MASSACHUSETTS AVENUE BETTER BIKE PROJECT

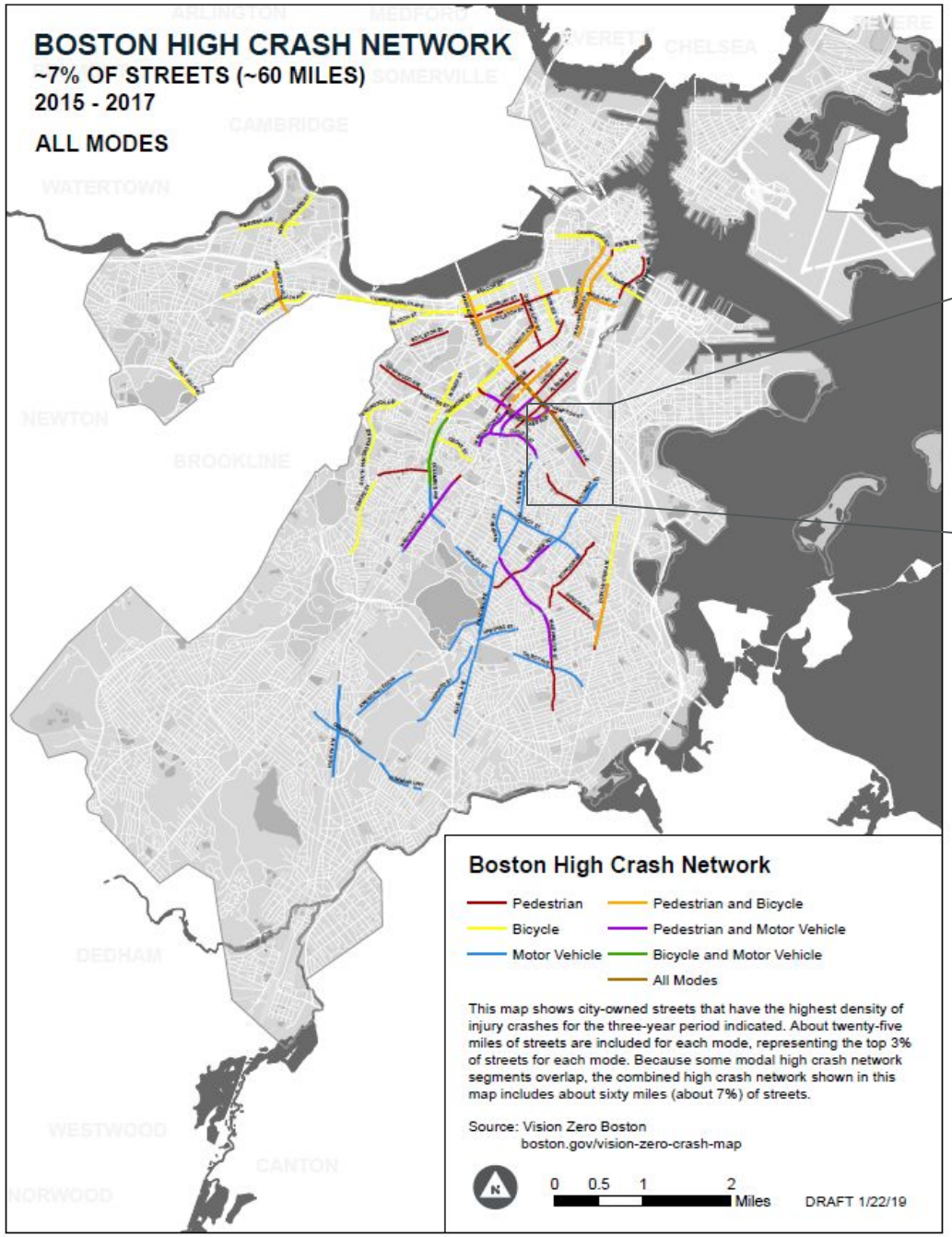
November 18, 2020

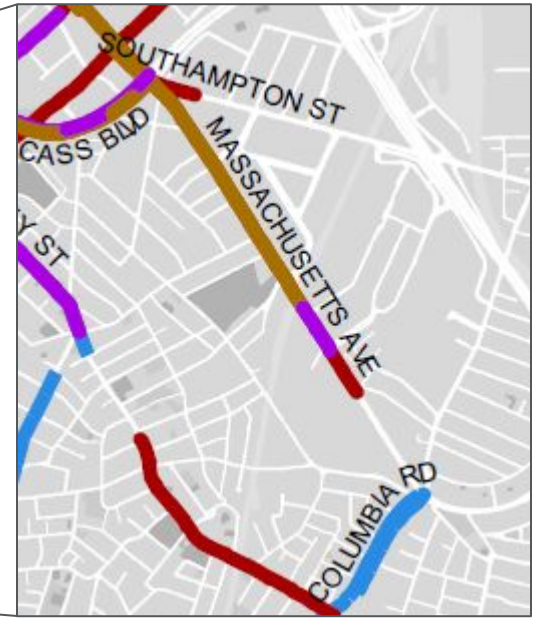
CITY OF BOSTON
Martin J. Walsh, Mayor

BOSTON TRANSPORTATION DEPARTMENT
Greg Rooney, Acting Commissioner

OVERVIEW


CAMBRIDGE
SOMERVILLE
CHARLESTOWN
WINTHROP
WATERTOWN
CAMBRIDGE
EAST BOSTON
CENTRAL
ALLSTON/
BRIGHTON
BACK BAY/
BEACON HILL
FENWAY/
KENMORE
SOUTH
END
SOUTH BOSTON
BROOKLINE
Mass Ave
ROXBURY
BROOKLINE
JAMAICA PLAIN
DORCHESTER
QUINCY
NEWTON
WEST ROXBURY
ROSLINDALE
MATTAPAN
1
93
1A
3
90
20
30
9
28
3A
145
203





Boston High Crash Network

- Pedestrian
- Pedestrian and Bicycle
- Bicycle
- Pedestrian and Motor Vehicle
- Motor Vehicle
- Bicycle and Motor Vehicle
- All Modes


Best Western PLUS
GERARD
25
DI PIERRO
DESIGN • BUILD • REMODEL

Greetings from...

NEWMARKET







Boston, Massachusetts

WHAT WE'VE DONE

PRIORITIZED THE PROJECT

- *Prioritized by the public through the Go Boston 2030 process (2017)*
- *Council advocated for inclusion in the city's FY20 budget (spring 2019)*

CONDUCTED RESIDENT OUTREACH

- *Flyered light posts and all residences along corridor*
- *Conducted walk/ride tours*
- *Presented at civic association meetings*
  - *Columbia-Savin Hill*
  - *Hancock Street*
  - *Jones Hill*
  - *Eastman-Elder*
  - *McCormack Executive Board*
  - *McCormack*
  - *Polish Triangle United*
  - *Uphams Corner Westside*

CONDUCTED BUSINESS OUTREACH

- *Delivered an informational flyer to every open business on the corridor*
  - *Returned twice to ensure every business had been visited*
- *Presented at Newmarket Business Association Meeting*
- *Followed up via 1:1 conversations with specific businesses:*
  - *Di Pierro Construction*
  - *Best Western Roundhouse Suites*
  - *Victory Programs*
  - *Edens*
  - *Ace Plumbing*
  - *South Bay Auto Body*
  - *Home Run Cafe*
  - *Dorchester Brewing Co.*

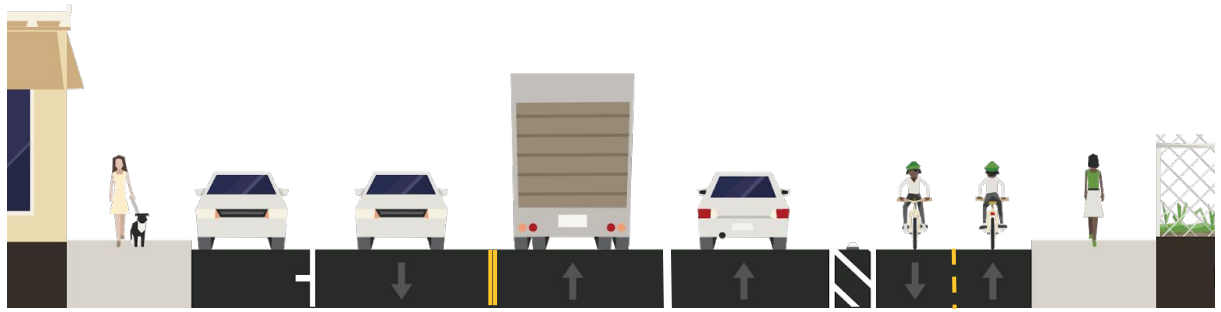
IDENTIFIED DESIGN PRIORITIES

We identified the following design priorities from our initial outreach with residents and businesses:

- Safety of people biking and walking
- Flow of buses, trucks, and cars
- Access to the curb
- Integration with ongoing planning and development

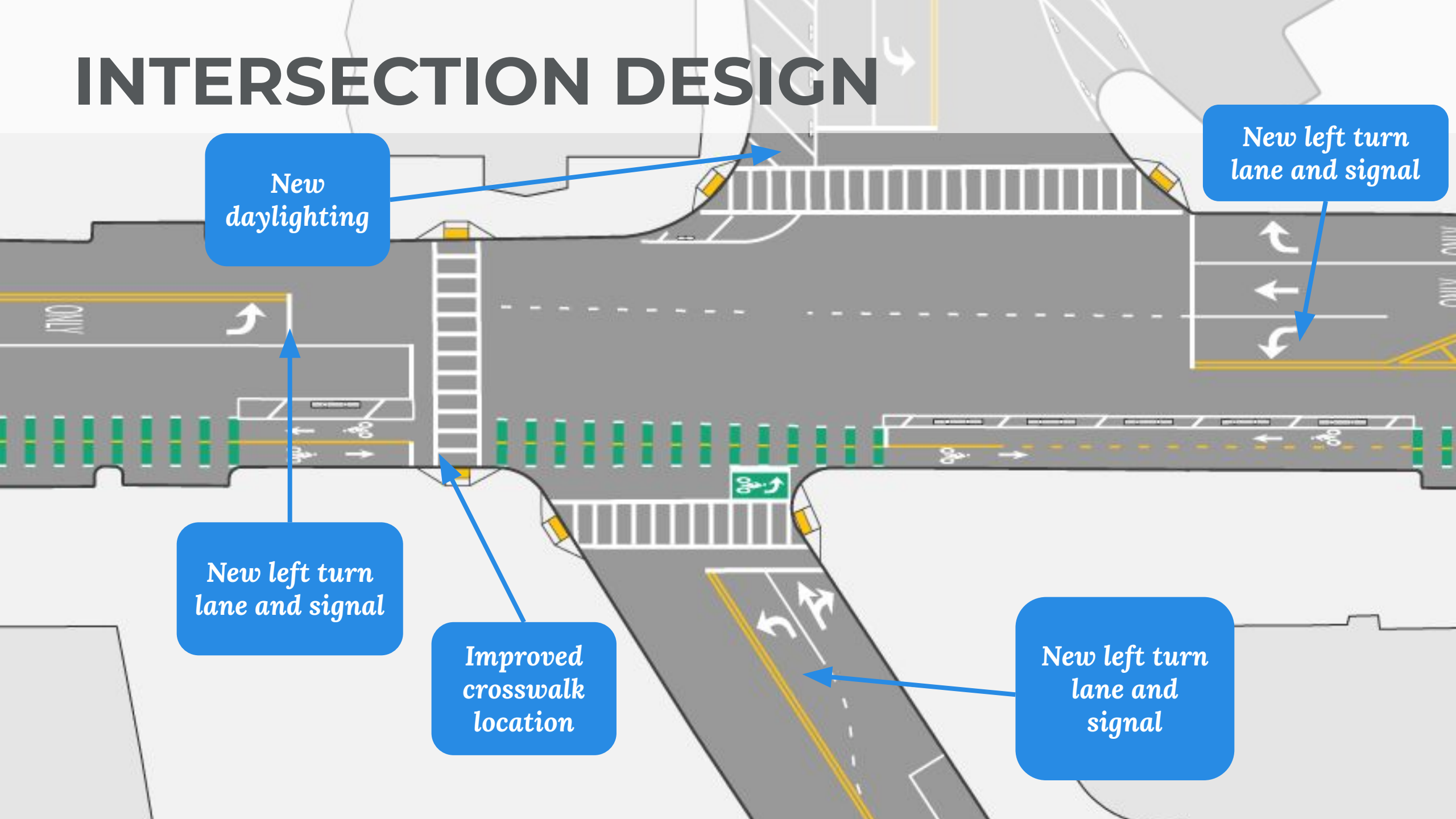
We analyzed all potential concepts against the four design priorities.

- We elected a two-way separated bike lane along the western curb because it proved to be the **safest** and allowed for the **best traffic flow** and **best curb access**.
- We developed a design plan to illustrate this.

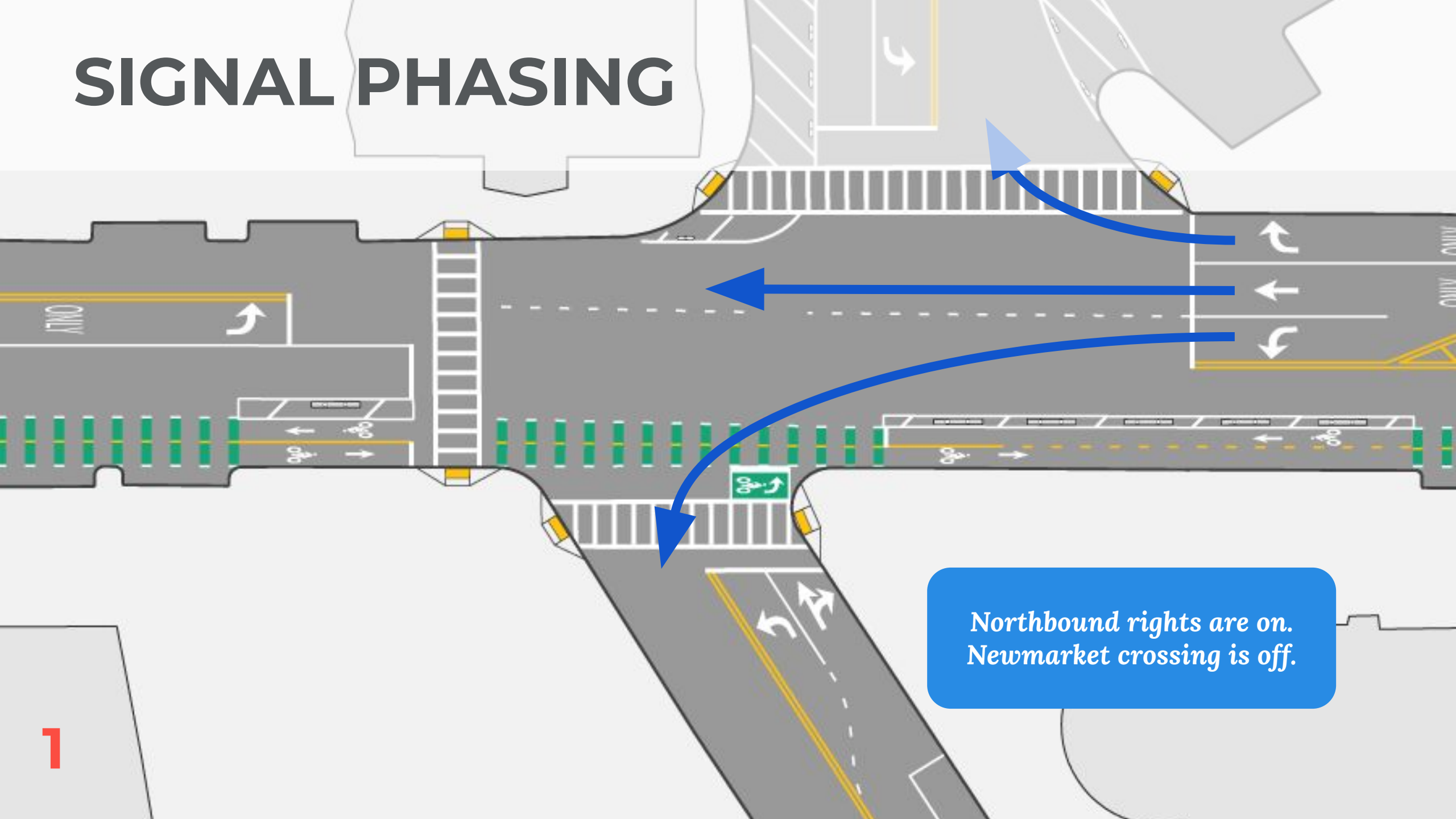


THE DESIGN

INTERSECTION DESIGN

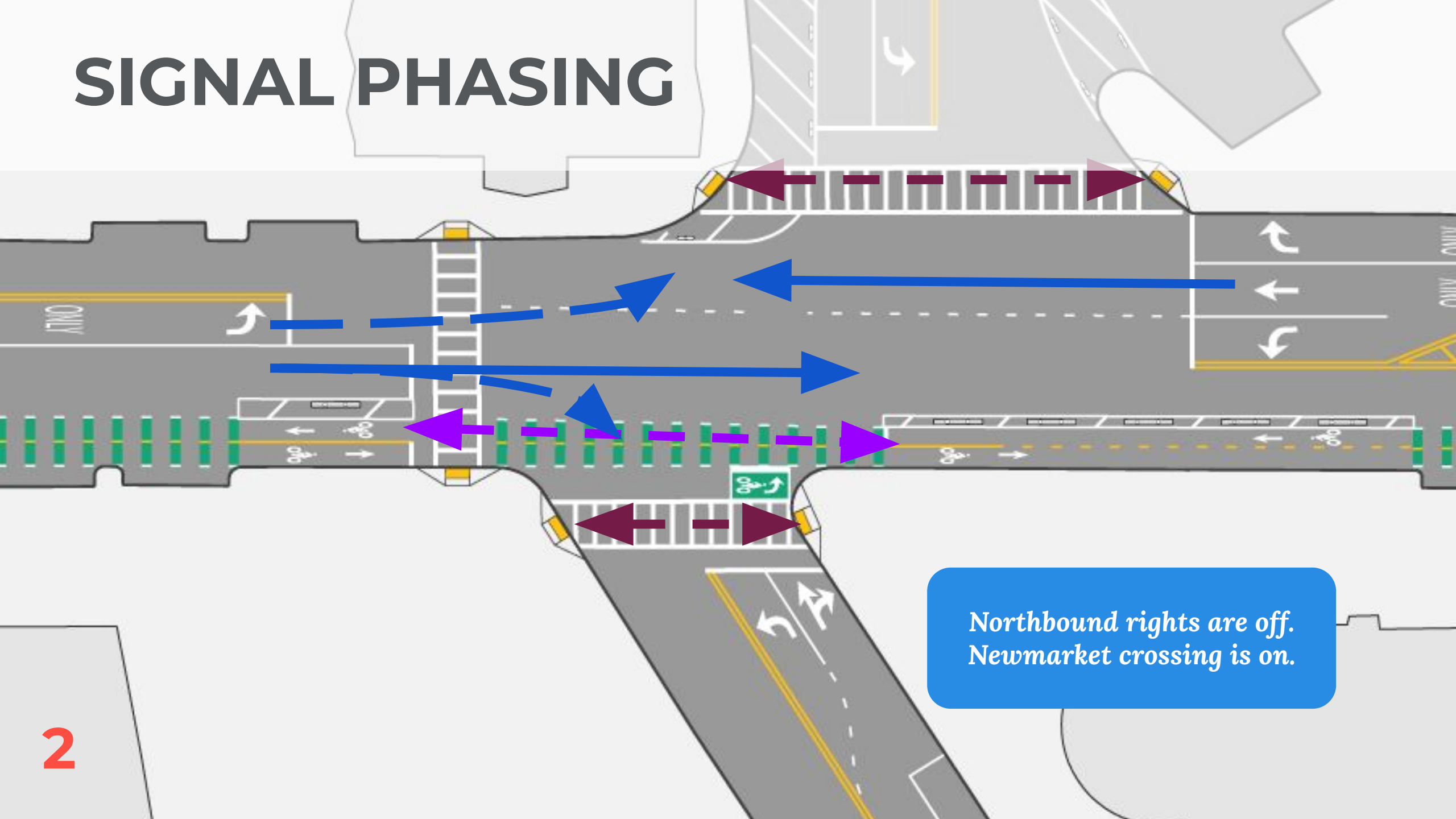


SIGNAL PHASING



Northbound rights are on.
Newmarket crossing is off.

SIGNAL PHASING



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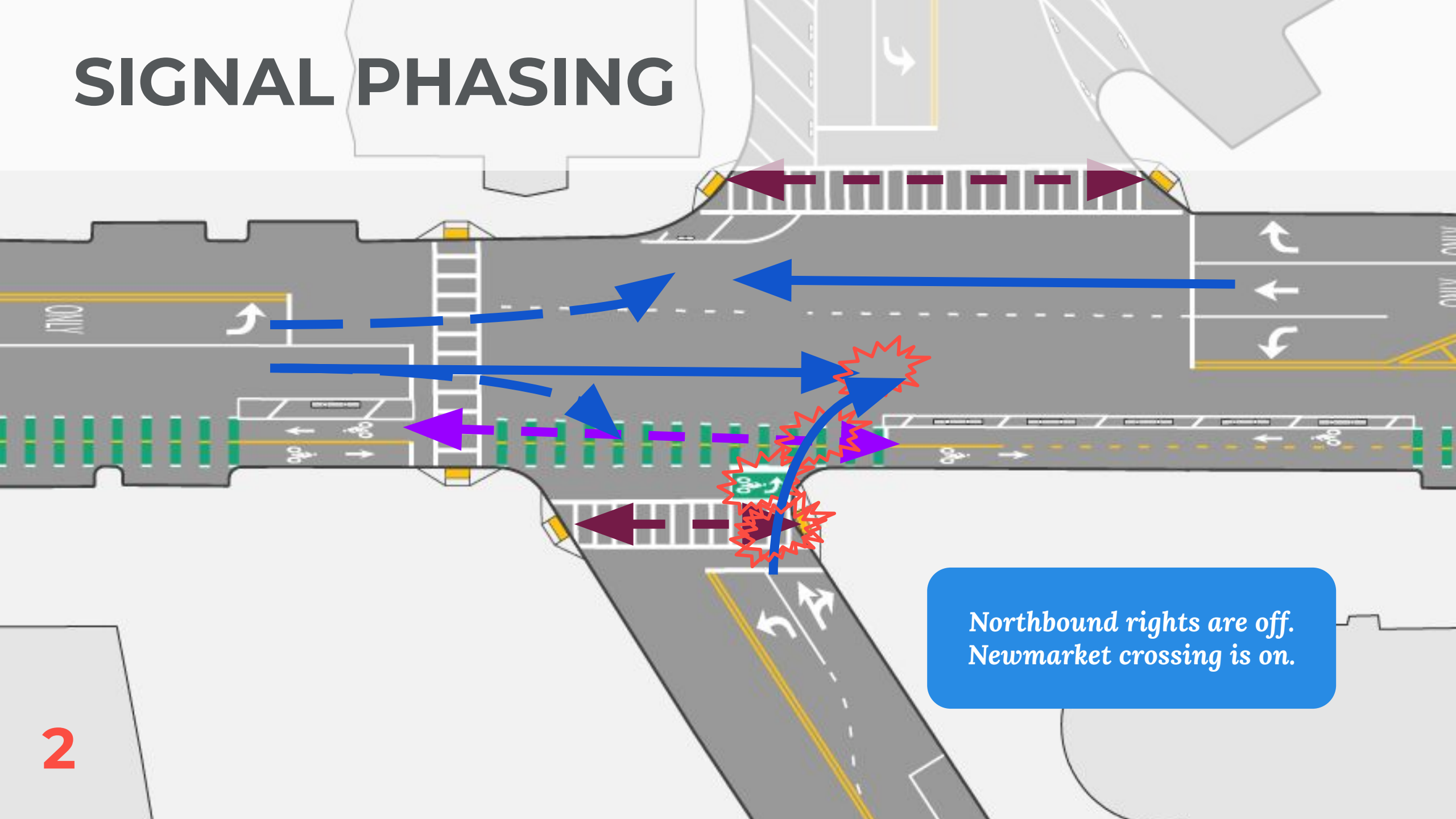

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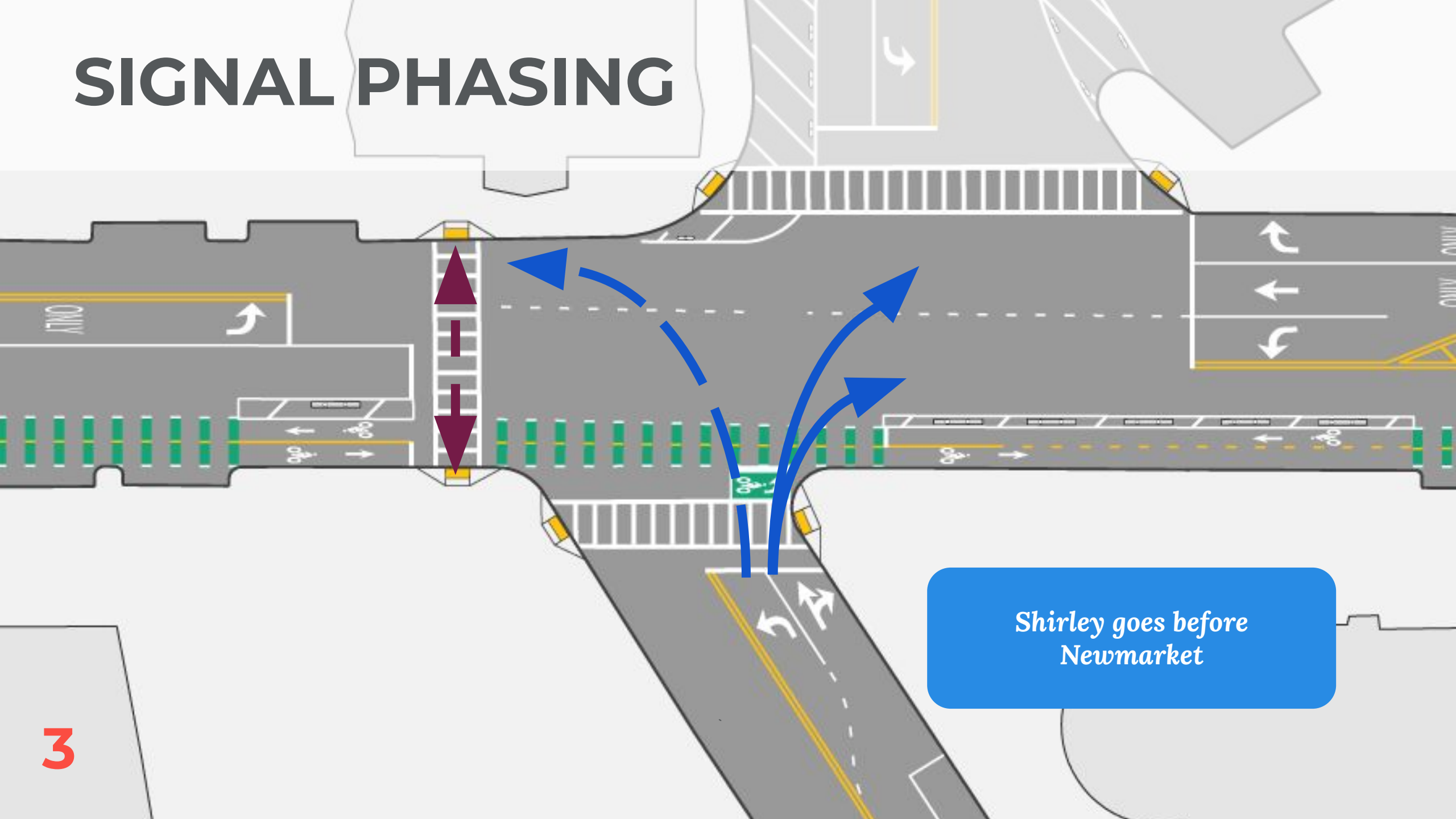
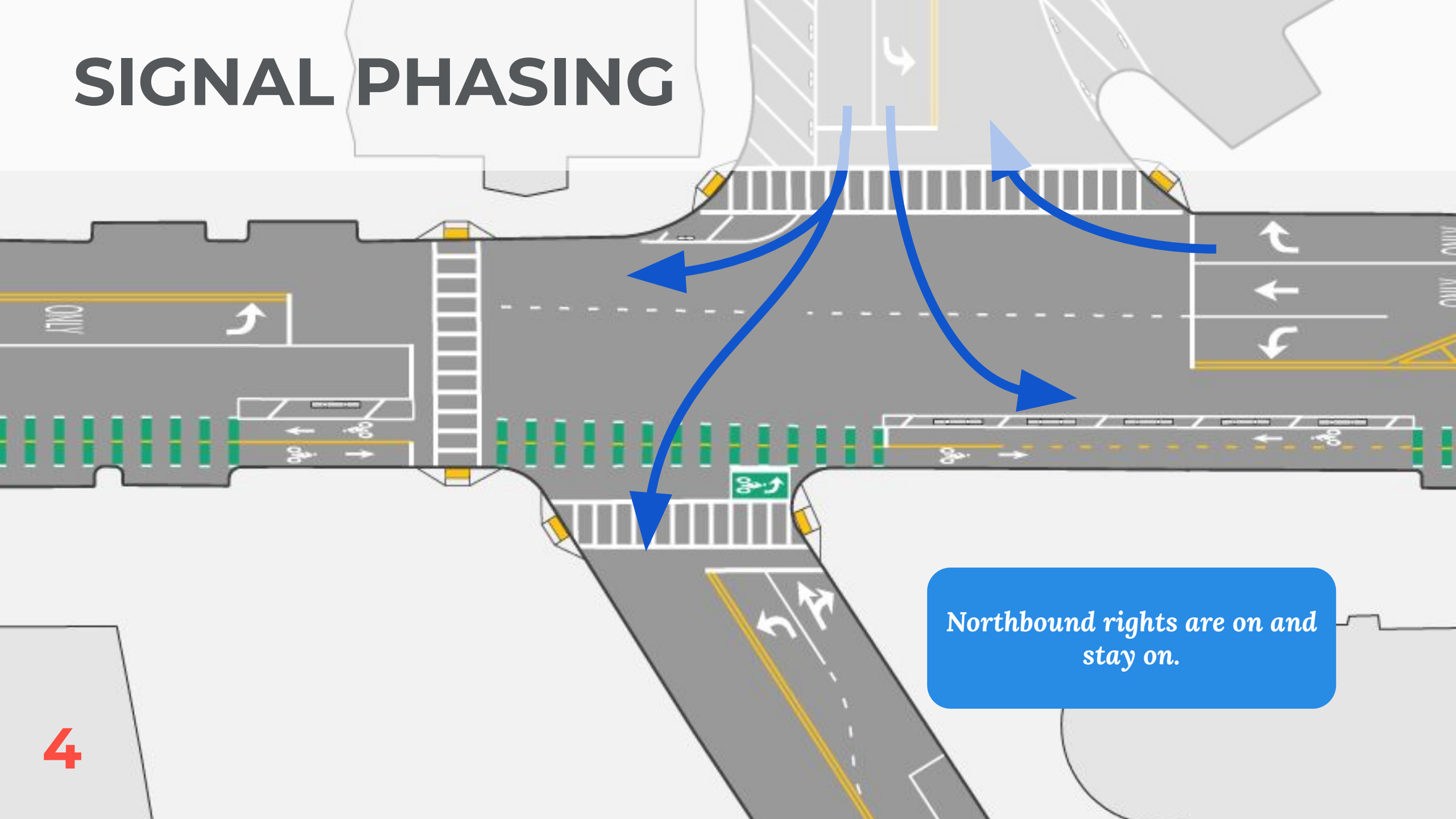


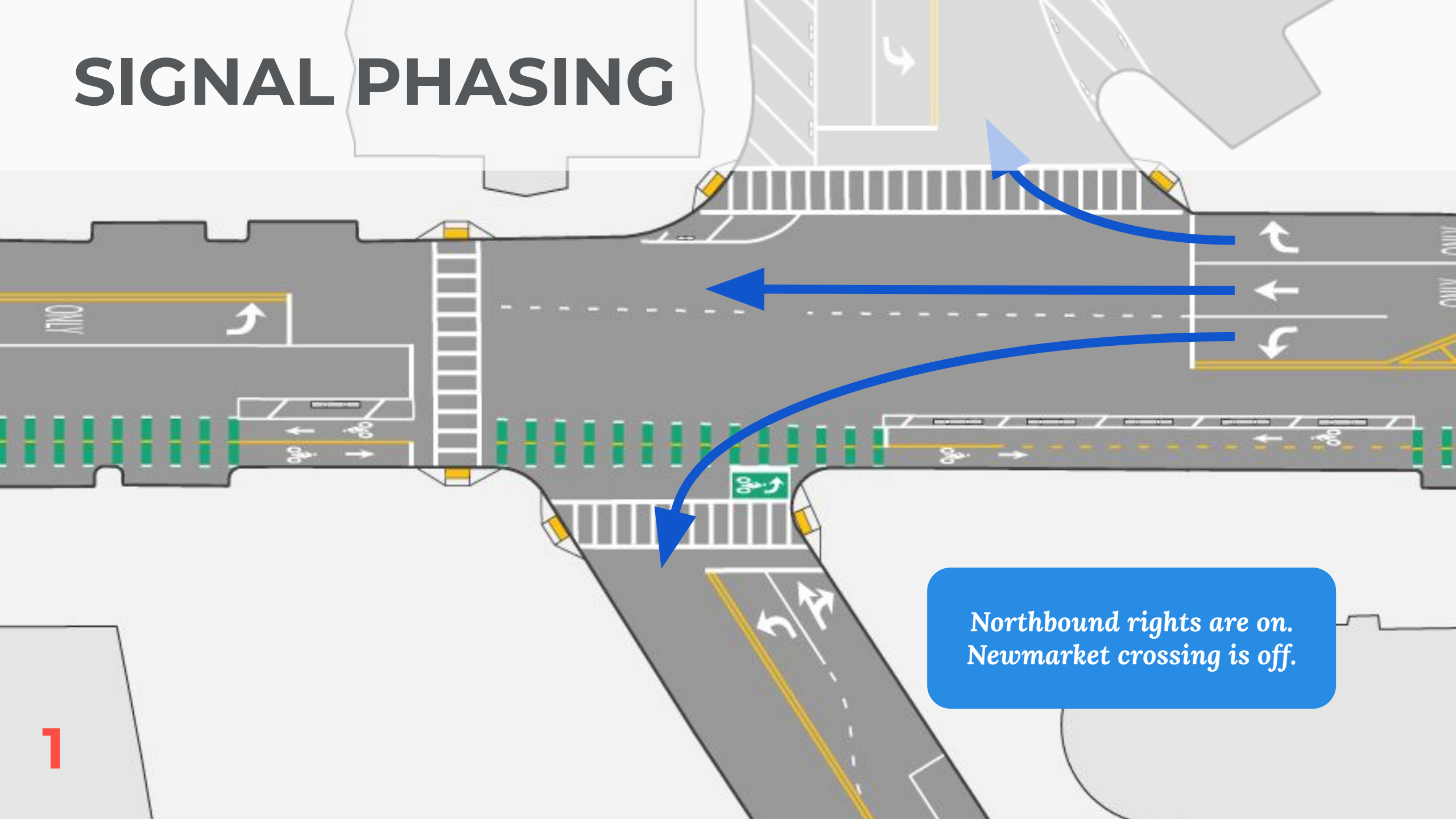
Shirley goes before Newmarket

SIGNAL PHASING



Northbound rights are on and stay on.

SIGNAL PHASING



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QUESTIONS

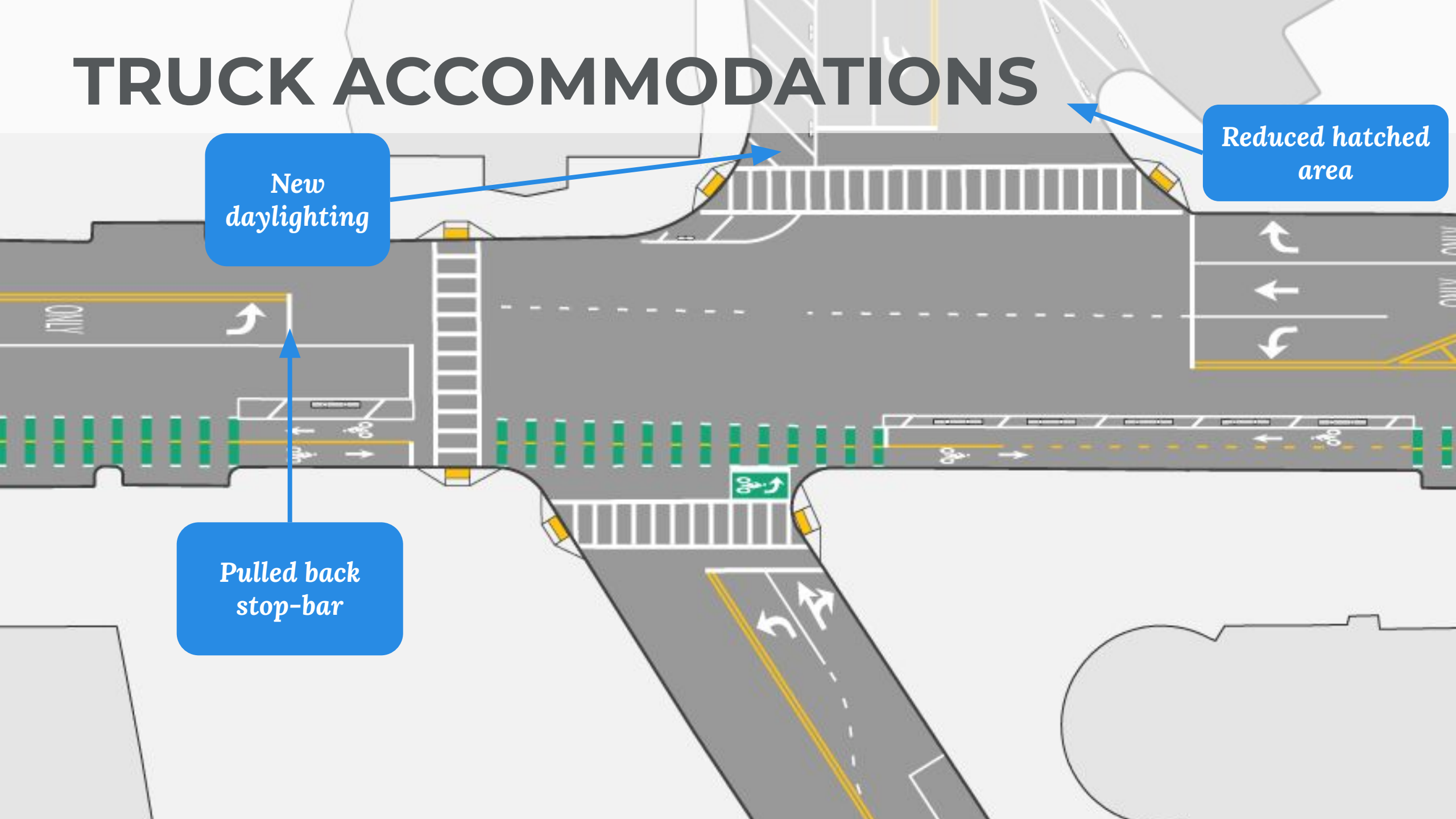
EXPLORATION OF OPTIONS

CRITERIA FOR COMPARISON

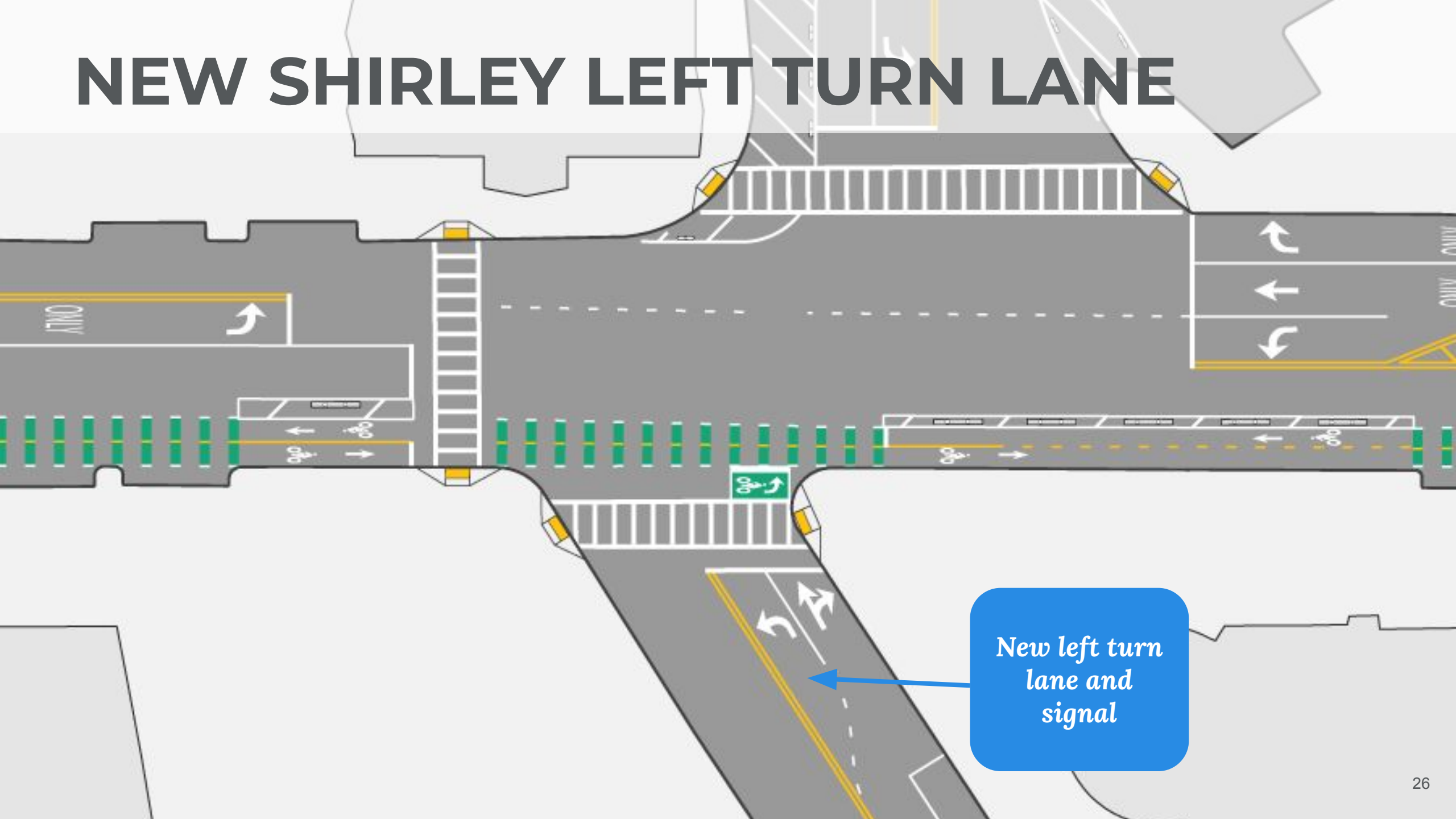
CRITERIA	METRICS
1. Ability of the design (lanes + signals) to process expected vehicles (by movement)	▸ Volume/Capacity (V/C) ▸ SimTraffic assessment
2. Spill-back affecting other intersections	▸ Queue length ▸ SimTraffic assessment
3. Ability of lanes to hold expected vehicles	▸ Queue length ▸ SimTraffic assessment
4. Robustness to known inefficiencies	▸ Separation of potentially conflicting movements

OPTIONS THAT HELPED

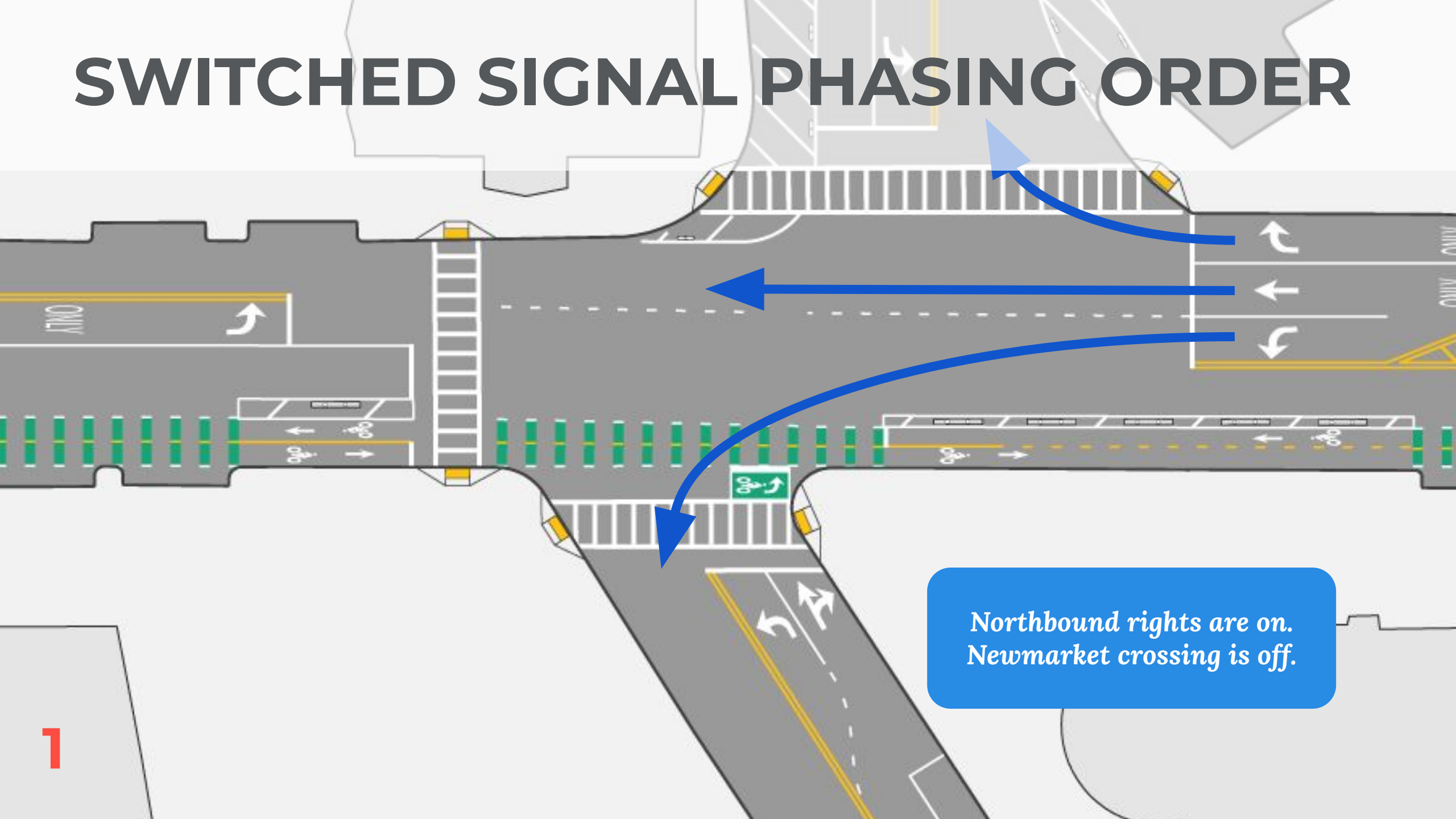
TRUCK ACCOMMODATIONS



NEW SHIRLEY LEFT TURN LANE



SWITCHED SIGNAL PHASING ORDER



1

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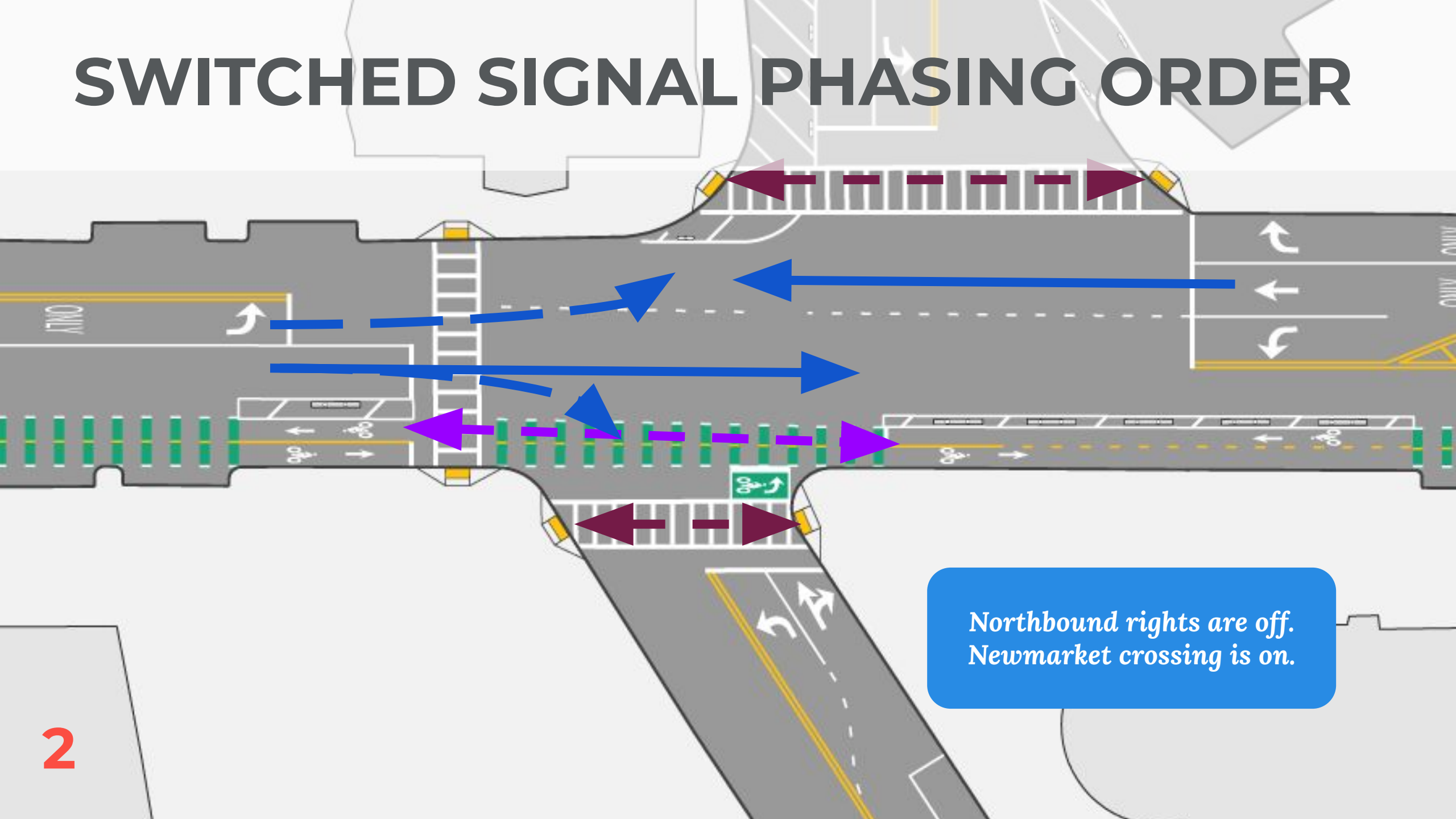

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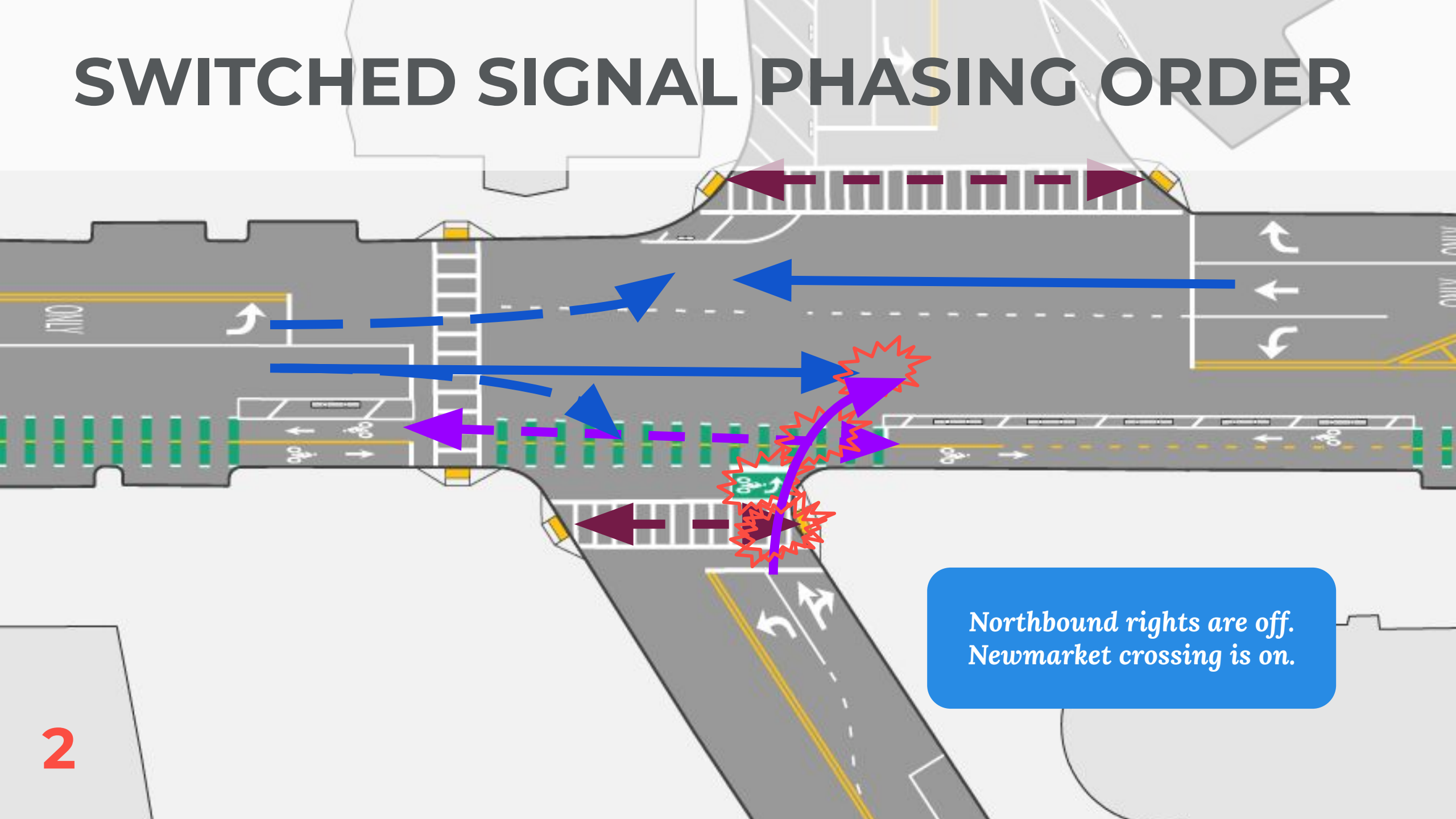
Newmarket crossing is on.

2

SWITCHED SIGNAL PHASING ORDER



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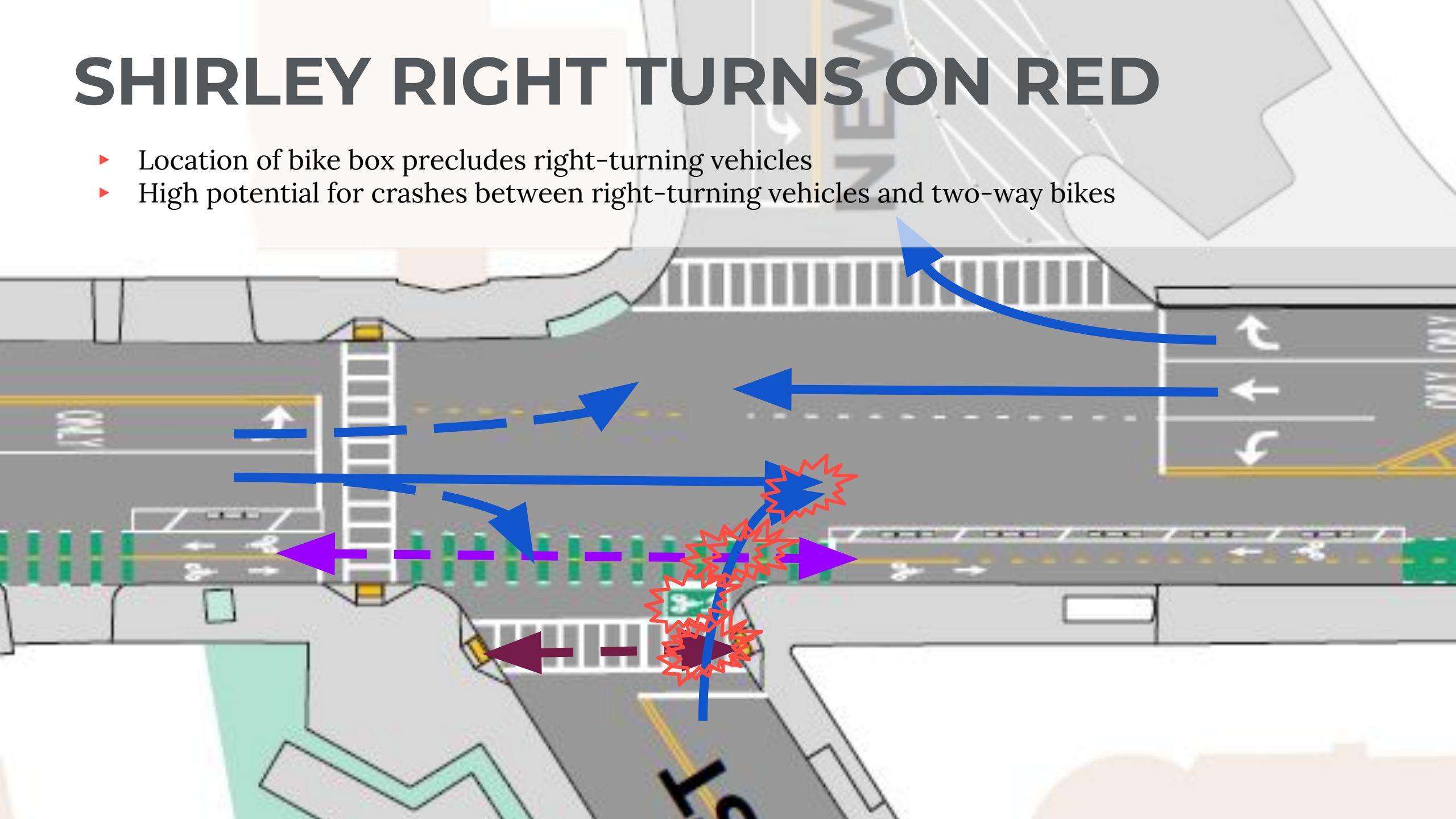
2

SHIRLEY RIGHT TURNS ON RED

- Location of bike box precludes right-turning vehicles
- High potential for crashes between right-turning vehicles and two-way bikes



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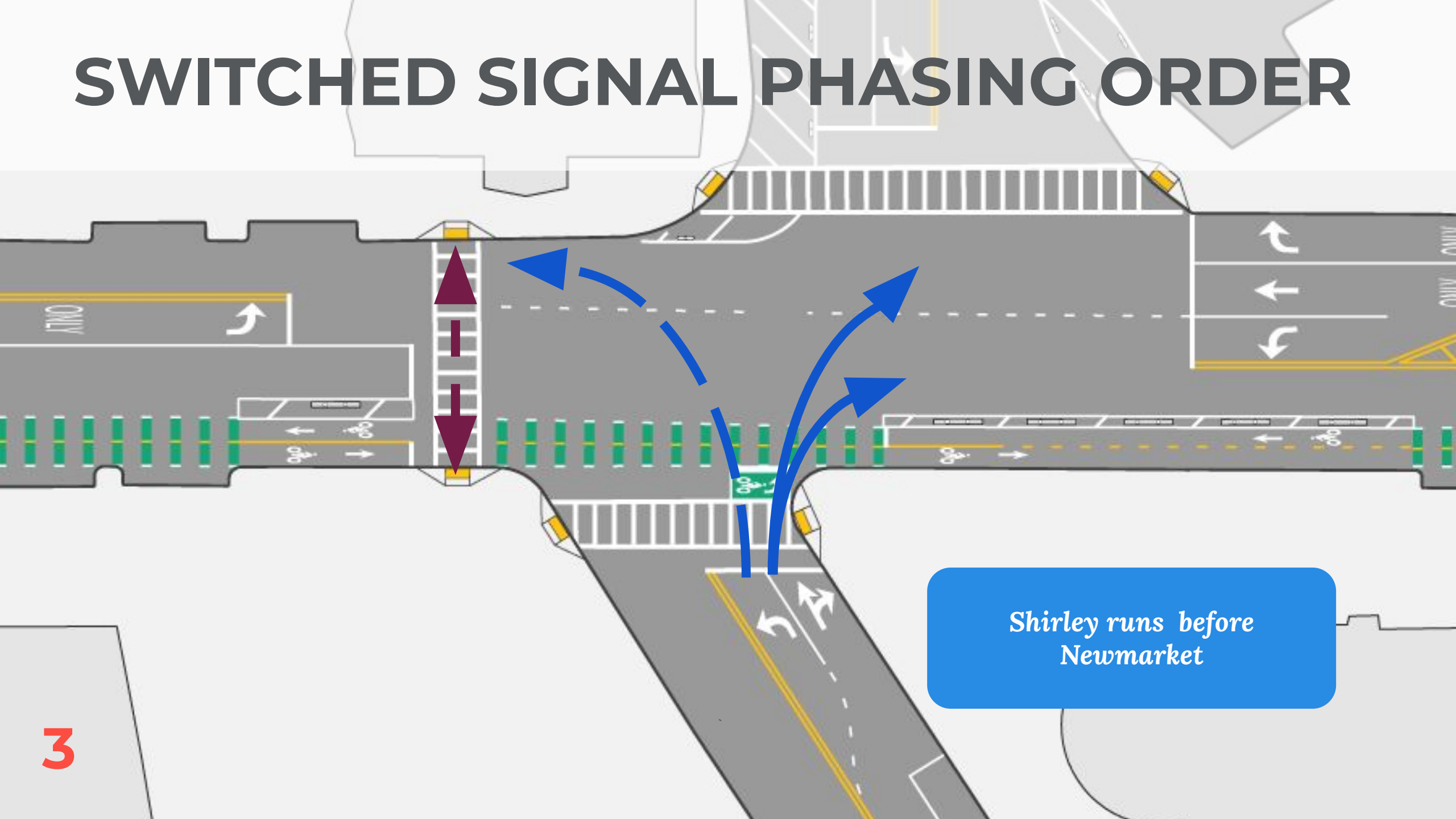

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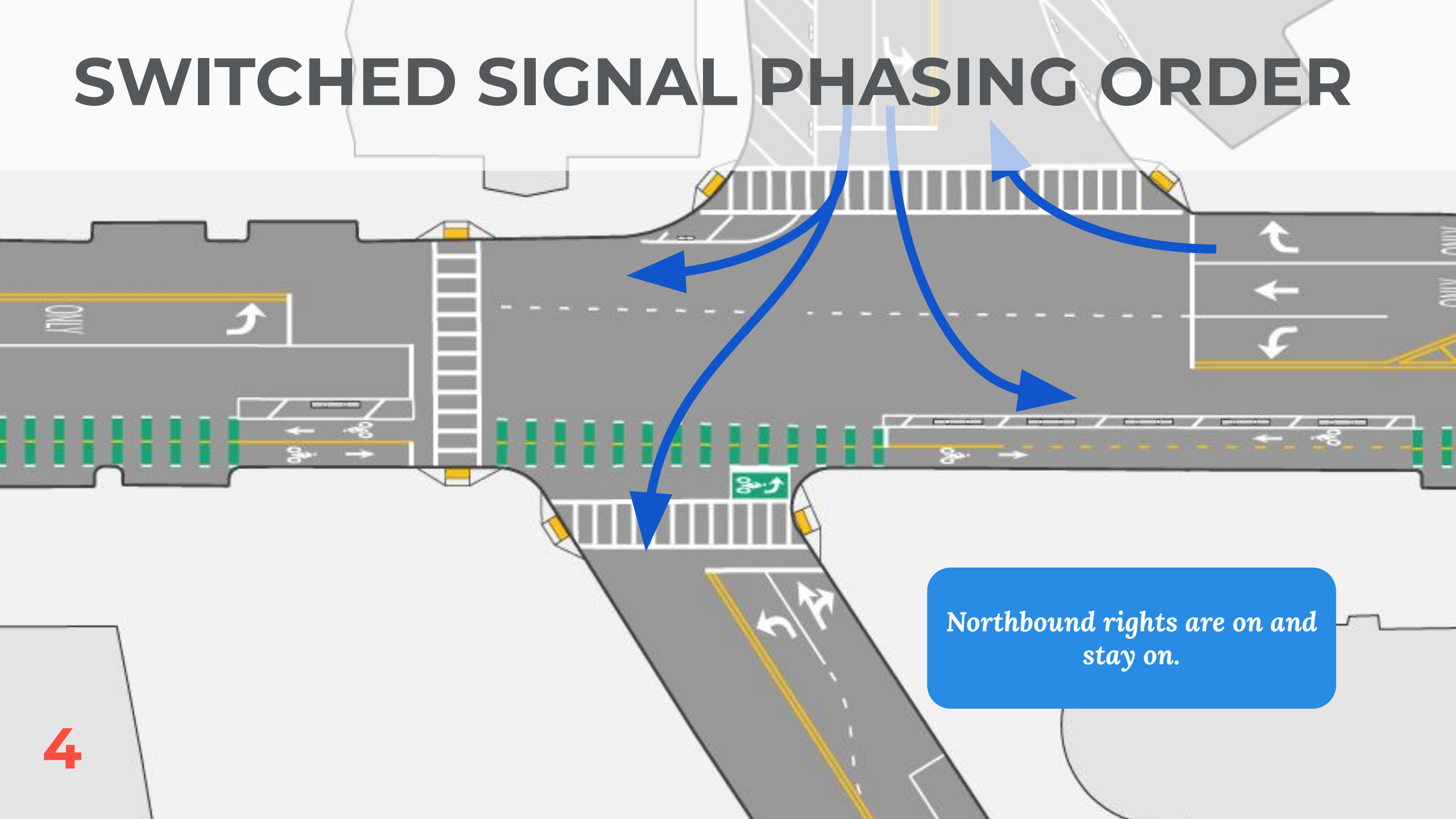
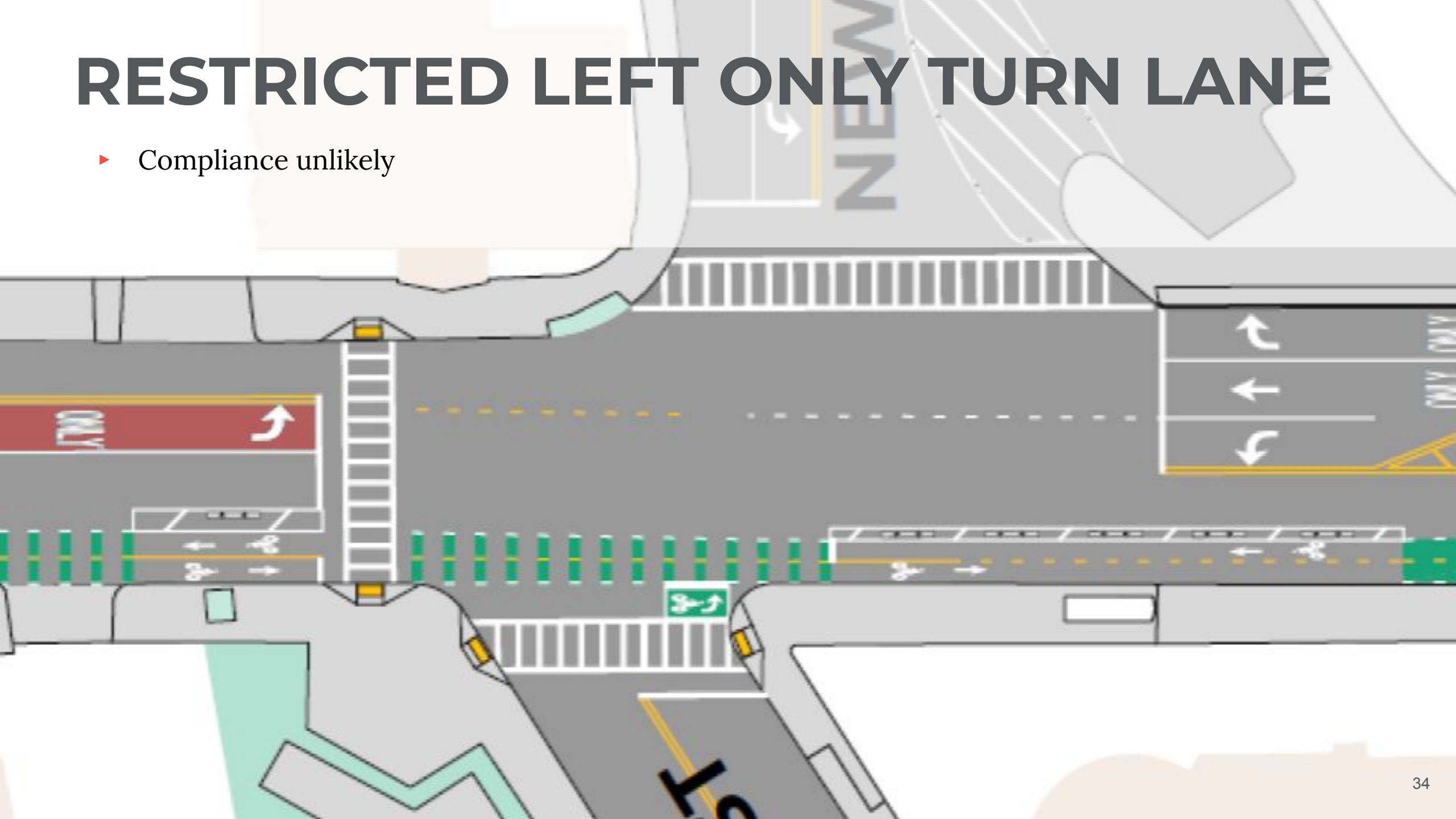


Northbound rights are on and stay on.

OTHER OPTIONS WE LOOKED INTO

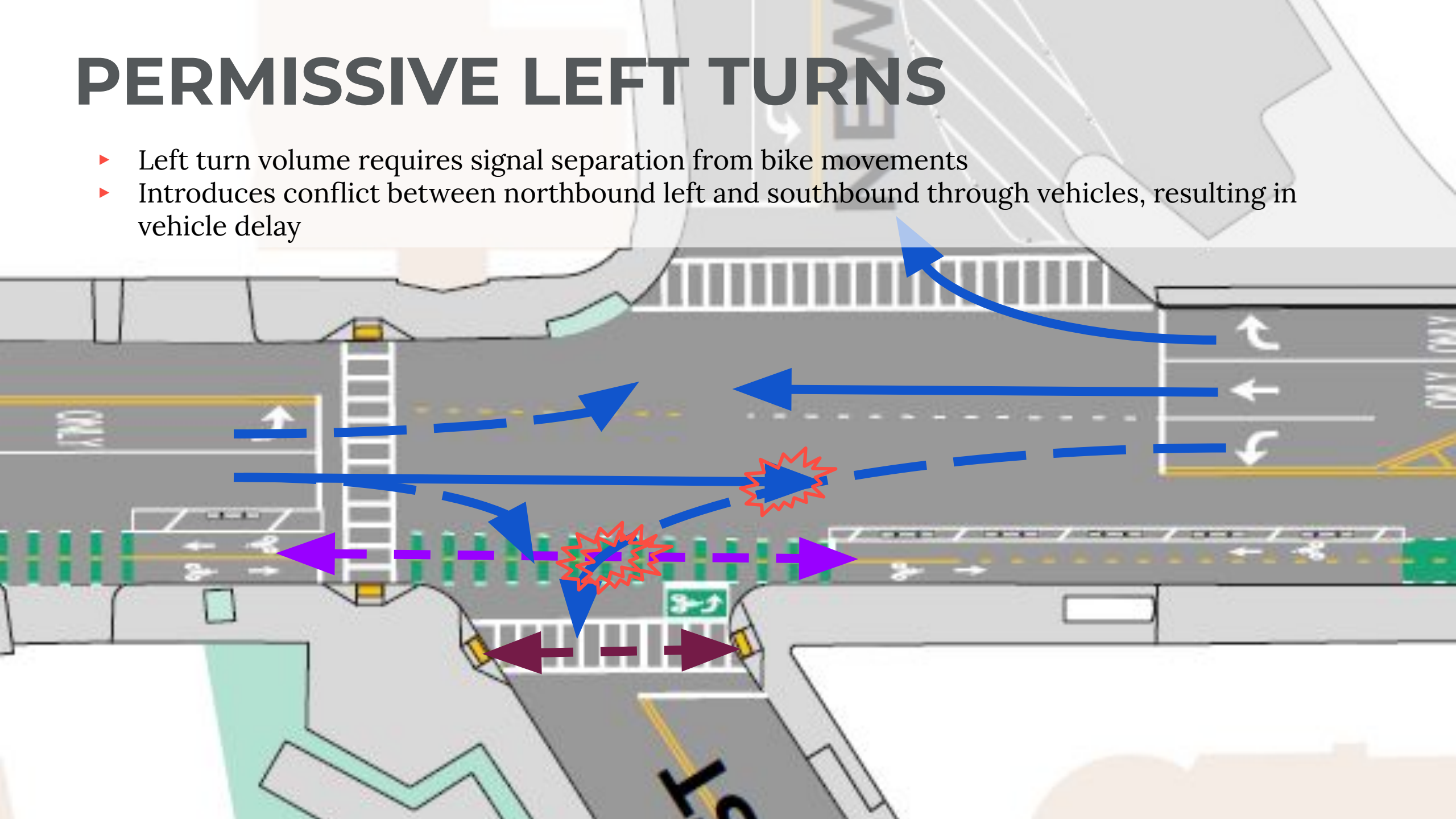
RESTRICTED LEFT ONLY TURN LANE

- Compliance unlikely



PERMISSIVE LEFT TURNS

- Left turn volume requires signal separation from bike movements
- Introduces conflict between northbound left and southbound through vehicles, resulting in vehicle delay



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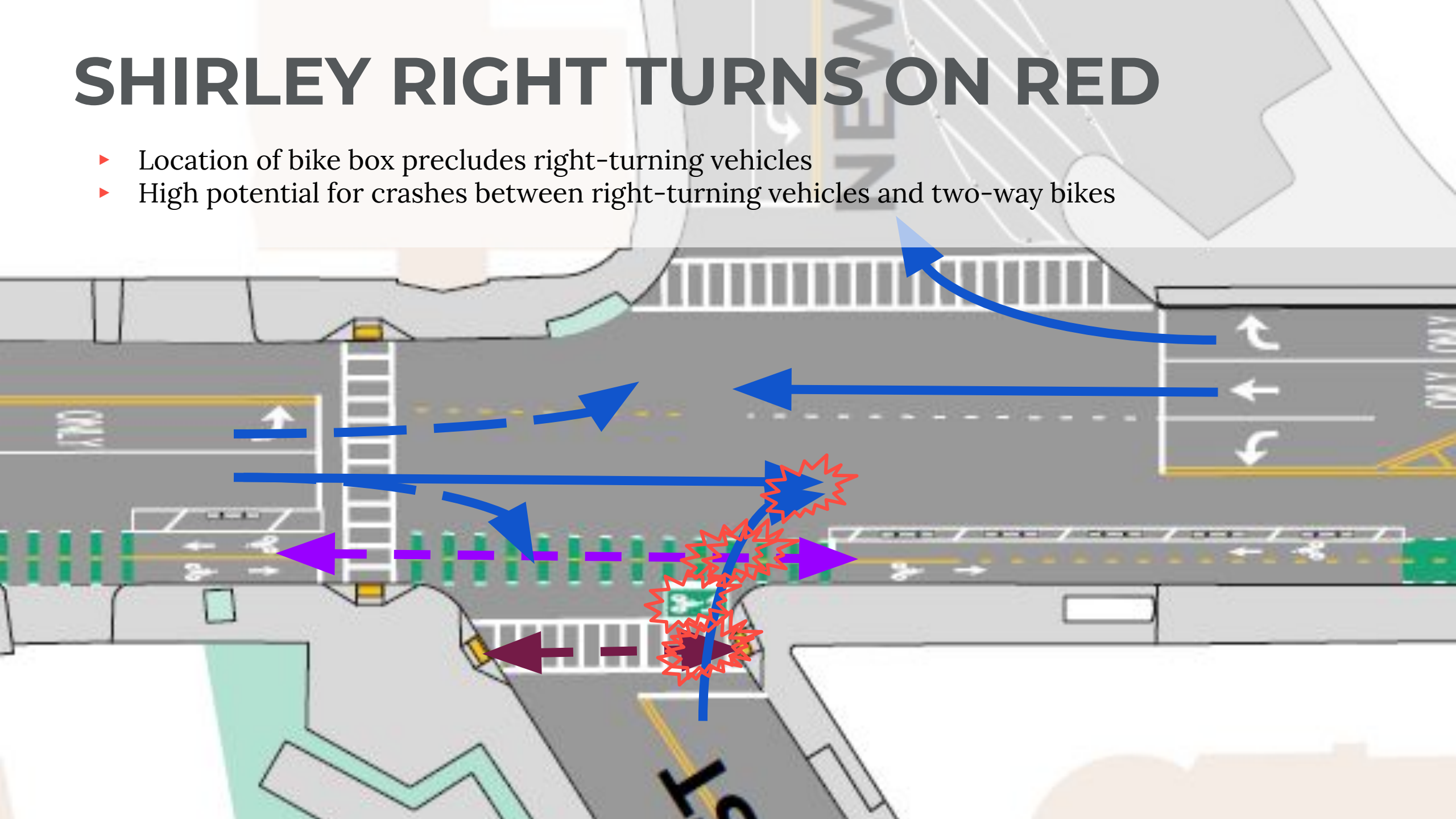
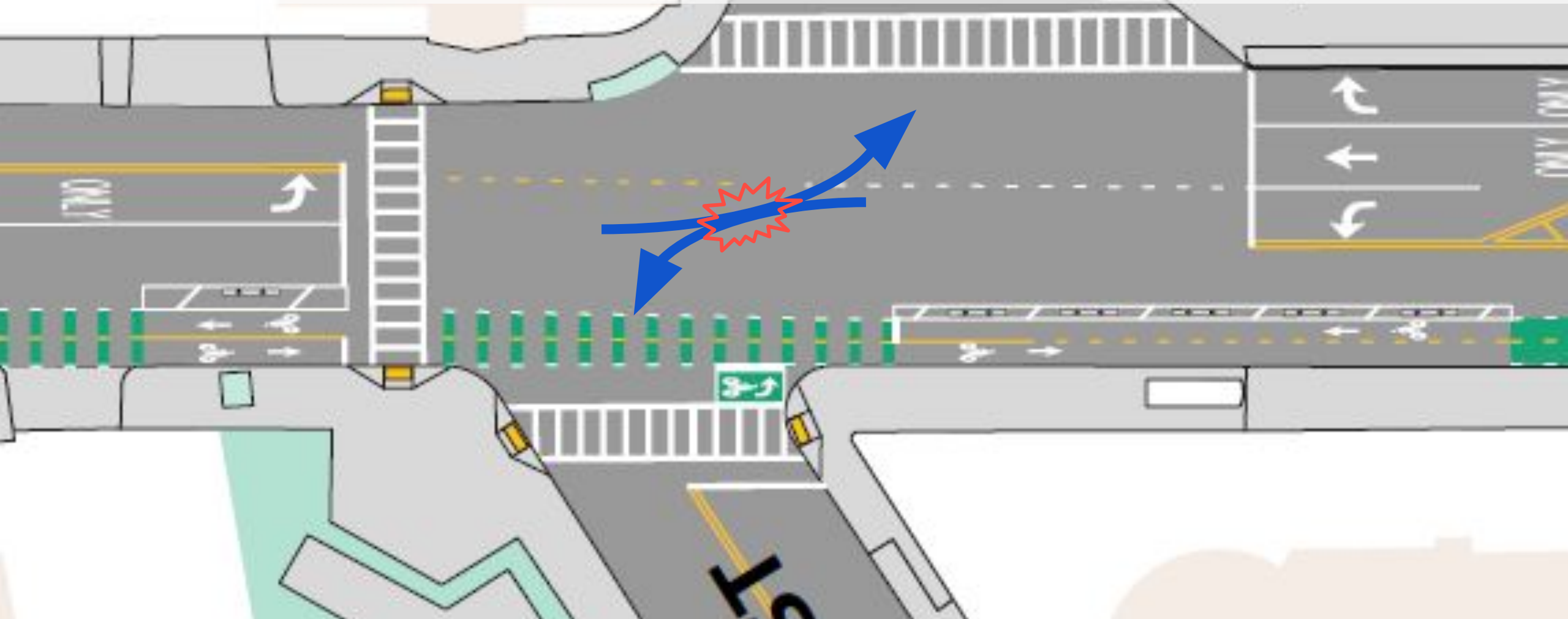


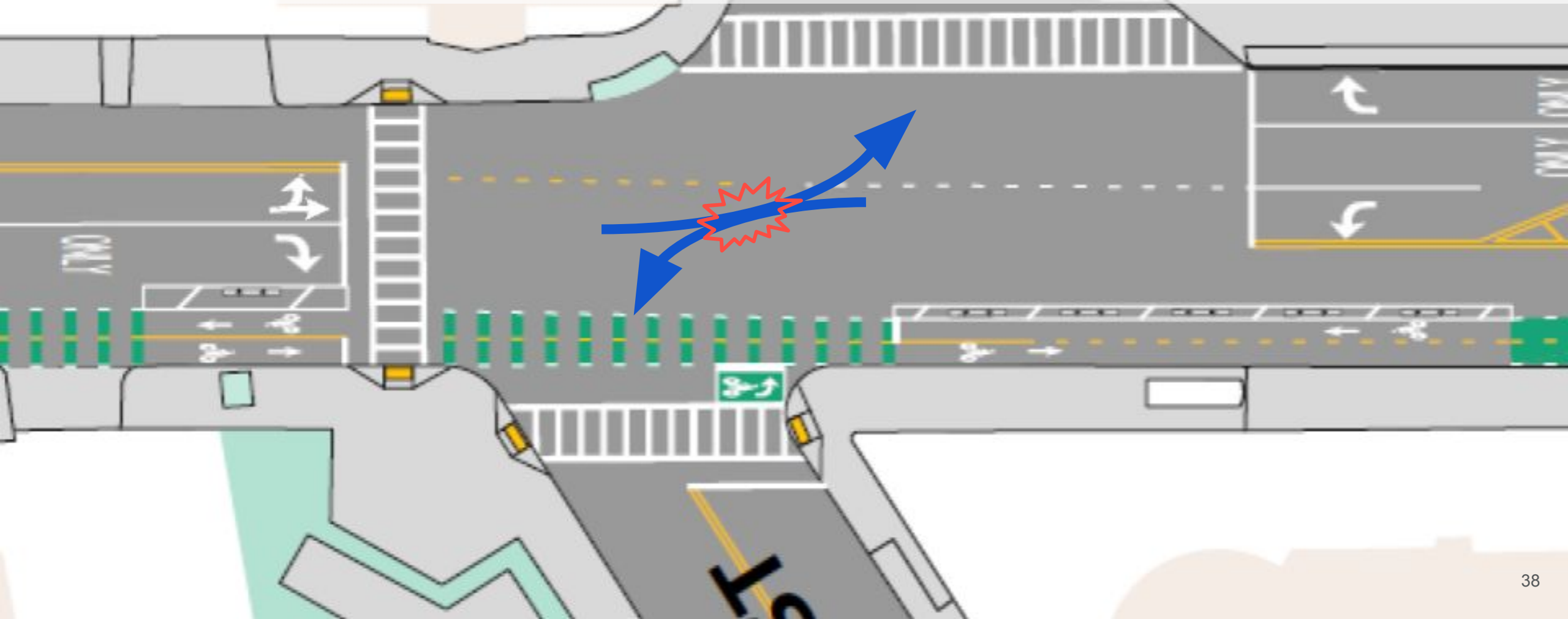
SEPARATED LEFT TURNS PHASE

- Irregular geometry of the intersection places the vehicles in direct conflict with each other while turning



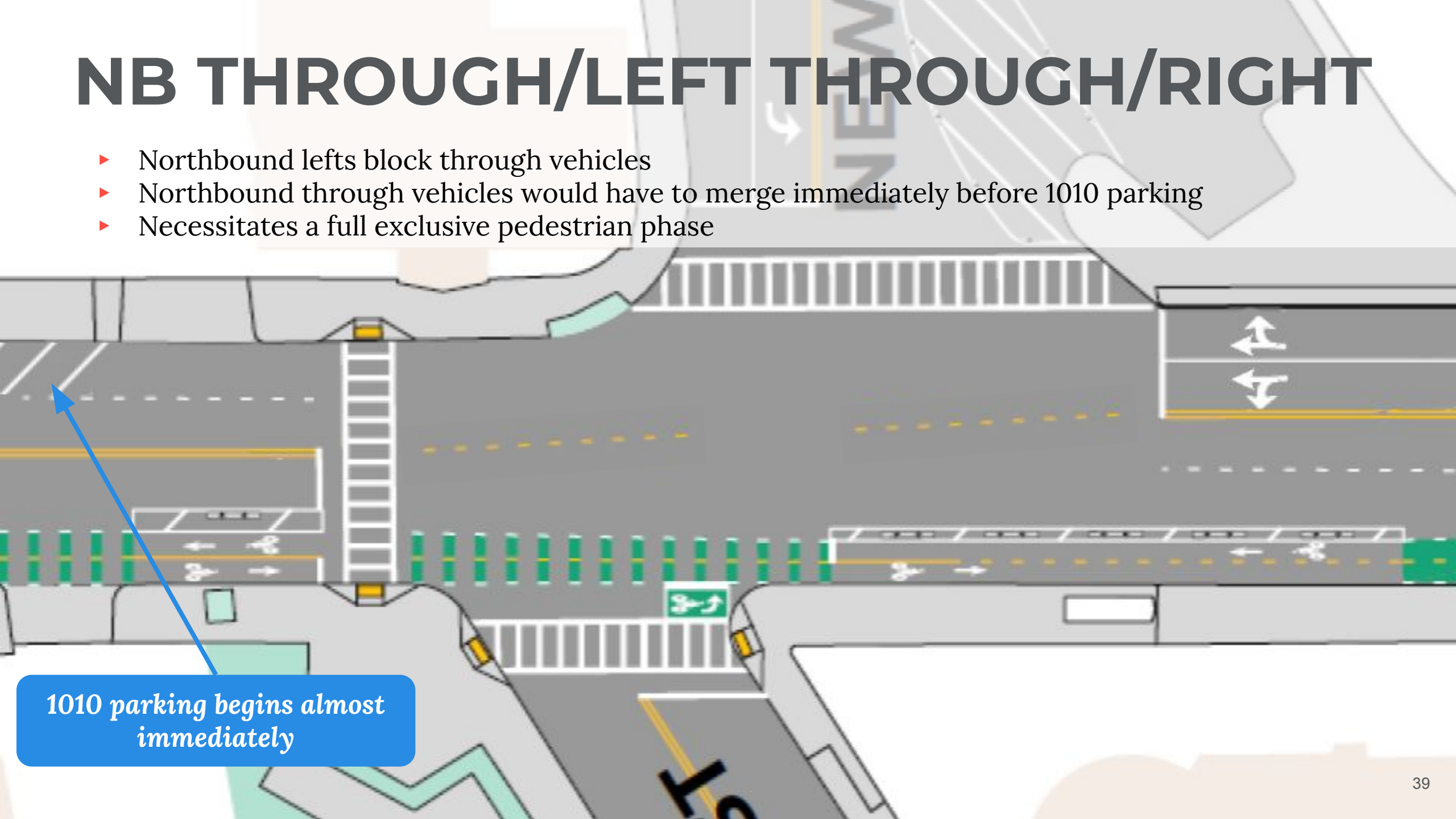
SB LEFT/THROUGH RIGHT TURN ONLY

- Irregular geometry of the intersection places the vehicles in direct conflict with each other while turning



NB THROUGH/LEFT THROUGH/RIGHT

- Northbound lefts block through vehicles
- Northbound through vehicles would have to merge immediately before 1010 parking
- Necessitates a full exclusive pedestrian phase



NB LEFT/THROUGH RIGHT TURN ONLY

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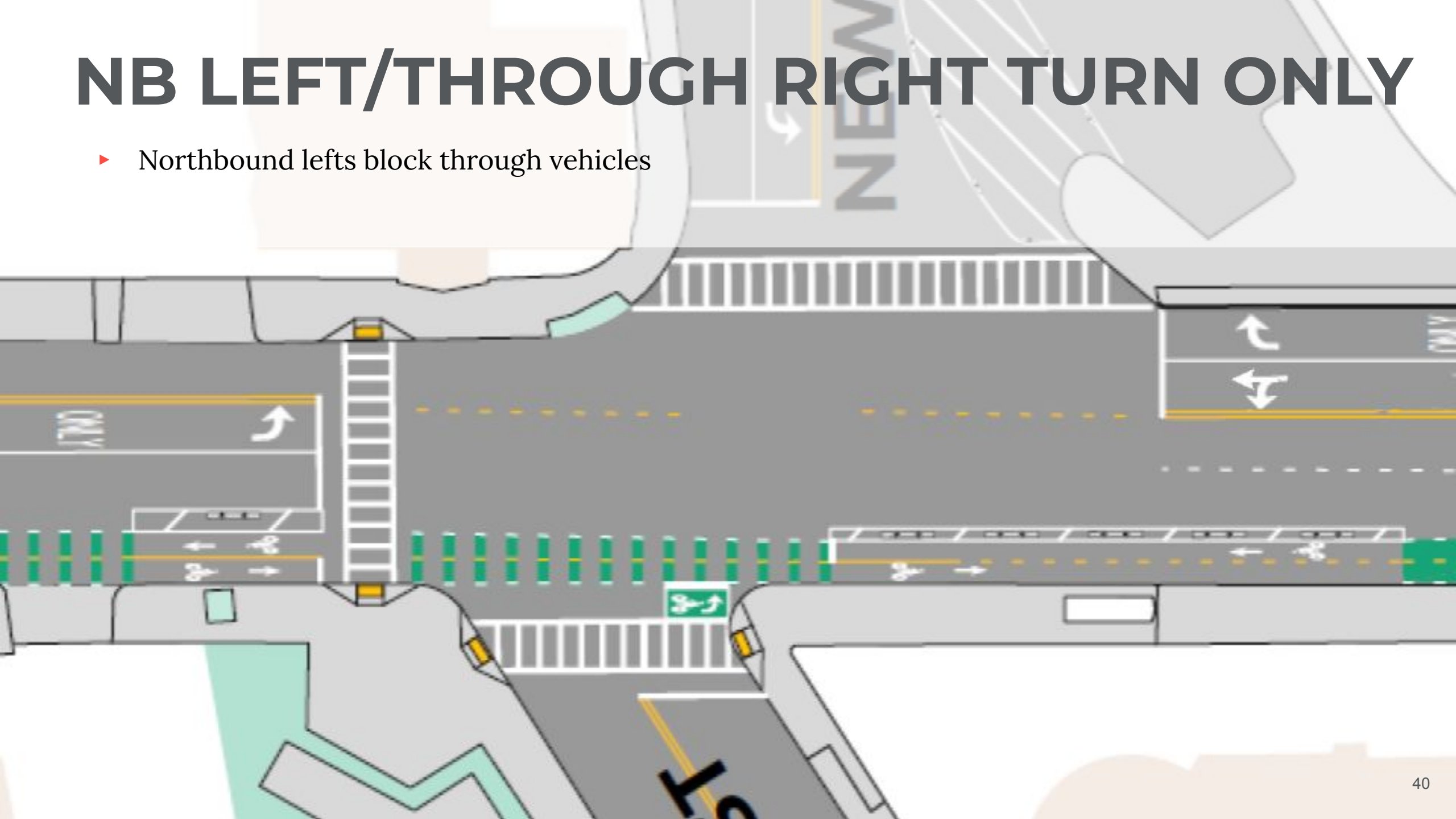
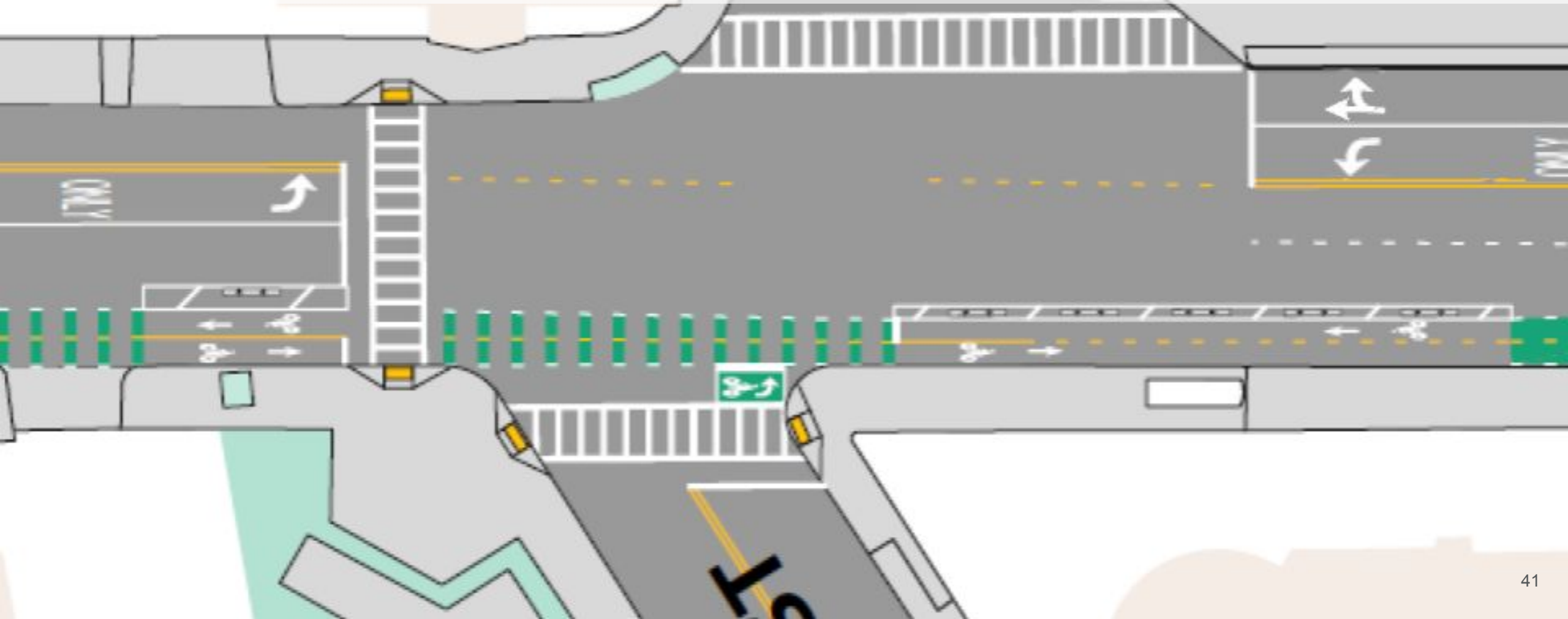


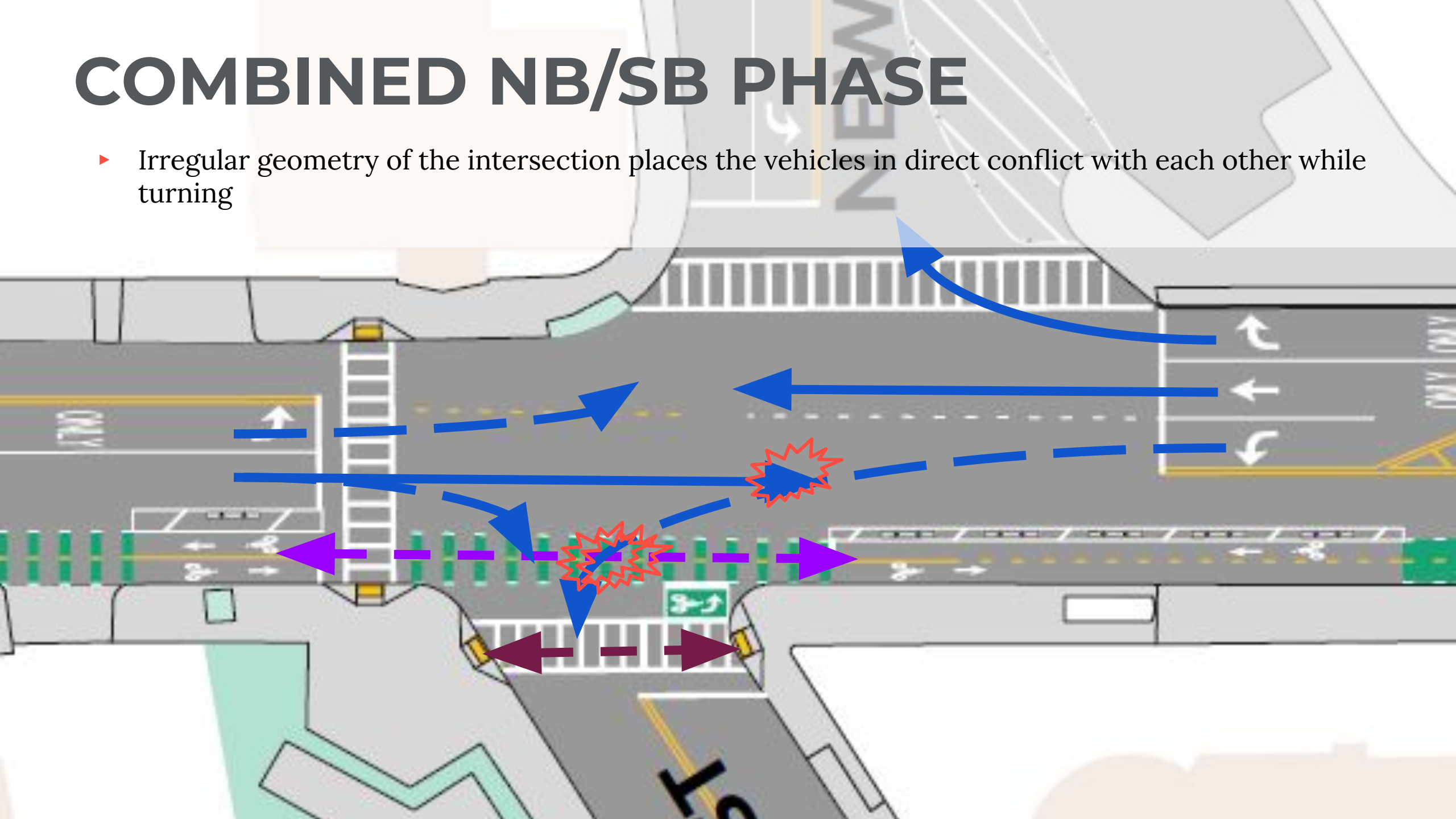
NB THROUGH/RIGHT LEFT TURN ONLY

- Reduces green time available for northbound through/right movements
- Worsens V/C
- Increases queue lengths



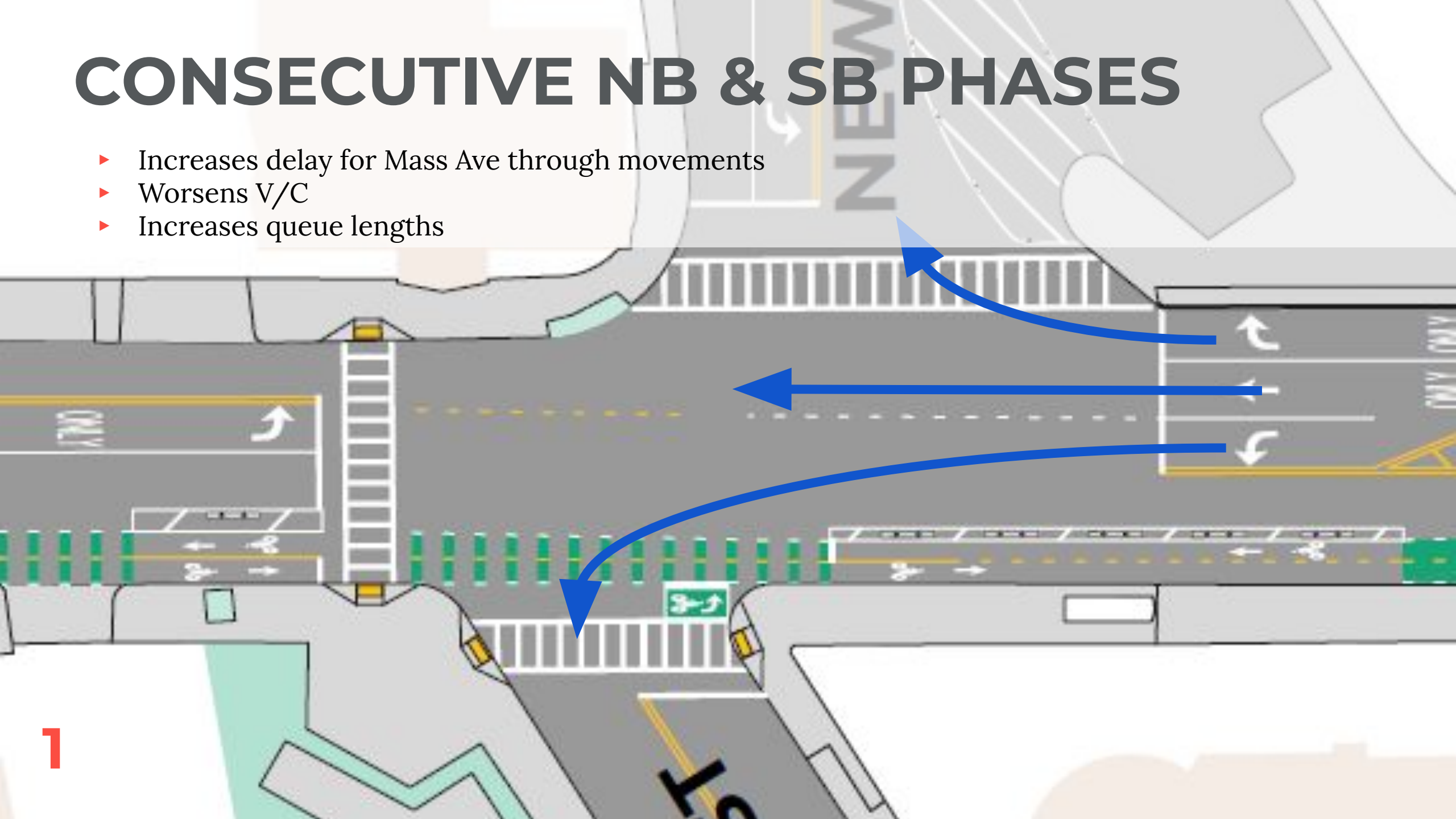
COMBINED NB/SB PHASE

- Irregular geometry of the intersection places the vehicles in direct conflict with each other while turning



CONSECUTIVE NB & SB PHASES

- Increases delay for Mass Ave through movements
- Worsens V/C
- Increases queue lengths



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