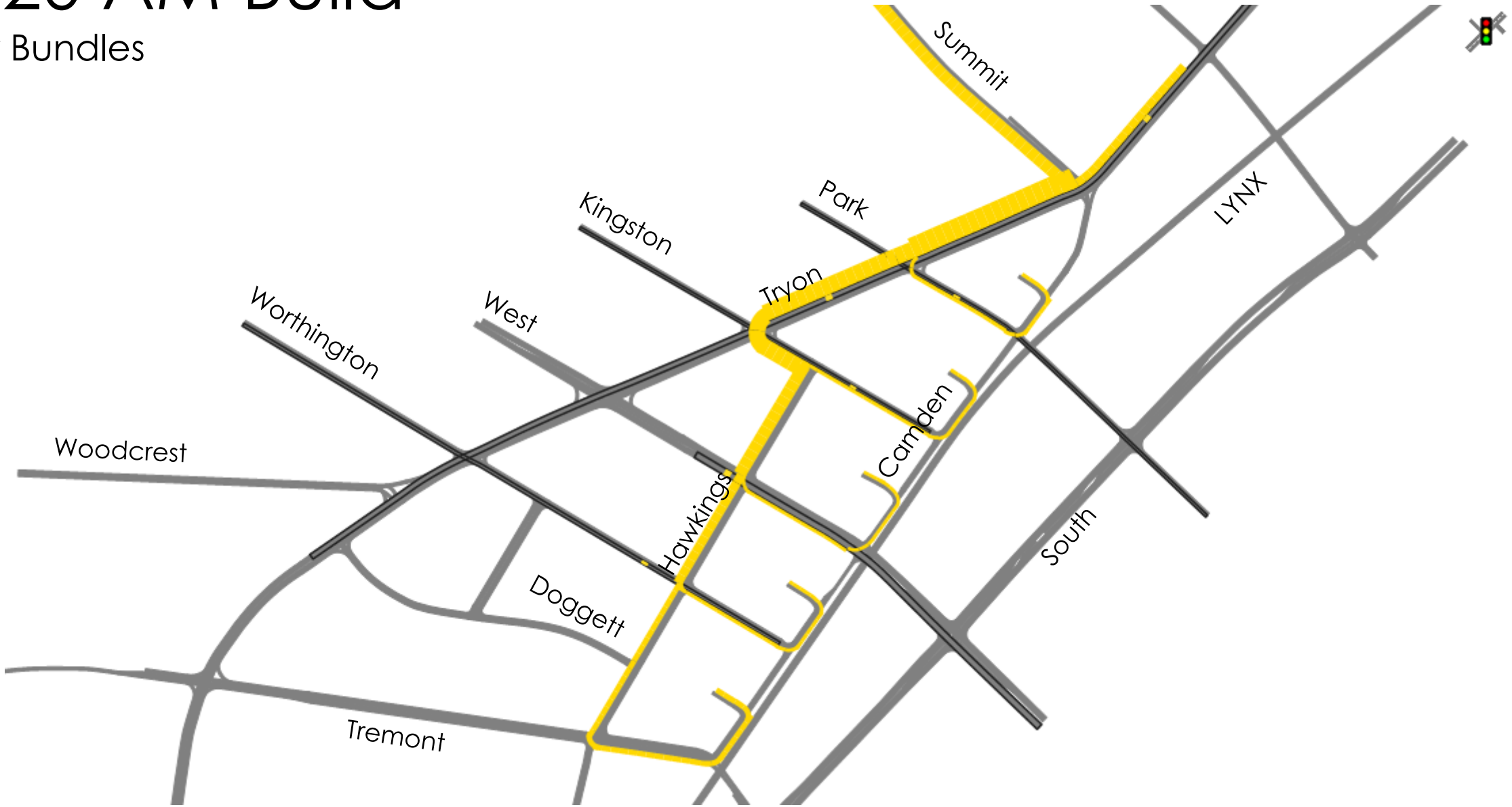
# 2020 PM No-Build

Flow Bundles



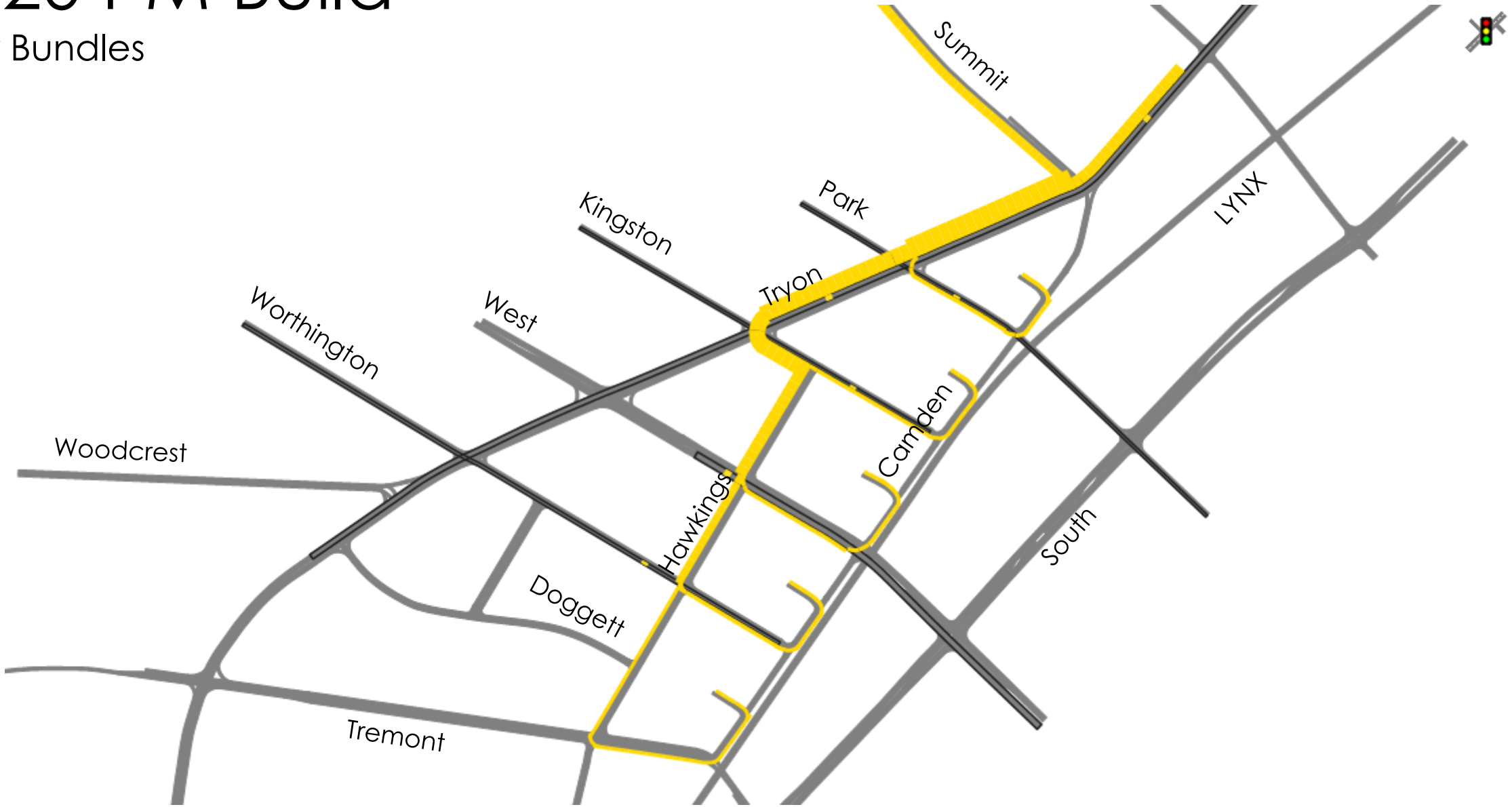
# 2020 AM Build

## Flow Bundles



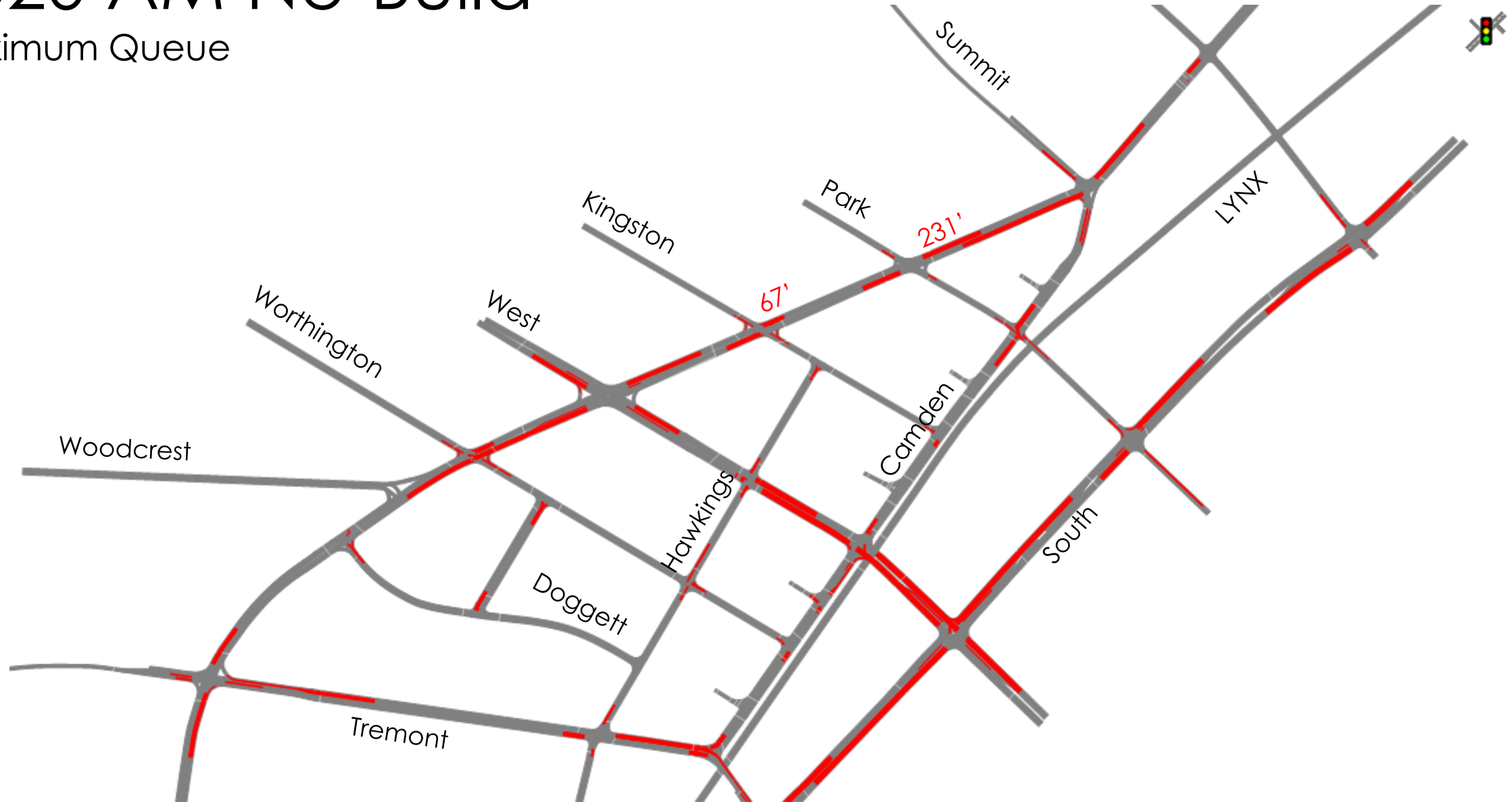
# 2020 PM Build

## Flow Bundles



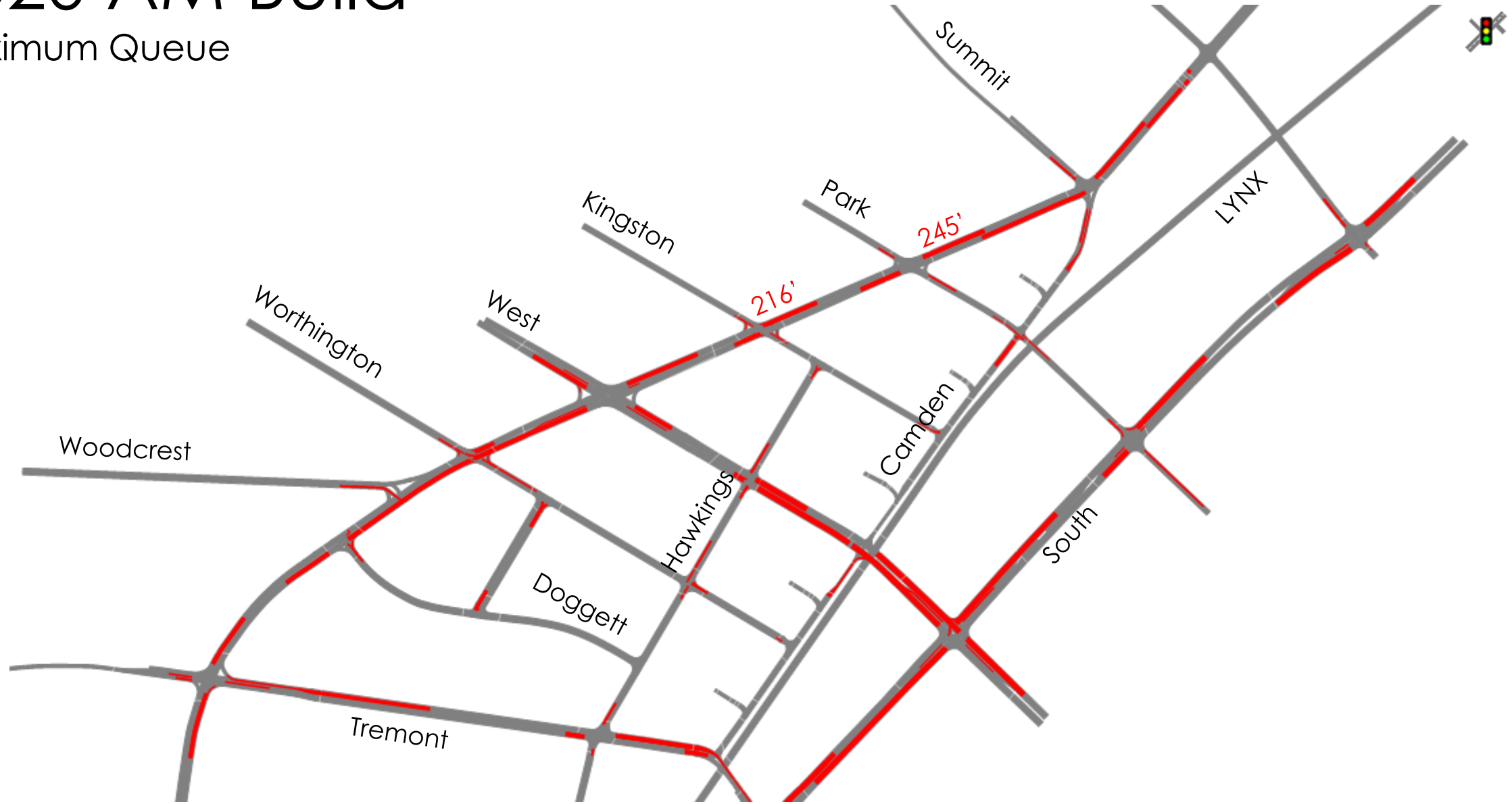
# 2020 AM No-Build

## Maximum Queue



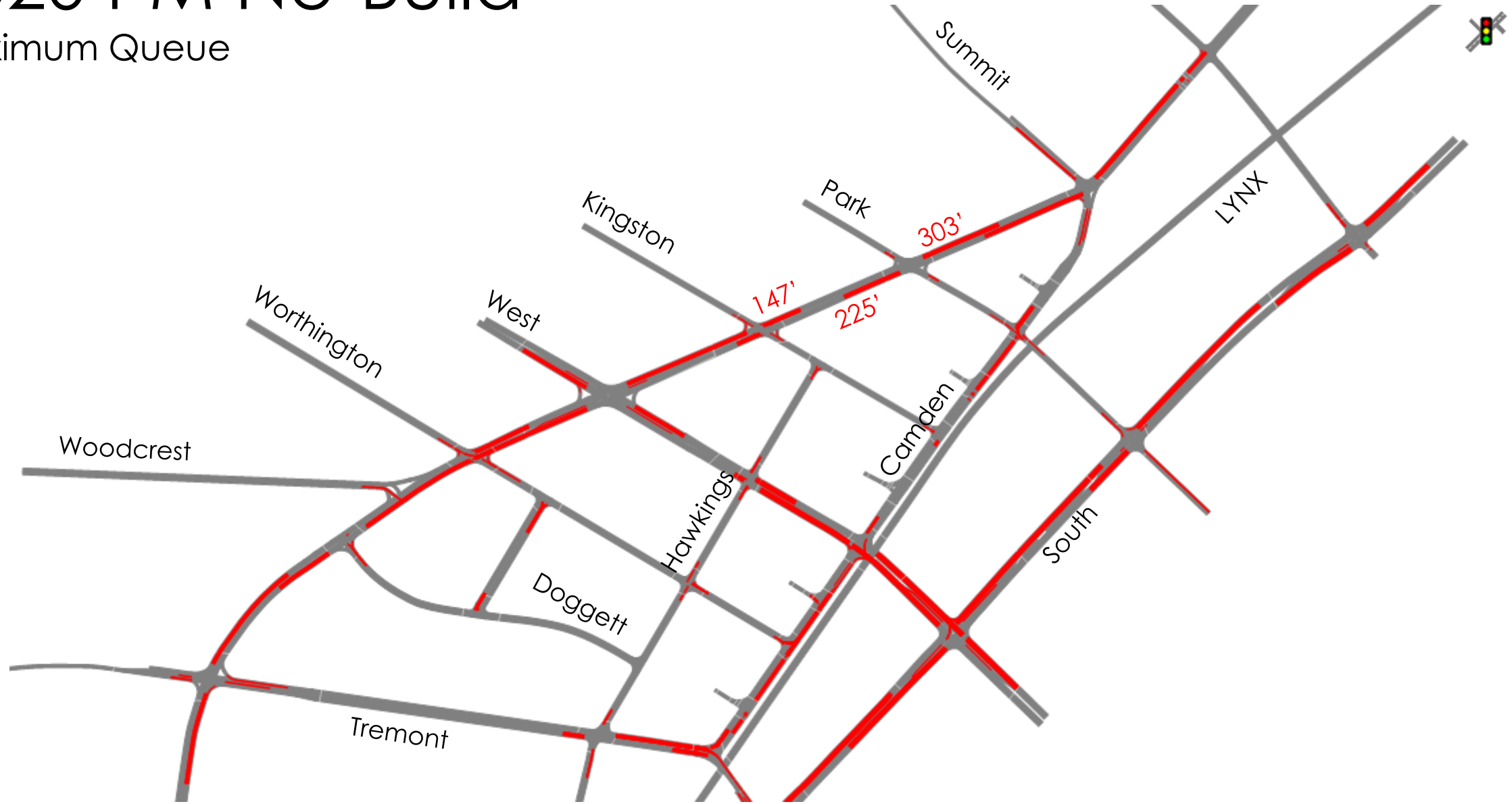
# 2020 AM Build

## Maximum Queue



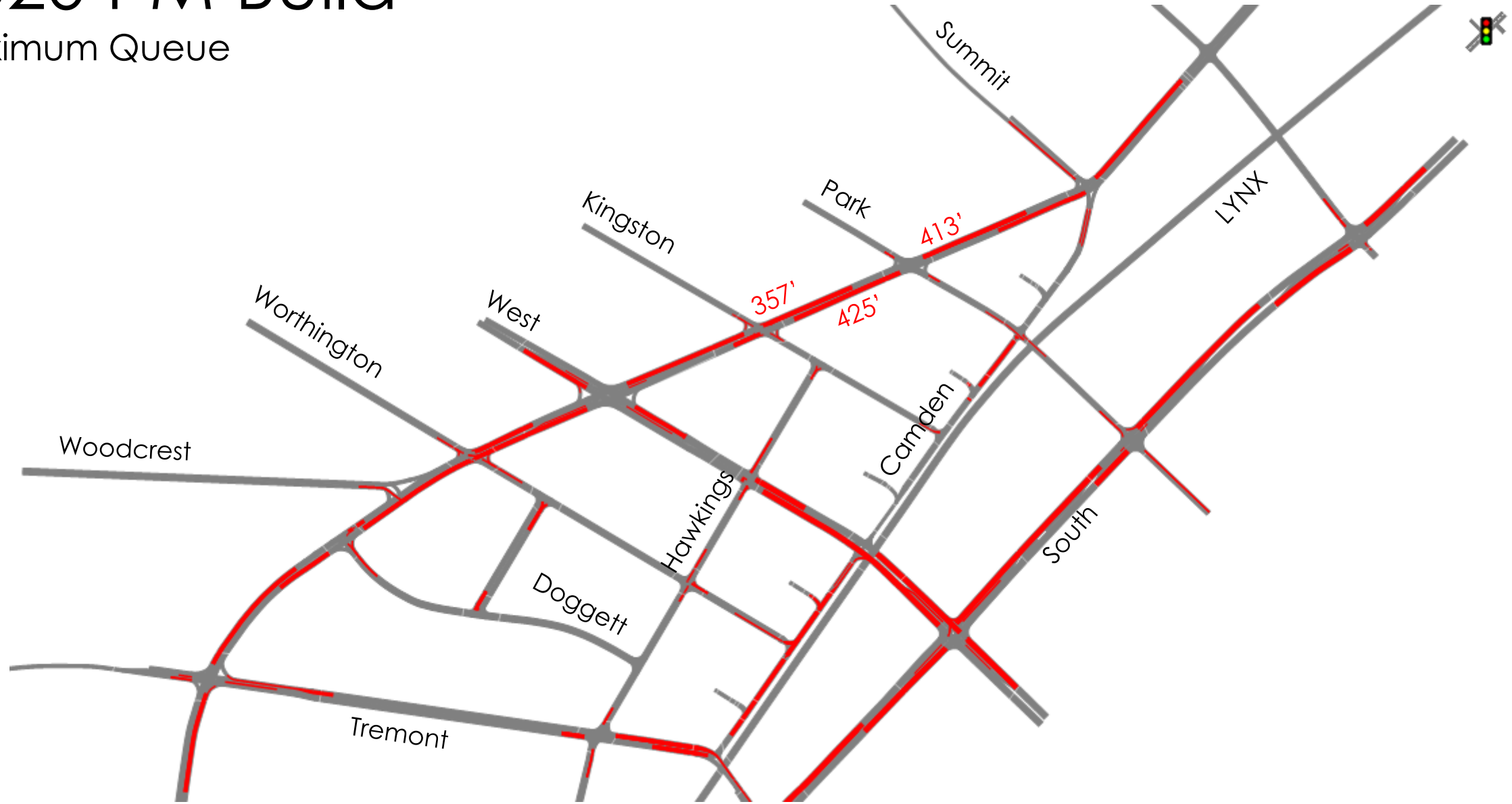
# 2020 PM No-Build

## Maximum Queue

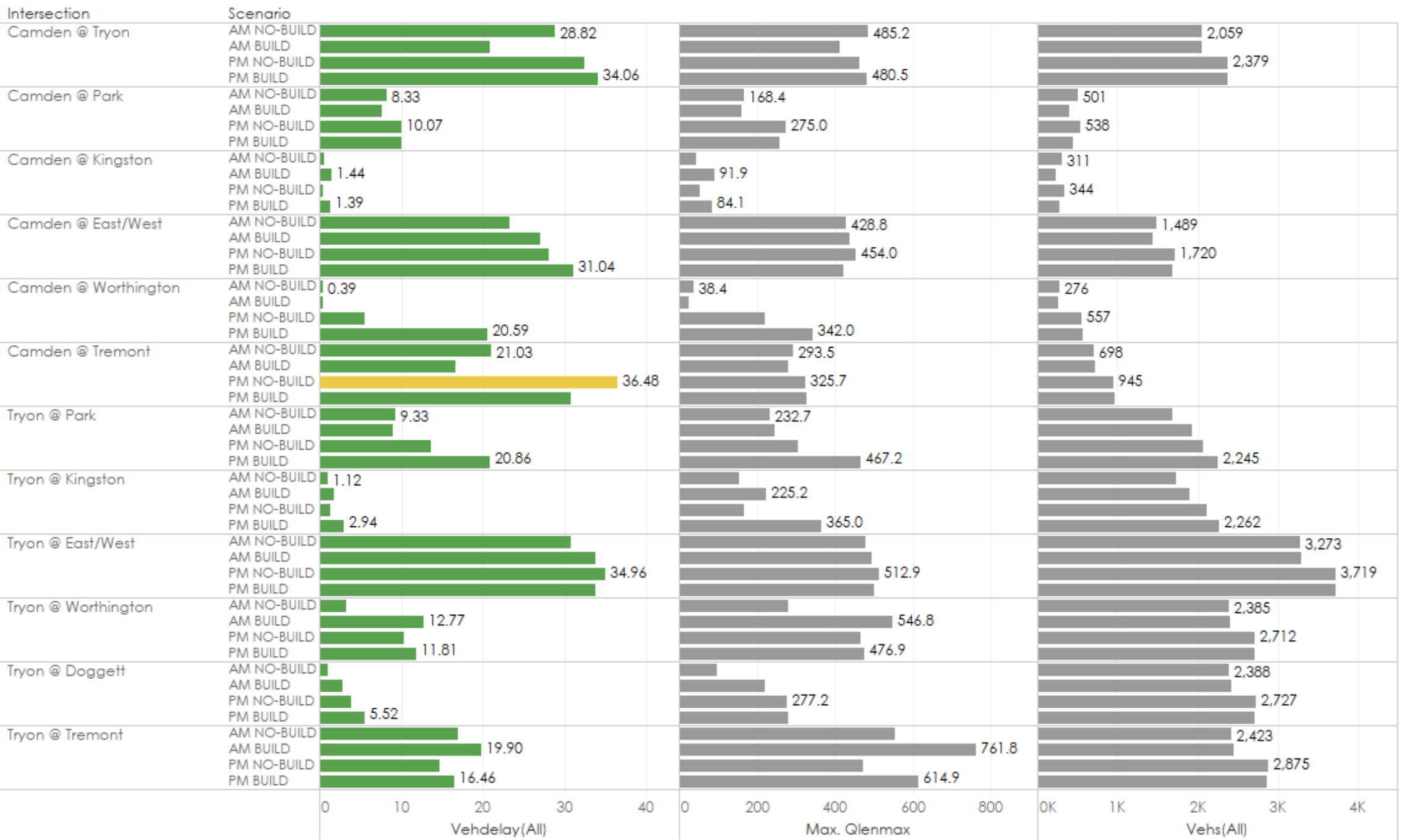


# 2020 PM Build

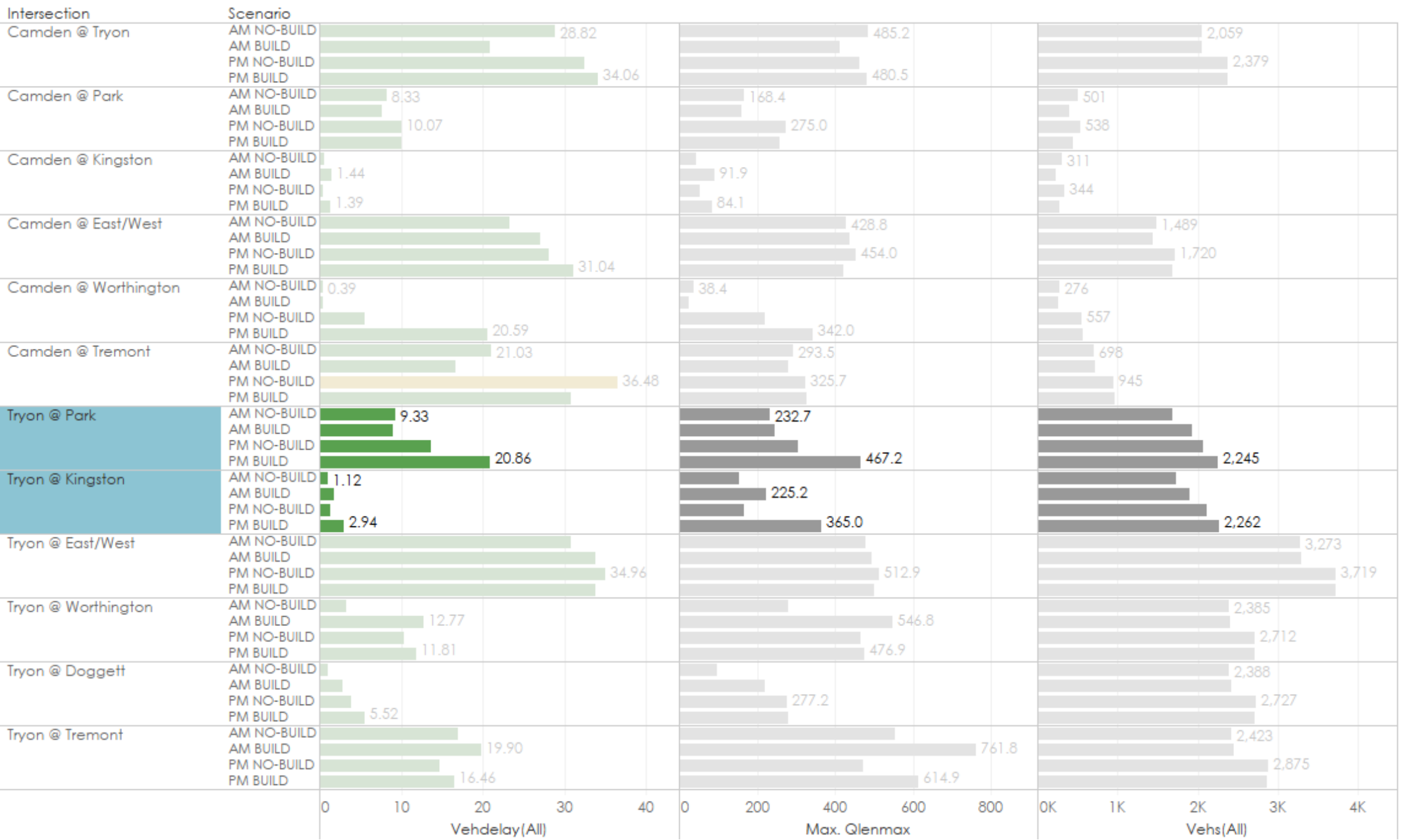
## Maximum Queue



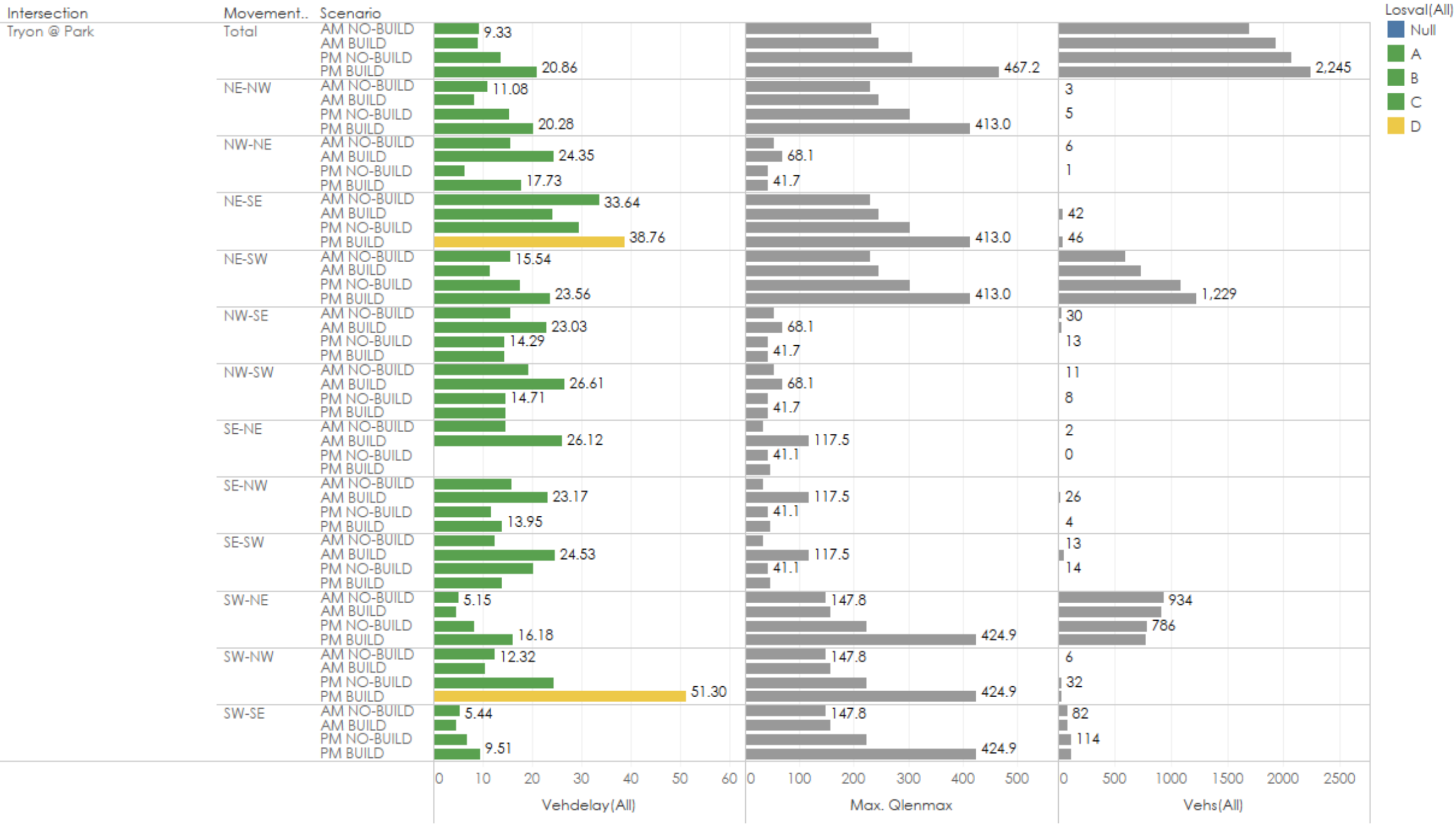
# CAMDEN RD


Intersection
Scenario
Camden @ Tryon
AM NO-BUILD 28.82
AM BUILD
PM NO-BUILD
PM BUILD 34.06
Camden @ Park
AM NO-BUILD 8.33
AM BUILD
PM NO-BUILD 10.07
PM BUILD
Camden @ Kingston
AM NO-BUILD
AM BUILD 1.44
PM NO-BUILD
PM BUILD 1.39
Camden @ East/West
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD 31.04
Camden @ Worthington
AM NO-BUILD 0.39
AM BUILD
PM NO-BUILD
PM BUILD 20.59
Camden @ Tremont
AM NO-BUILD 21.03
AM BUILD
PM NO-BUILD 36.48
PM BUILD
Tryon @ Park
AM NO-BUILD 9.33
AM BUILD
PM NO-BUILD
PM BUILD 20.86
Tryon @ Kingston
AM NO-BUILD 1.12
AM BUILD
PM NO-BUILD
PM BUILD 2.94
Tryon @ East/West
AM NO-BUILD
AM BUILD
PM NO-BUILD 34.96
PM BUILD
Tryon @ Worthington
AM NO-BUILD
AM BUILD 12.77
PM NO-BUILD
PM BUILD 11.81
Tryon @ Doggett
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD 5.52
Tryon @ Tremont
AM NO-BUILD
AM BUILD 19.90
PM NO-BUILD
PM BUILD 16.46
0 10 20 30 40
Vehdelay(All)
485.2
480.5
168.4
275.0
91.9
84.1
428.8
454.0
38.4
342.0
293.5
325.7
232.7
467.2
225.2
365.0
512.9
546.8
277.2
761.8
614.9
0 200 400 600 800
Max. Qlenmax
2,059
2,379
501
538
311
344
1,489
1,720
276
557
698
945
2,245
2,262
3,273
3,719
2,385
2,712
2,388
2,727
2,423
2,875
0K 1K 2K 3K 4K
Vehs(All)
LOS
A
B
C
D

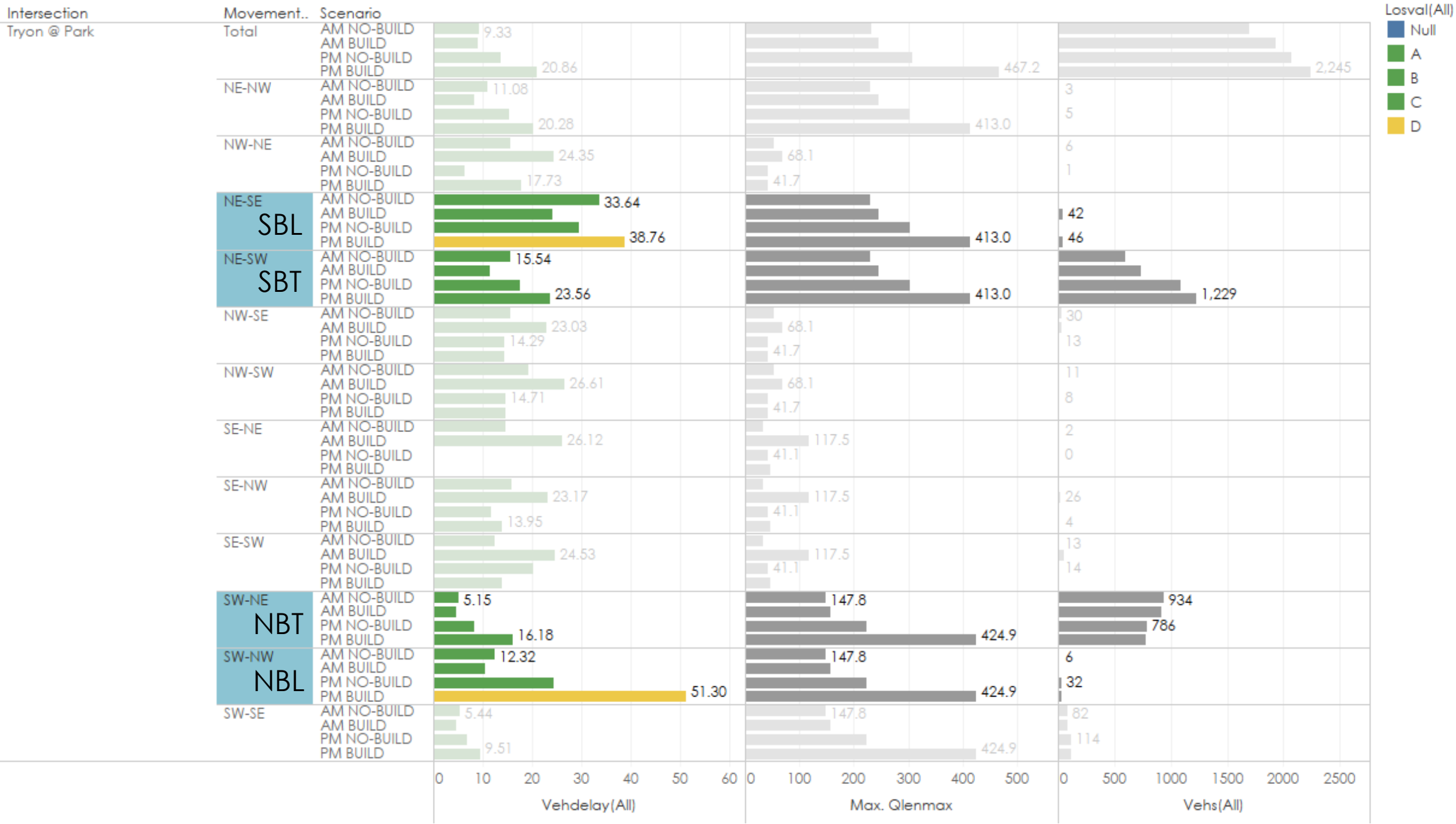
# CAMDEN RD


Intersection
Scenario
LOS
A
B
C
D
Camden @ Tryon
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
28.82
34.06
485.2
480.5
2,059
2,379
Camden @ Park
8.33
10.07
168.4
275.0
501
538
Camden @ Kingston
1.44
1.39
91.9
84.1
311
344
Camden @ East/West
31.04
428.8
454.0
1,489
1,720
Camden @ Worthington
0.39
20.59
38.4
342.0
276
557
Camden @ Tremont
21.03
36.48
293.5
325.7
698
945
Tryon @ Park
9.33
20.86
232.7
467.2
2,245
Tryon @ Kingston
1.12
2.94
225.2
365.0
2,262
Tryon @ East/West
34.96
512.9
3,273
3,719
Tryon @ Worthington
12.77
11.81
546.8
476.9
2,385
2,712
Tryon @ Doggett
5.52
277.2
2,388
2,727
Tryon @ Tremont
19.90
16.46
761.8
614.9
2,423
2,875
0
10
20
30
40
Vehdelay(All)
0
200
400
600
800
Max. Qlenmax
0K
1K
2K
3K
4K
Vehs(All)

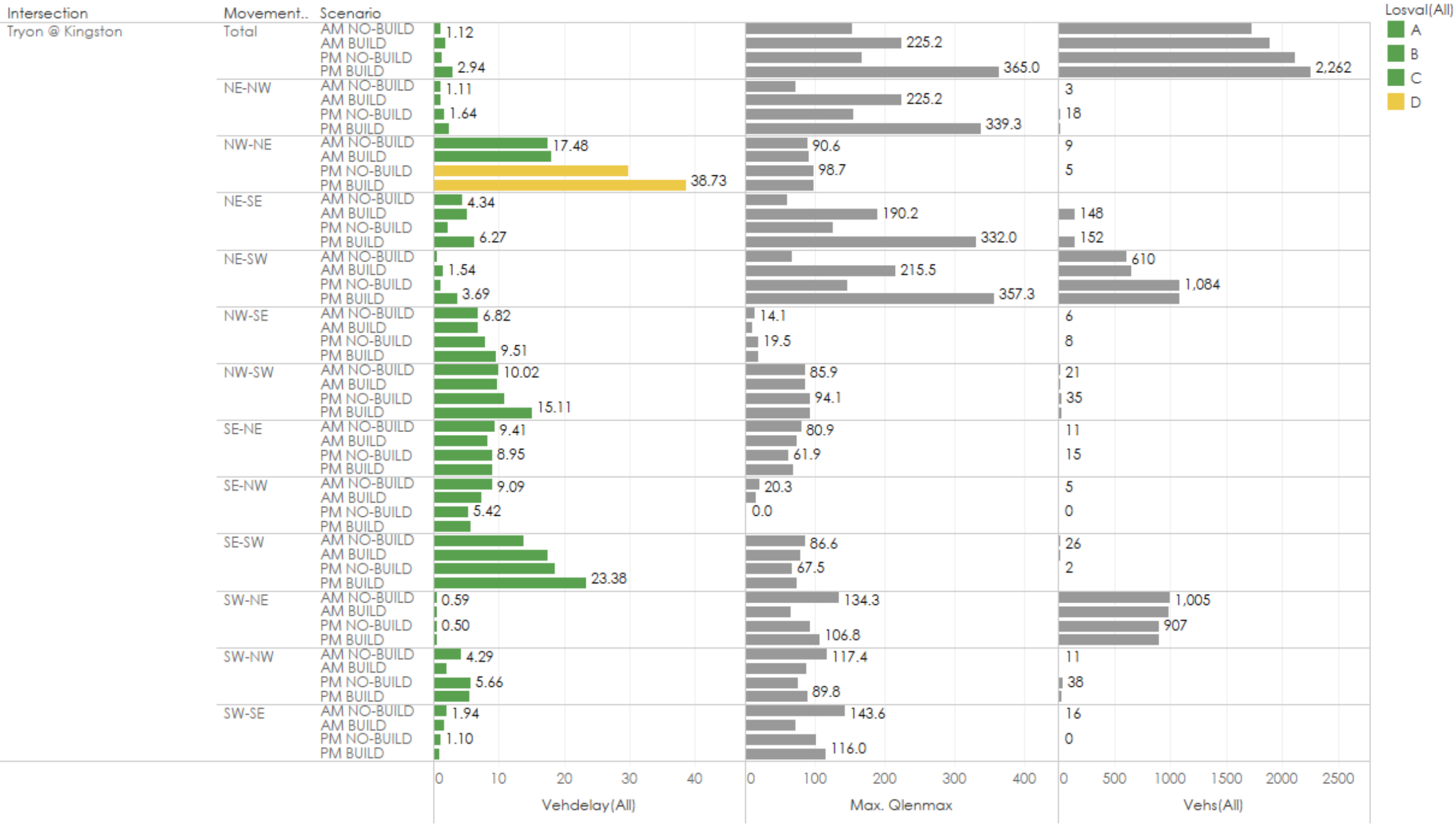
# CAMDEN RD


Intersection
Movement..
Scenario
Tryon @ Park
Total
NE-NW
NW-NE
NE-SE
NE-SW
NW-SE
NW-SW
SE-NE
SE-NW
SE-SW
SW-NE
SW-NW
SW-SE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
9.33
20.86
11.08
20.28
24.35
17.73
33.64
38.76
15.54
23.56
23.03
14.29
26.61
14.71
26.12
23.17
13.95
24.53
5.15
16.18
12.32
51.30
5.44
9.51
467.2
413.0
68.1
41.7
117.5
41.1
147.8
424.9
2,245
3
5
6
1
42
46
1,229
30
13
11
8
2
0
26
4
13
14
934
786
6
32
82
114
0 10 20 30 40 50 60
Vehdelay(All)
0 100 200 300 400 500
Max. Qlenmax
0 500 1000 1500 2000 2500
Vehs(All)
Losval(All)
Null
A
B
C
D

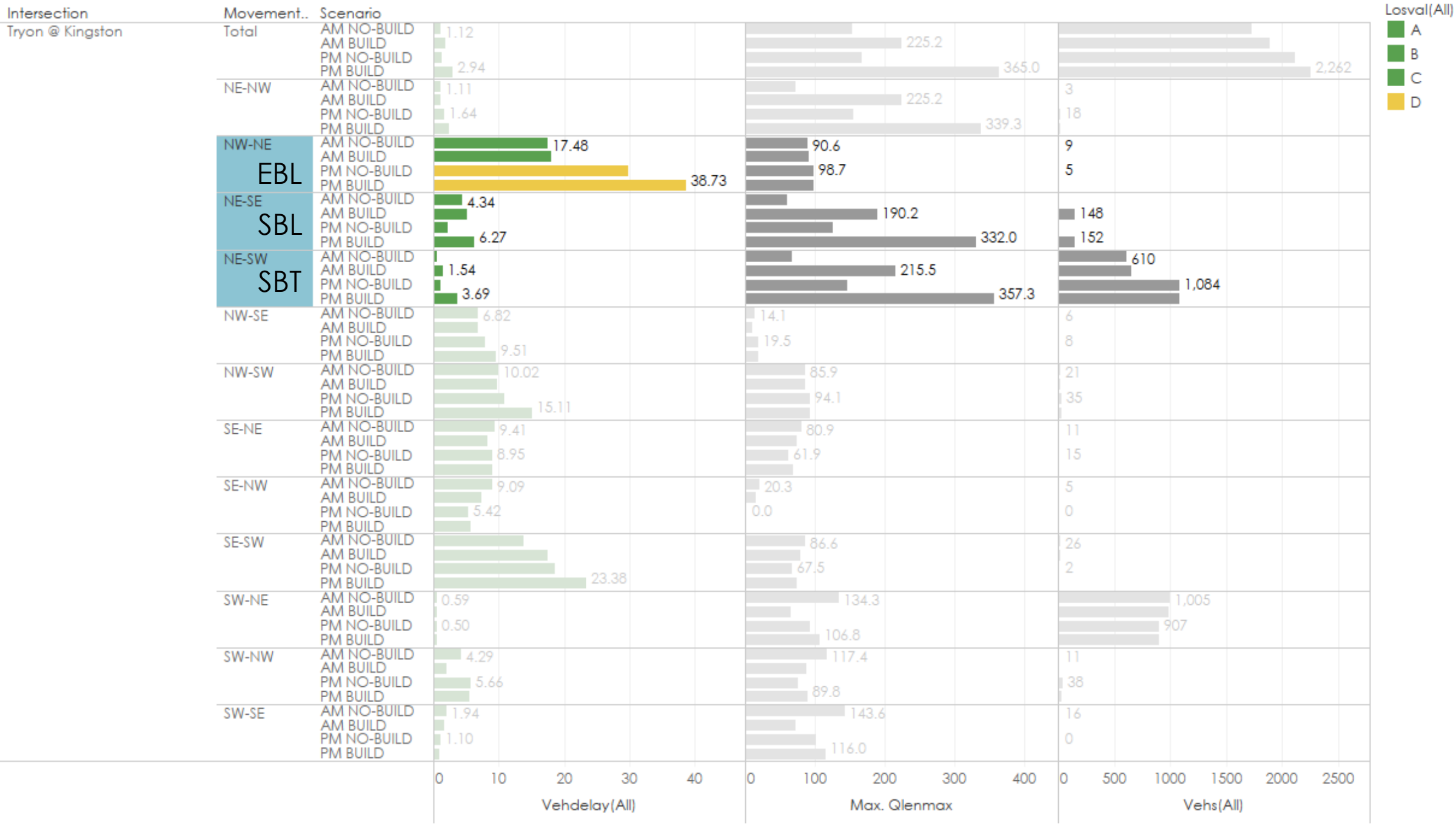
# CAMDEN RD


Intersection
Movement..
Scenario
Tryon @ Park
Total
NE-NW
NW-NE
NE-SE
SBL
NE-SW
SBT
NW-SE
NW-SW
SE-NE
SE-NW
SE-SW
SW-NE
NBT
SW-NW
NBL
SW-SE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
9.33
20.86
11.08
20.28
24.35
17.73
33.64
38.76
15.54
23.56
23.03
14.29
26.61
14.71
26.12
23.17
13.95
24.53
5.15
16.18
12.32
51.30
5.44
9.51
467.2
413.0
68.1
41.7
413.0
413.0
68.1
41.7
68.1
41.7
117.5
41.1
117.5
41.1
117.5
41.1
147.8
424.9
147.8
424.9
147.8
424.9
2,245
3
5
6
1
42
46
1,229
30
13
11
8
2
0
26
4
13
14
934
786
6
32
82
114
0
10
20
30
40
50
60
Vehdelay(All)
0
100
200
300
400
500
Max. Qlenmax
0
500
1000
1500
2000
2500
Vehs(All)
Losval(All)
Null
A
B
C
D

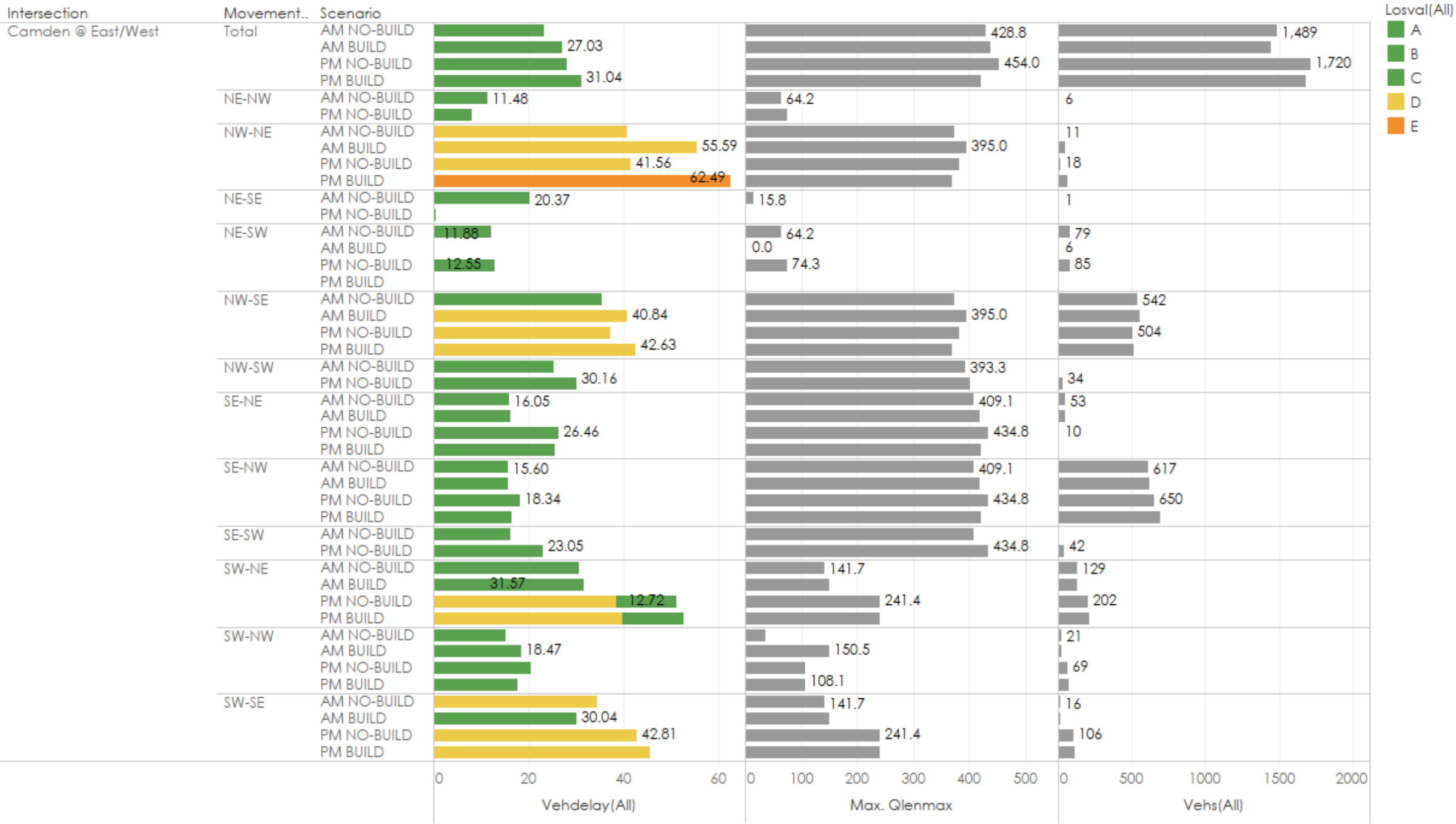
# CAMDEN RD


Intersection
Movement..
Scenario
Tryon @ Kingston
Total
NE-NW
NW-NE
NE-SE
NE-SW
NW-SE
NW-SW
SE-NE
SE-NW
SE-SW
SW-NE
SW-NW
SW-SE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
1.12
2.94
1.11
1.64
17.48
38.73
4.34
6.27
1.54
3.69
6.82
9.51
10.02
15.11
9.41
8.95
9.09
5.42
23.38
0.59
0.50
4.29
5.66
1.94
1.10
225.2
365.0
225.2
339.3
90.6
98.7
190.2
332.0
215.5
357.3
14.1
19.5
85.9
94.1
80.9
61.9
20.3
0.0
86.6
67.5
134.3
106.8
117.4
89.8
143.6
116.0
2,262
3
18
9
5
148
152
610
1,084
6
8
21
35
11
15
5
0
26
2
1,005
907
11
38
16
0
0
10
20
30
40
Vehdelay(All)
0
100
200
300
400
Max. Qlenmax
0
500
1000
1500
2000
2500
Vehs(All)
Losval(All)
A
B
C
D

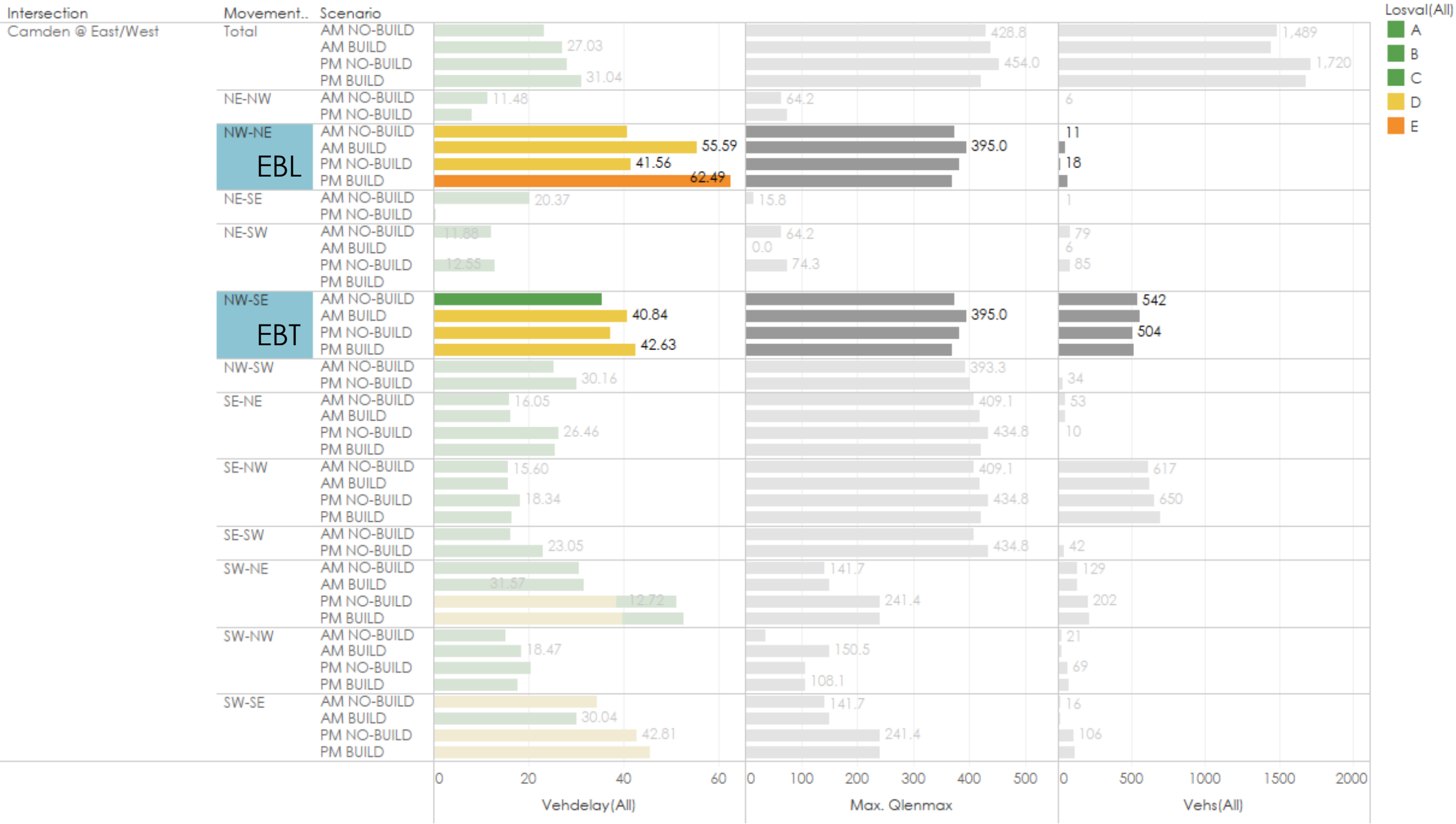
# CAMDEN RD


Intersection
Movement..
Scenario
Tryon @ Kingston
Total
NE-NW
NW-NE
EBL
NE-SE
SBL
NE-SW
SBT
NW-SE
NW-SW
SE-NE
SE-NW
SE-SW
SW-NE
SW-NW
SW-SE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
1.12
2.94
1.11
1.64
17.48
38.73
4.34
6.27
1.54
3.69
6.82
9.51
10.02
15.11
9.41
8.95
9.09
5.42
23.38
0.59
0.50
4.29
5.66
1.94
1.10
225.2
365.0
225.2
339.3
90.6
98.7
190.2
332.0
215.5
357.3
14.1
19.5
85.9
94.1
80.9
61.9
20.3
0.0
86.6
67.5
134.3
106.8
117.4
89.8
143.6
116.0
2,262
3
18
9
5
148
152
610
1,084
6
8
21
35
11
15
5
0
26
2
1,005
907
11
38
16
0
0
10
20
30
40
Vehdelay(All)
0
100
200
300
400
Max. Qlenmax
0
500
1000
1500
2000
2500
Vehs(All)
Losval(All)
A
B
C
D

# CAMDEN RD

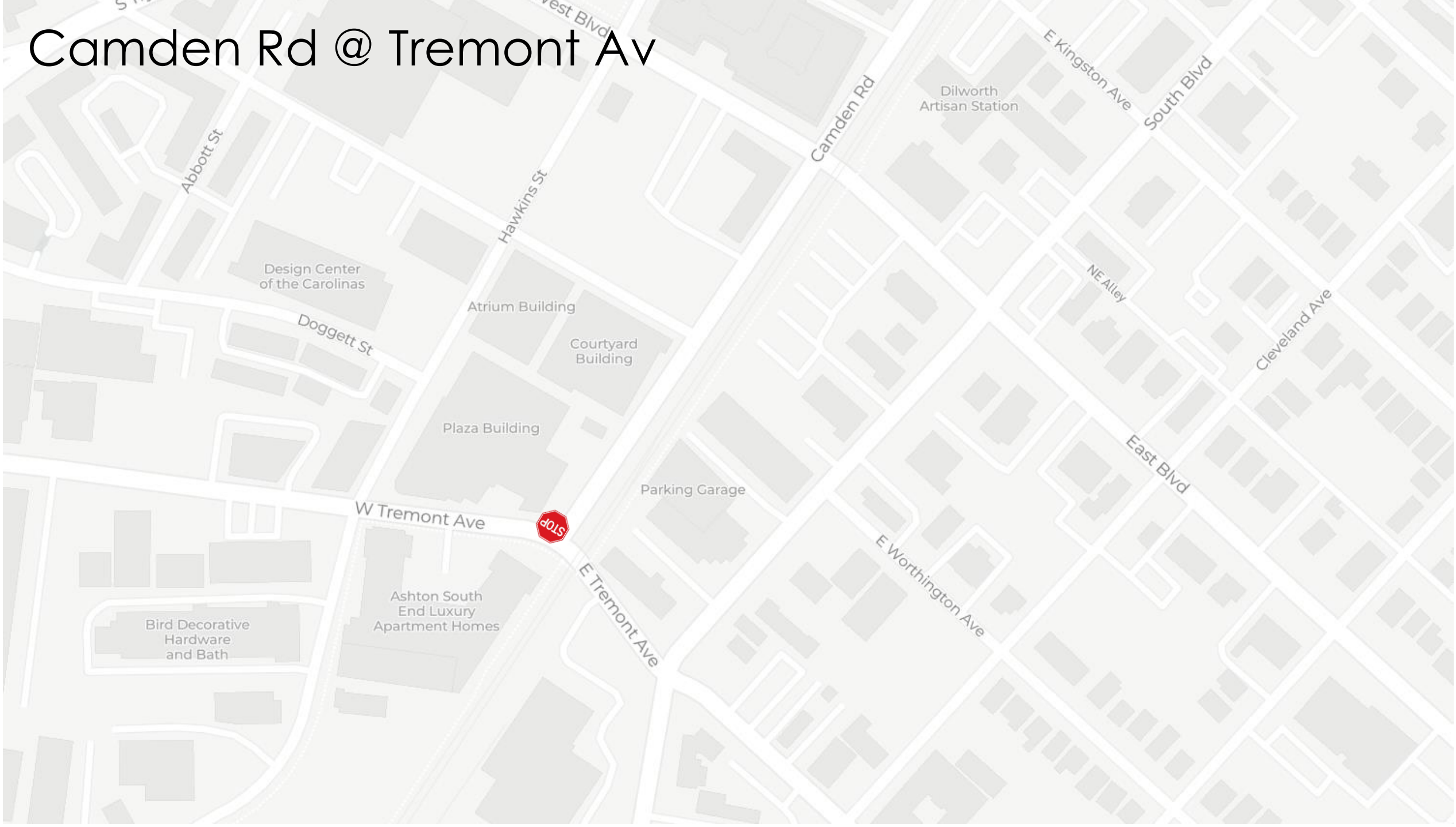

Intersection
Movement..
Scenario
Camden @ East/West
Total
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
27.03
31.04
428.8
454.0
1,489
1,720
NE-NW
AM NO-BUILD
PM NO-BUILD
11.48
64.2
6
NW-NE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
55.59
41.56
62.49
395.0
11
18
NE-SE
AM NO-BUILD
PM NO-BUILD
20.37
15.8
1
NE-SW
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
11.88
12.55
64.2
0.0
74.3
79
6
85
NW-SE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
40.84
42.63
395.0
542
504
NW-SW
AM NO-BUILD
PM NO-BUILD
30.16
393.3
34
SE-NE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
16.05
26.46
409.1
434.8
53
10
SE-NW
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
15.60
18.34
409.1
434.8
617
650
SE-SW
AM NO-BUILD
PM NO-BUILD
23.05
434.8
42
SW-NE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
31.57
12.72
141.7
241.4
129
202
SW-NW
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
18.47
150.5
108.1
21
69
SW-SE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
30.04
42.81
141.7
241.4
16
106
0
20
40
60
Vehdelay(All)
0
100
200
300
400
500
Max. Qlenmax
0
500
1000
1500
2000
Vehs(All)
Losval(All)
A
B
C
D
E

# CAMDEN RD


Intersection
Movement..
Scenario
Camden @ East/West
Total
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
27.03
31.04
428.8
454.0
1,489
1,720
NE-NW
AM NO-BUILD
PM NO-BUILD
11.48
64.2
6
NW-NE
EBL
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
55.59
41.56
62.49
395.0
11
18
NE-SE
AM NO-BUILD
PM NO-BUILD
20.37
15.8
1
NE-SW
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
11.88
12.55
64.2
0.0
74.3
79
6
85
NW-SE
EBT
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
40.84
42.63
395.0
542
504
NW-SW
AM NO-BUILD
PM NO-BUILD
30.16
393.3
34
SE-NE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
16.05
26.46
409.1
434.8
53
10
SE-NW
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
15.60
18.34
409.1
434.8
617
650
SE-SW
AM NO-BUILD
PM NO-BUILD
23.05
434.8
42
SW-NE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
31.57
12.72
141.7
241.4
129
202
SW-NW
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
18.47
150.5
108.1
21
69
SW-SE
AM NO-BUILD
AM BUILD
PM NO-BUILD
PM BUILD
30.04
42.81
141.7
241.4
16
106
0
20
40
60
Vehdelay(All)
0
100
200
300
400
500
Max. Qlenmax
0
500
1000
1500
2000
Vehs(All)
Losval(All)
A
B
C
D
E

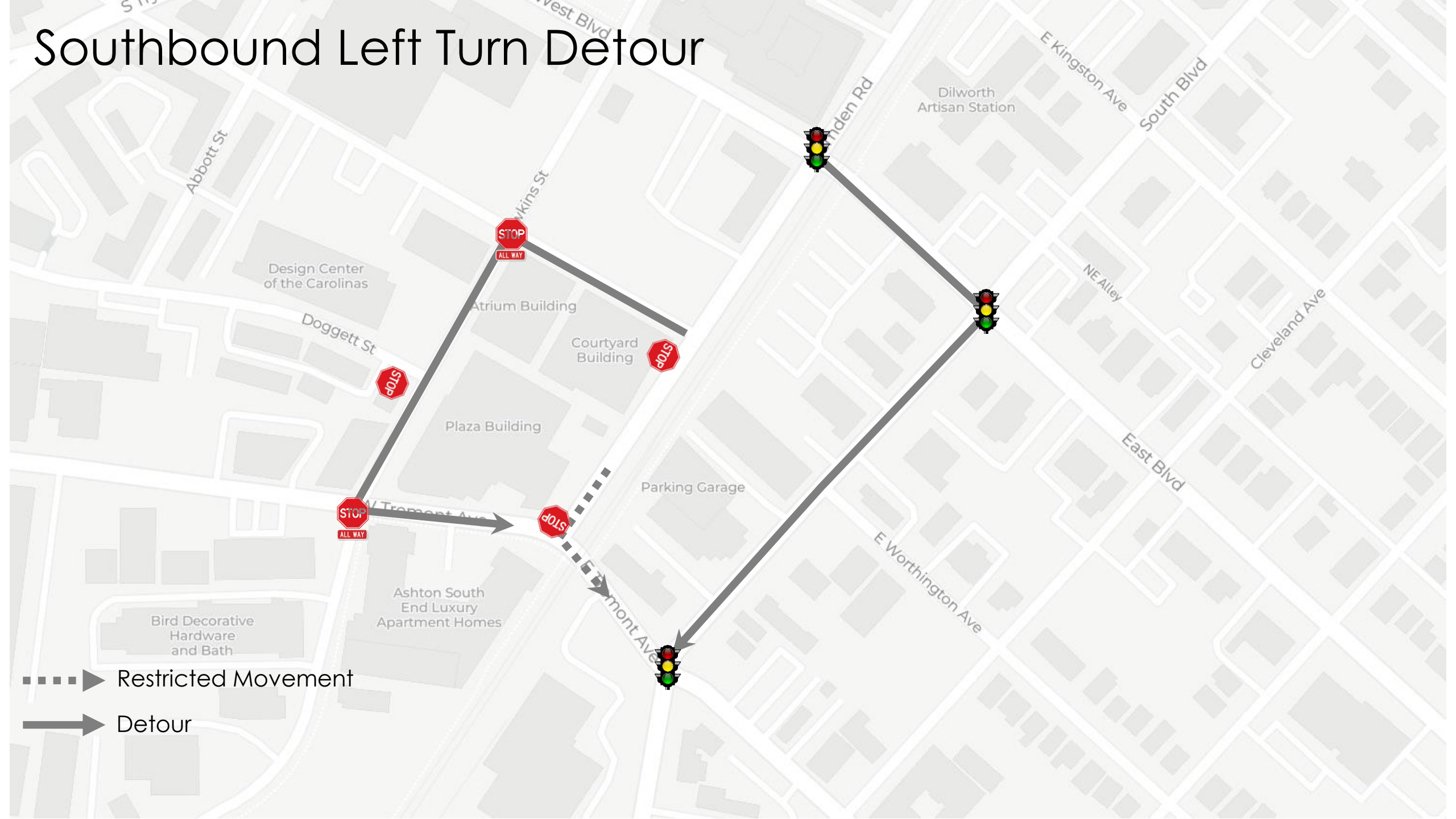
# Camden Rd @ Tremont Av

# Camden Rd @ Tremont Av



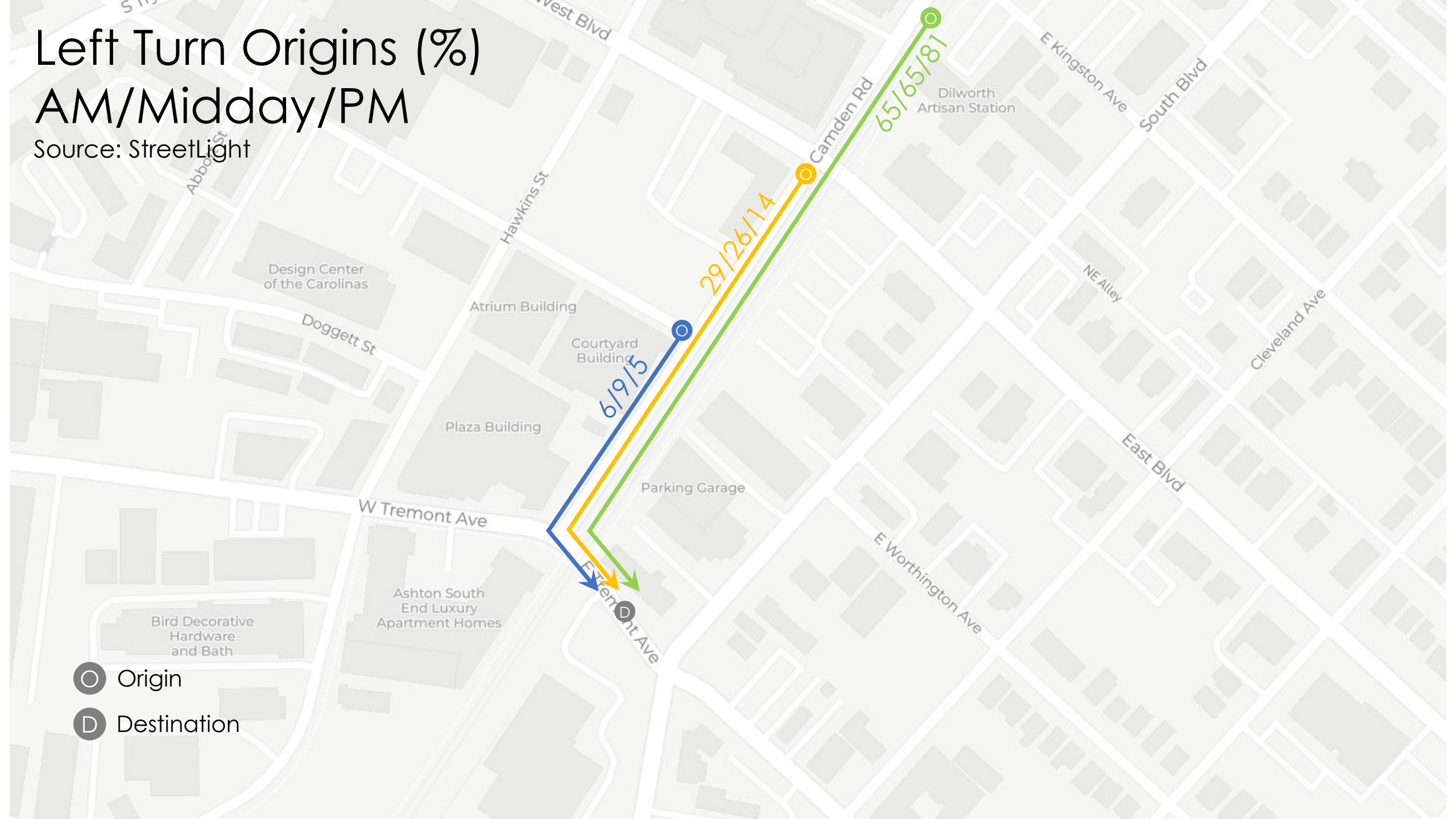

STOP
Camden Rd 1900
Tremont Ave 100
ASHTON
Camden Rd

# Southbound Left Turn Detour

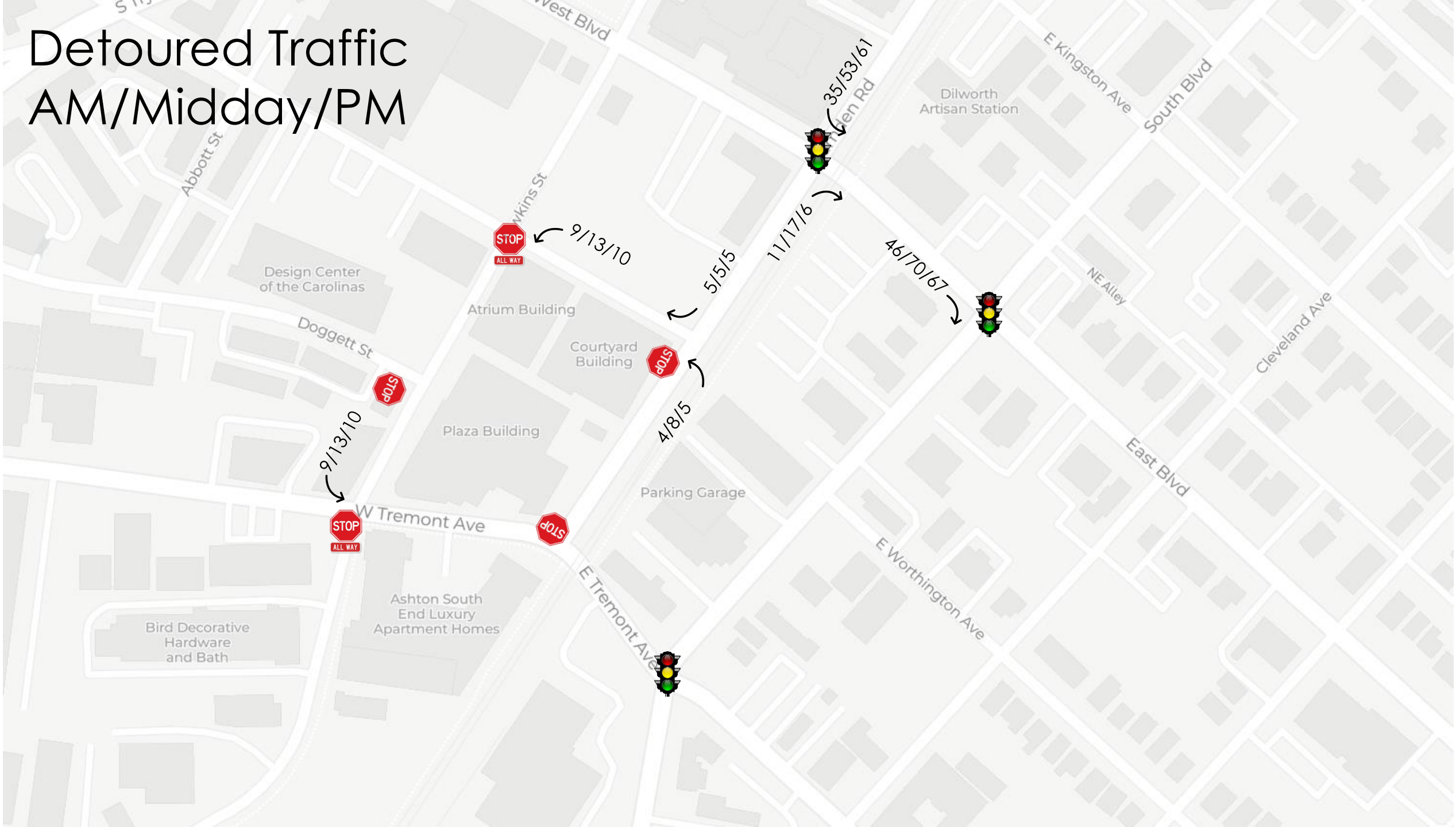


# Left Turn Origins (%) AM/Midday/PM

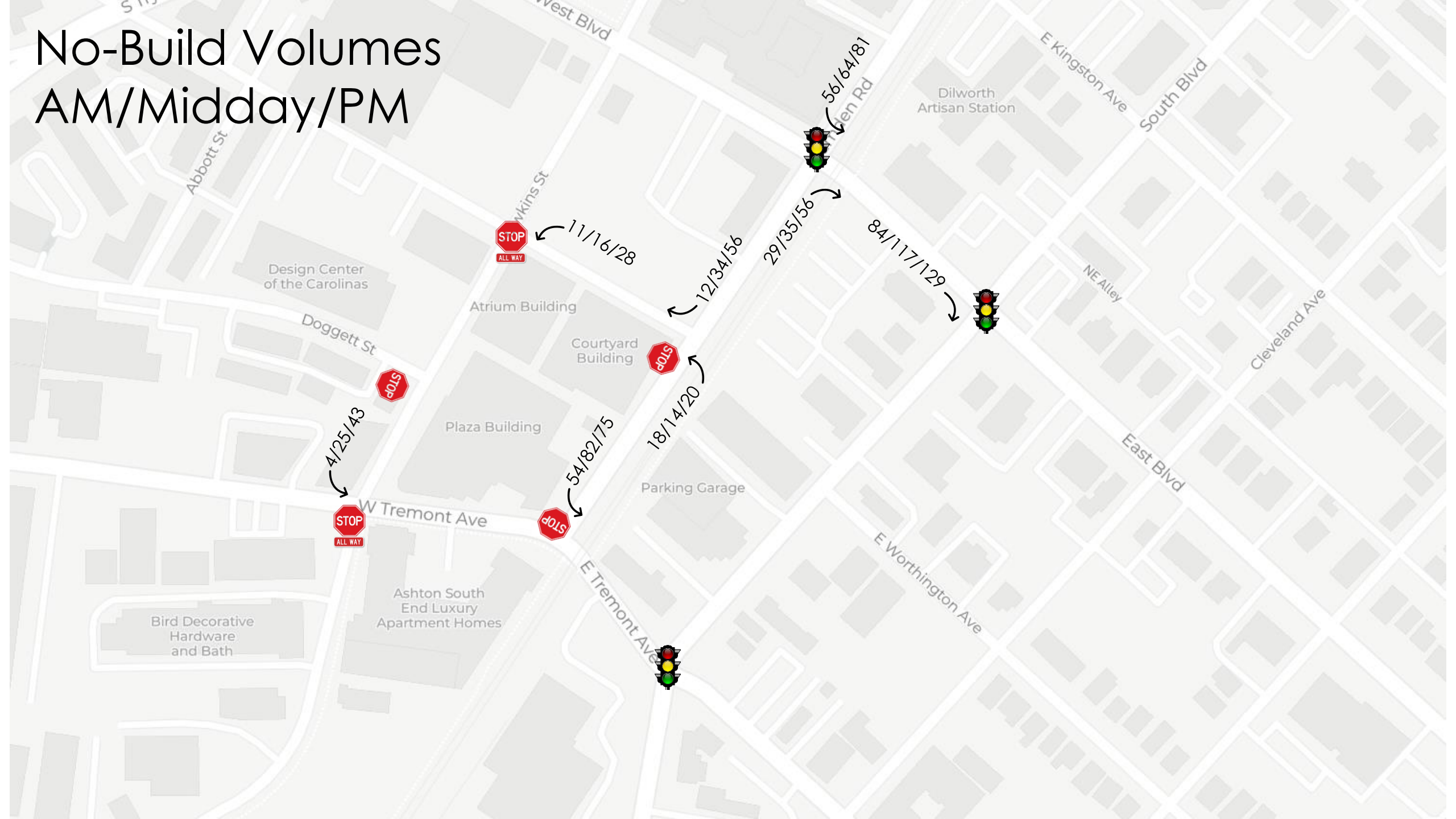
Source: StreetLight



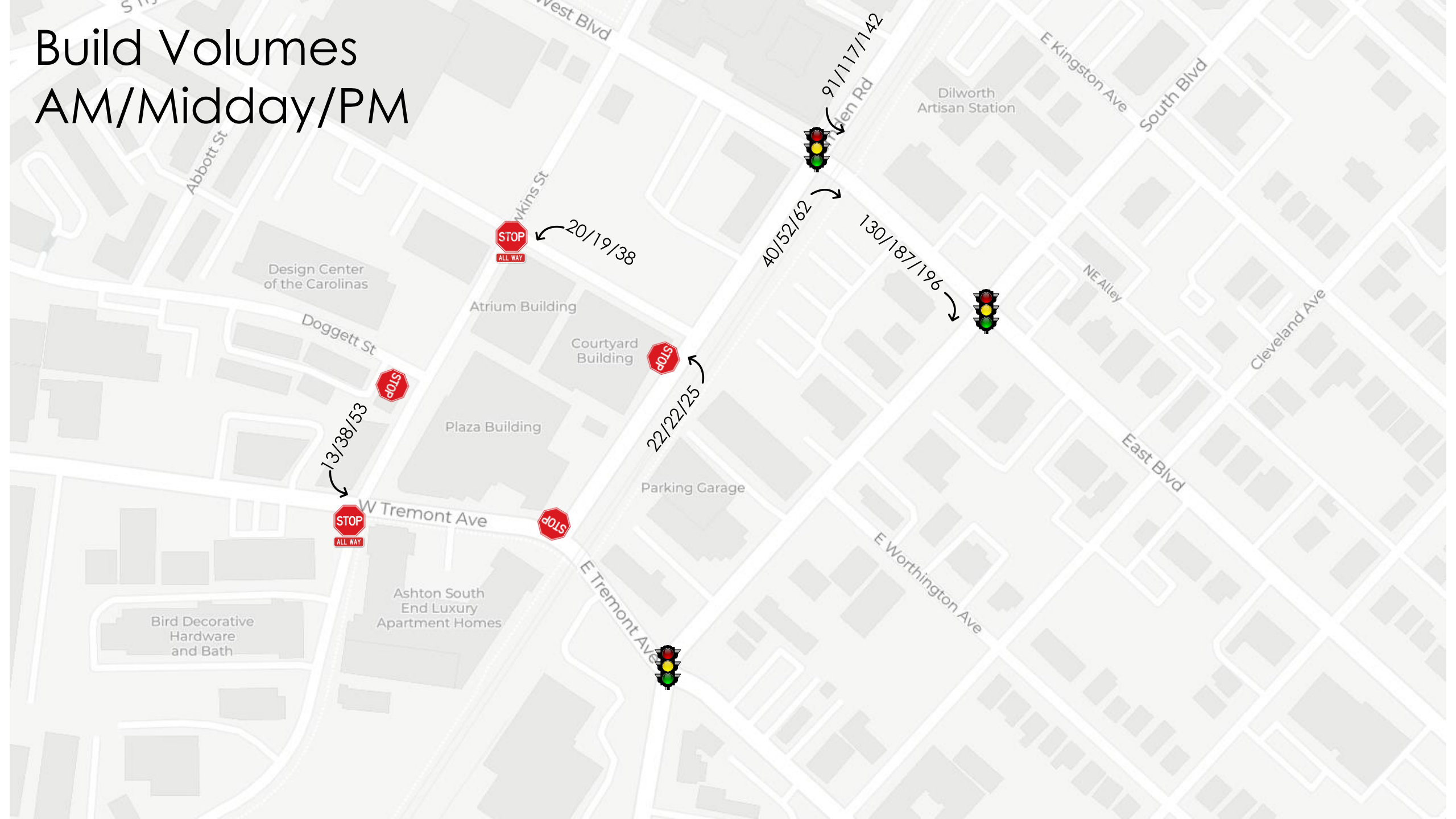
# Detoured Traffic
# AM/Midday/PM



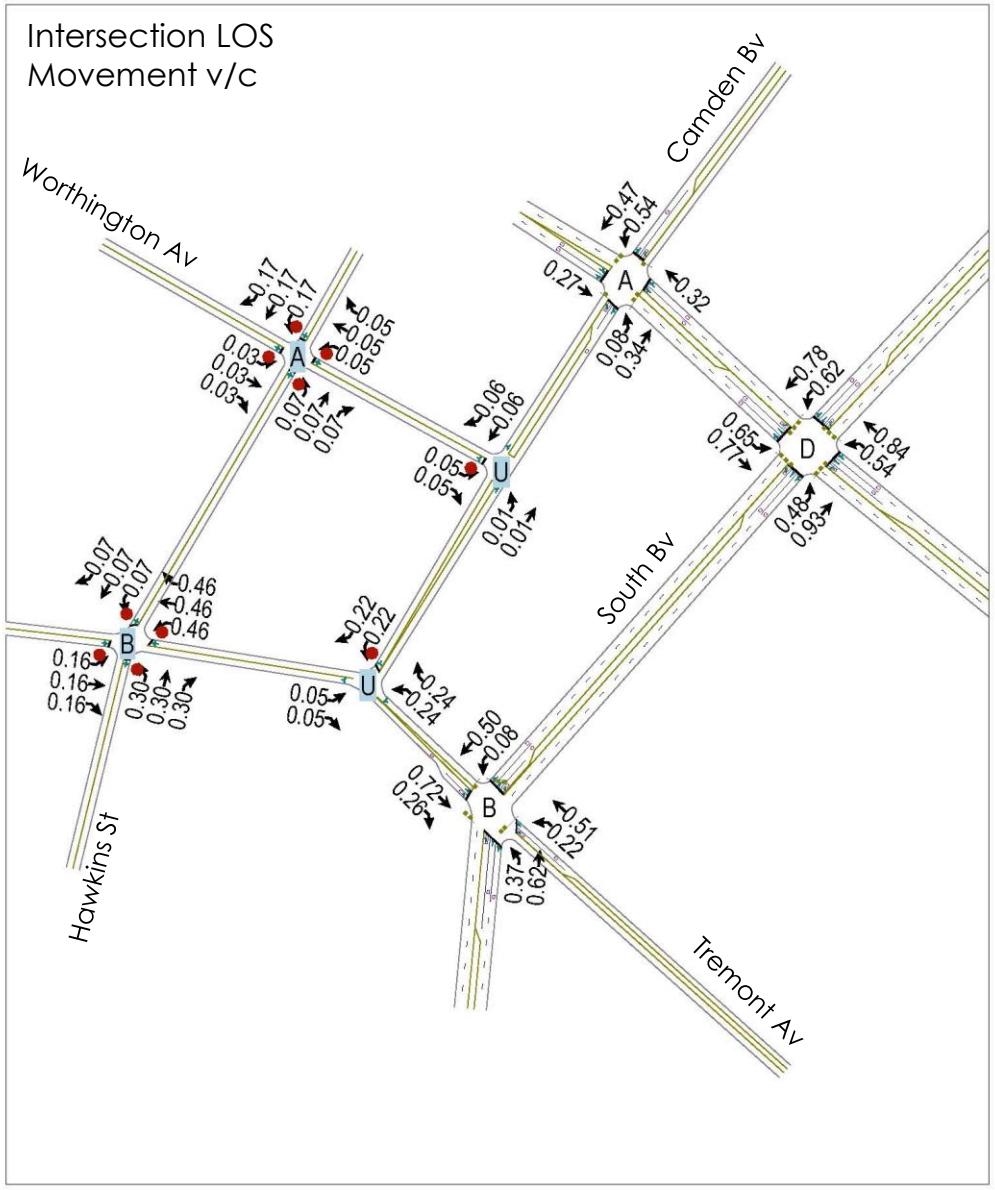
# No-Build Volumes
# AM/Midday/PM



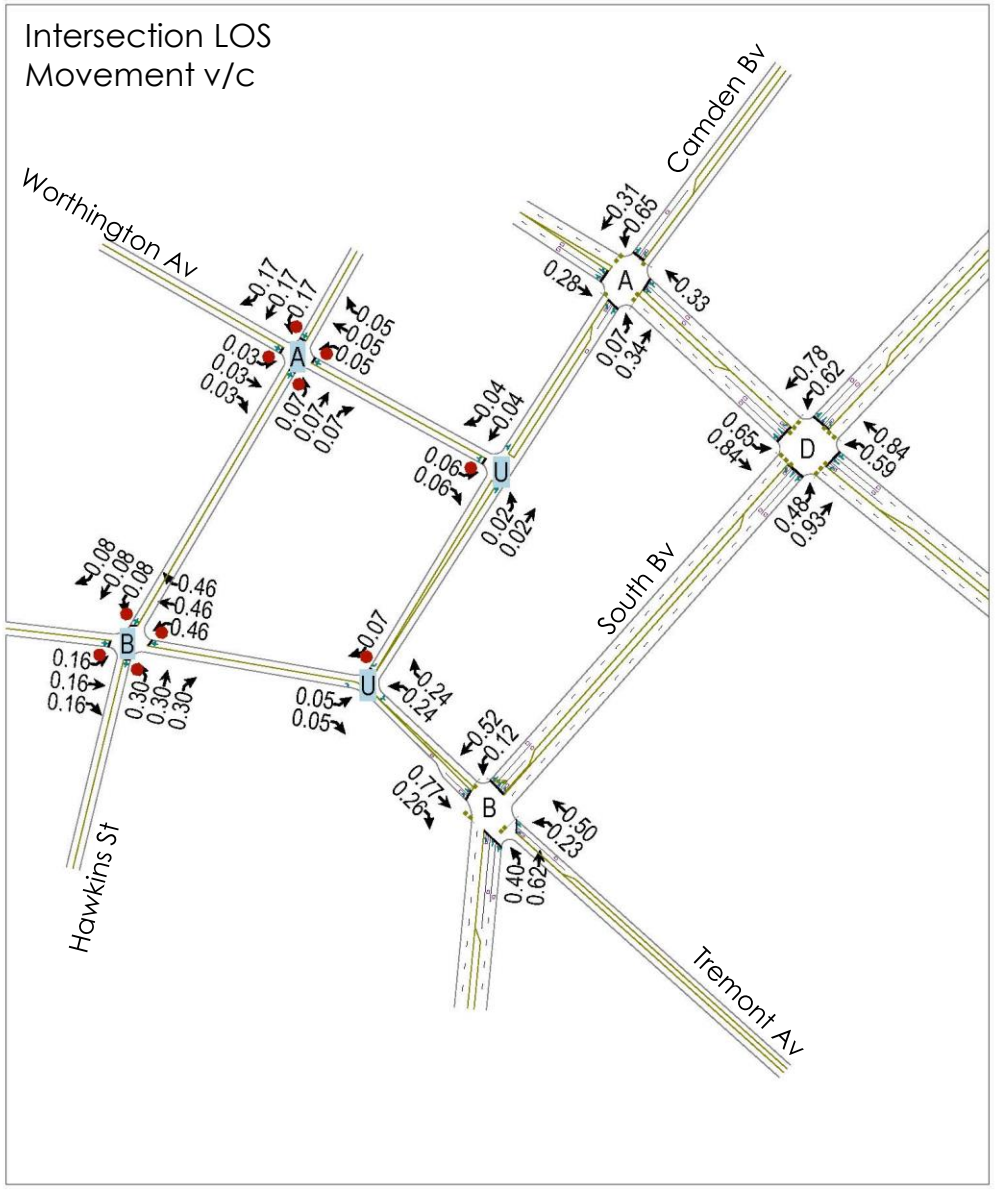
# Build Volumes
# AM/Midday/PM



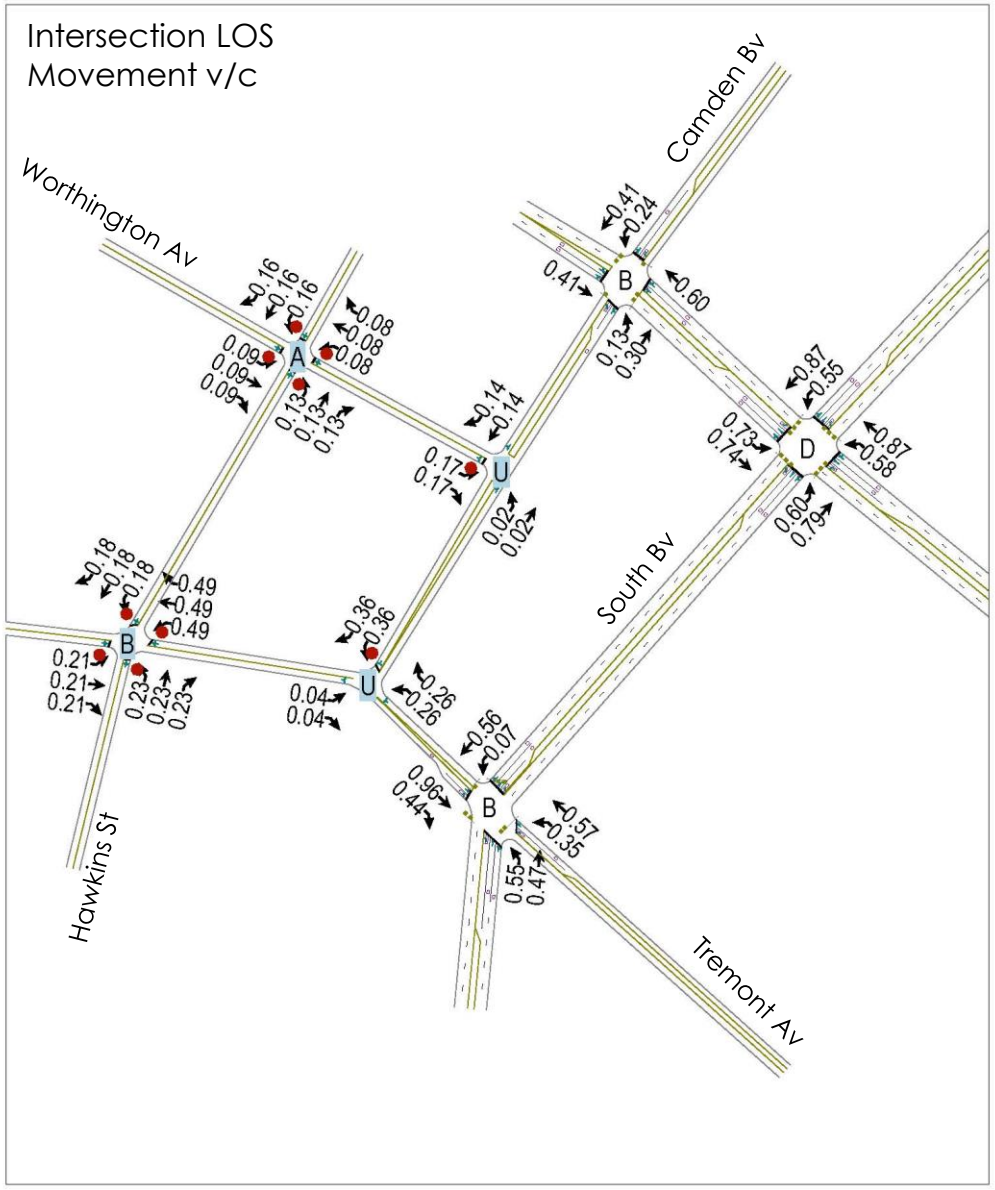
AM No-Build



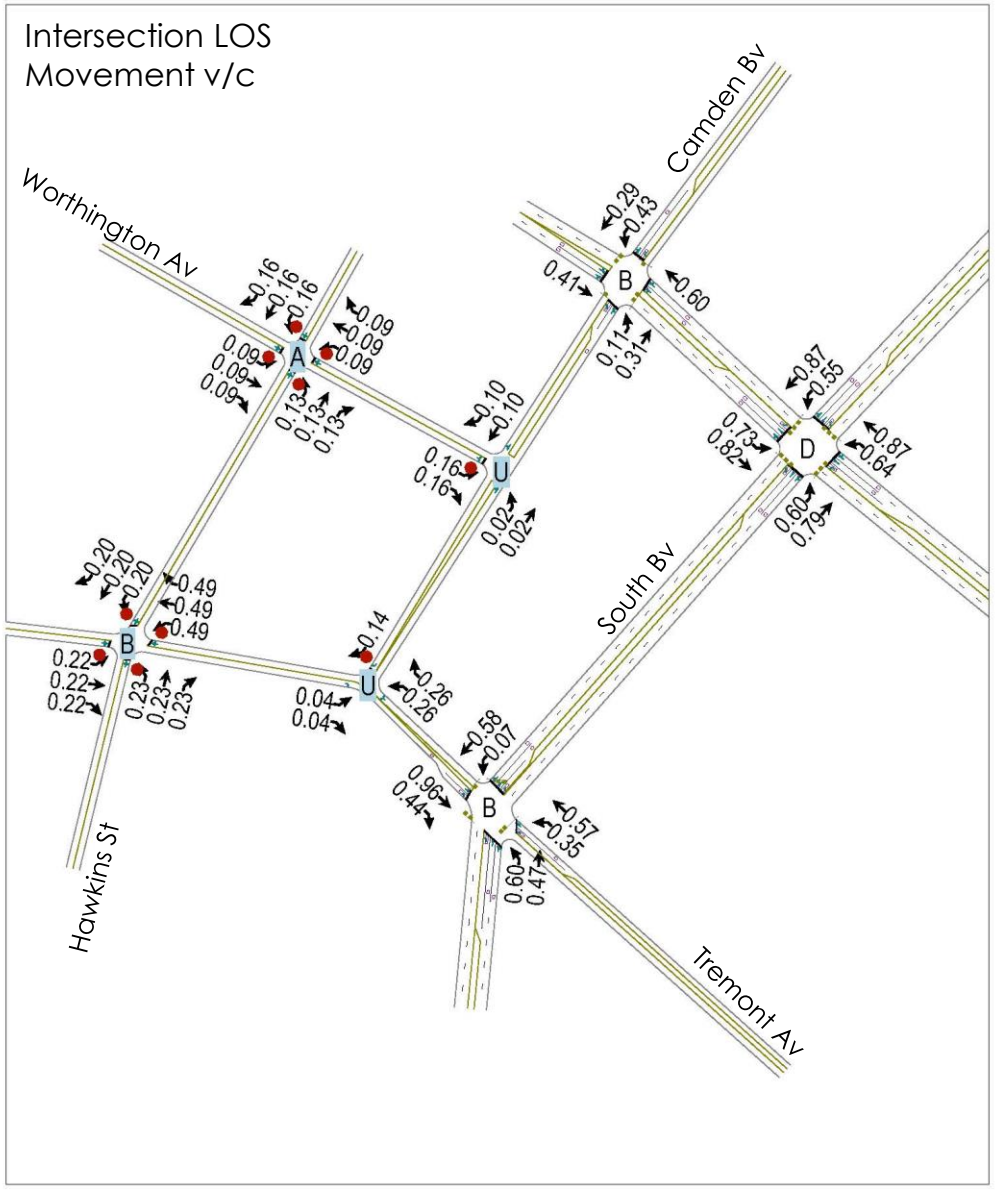

AM Build



PM No-Build




PM Build






NOTES:

1. THIS PROJECT DESIGN IS BASED ON AERIAL IMAGERY AND LIMITED FIELD MEASUREMENTS TO ANALYZE EXISTING CONDITIONS. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL EXISTING FEATURES AND CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IN THE EVENT OF DISCREPANCIES BETWEEN FIELD CONDITIONS AND EXISTING CONDITIONS AS DEPICTED ON THESE PLANS.
2. CONTACT PROJECT ENGINEER TO ARRANGE STAKEOUT AND PRE-CONSTRUCTION MEETING: ERIN PRATT, PE, 980-240-3165, ERIN.PRATT@CHARLOTTENC.GOV.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE REQUIREMENTS OF THE MOST CURRENT EDITIONS OF THE CHARLOTTE DEPT. OF TRANSPORTATION (CDOT) WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH), THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) SUPPLEMENT TO THE MUTCD, THE NCDOT ROADWAY STANDARD DRAWINGS AND THE CURRENT EDITION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
   3.1. CONTACT GEOFF SLOOP, SENIOR ENGINEERING PROJECT MANAGER (704-578-8639), CDOT IMPLEMENTATION SECTION OR THE PROJECT ENGINEER IF THERE ARE QUESTIONS REGARDING TEMPORARY TRAFFIC CONTROL
4. ALL CROSSWALK MARKINGS TO BE RETAINED AT THE CAMDEN ROAD AND TREMONT AVENUE INTERSECTION.

CHARLOTTE

Plans Prepared By:


800 East Fourth Street
Charlotte, North Carolina 28202
Phone: (704) 336-4119
Fax: (704) 336-4402

CITY OF CHARLOTTE
CHARLOTTE DEPARTMENT OF TRANSPORTATION


| | | | |
|---|---|---|---|
| 1" = 20' SCALE | EIP | 11-22-2022 | |
| | CSW | | |

CAMDEN ROAD & TREMONT AVENUE INTERSECTION

PLAN VIEW

2 | 6

N:\Planning & Design\Design Section\Miscellaneous Projects\Camden and Tremont\17 - CAD\Camden Tremont Intersection Concept Fi

# Questions?


Camden Rd
Severville
Johnson & Wales University – Charlotte
Rhino Market and Deli
Glenwood
Zeppelin
Dilworth
Dr. Charles L. Sifford Golf Course
Carolinas Medical Center-Mercy
Rosemont
Colonial Heights
Carolinas Medical Center
W Morehead St
West Blvd
W Tremont Ave
Remount Rd
Revolution Park Dr
Camp Greene St
Thrift Rd
Highland St
Suttle Ave
Merriman Ave
S Mint St
S Church St
Winnifred St
S Tryon St
Toomey Ave
South Blvd
Cleveland Ave
Euclid Ave
Myrtle Ave
Lexington Ave
E Morehead St
E Brooklyn Village Ave
E 3rd St
E Trade St
S College St
W 5th St
W Trade St
N Smith St
N Graham St
N Poplar St
N Church St
N Tryon St
W 12th St
E 12th St
E 11th St
E 7th St
E 10th St
E 15th St
E 19th St
E 18th St
E 17th St
Seigle Ave
Allen St
Otts St
Louise Ave
Hawthorne Ln
Pegram St
Elizabeth Ave
E 4th St
E 5th St
E 7th St
E 8th St
Bay St
S Kings Dr
Lennox Ave
Park Rd
Dilworth Rd W
Dilworth Rd E
1662
277
29
27
74
29-74
160
49
16
77