

CITY OF FRANKLIN, TENNESSEE

Columbia Avenue

Widening & Improvements Project

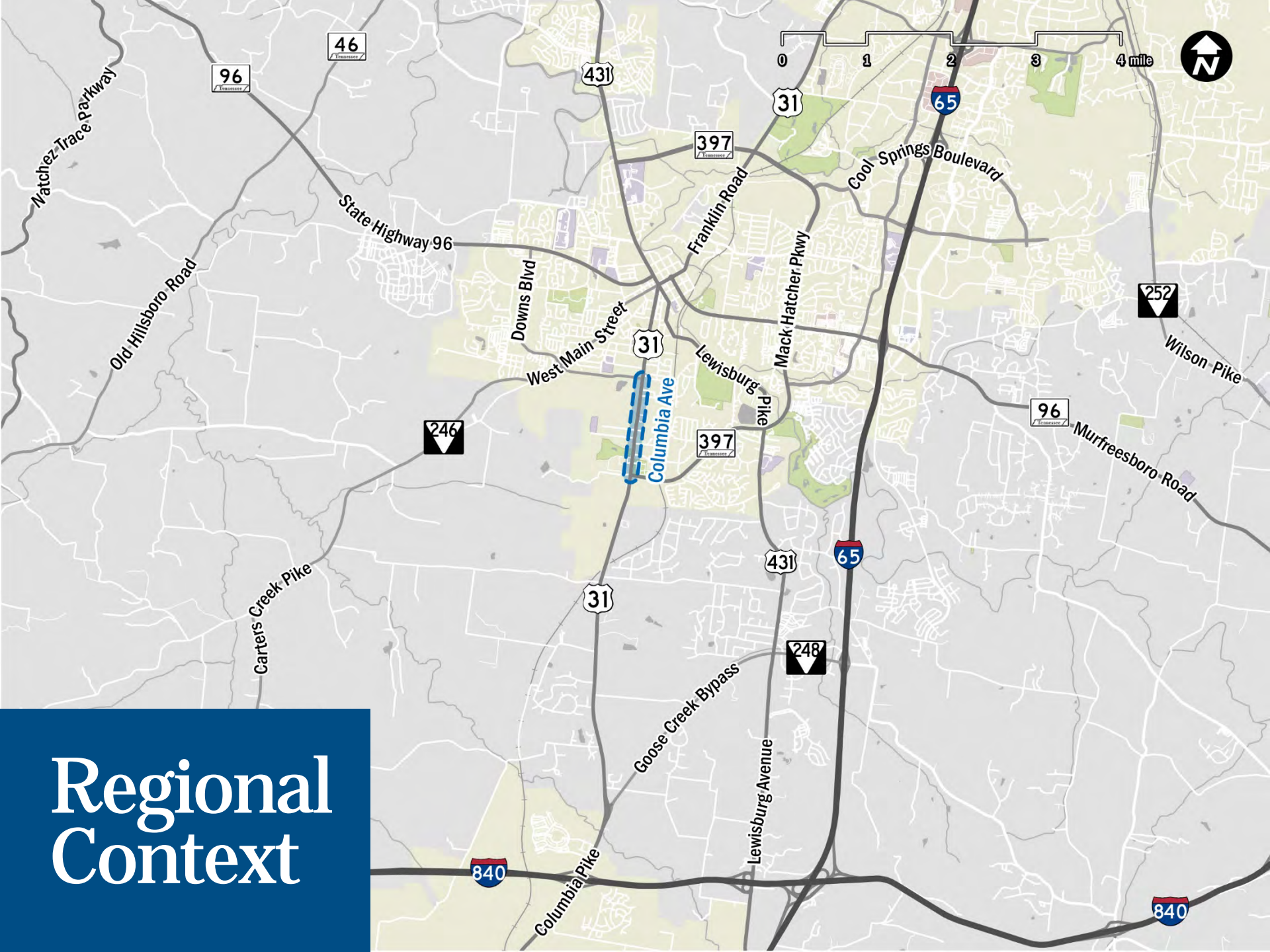
BOMA Work Session | July 11, 2017





Project Location

Regional Context

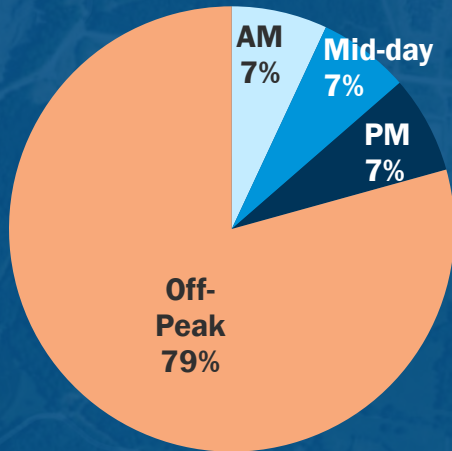


May 2016

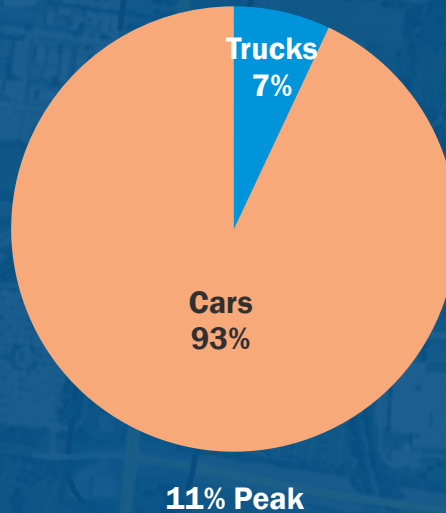
18,900

vehicles/day

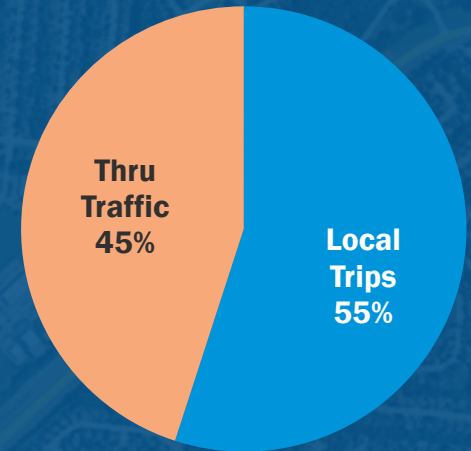
DAILY TRAFFIC



TRAFFIC COMPOSITION



TRAFFIC TYPE



April 2016 travel time

from Battle Avenue to
Winstead Elementary School,
in minutes.

3:10

with no traffic

5:10

average day

10:20

longest recorded

Future Growth

2016

EXISTING
CONDITIONS

based on data from City and
TDOT count stations

18,900

vehicles/day

2021

BUILD
YEAR

forecast conditions at
project completion

19,800

vehicles/day

2041

DESIGN
YEAR

improvements are designed to
accommodate 20 years of growth

25,400

vehicles/day

3

components of
comparison

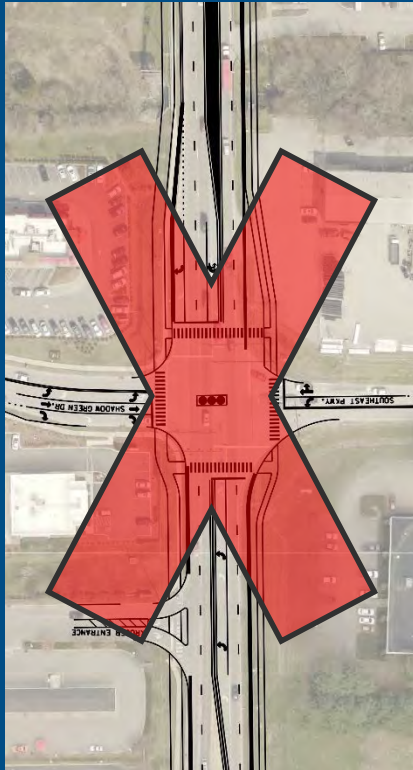
Operations

Safety

Physical
Impact

Corridor Concepts

Example: Columbia Avenue at Southeast Parkway



**Four-Lane Median
Divided Concept**

with center median
and left-turn lanes



**Five-Lane
Signalized Concept**

with continuous
two-way, left-turn lane



**Roundabout
Concept**

with 4-foot
center median

Operations

Anticipated Travel Time and Average Speed, 2041 Volumes (Columbia Avenue)

No-Build
Conditions

5:40

14.9 mph

Four Lane Median
Divided Concept

~~**5:30**~~

~~15.4 mph~~

ORIGINAL

Five-Lane
Signalized Concept

4:50

17.5 mph

ORIGINAL

Roundabout
Concept

4:35

18.2 mph

NOTE: Average travel time of Northbound and Southbound traffic for the four (4) study peak hours (i.e. AM + Midday + PM + busiest hour on Saturday)

Operations

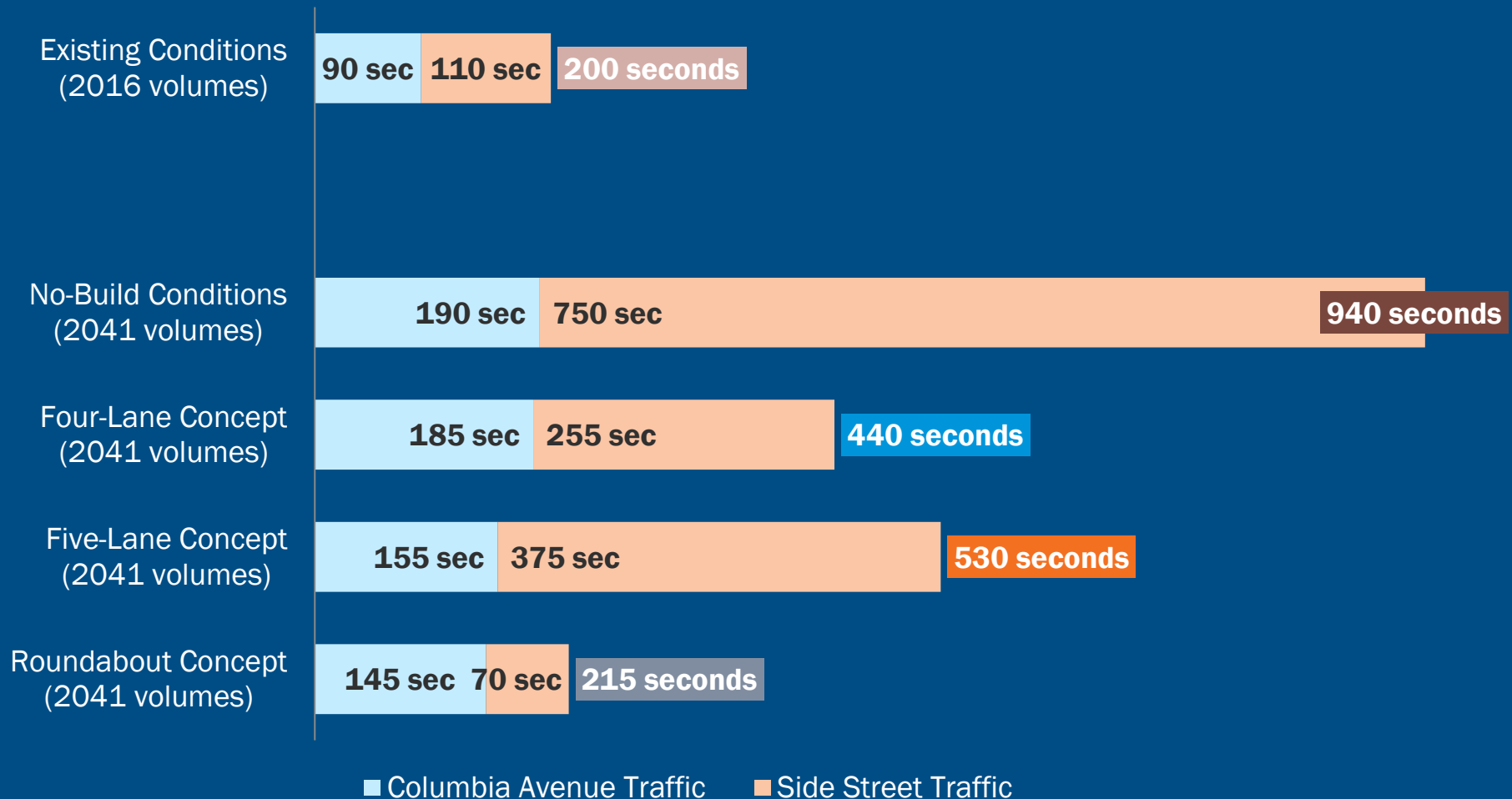
Anticipated Travel Time and Average Speed, 2041 Volumes (Columbia Avenue)



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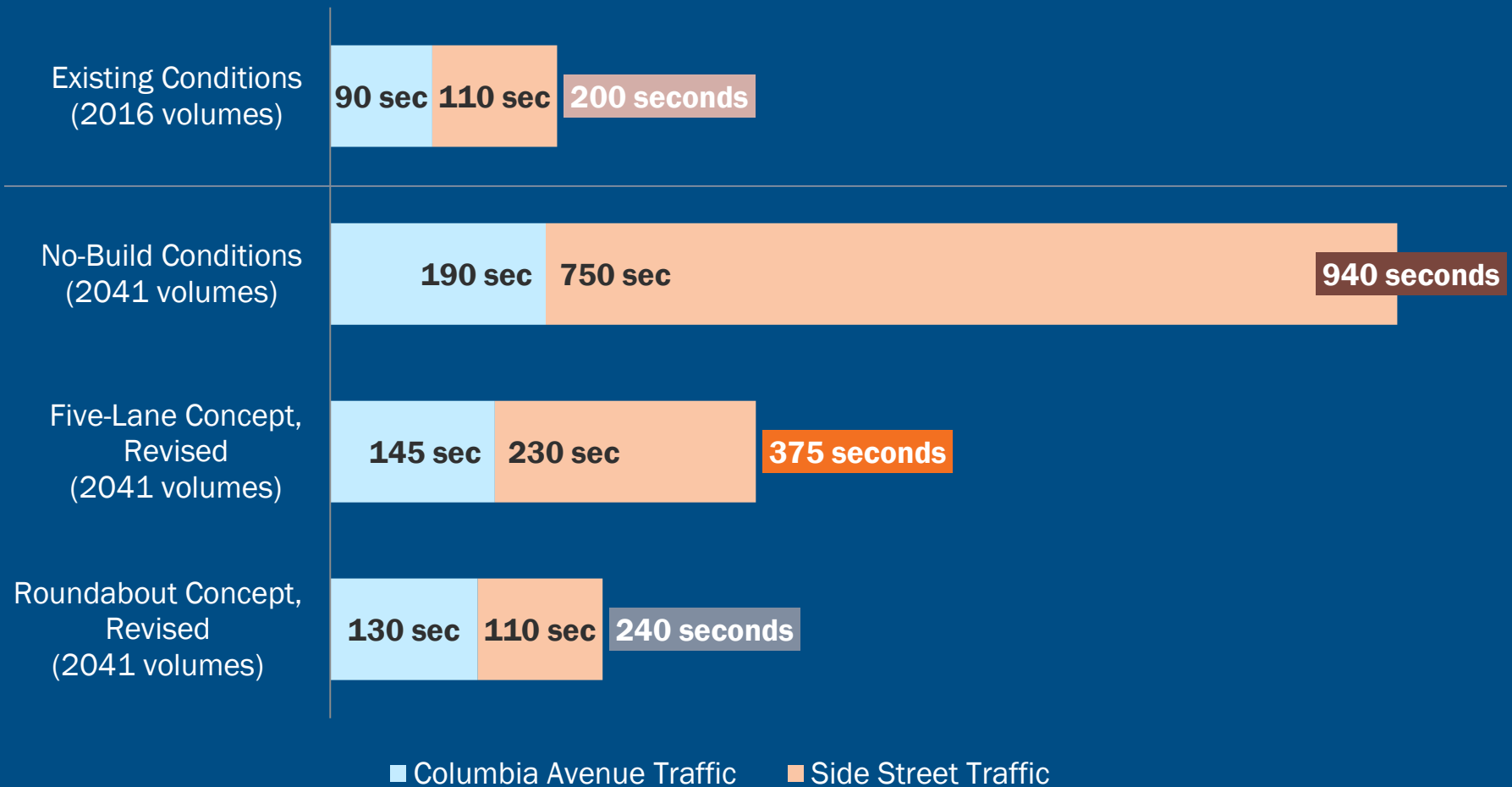
Operations

Corridor Delay for *Original* Concepts



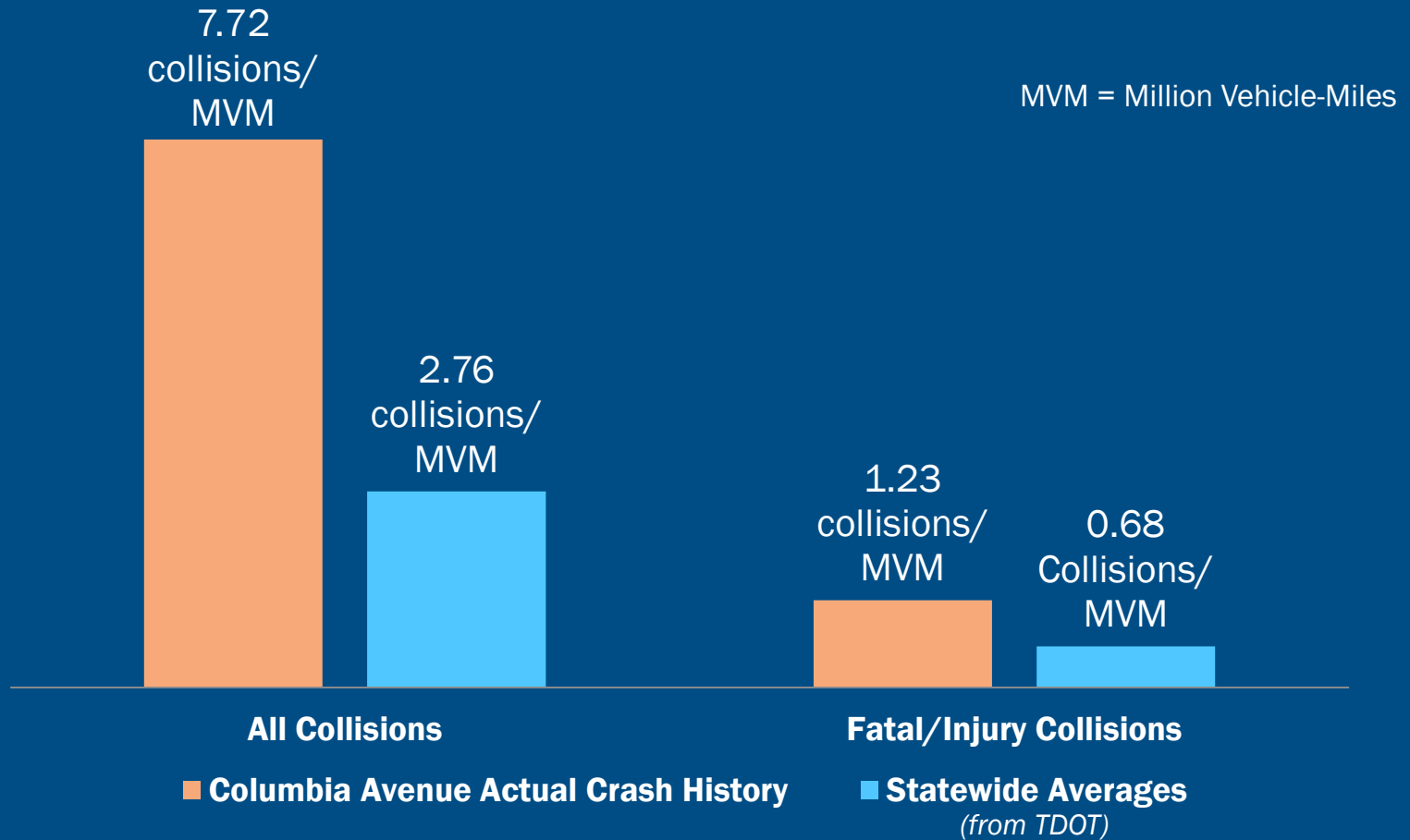
Operations

Corridor Delay for Revised Concepts



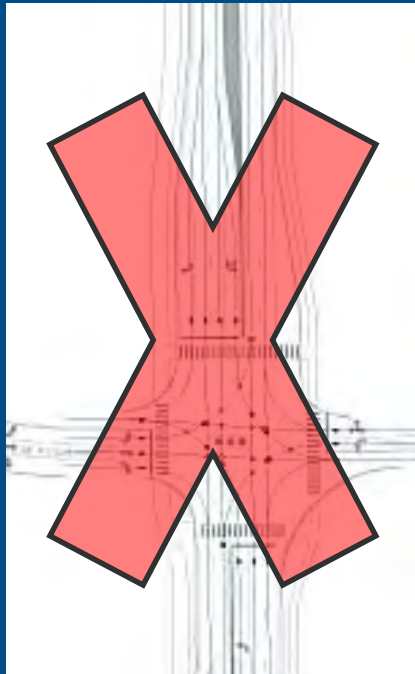
Safety

Collision Data (2013–2016)



Safety

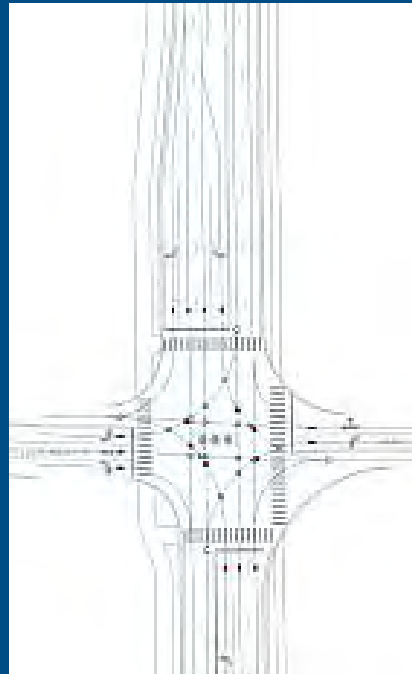
Conflict Points for *Original* Concepts



Four-Lane Median
Divided Concept

340

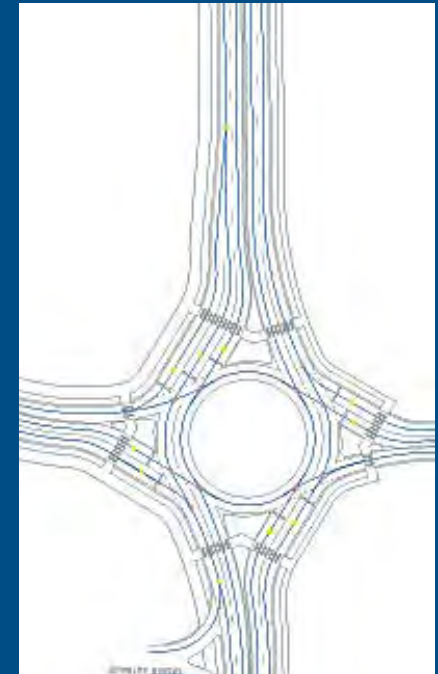
conflict points



Five-Lane
Signalized Concept

583

conflict points
(377 with access mgmt)



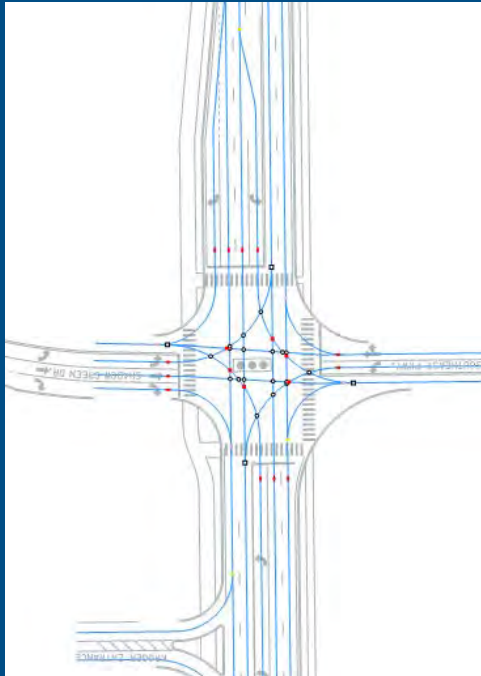
Roundabout
Concept

243

conflict points

Safety

Conflict Points for Revised Concepts



Five-Lane Signalized
Concept, revised

385

conflict points



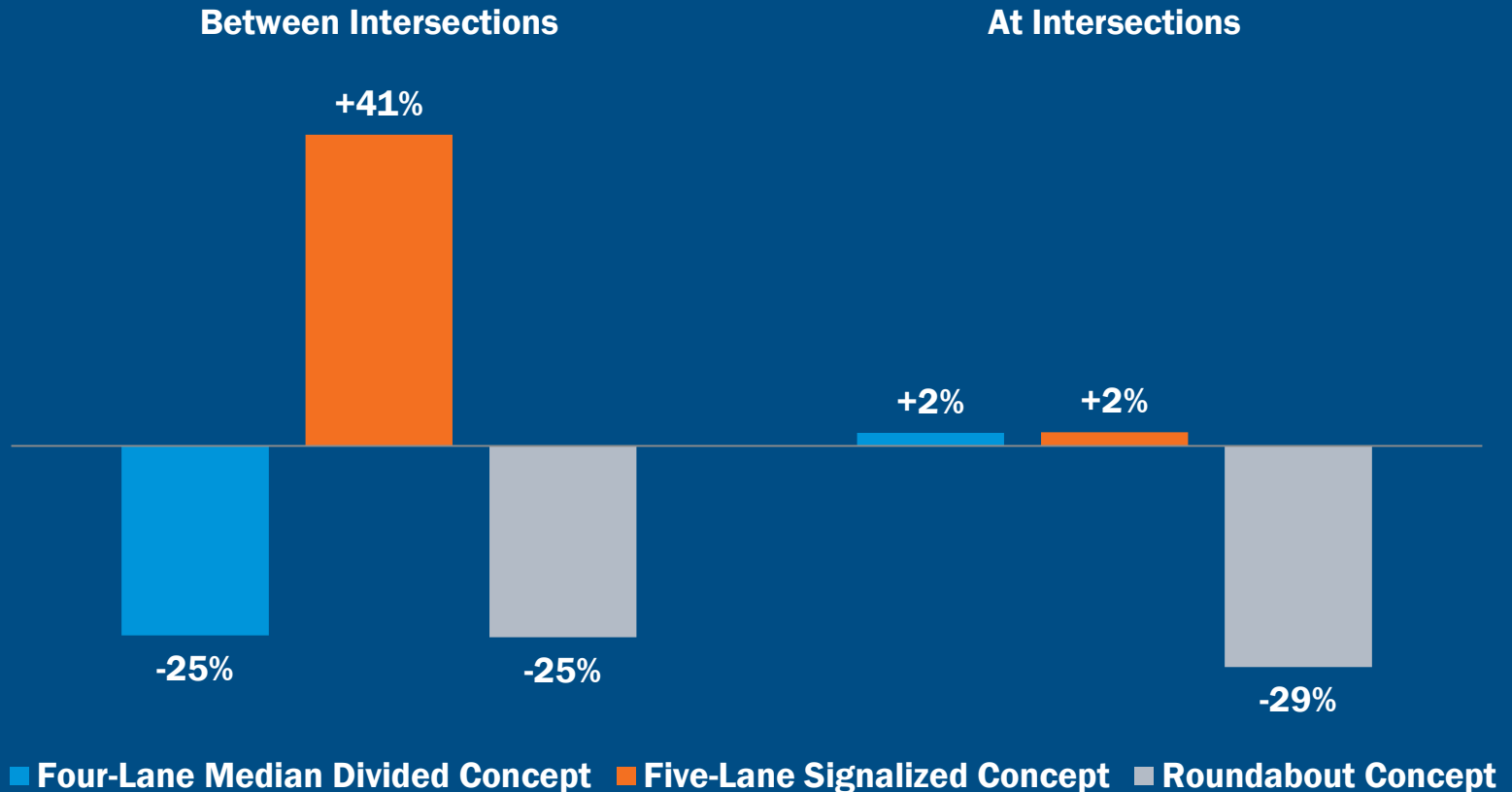
Roundabout
Concept, revised

258

conflict points

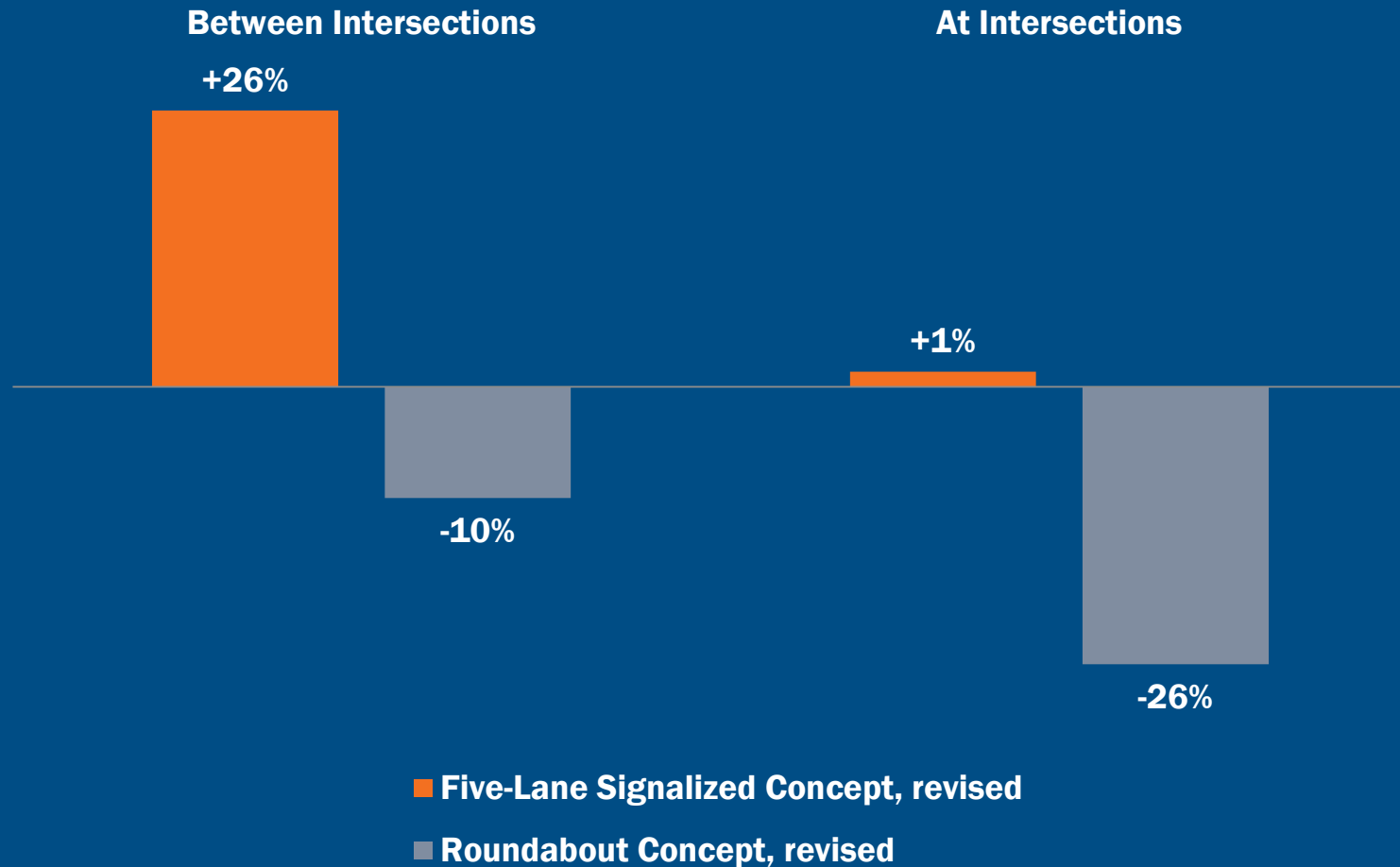
Safety

2041 Anticipated Change in Traffic Collisions for Original Concepts



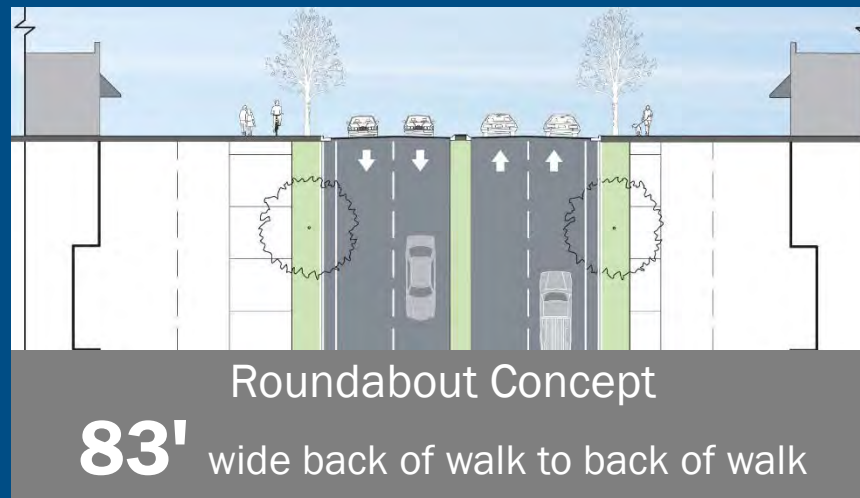
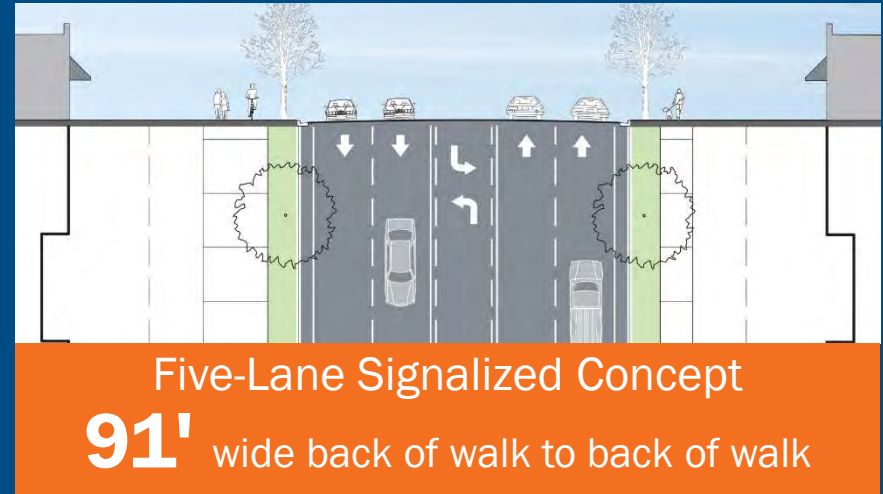
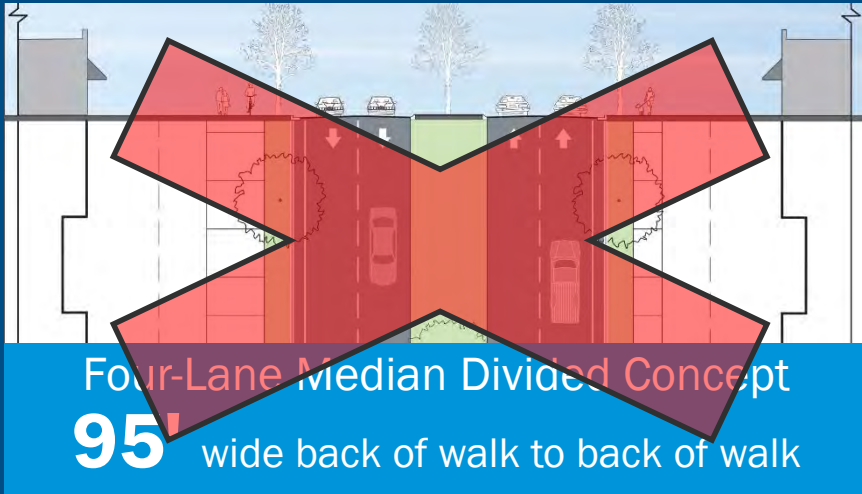
Safety

2041 Anticipated Change in Traffic Collisions for Revised Concepts

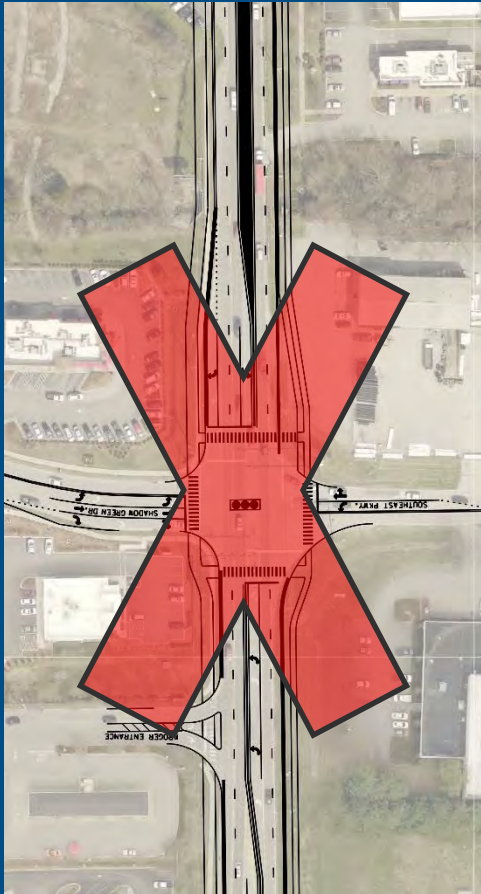


Physical Impact

Typical Sections



Physical Impact



Four-Lane Median
Divided Concept



Five-Lane Signalized
Concept



Roundabout
Concept

Data Summary

<i>ORIGINAL CONCEPTS</i>		Four-Lane Median Divided Concept	Five-Lane Signalized Concept	Roundabout Concept
Operational Performance	Thru Traffic Delay	185 sec/veh	155 sec/veh	145 sec/veh
	Side Street Delay	255 sec/veh	375 sec/veh	70 sec/veh
	Average Travel Time	5:30	4:50	4:35
Safety Performance	Between Intersections	-25% fewer collisions	+41% more collisions	-25% fewer collisions
	At Intersections	+2% more collisions	+2% more collisions	-29% fewer collisions
Physical Impact	Between Intersections	95' total width	91' total width	83' total width
	At Intersections	AVERAGE footprint	AVERAGE footprint	INCREASED footprint

Data Summary

REVISED CONCEPTS

		Five-Lane Signalized Concept, revised (with increased access management)	Roundabout Concept, revised (with loosened access management)
Operational Performance	Thru Traffic Delay	145 (sec/veh)	130 (sec/veh)
	Side Street Delay	230 (sec/veh)	110 (sec/veh)
	Average Travel Time	4:40	4:35
Safety Performance	Between Intersections	+26% (more collisions)	-10% (fewer collisions)
	At Intersections	+1% (more collisions)	-26% (fewer collisions)
Physical Impact	Between Intersections	91' total width	83' total width
	At Intersections	AVERAGE footprint	INCREASED footprint

next step

BOMA selects
preferred concept
to bring forward to
detailed design.