



Downtown Transportation Plan Update

**TRANSPORTATION COMMISSION
DECEMBER 13, 2012**

DOWNTOWN TRAVEL DEMAND MODELING



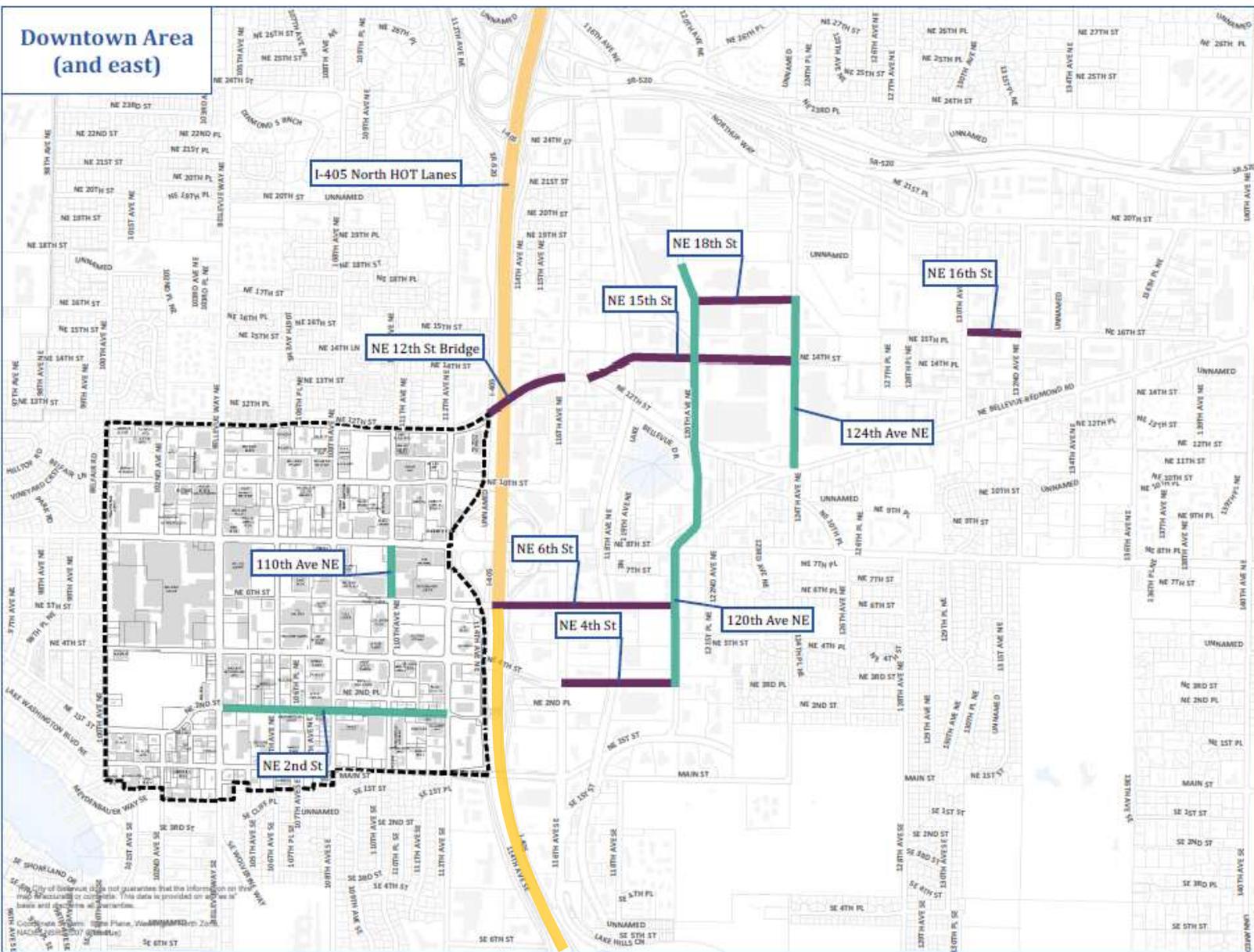
Downtown Transportation Plan Update

Presentation and Discussion, December 13, 2012

DOWNTOWN TRAVEL DEMAND MODELING

- Roadway Capacity Projects
 - 2030 Baseline “No Build”
 - 2030 “Build”
- Roadway Segment Level of Service
- Intersection Level of Service
- Modeling Conclusions

2030 Baseline “No Build” Projects



Transportation Projects: 2030 No Build

Downtown Transportation Plan Update

Legend

Transportation Projects: 2030 No Build

Roadway Capacity Projects

- Arterial Extension
- Arterial Widening
- Freeway

All transportation project locations and extents are approximate. Updated: December 2012



Scale: 80,000 Feet

Source: City of Bellevue, Building Footprints, Spring 2009

2030 "Build" Projects



Transportation Projects: 2030 Build

Downtown Transportation Plan Update

- Legend**
- Transportation Projects: 2030 Build
- Roadway Capacity Projects
- ■ ■ ■ ■ Arterial Extension
 - ■ ■ ■ ■ Freeway

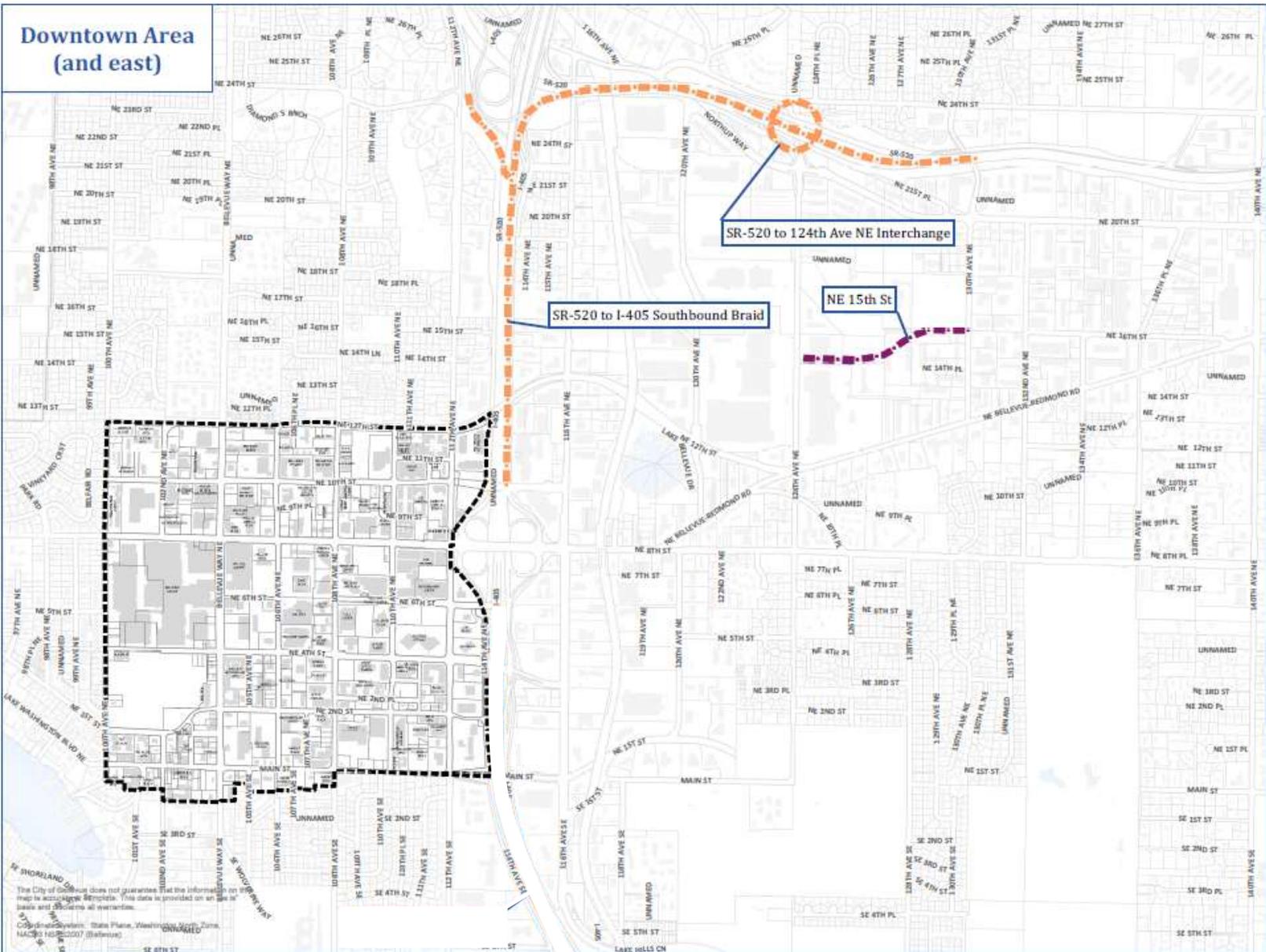
All transportation project locations and extents are approximate.
Updated: December 2012



80,000
Feet

Source: City of Bellevue Building Footprints, Spring 2009

Downtown Area (and east)



The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and without all warranties.

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2030 “No Build” + “Build Projects



Transportation Projects: 2030 Build & No Build

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Legend

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Roadway Capacity Projects

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2030 Build

Roadway Capacity Projects

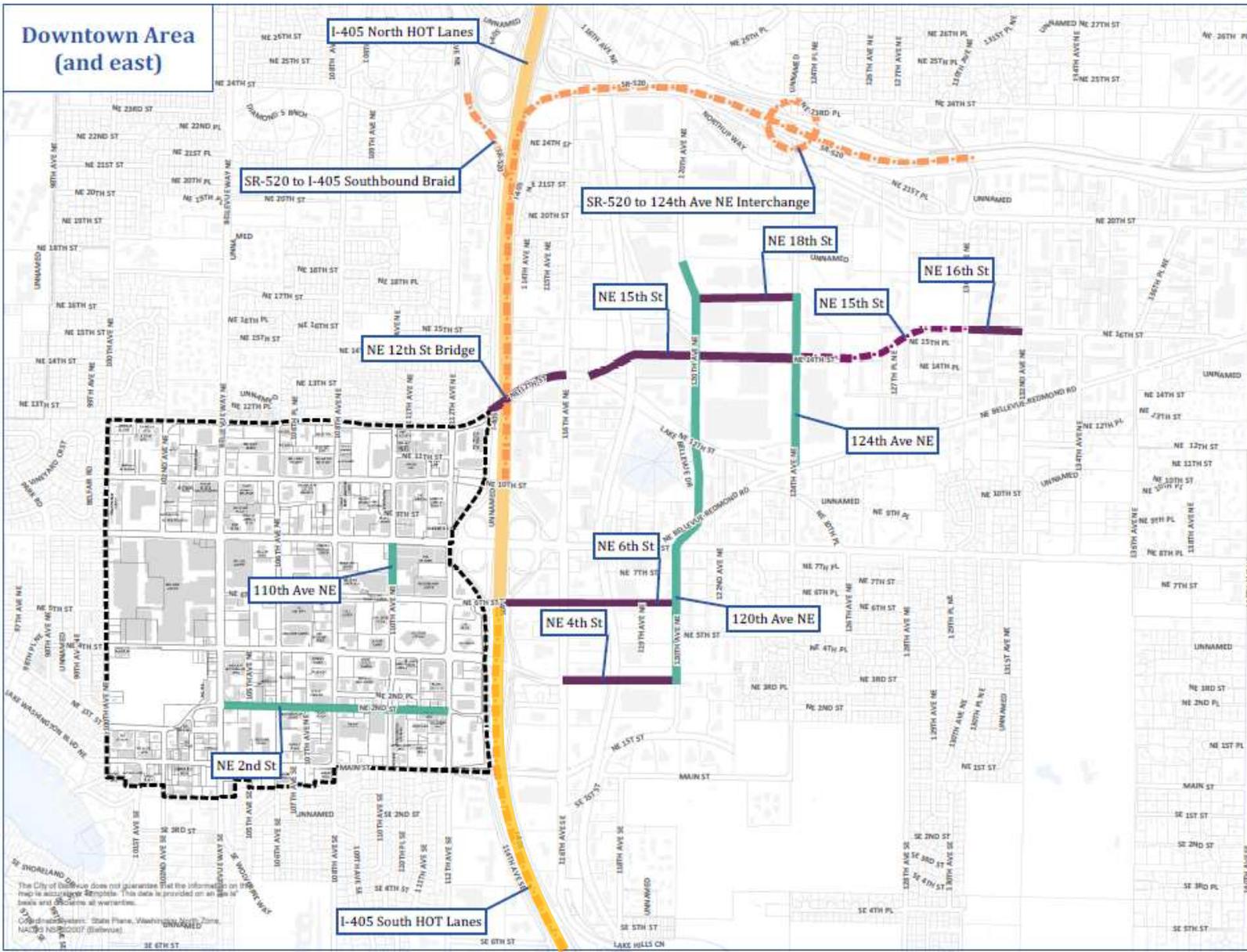
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80,000 Feet

Sources:
City of Bellevue
Building Footprints:
Spring 2009



Downtown Area
(and east)

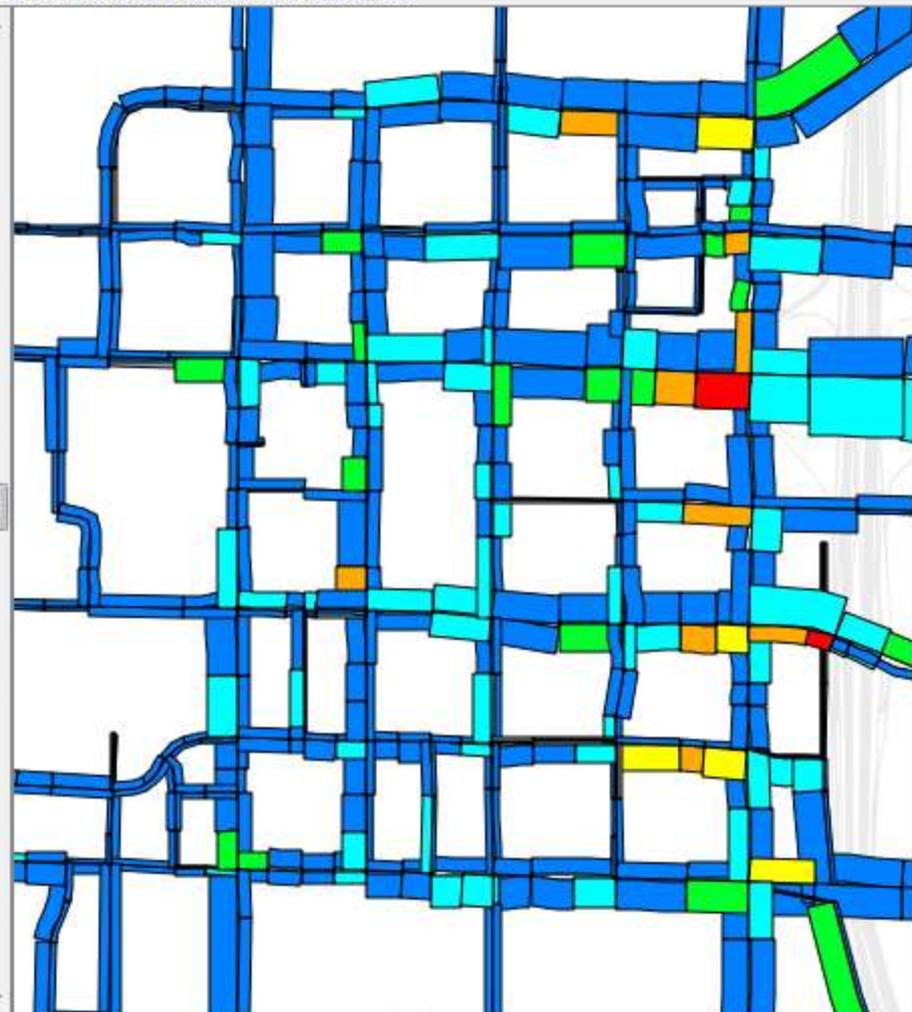
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Coordinate System: State Plane, Washington North Zone, NAD83, NAD 2011 (Bellevue)

2030 Roadway Segment Level of Service

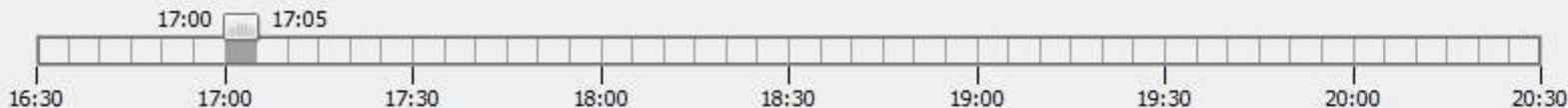
- Dynamic nature of roadway segment congestion can be observed in the following sequence of slides
 - Side-by-side slides show
 - 2030 Build on left and
 - 2030 No Build on right
- Level of Service (LOS) by roadway segment shown by color on the link occupancy legend
 - Blue is LOS A and Red is LOS F
- Dynameq modeling isolates occupancy level of roadway segments in 5-minute intervals during the PM Peak hour as shown on the slider bar at bottom of slide

BKR2030build120712 / DTAnewoffpeak

BKR2030nobuild120812 / DTAnewoffpeak



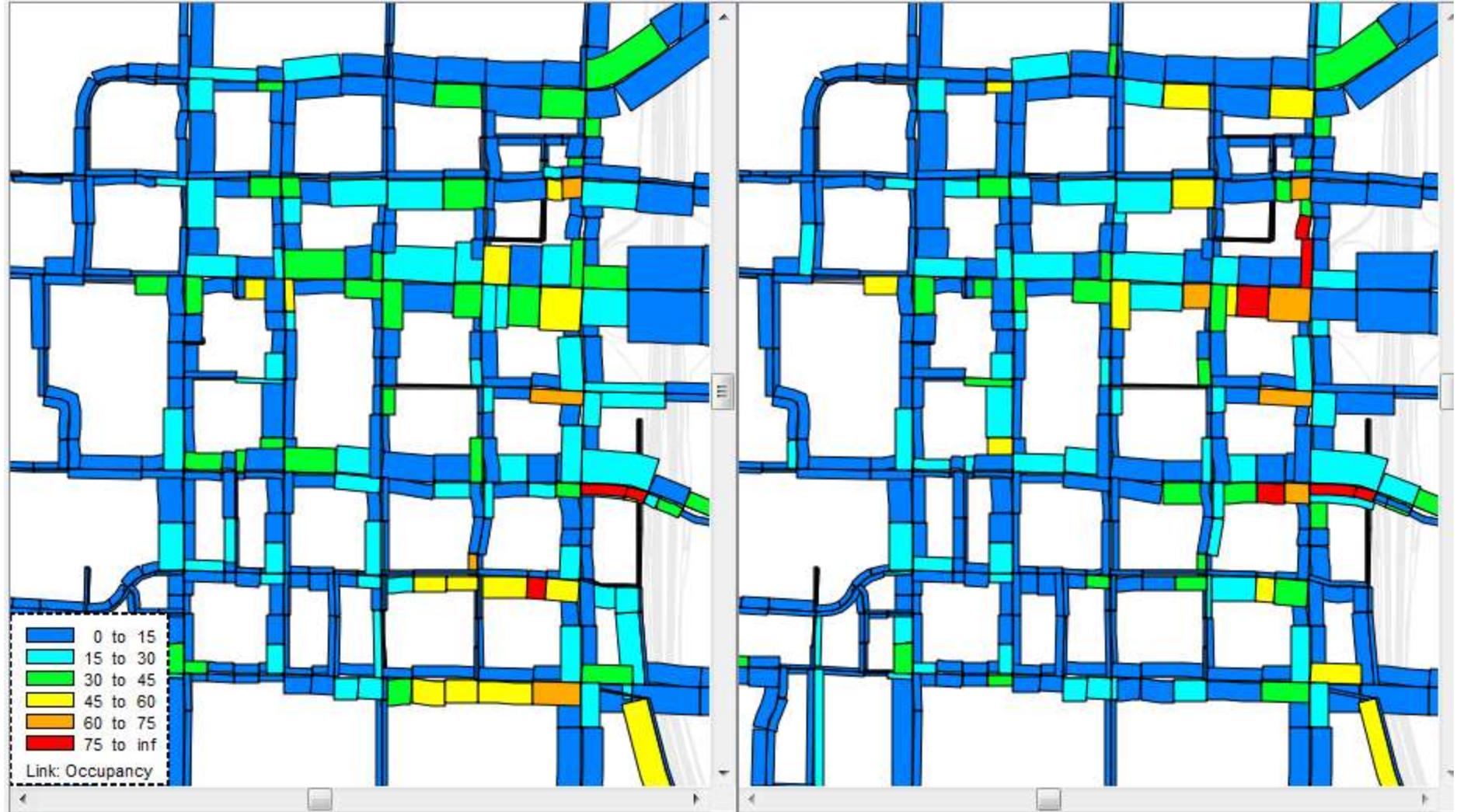
Results Interval



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BKR2030build120712 / DTAnewoffpeak

BKR2030nobuild120812 / DTAnewoffpeak



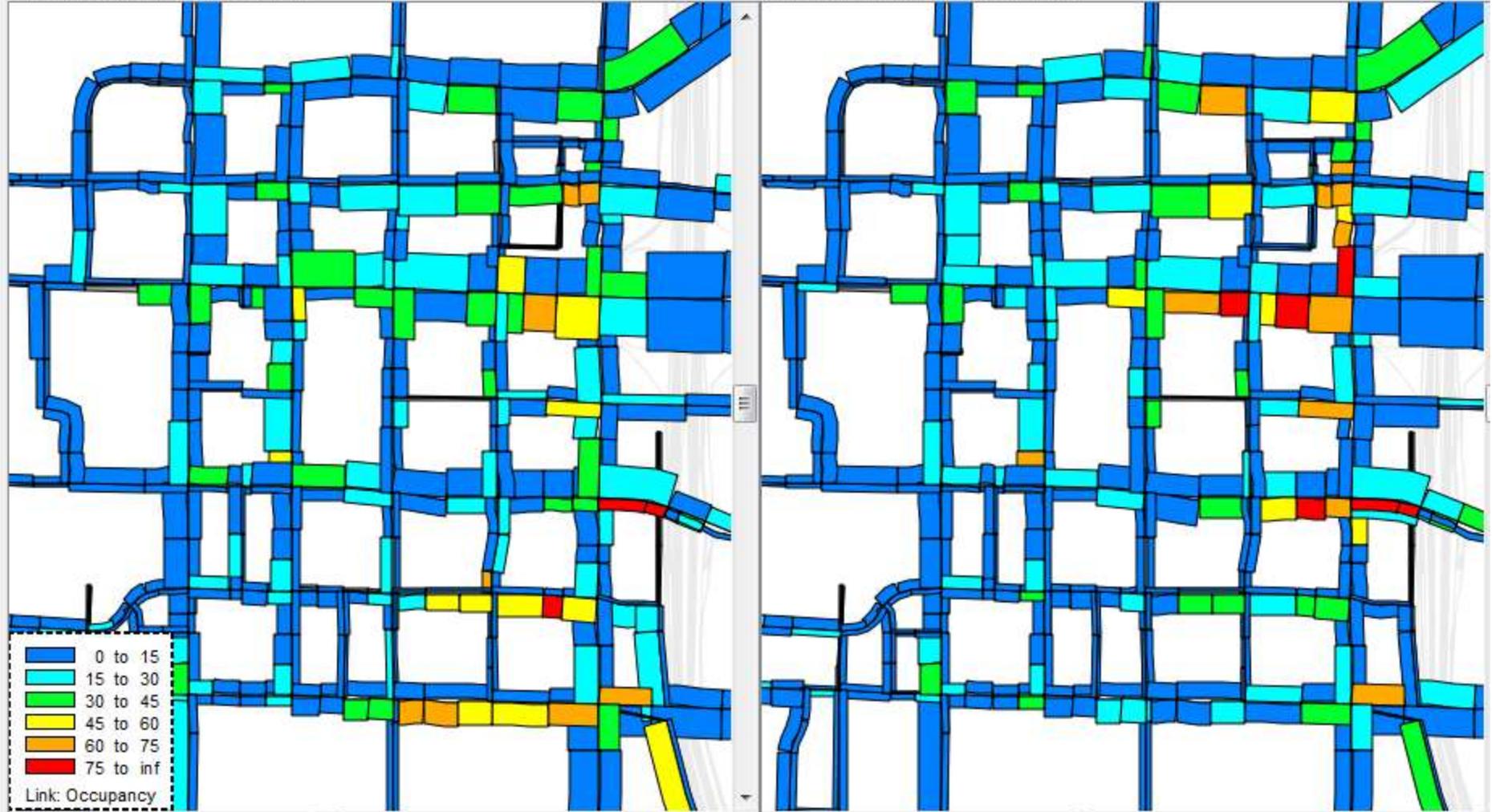
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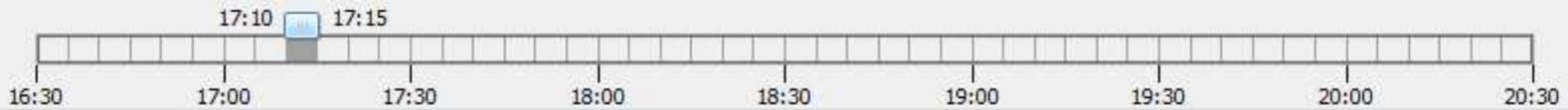
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BKR.2030build120712 / DTAnewoffpeak

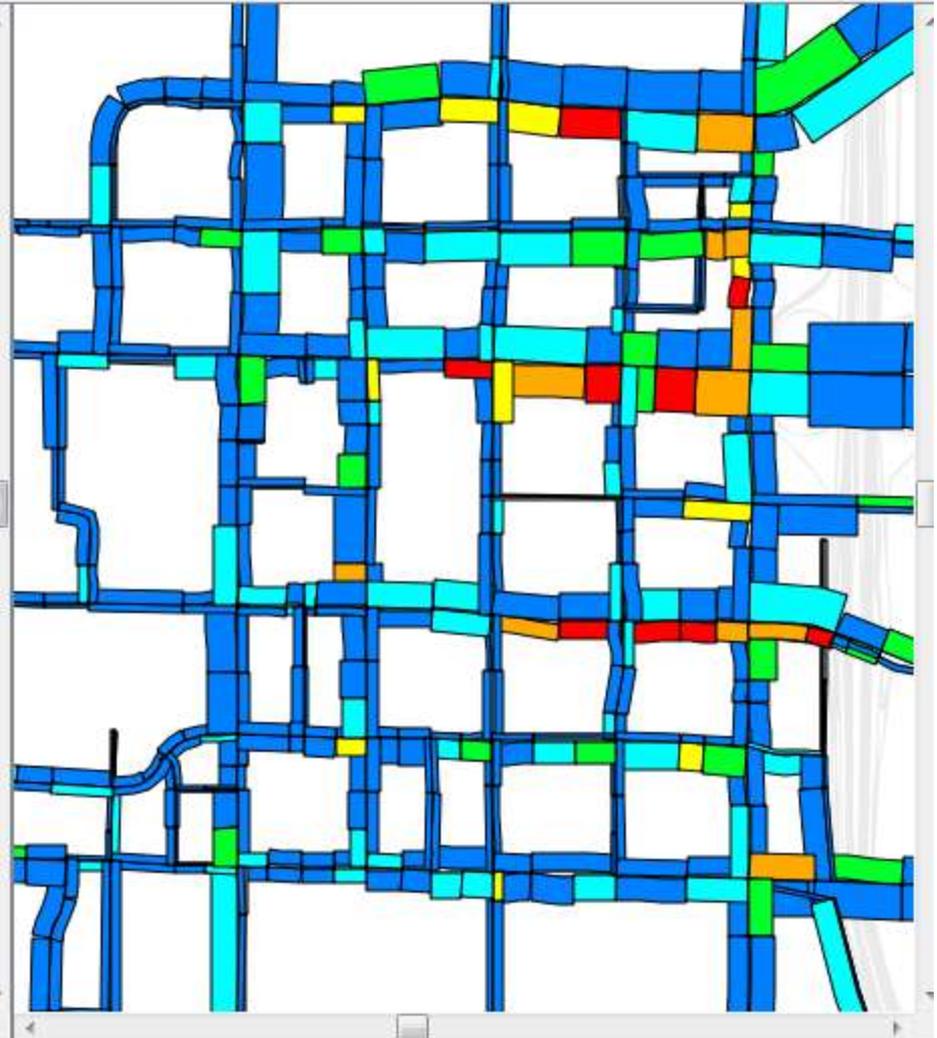
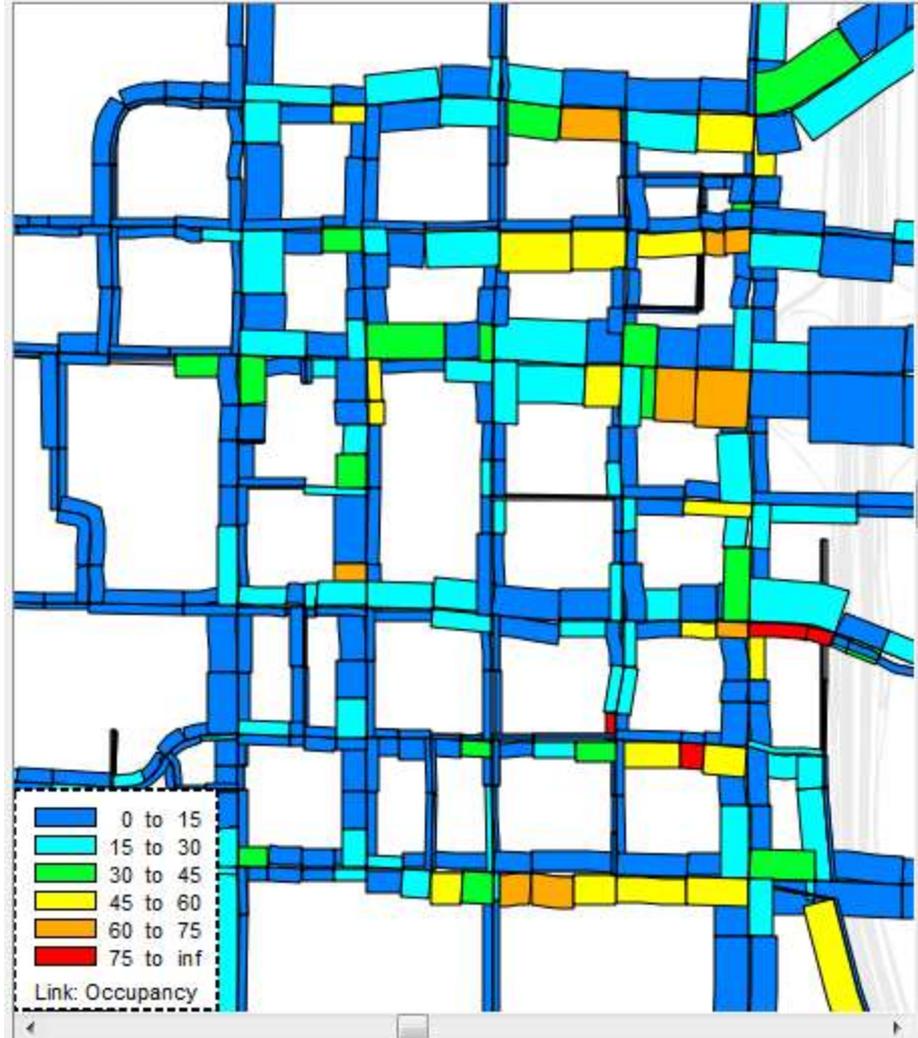
BKR.2030nobuild120812 / DTAnewoffpeak



Results Interval



Build on left No Build on right



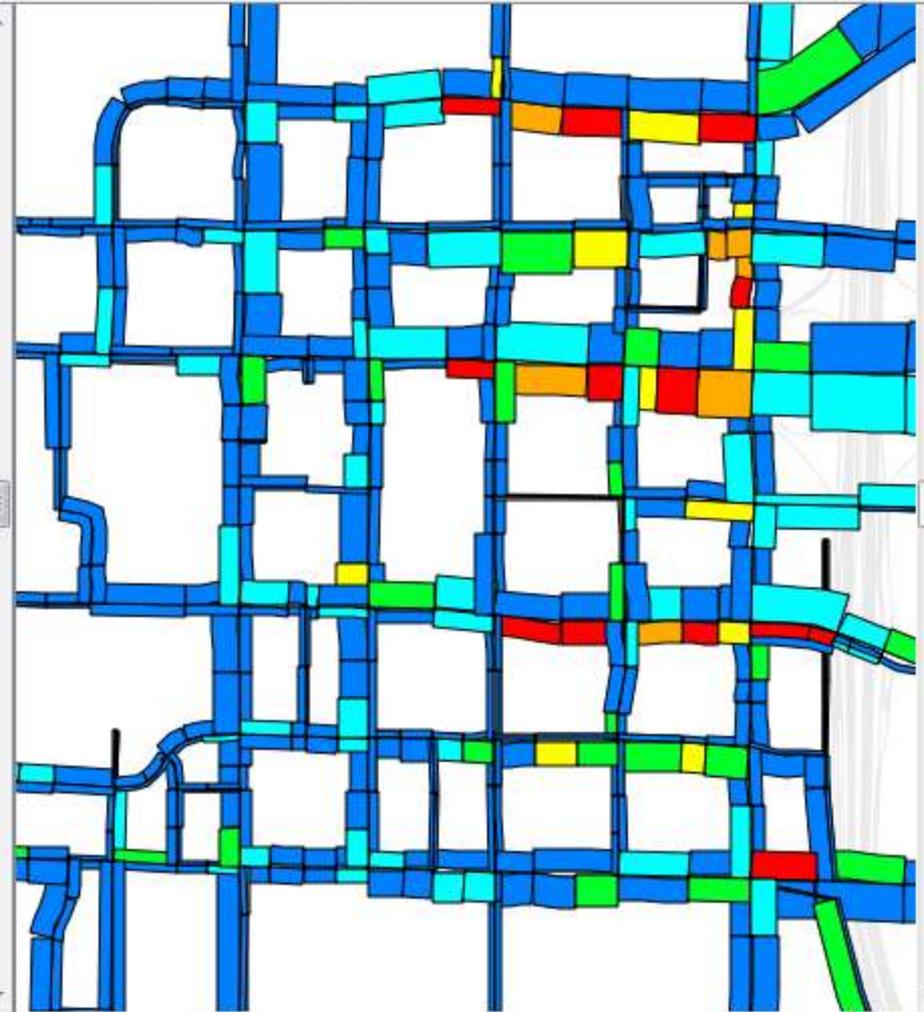
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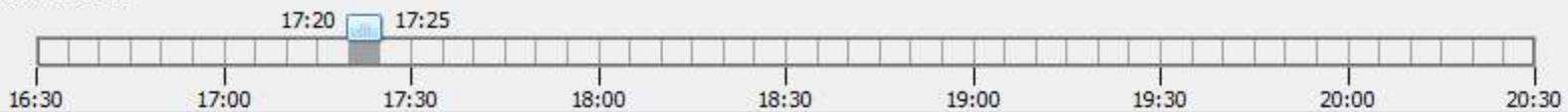
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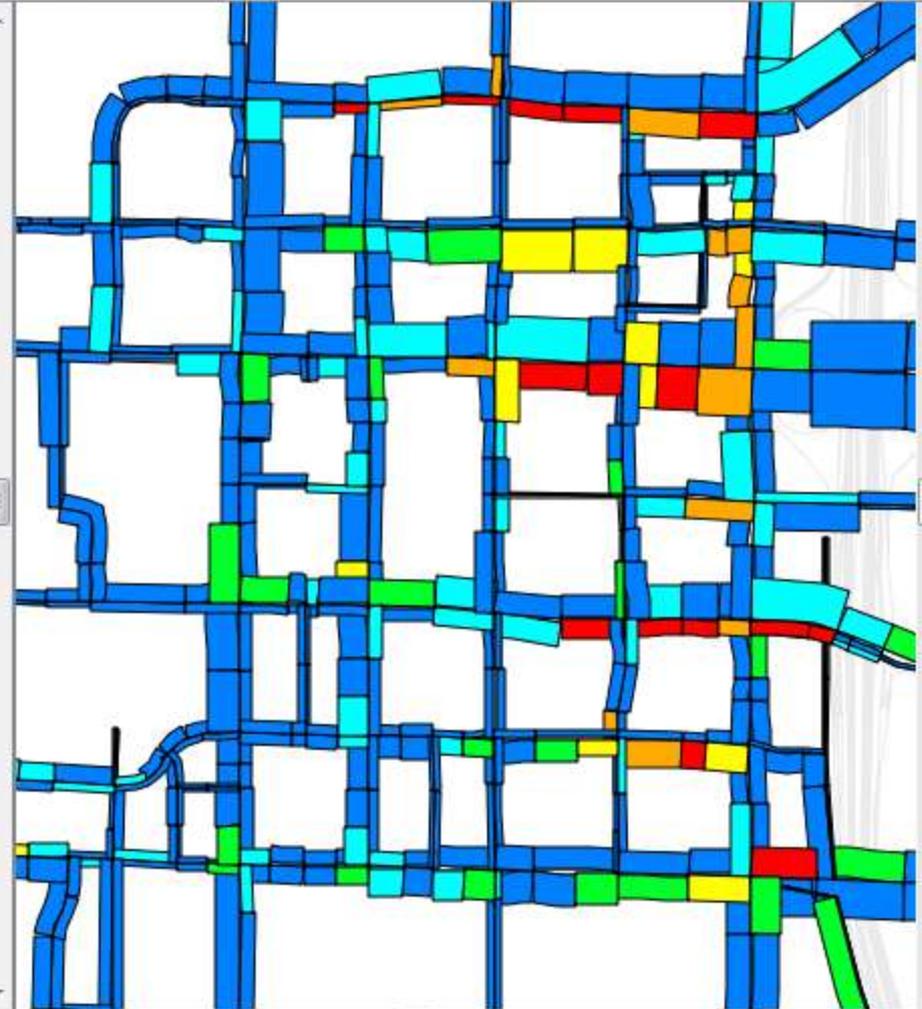
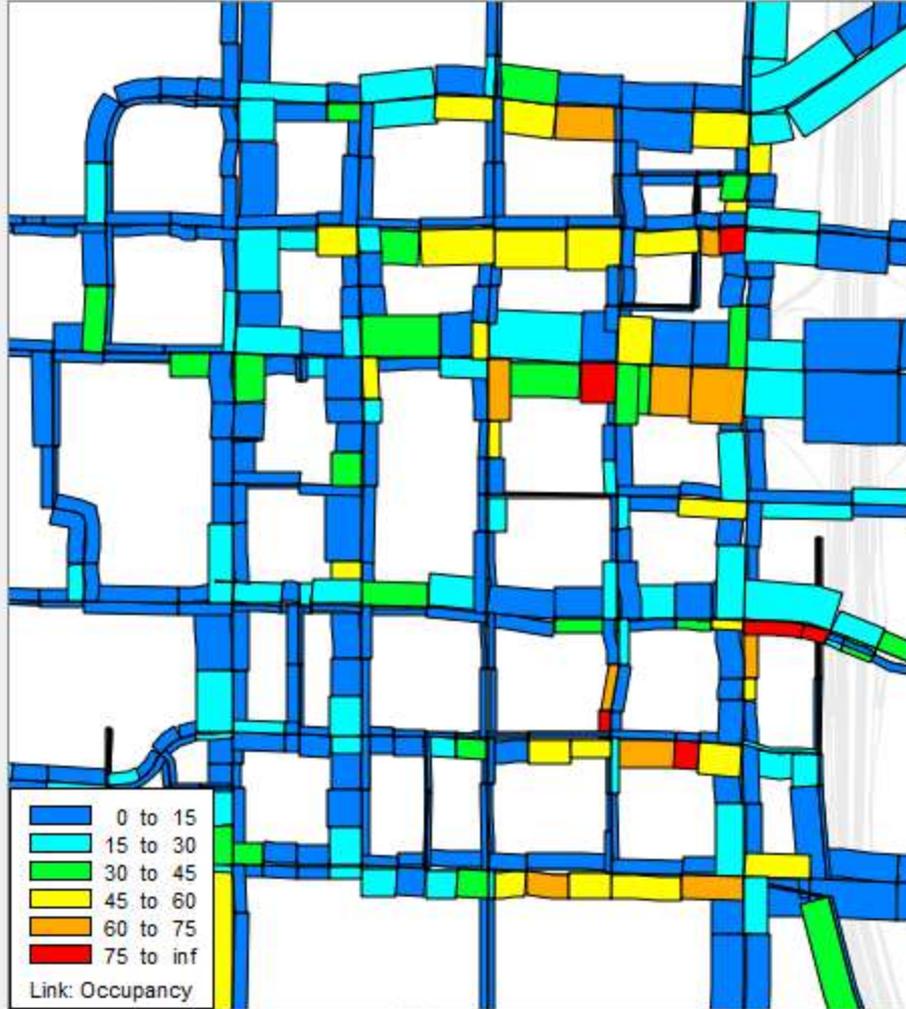
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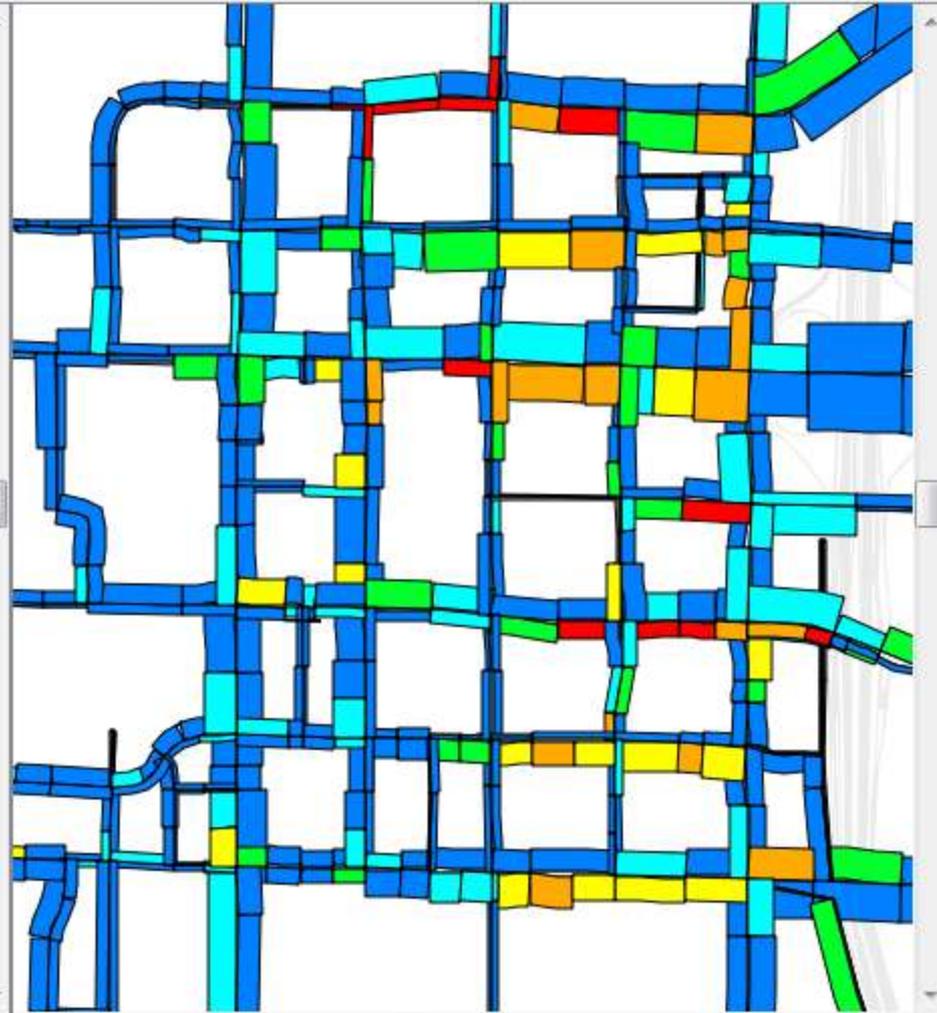
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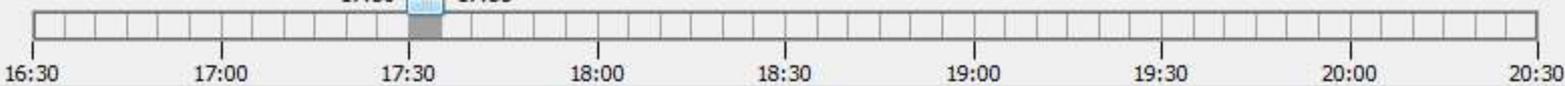
BKR.2030nobuild120812 / DTAnewoffpeak



- 0 to 15
 - 15 to 30
 - 30 to 45
 - 45 to 60
 - 60 to 75
 - 75 to inf
- Link: Occupancy

Results Interval

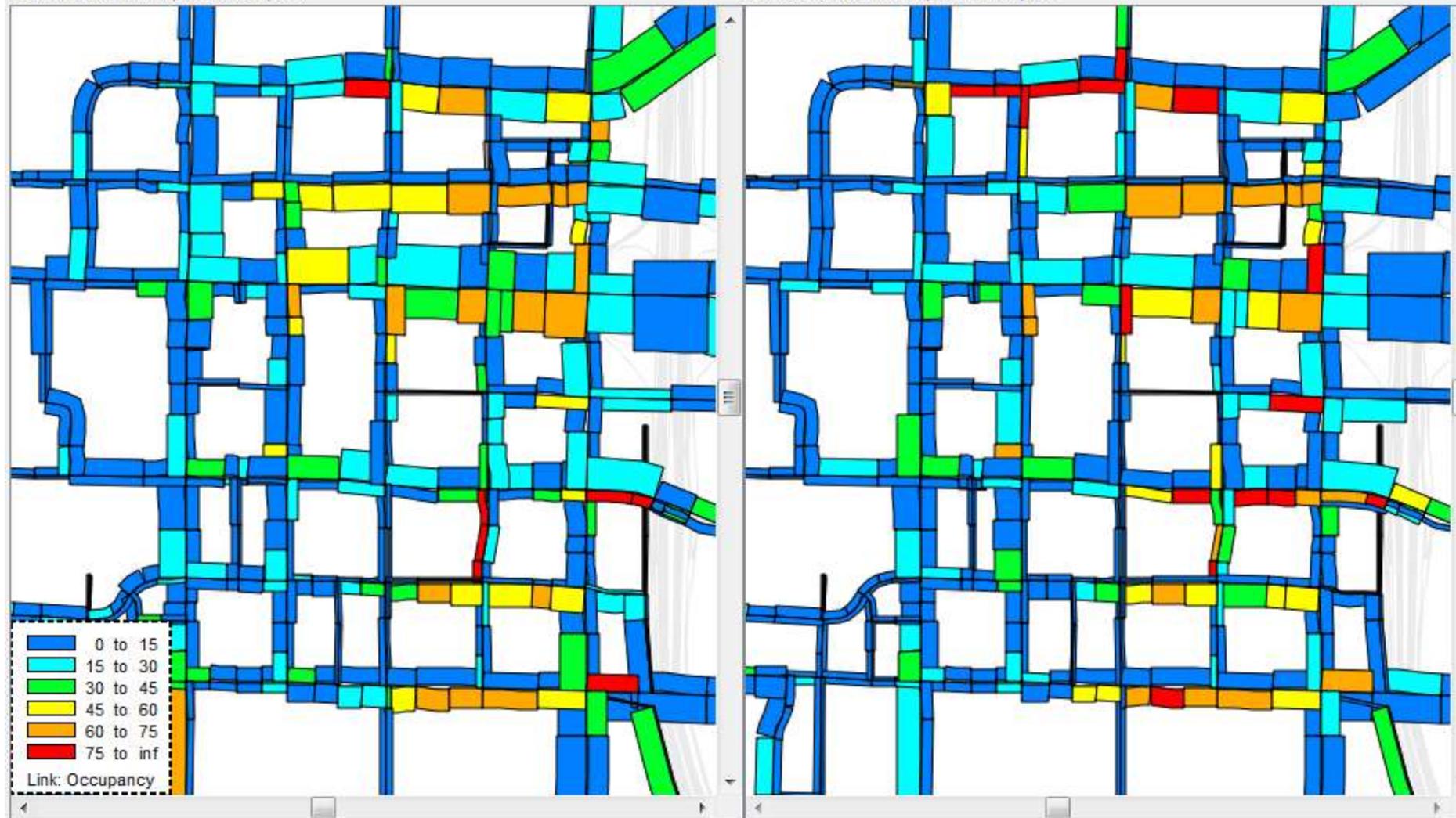
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BKR2030nobuild120812 / DTAnewoffpeak



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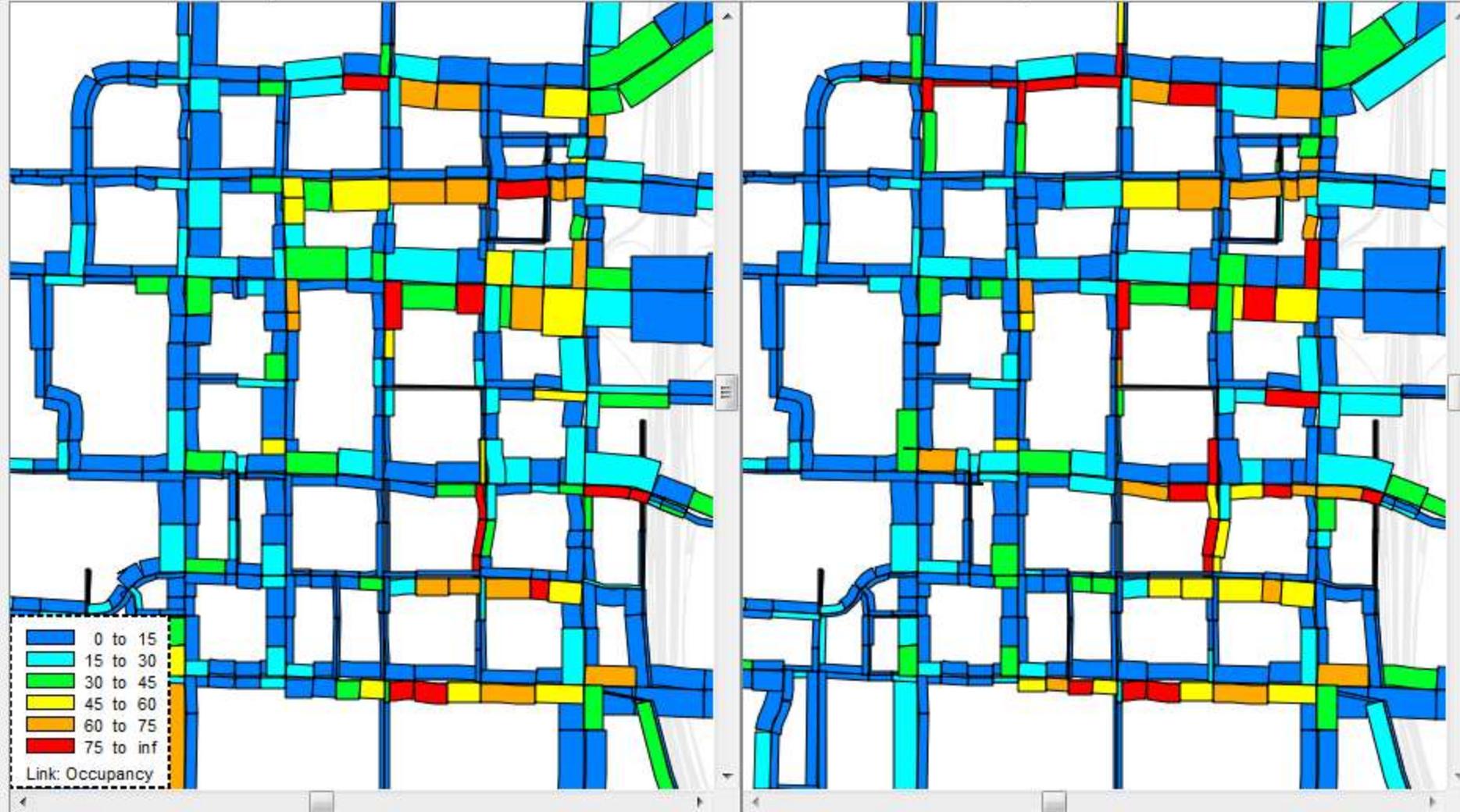
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BKR.2030nobuild120812 / DTAnewoffpeak



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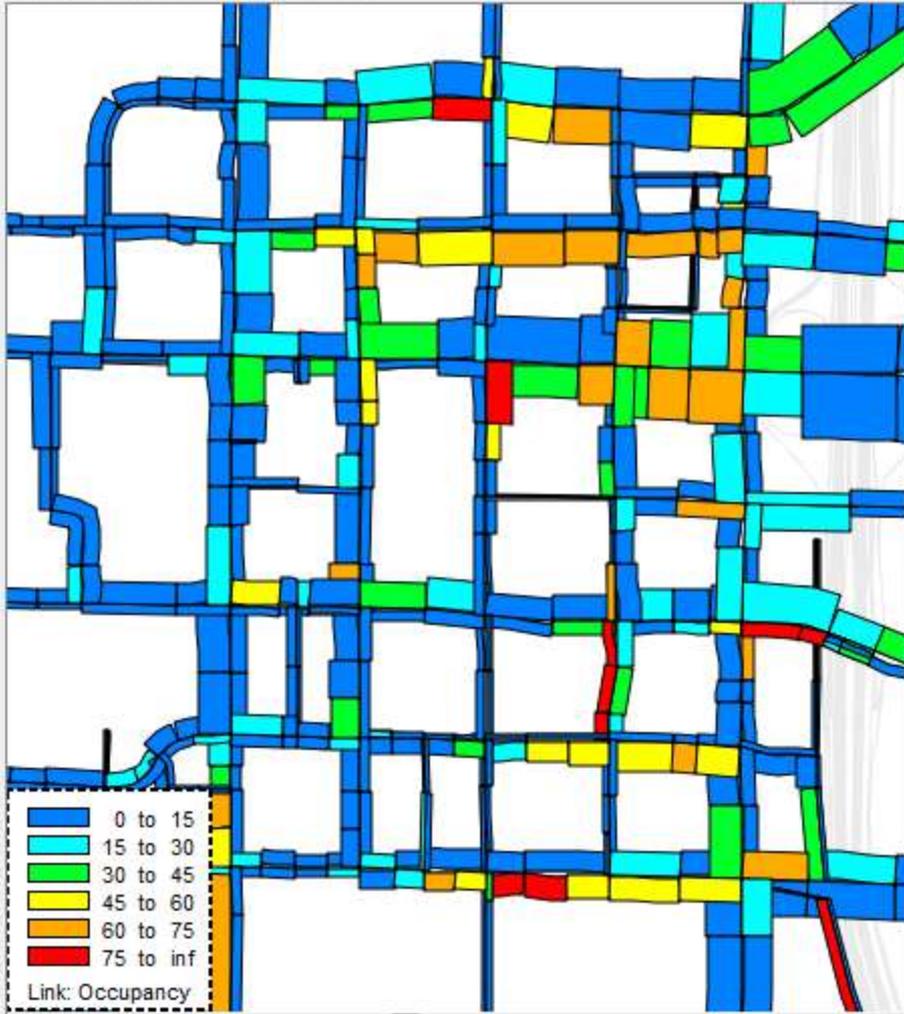
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BKR2030build120712 / DTAnewoffpeak

BKR2030nobuild120812 / DTAnewoffpeak



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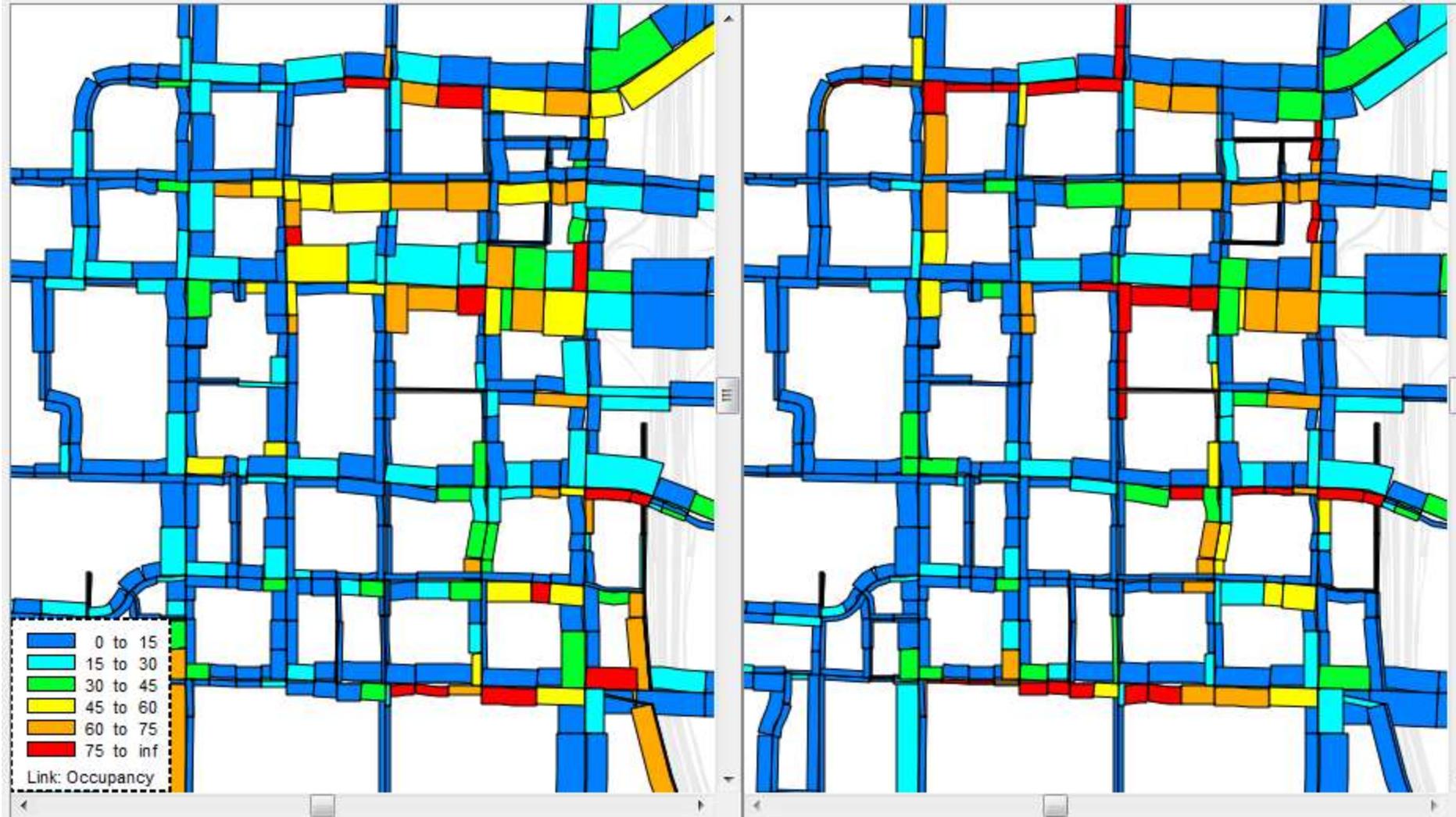
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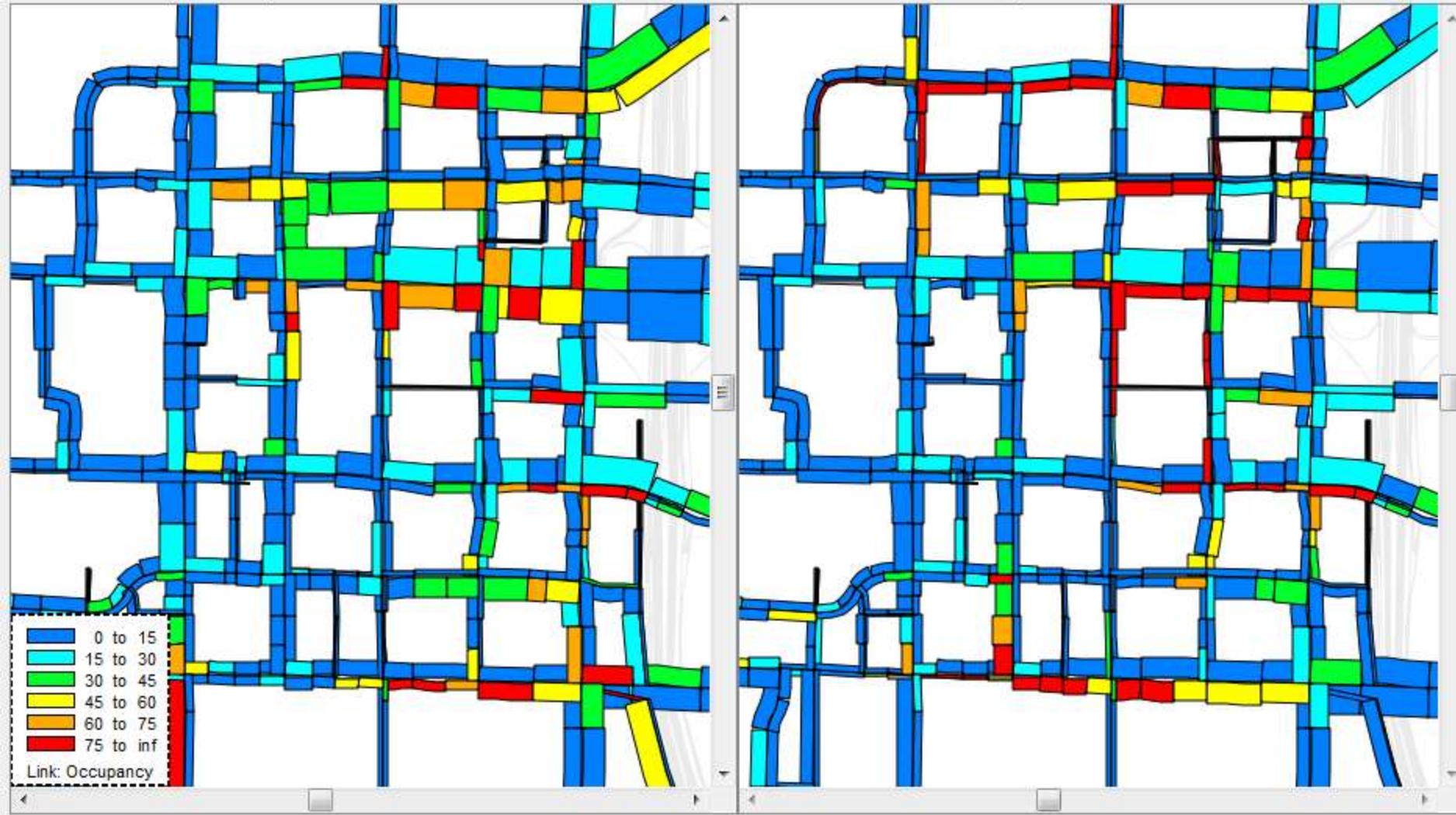


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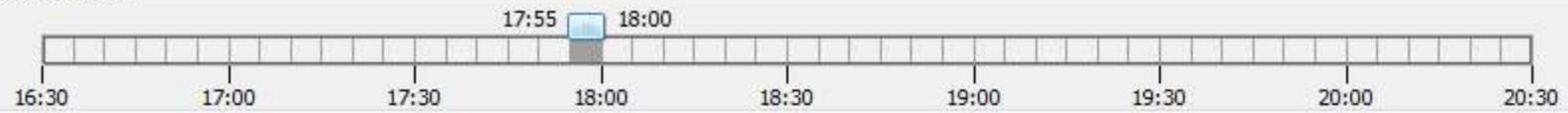
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Build on left No Build on right



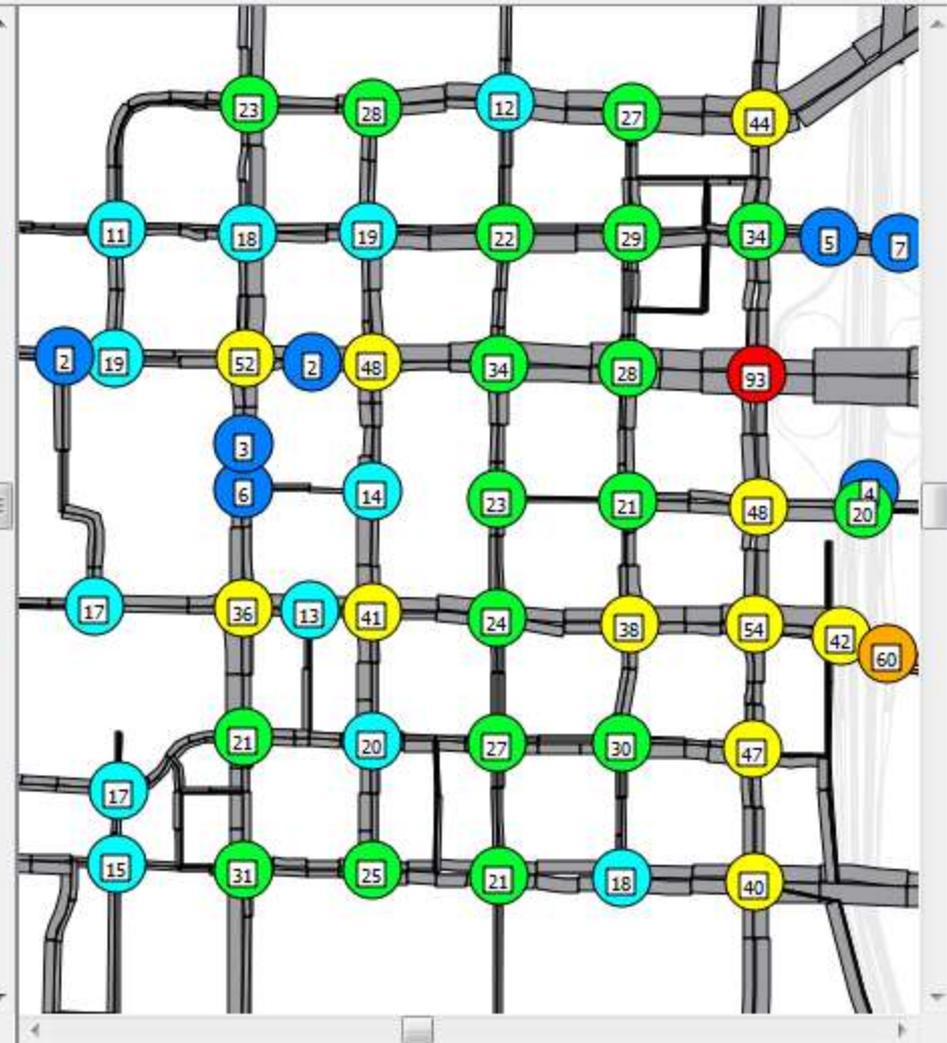
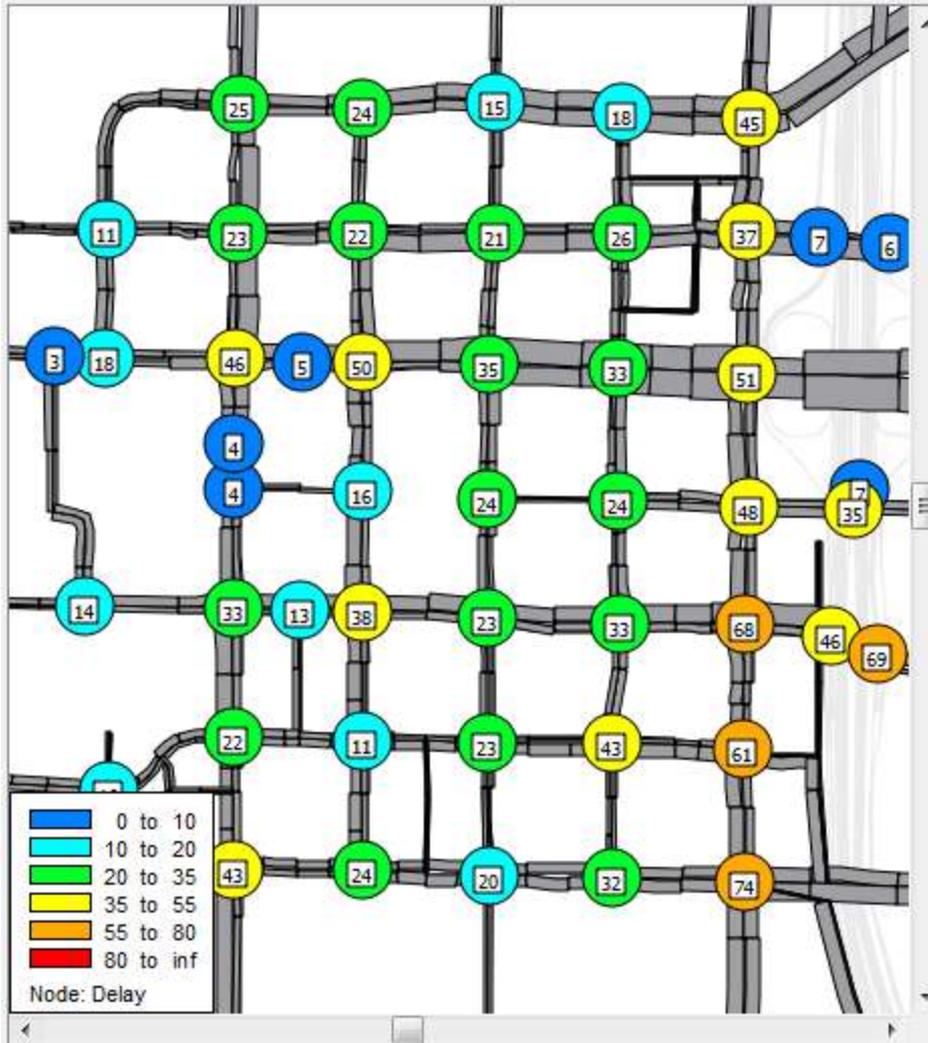
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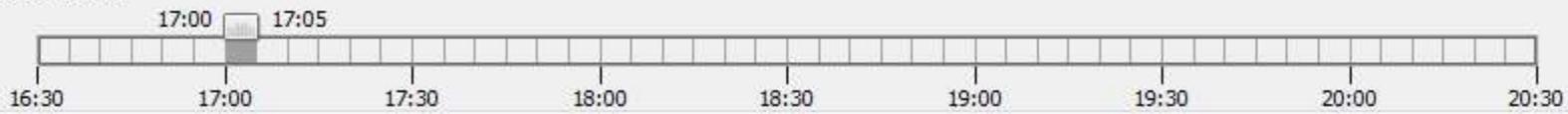
Build on left No Build on right

2030 Intersection Level of Service

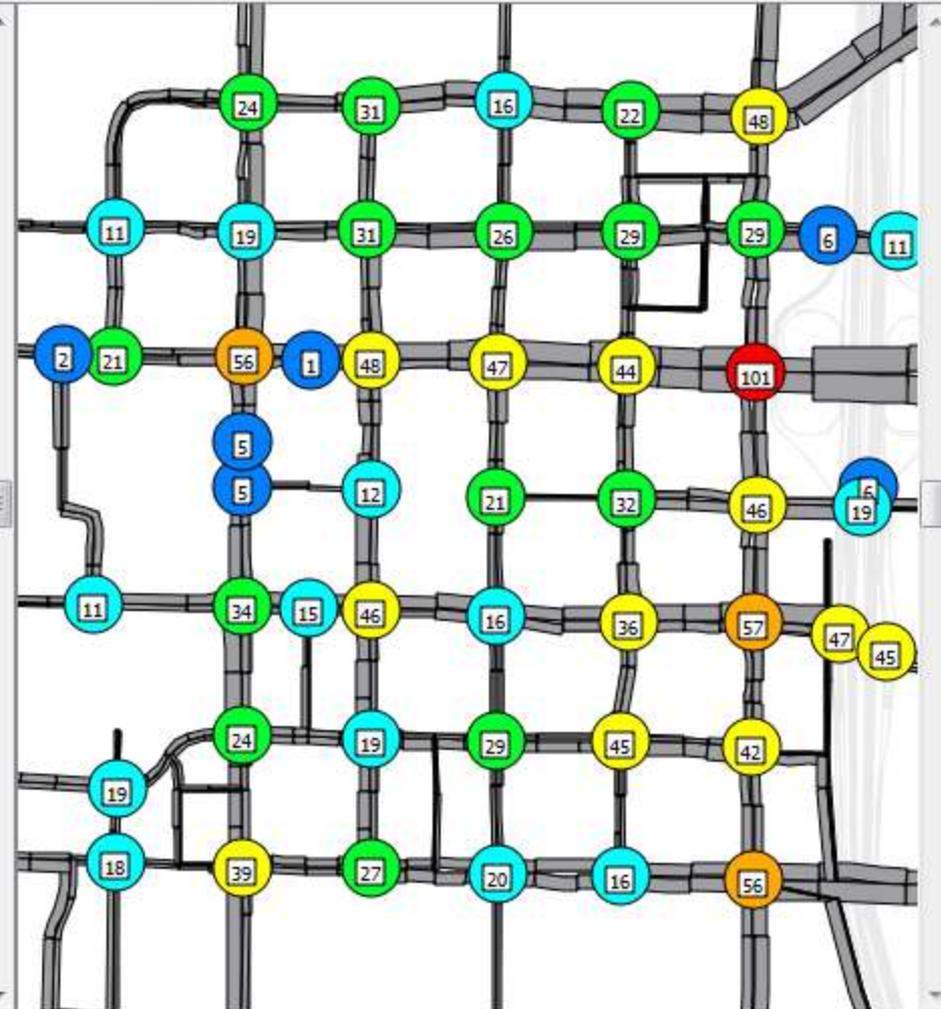
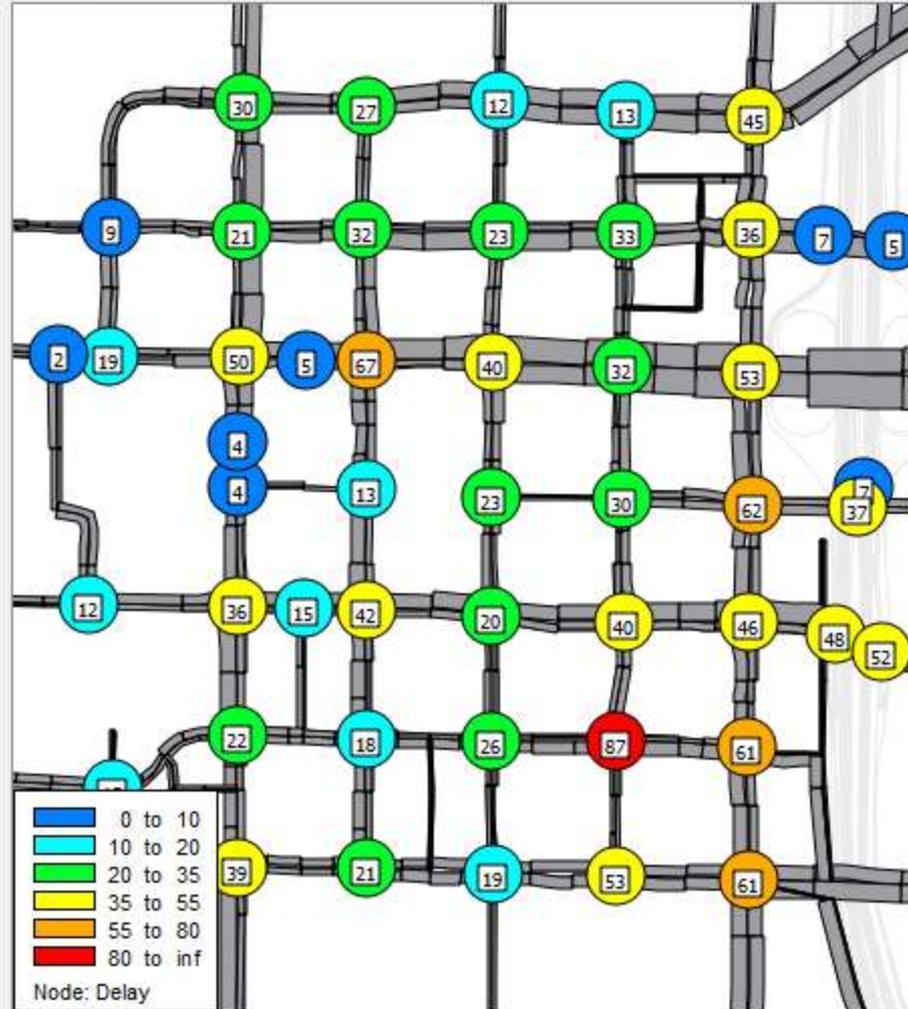
- Dynameq modeling can isolate function (vehicle delay) of intersections in 5-minute intervals during the PM Peak hour
- Level of Service can be determined for each intersection
- Dynamic nature of intersection congestion can be observed in the following sequence of slides
 - Side-by-side slides show 2030 Build on left and 2030 No Build on right



Results Interval



Build on left No Build on right



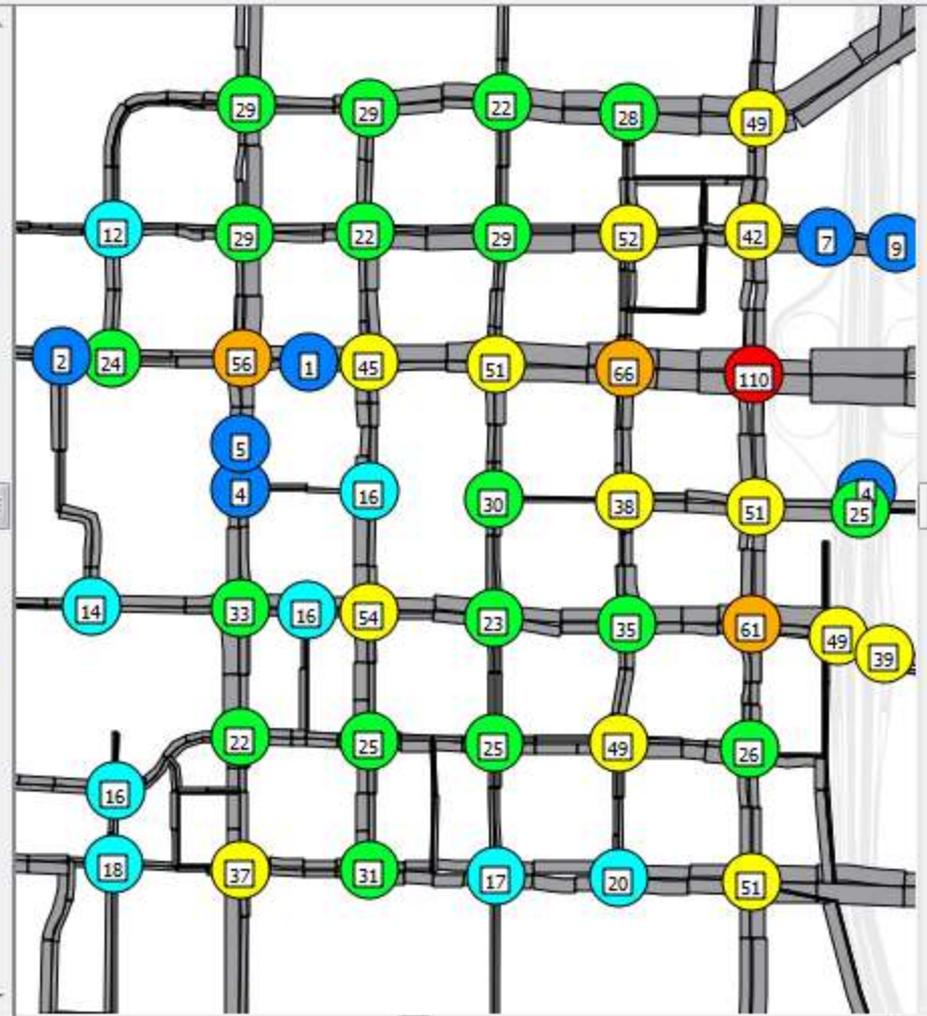
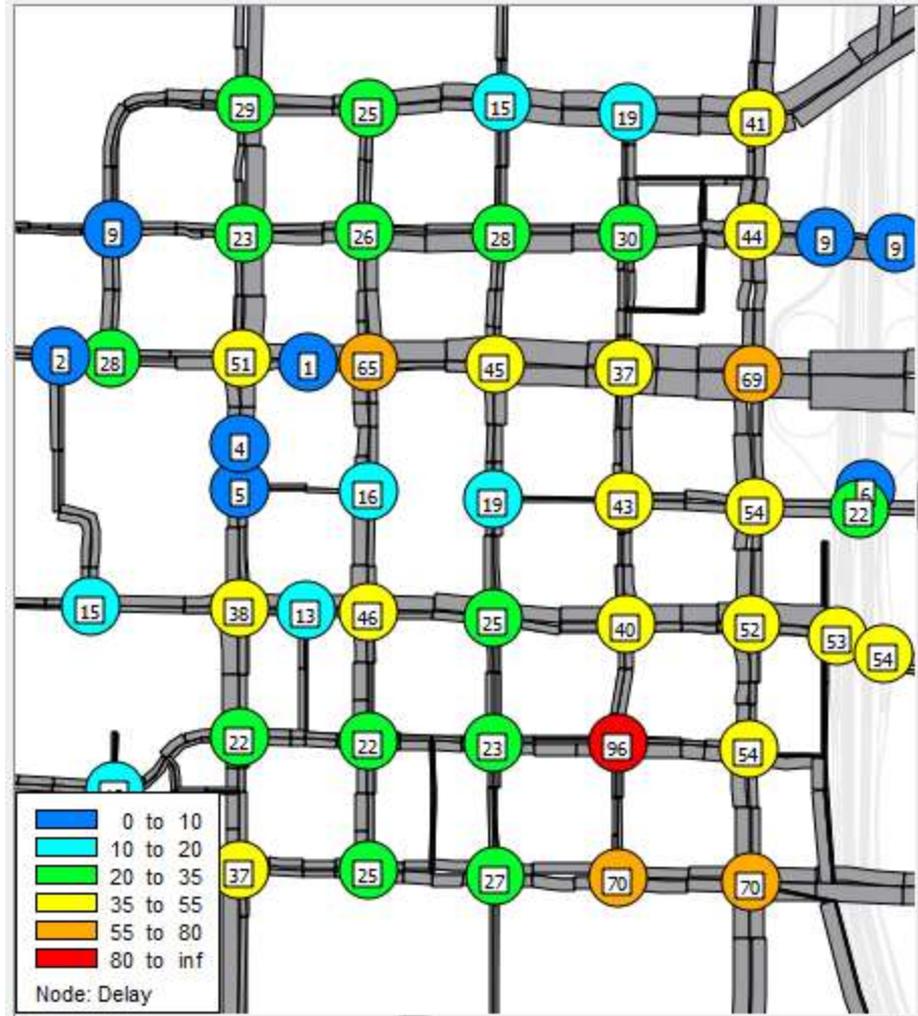
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16:30 17:00 17:30 18:00 18:30 19:00 19:30 20:00 20:30



Build on left No Build on right



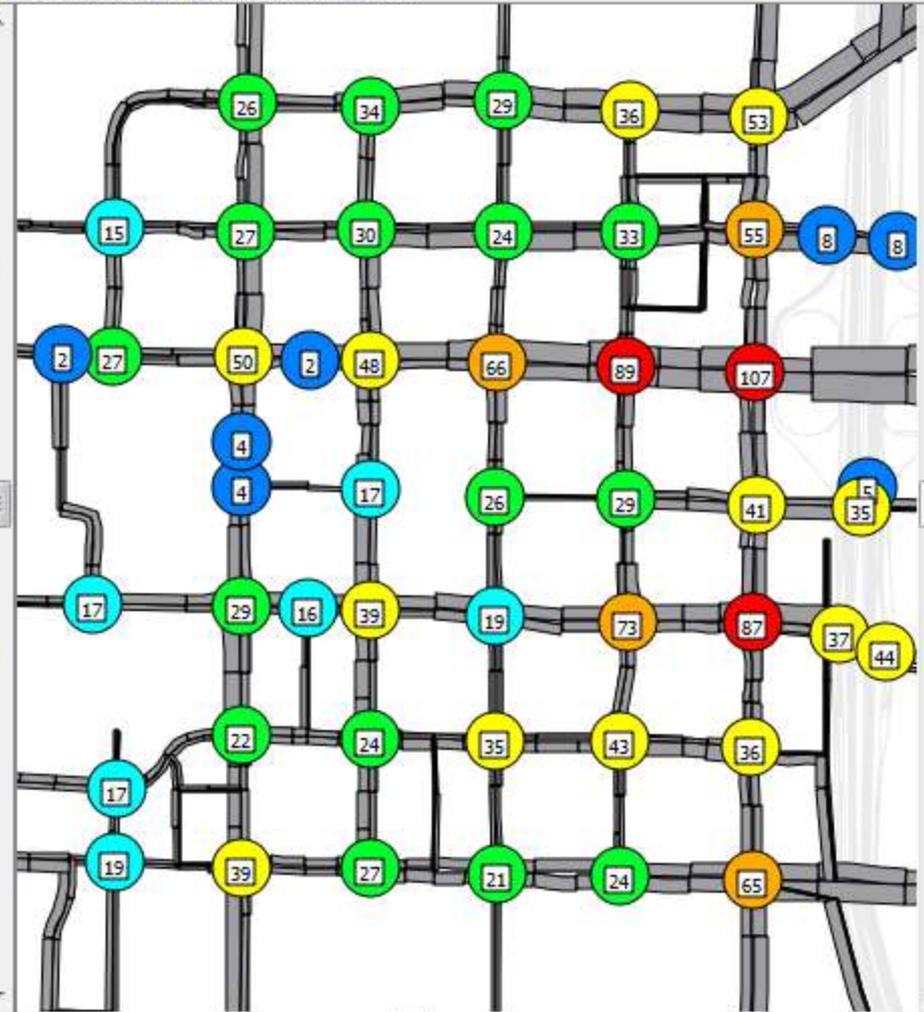
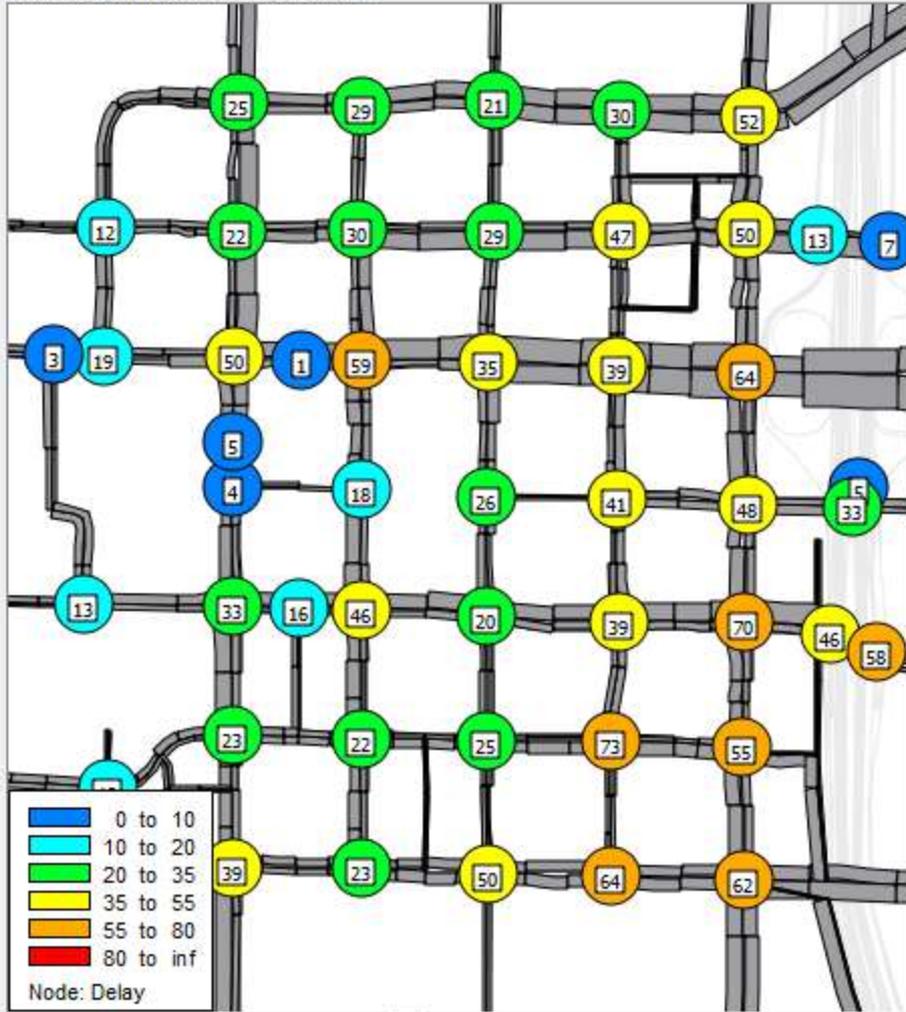
Results Interval



Build on left No Build on right

BKR2030build120712 / DTAnewoffpeak

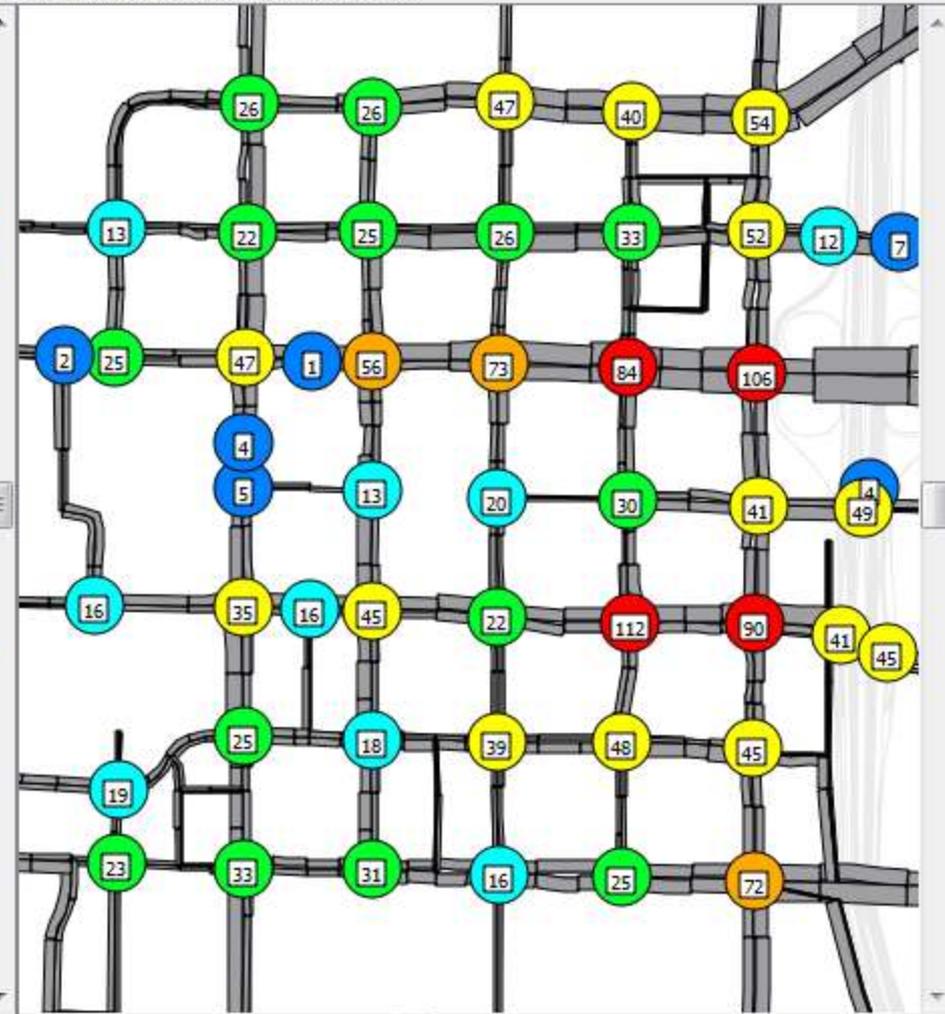
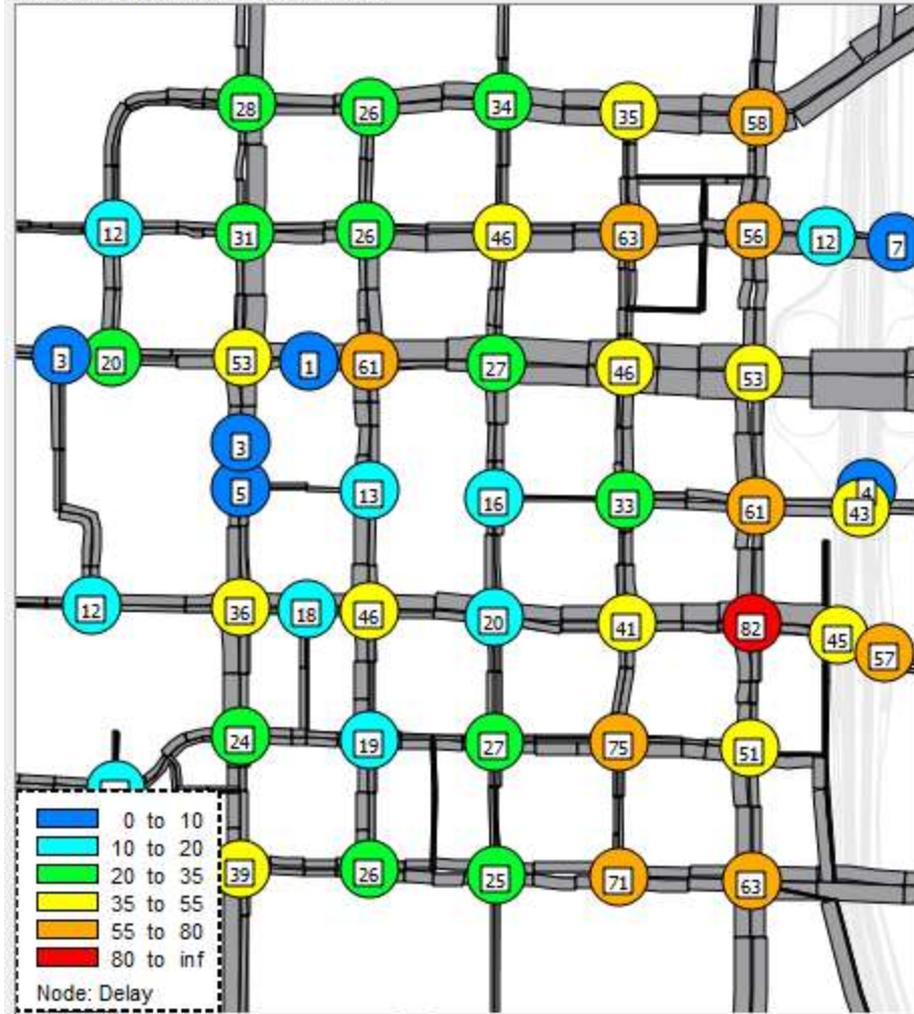
BKR2030nobuild120812 / DTAnewoffpeak



Results Interval



Build on left No Build on right

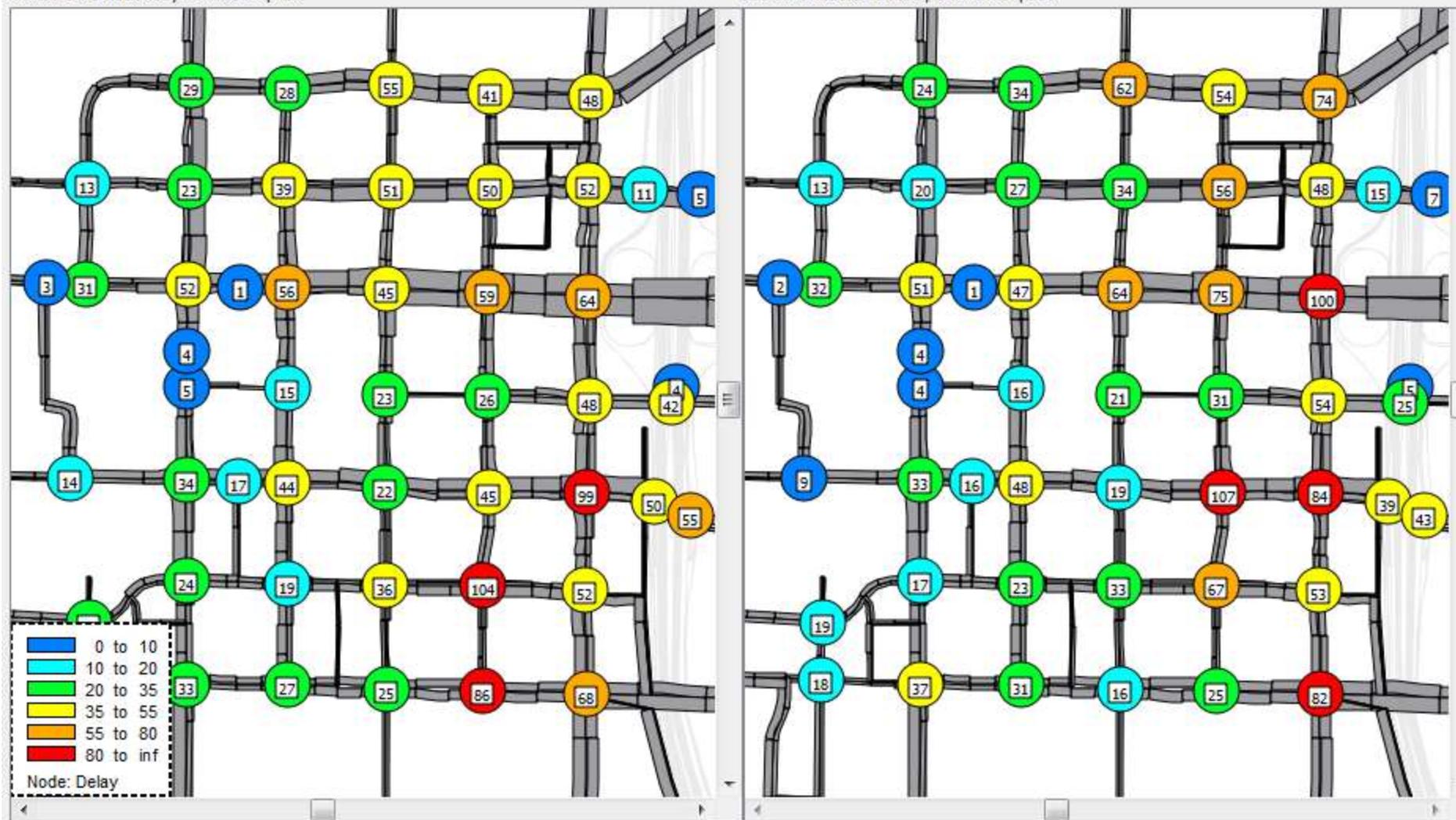


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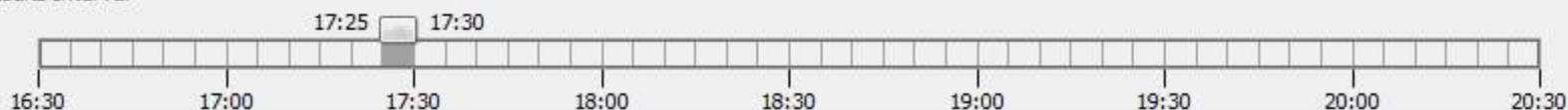
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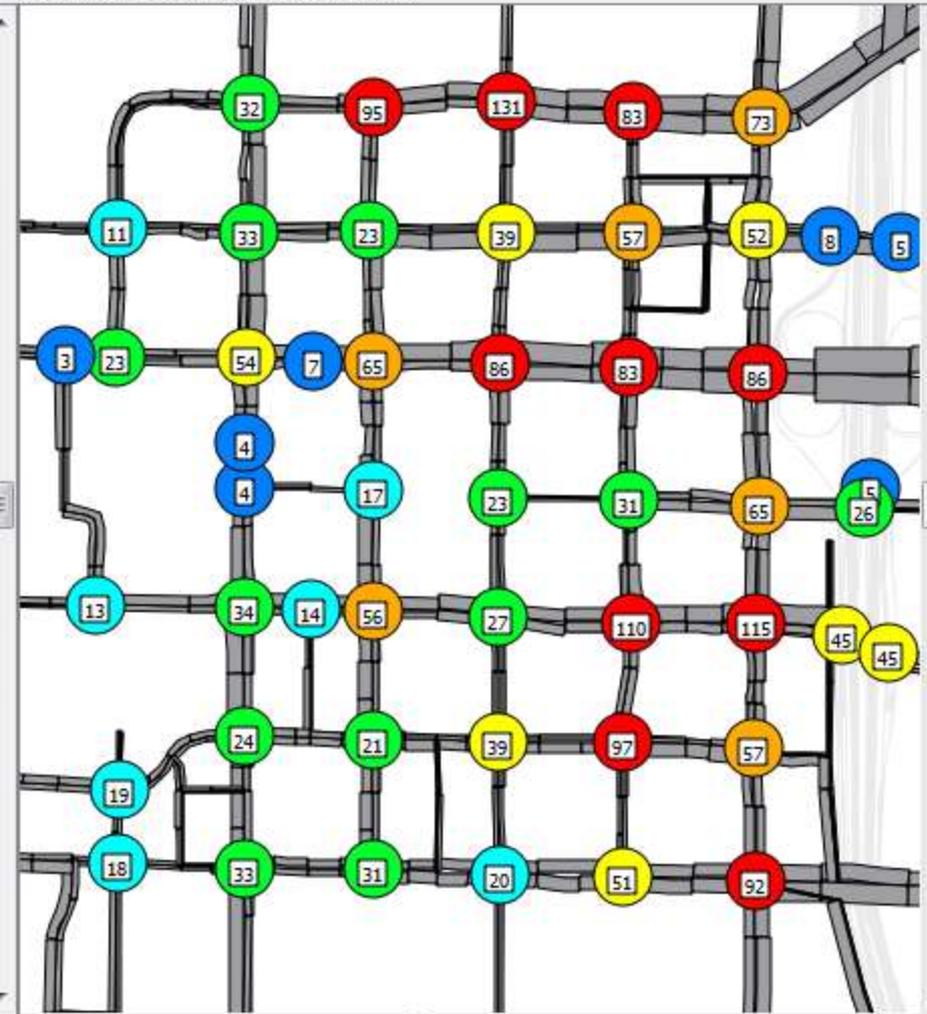
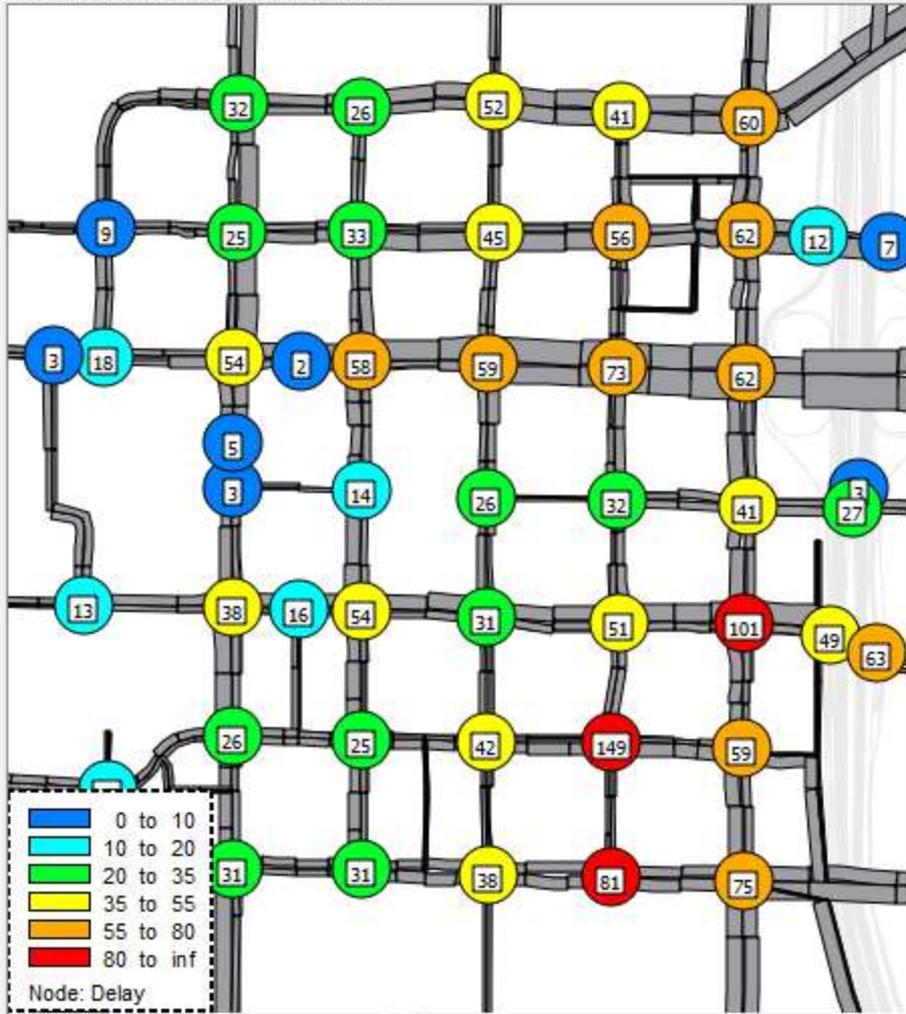
Build on left No Build on right



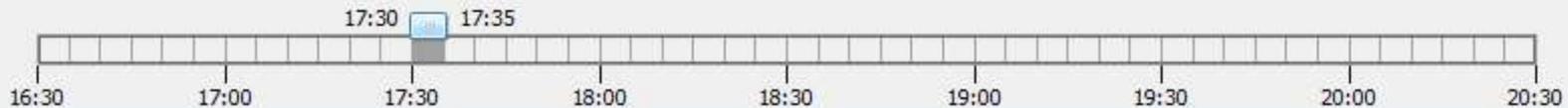
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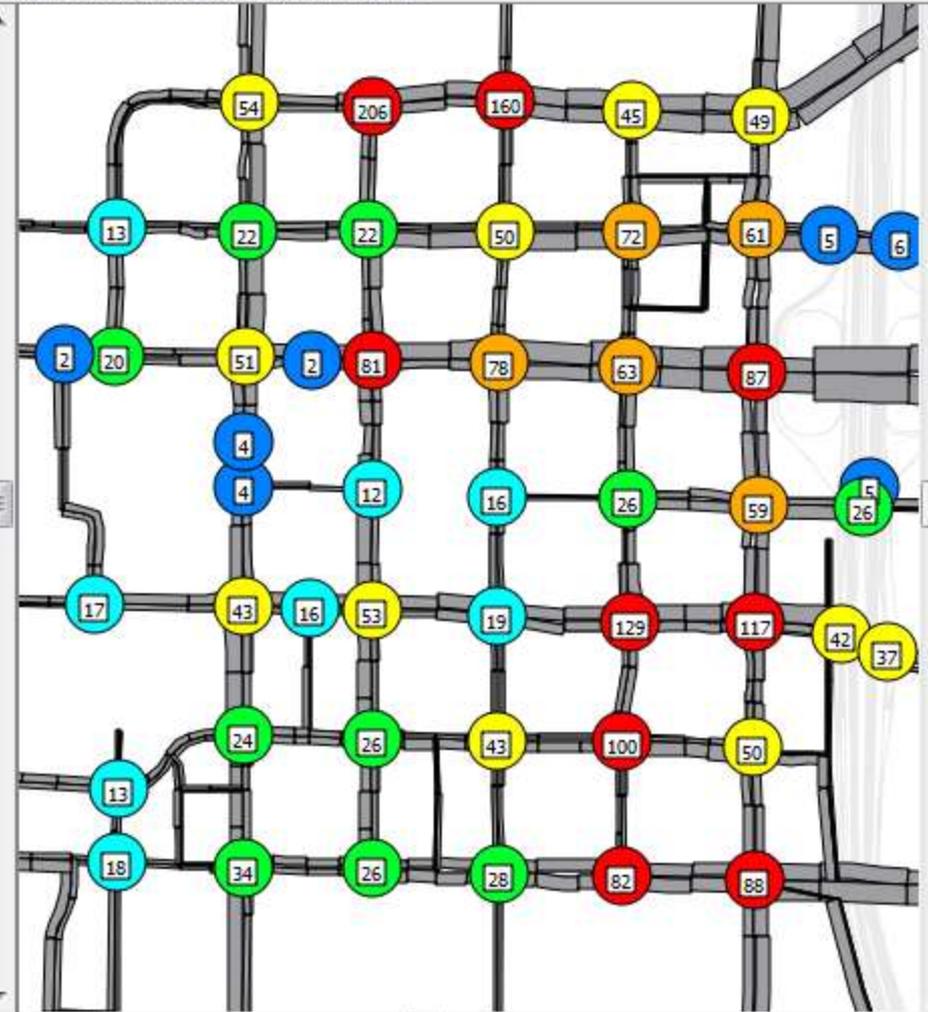
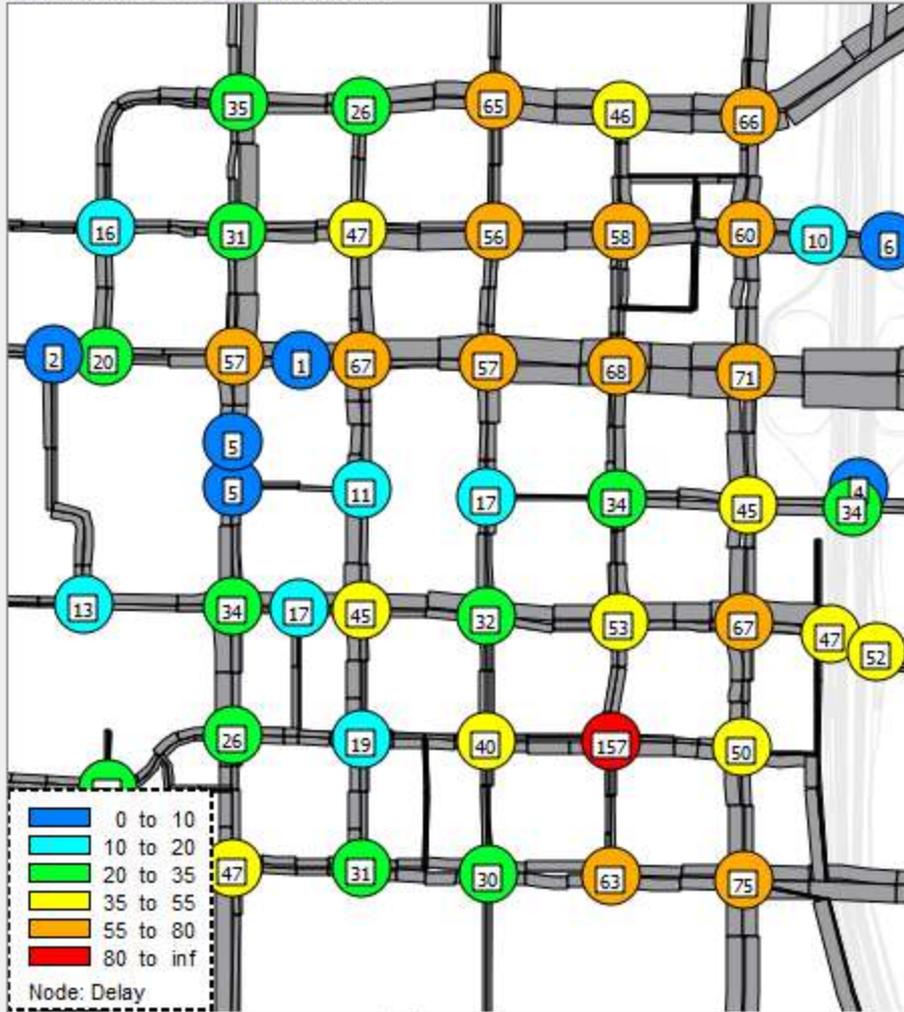
Build on left No Build on right



Results Interval



Build on left No Build on right

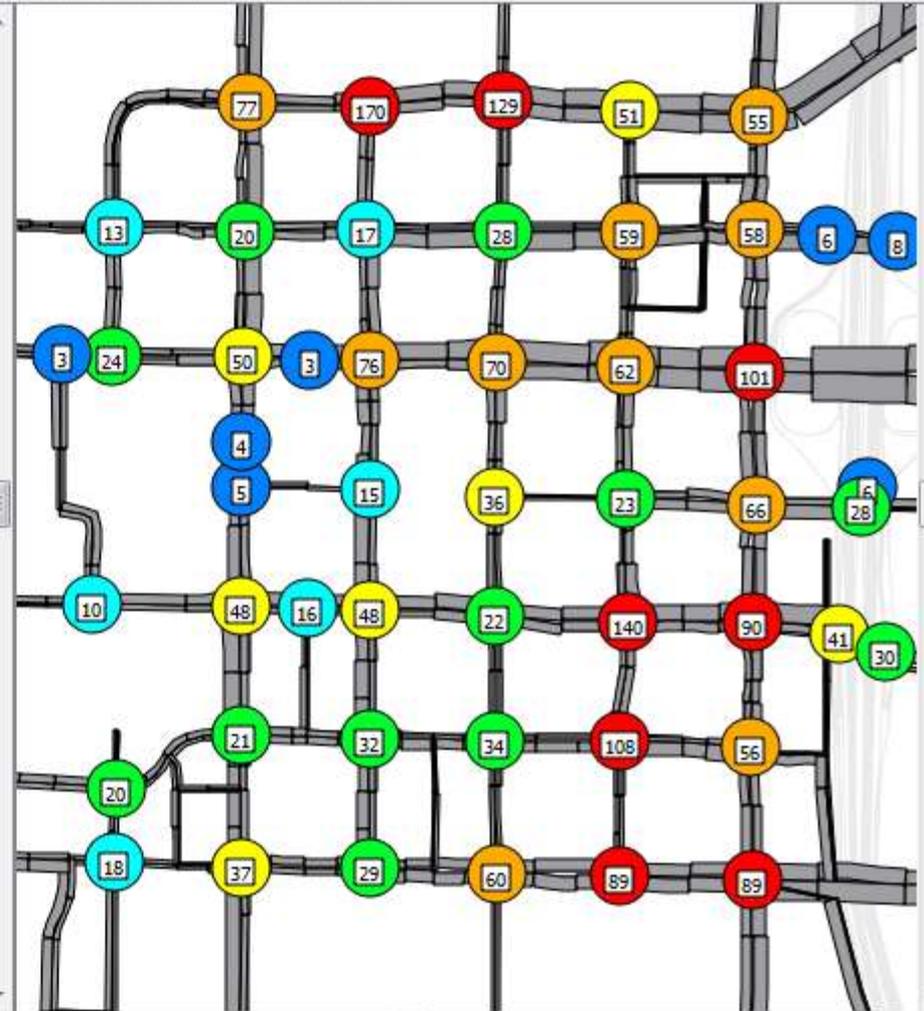
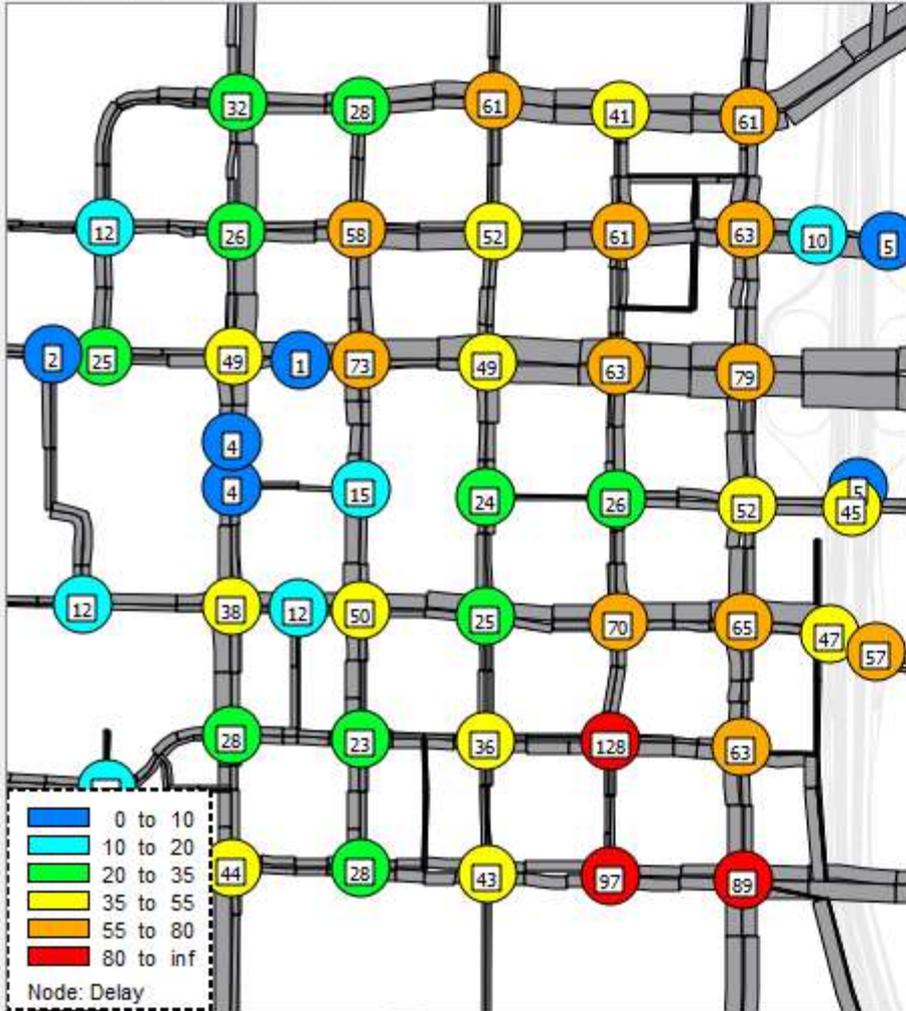


Results Interval

17:35 17:40



Build on left No Build on right

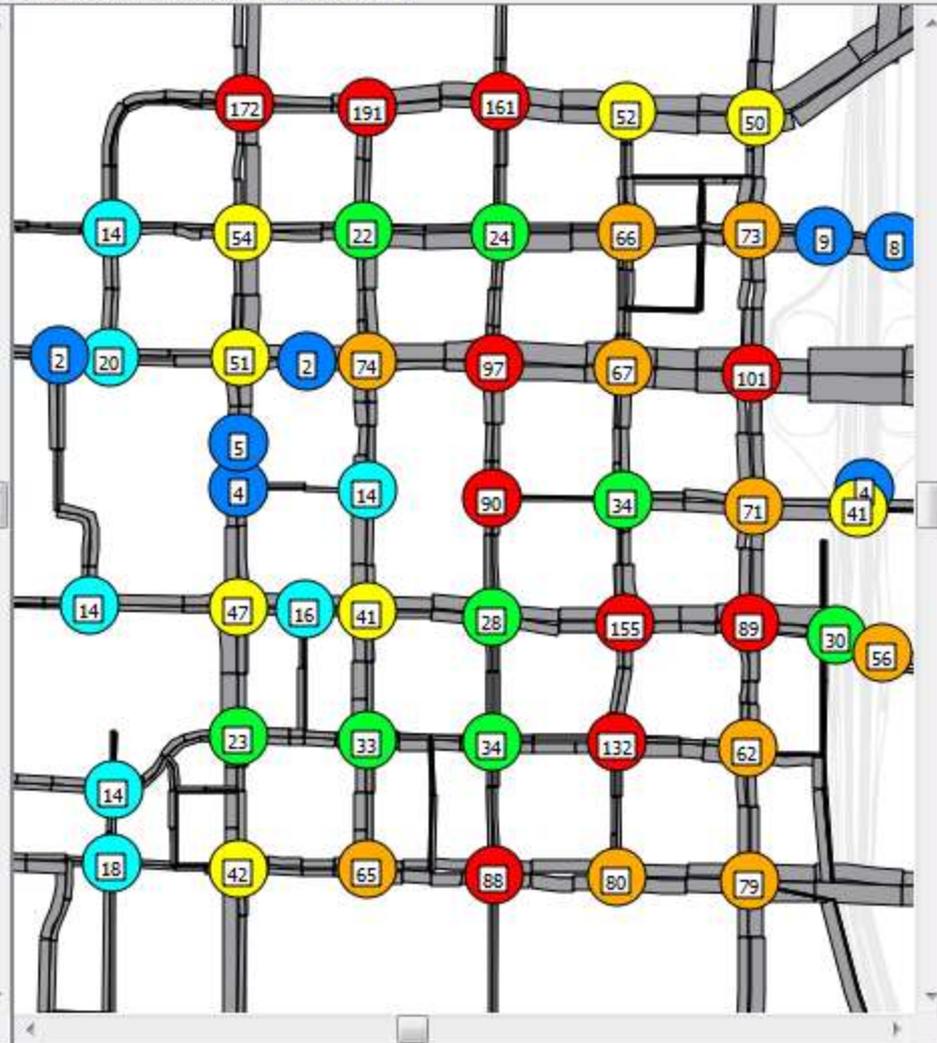
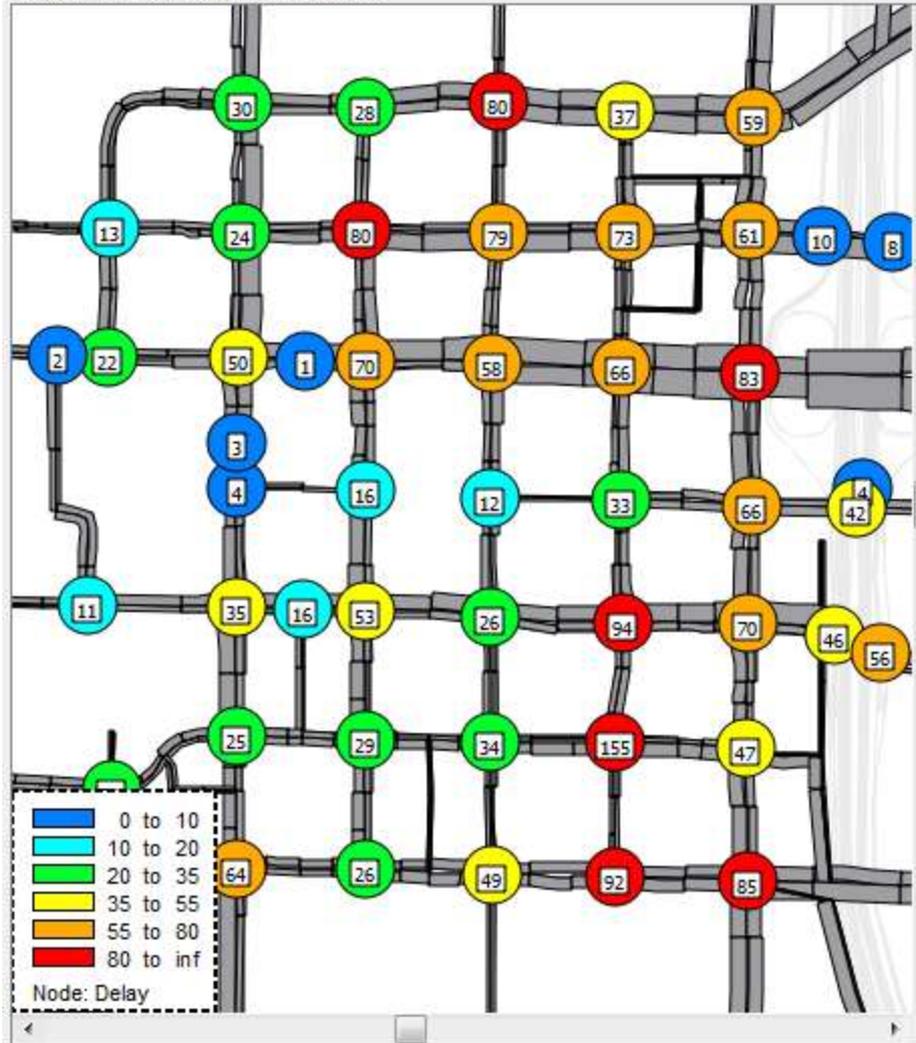


Results Interval

17:40 17:45



Build on left No Build on right

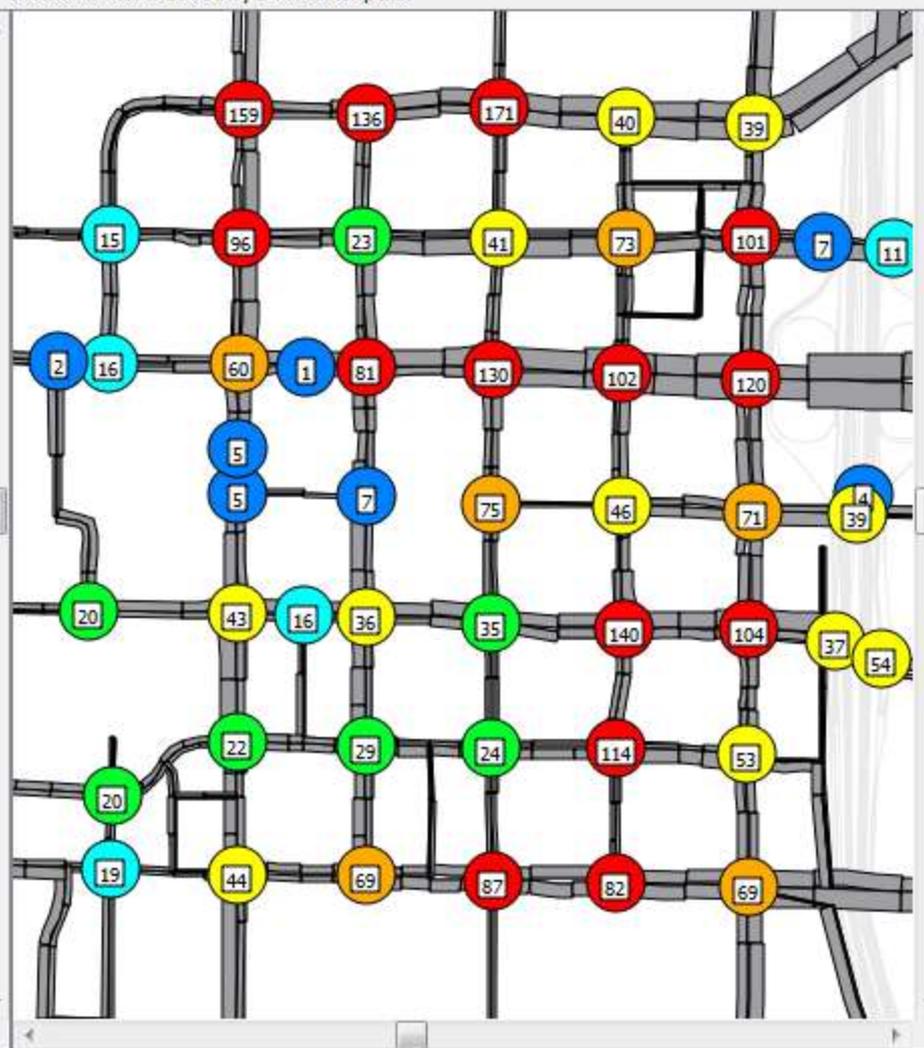
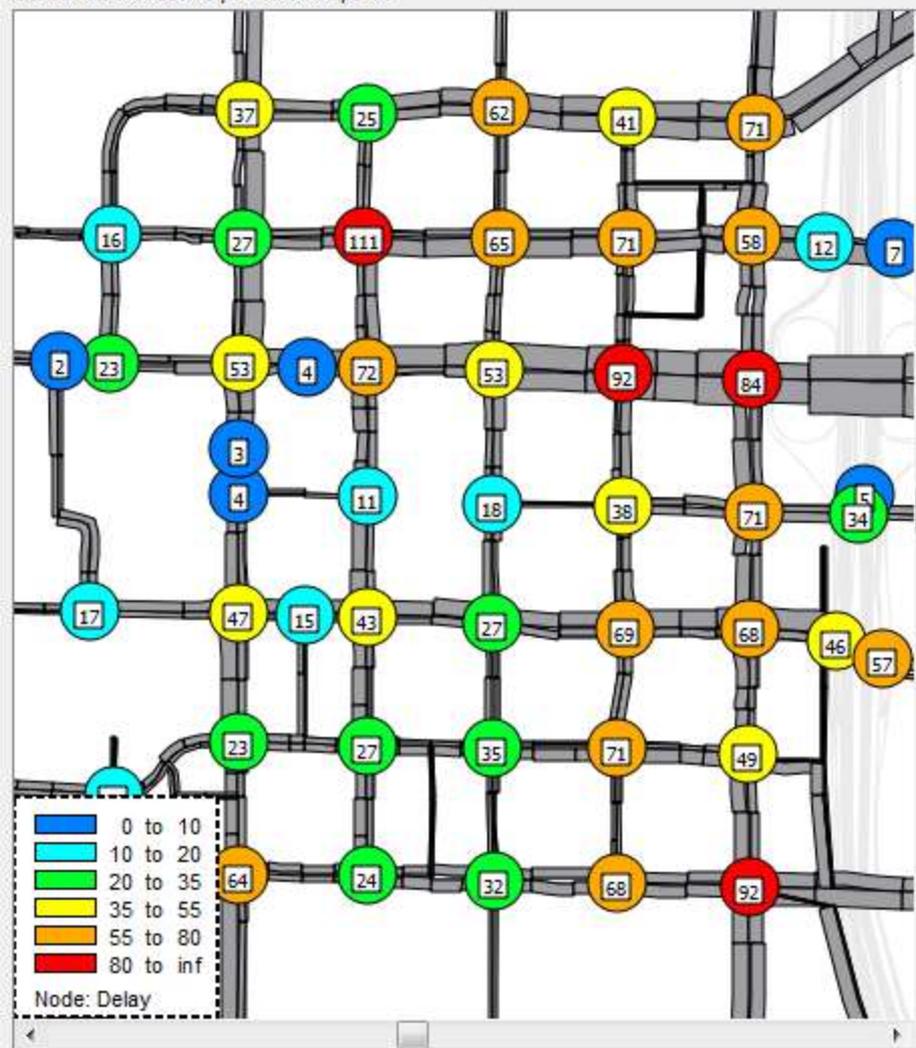


Results Interval

17:45 17:50



Build on left No Build on right



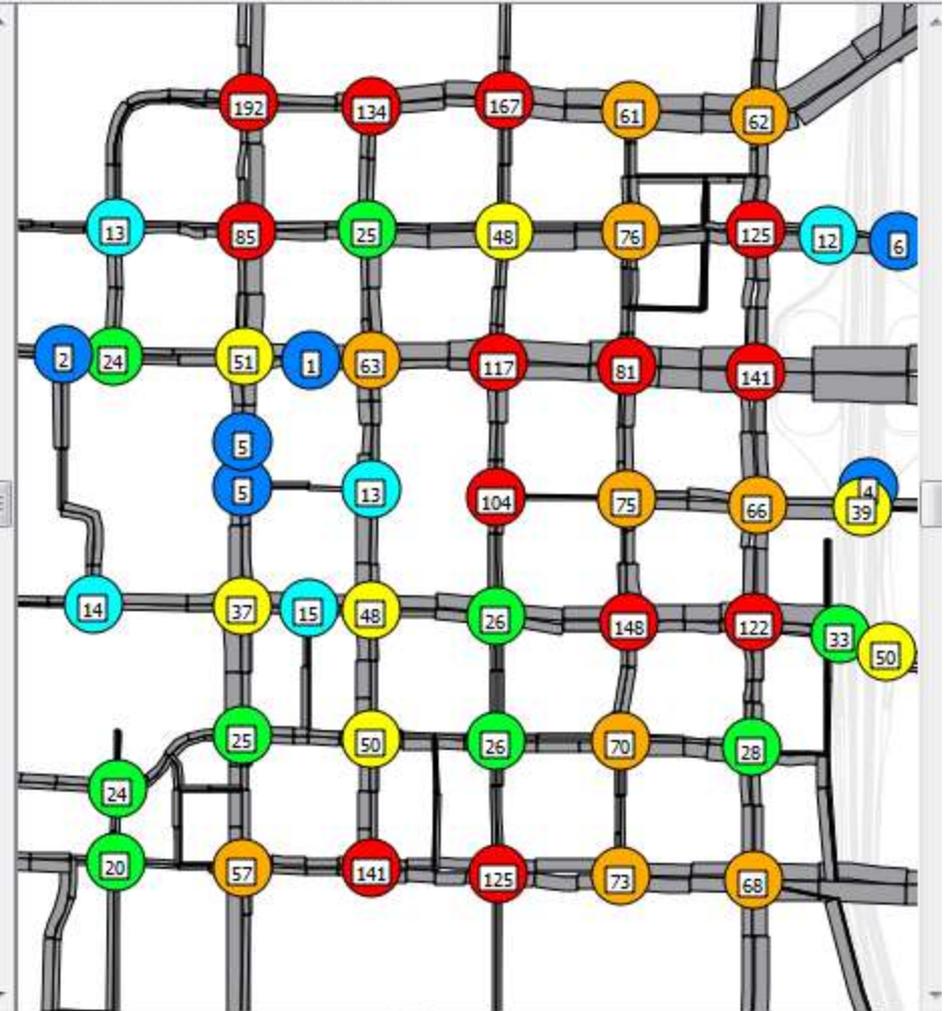
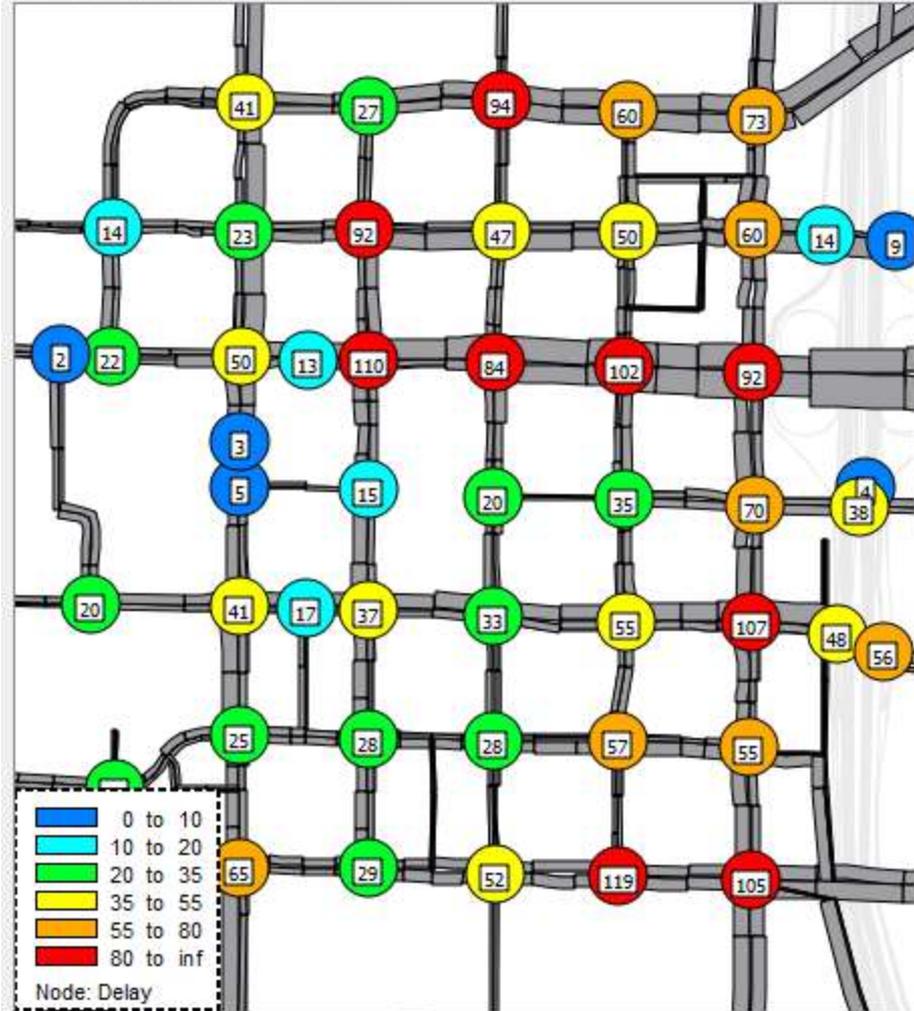
Results Interval

17:50 17:55

16:30 17:00 17:30 18:00 18:30 19:00 19:30 20:00 20:30



Build on left No Build on right



Results Interval

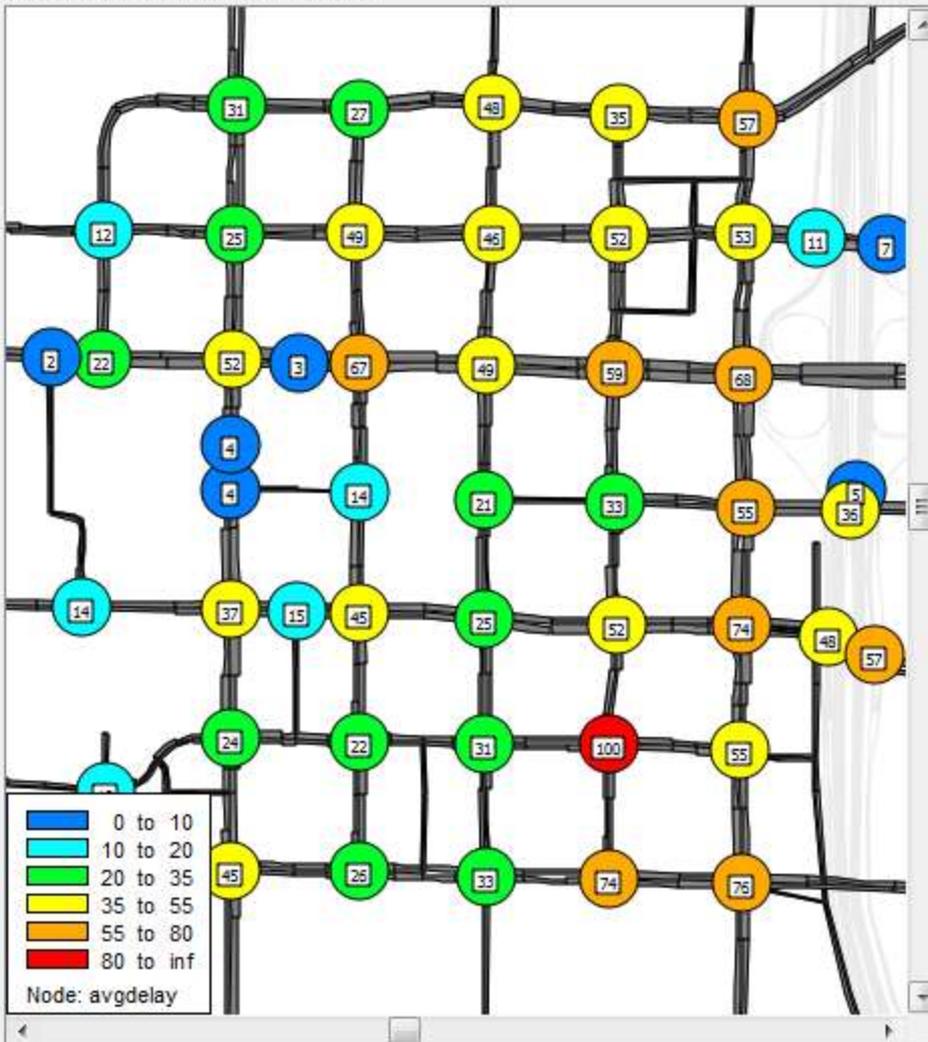
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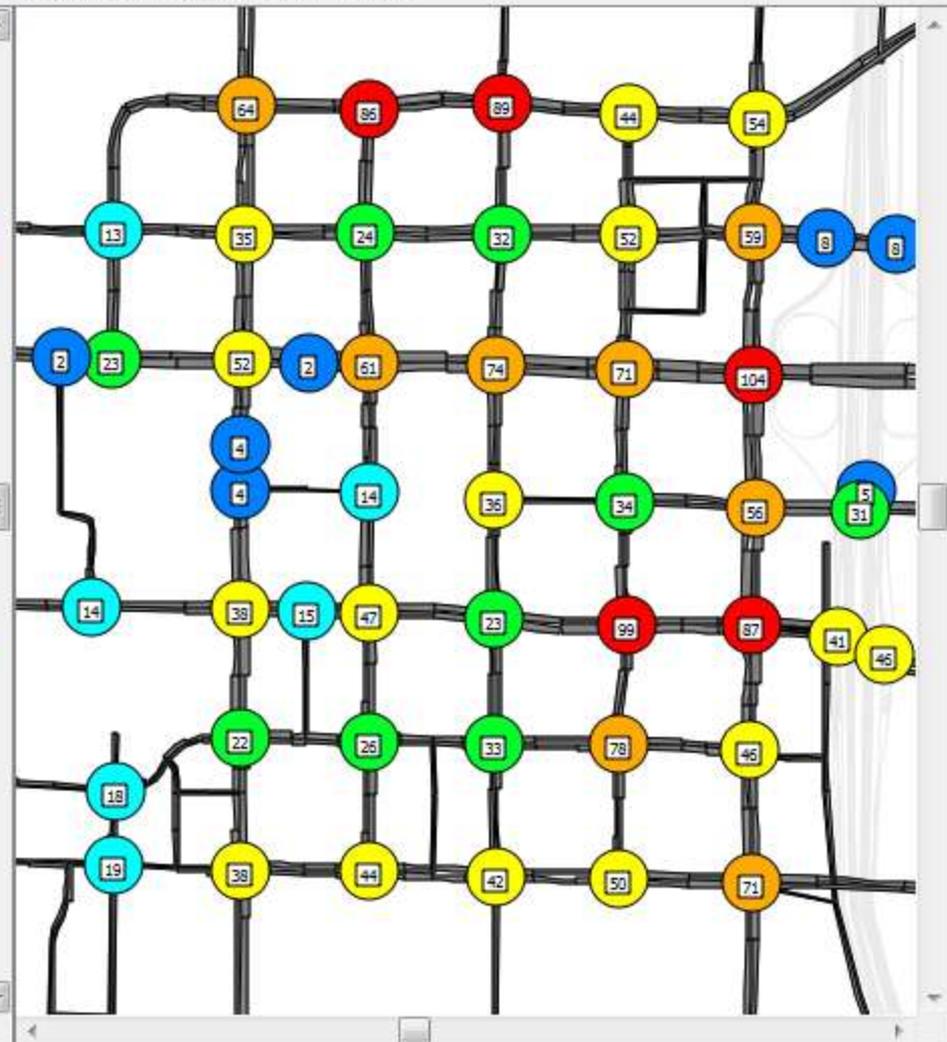
Build on left No Build on right

Average Intersection Delay and LOS

BKR.2030build120712 / DTAnewoffpeak



BKR.2030nobuild120812 / DTAnewoffpeak



Results Interval

Build on left No Build on right

2030 “Build” Often Reduces Travel Times

Avg Travel Time in PM Peak Hour	Option	Minutes
112th Ave NB	2030 No Build	4.2
112th Ave NB	2030 Build	5.1
112th Ave SB	2030 No Build	9.5
112th Ave SB	2030 Build	6.6
4th St EB	2030 No Build	10.9
4th St EB	2030 Build	6.6
4th St WB	2030 No Build	3.3
4th St WB	2030 Build	3.7
8th St EB	2030 No Build	8.4
8th St EB	2030 Build	5.4
8th St WB	2030 No Build	2.8
8th St WB	2030 Build	3.5
Bellevue Way NB	2030 No Build	4.9
Bellevue Way NB	2030 Build	3.7
Bellevue Way SB	2030 No Build	3.4
Bellevue Way SB	2030 Build	3.6
Main St EB	2030 No Build	7.0
Main St EB	2030 Build	6.9
Main St WB	2030 No Build	2.5
Main St WB	2030 Build	2.7

Summary Comparisons

Downtown	2010 Base Year	2030 No Build	2030 Build
Hourly Volume	82,307	111,865	119,122
Avg Intersection Delay (sec)	27	56	48
LOS	C	E	D
Total Delay Hours in Peak Hour	609	1739	1604

More Volume is good; Less Delay is good

Downtown	Change over 2010	2030 No Build	2030 Build
Hourly Volume	More Served	36%	45%
Avg Intersection Delay (sec)	Average Delay Increase	110%	82%
LOS	Level of Service Change	-2 Grade Levels	-1 Grade Level
Total Delay Hours in Peak Hour	Total Delay Hours Increase	185%	163%

Modeling Conclusions

- 2030 Baseline “No Build” traffic in Downtown is not gridlock
- 2030 “Build” projects would improve Downtown traffic flow
 - More even distribution on east-west arterials
 - Local and regional projects outside of Downtown and NE 2nd Street improve access to neighborhoods and to the regional system
 - Changes traffic patterns make the system more efficient overall
- Adaptive signal technology (SCATS) can help optimize available roadway capacity
- Major roadway capacity projects beyond the 2030 “Build” scenario projects are not needed within Downtown Bellevue to accommodate 2030 projected growth
- Certain intersections and segments may require additional analysis



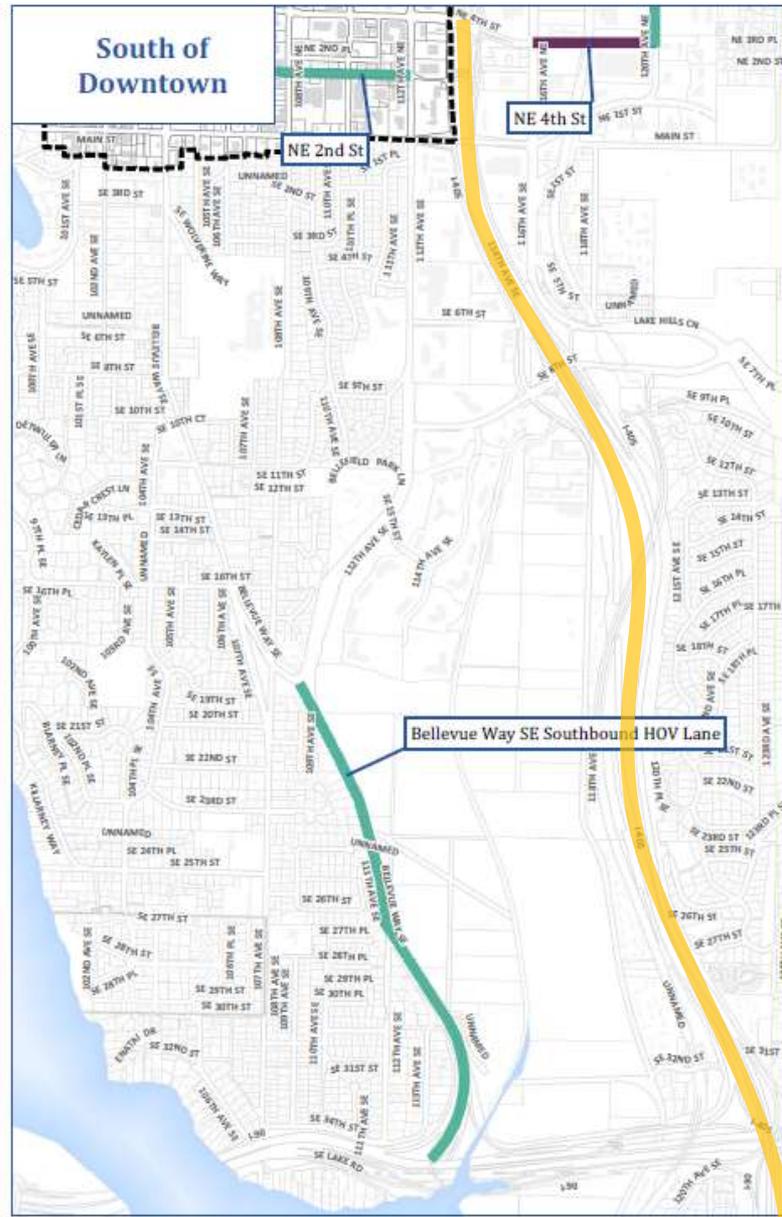
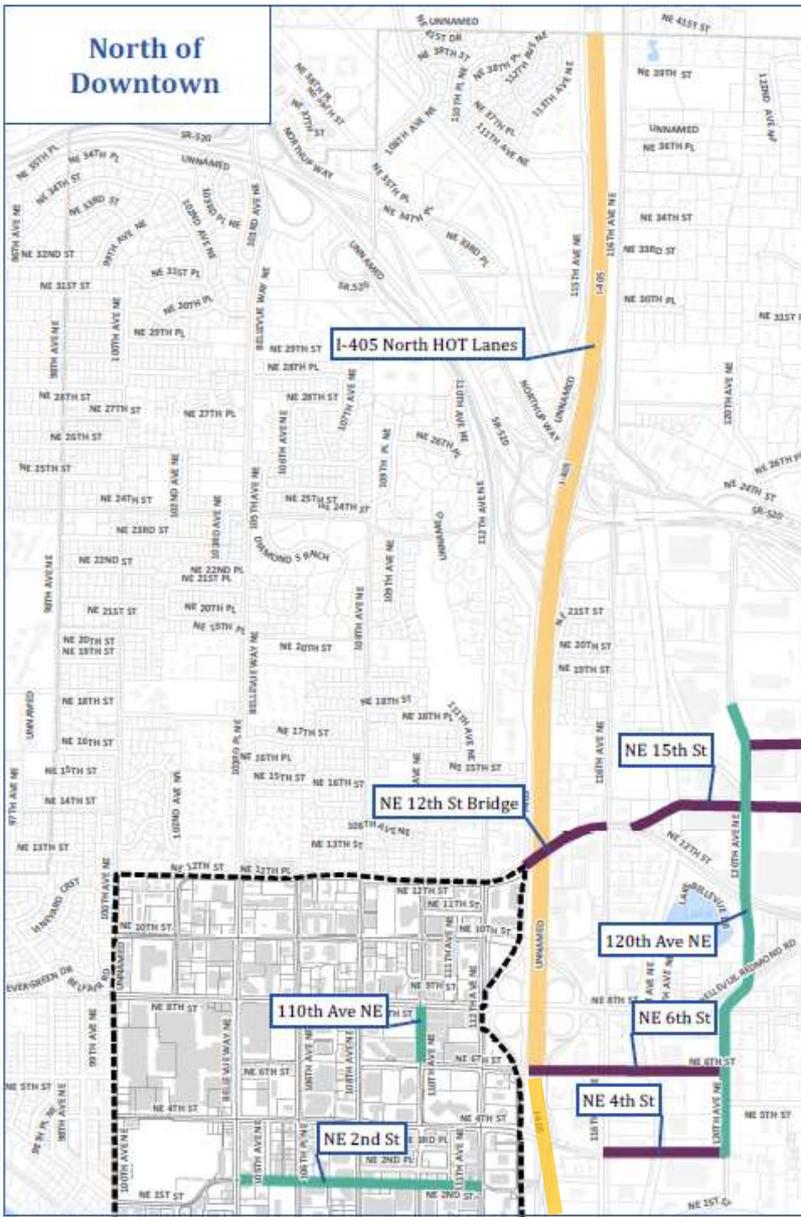
Downtown Transportation Plan Update

Thank you!

Comments/Questions?

www.bellevuewa.gov/DowntownTransportationPlanUpdate

2030 Baseline “No Build” Projects Zoom



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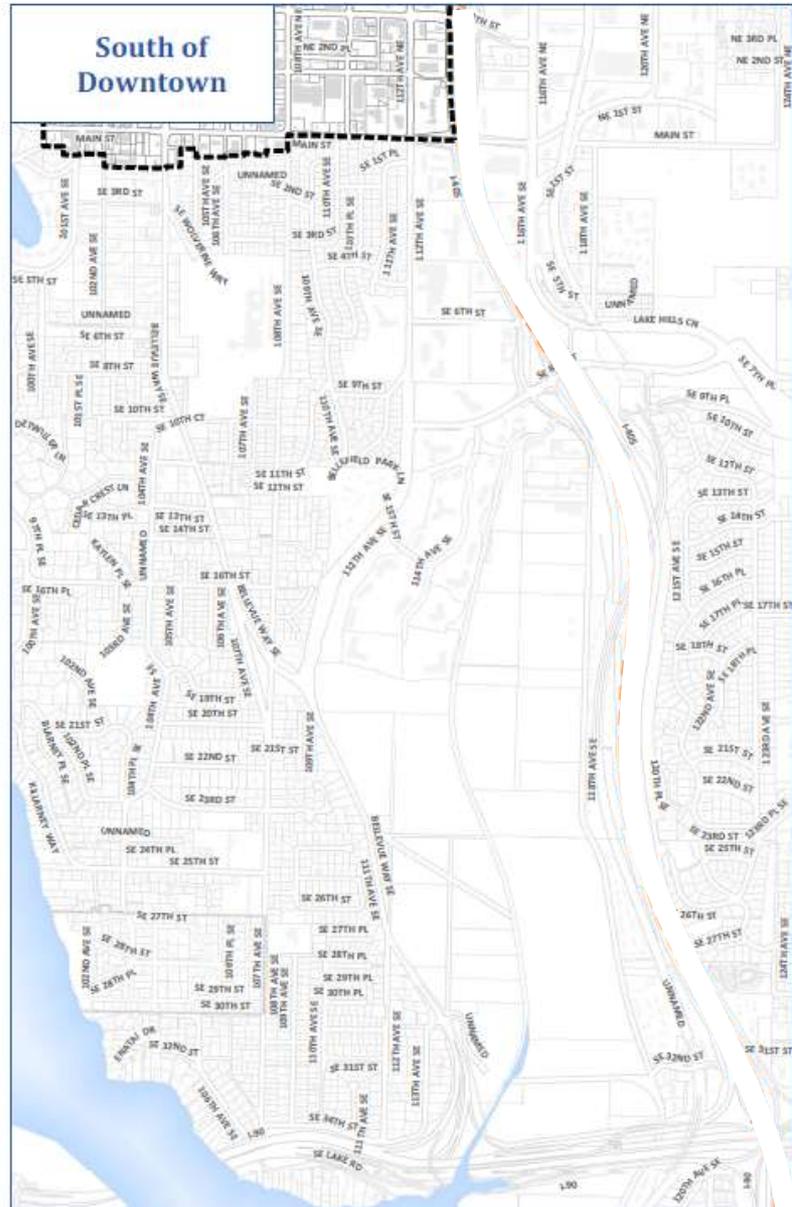
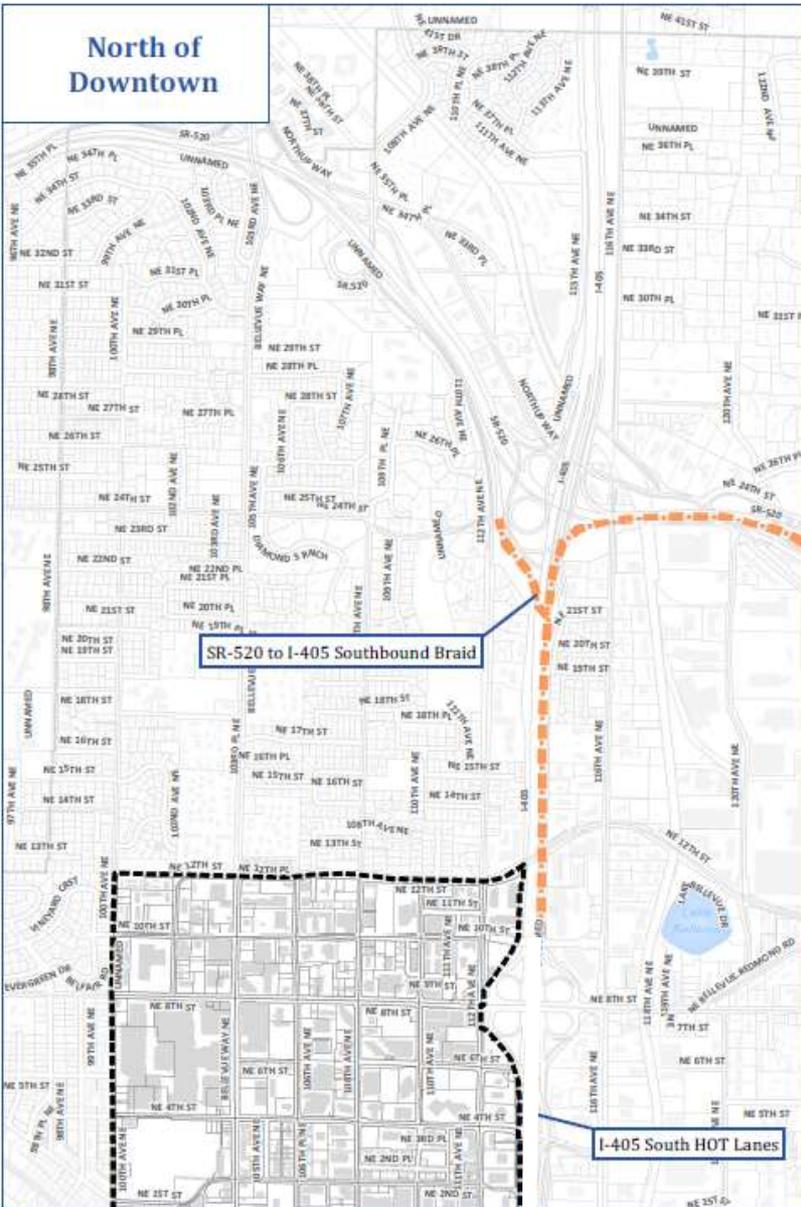
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80,000 Feet

Source: City of Bellevue Building Footprints: Spring 2009

2030 "Build" Projects Zoom-in View



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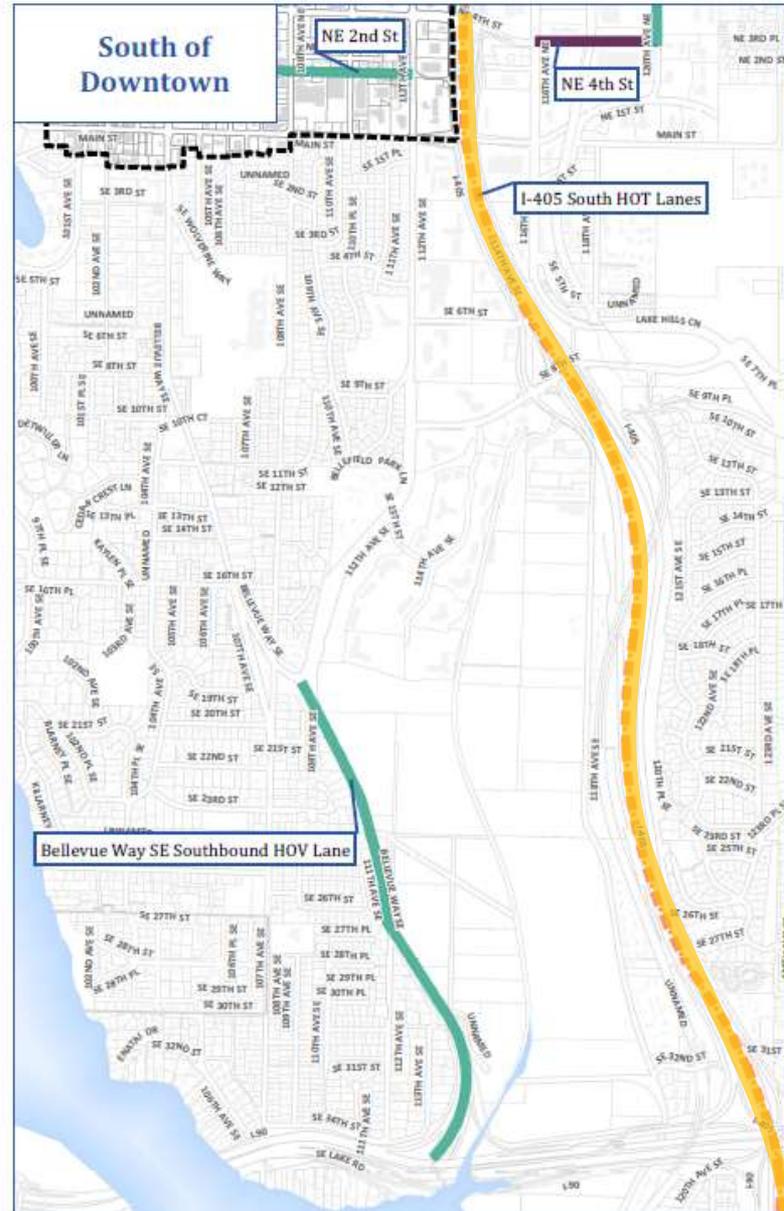
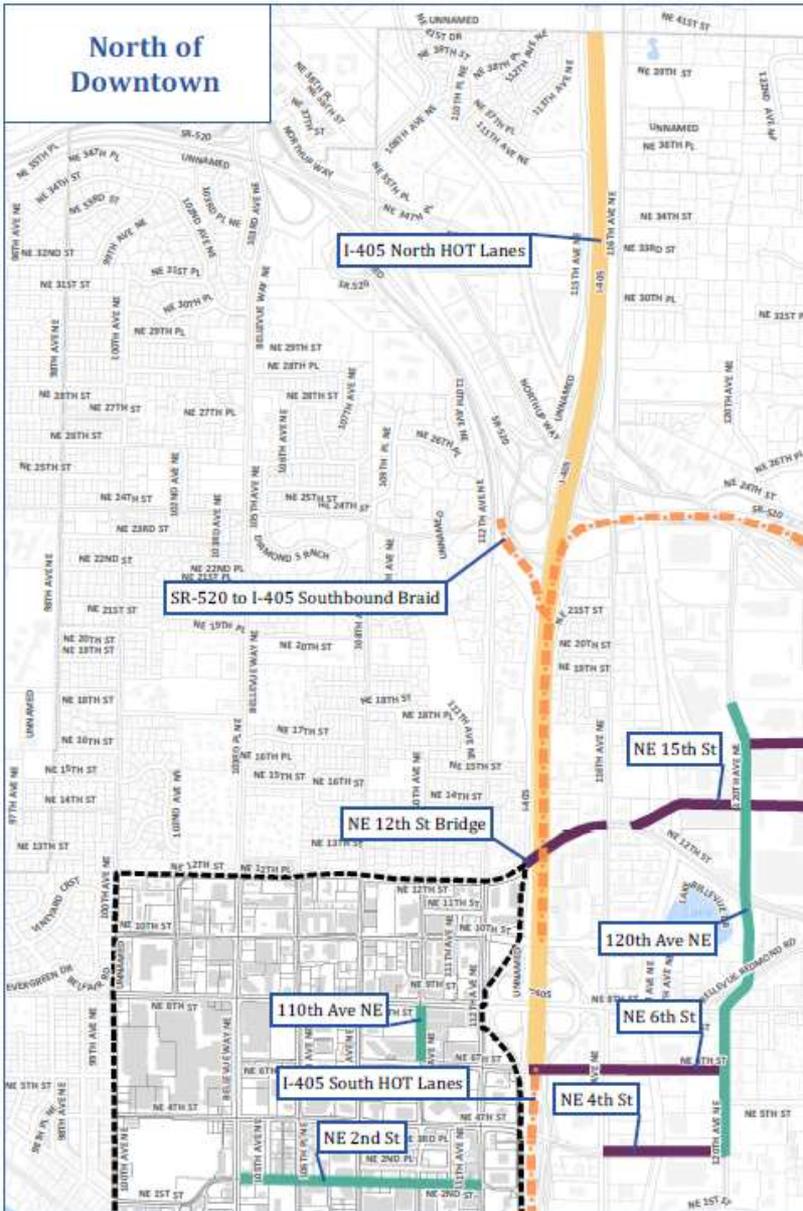
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80,000
Foot

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2030 “No Build” + “Build Projects Zoom



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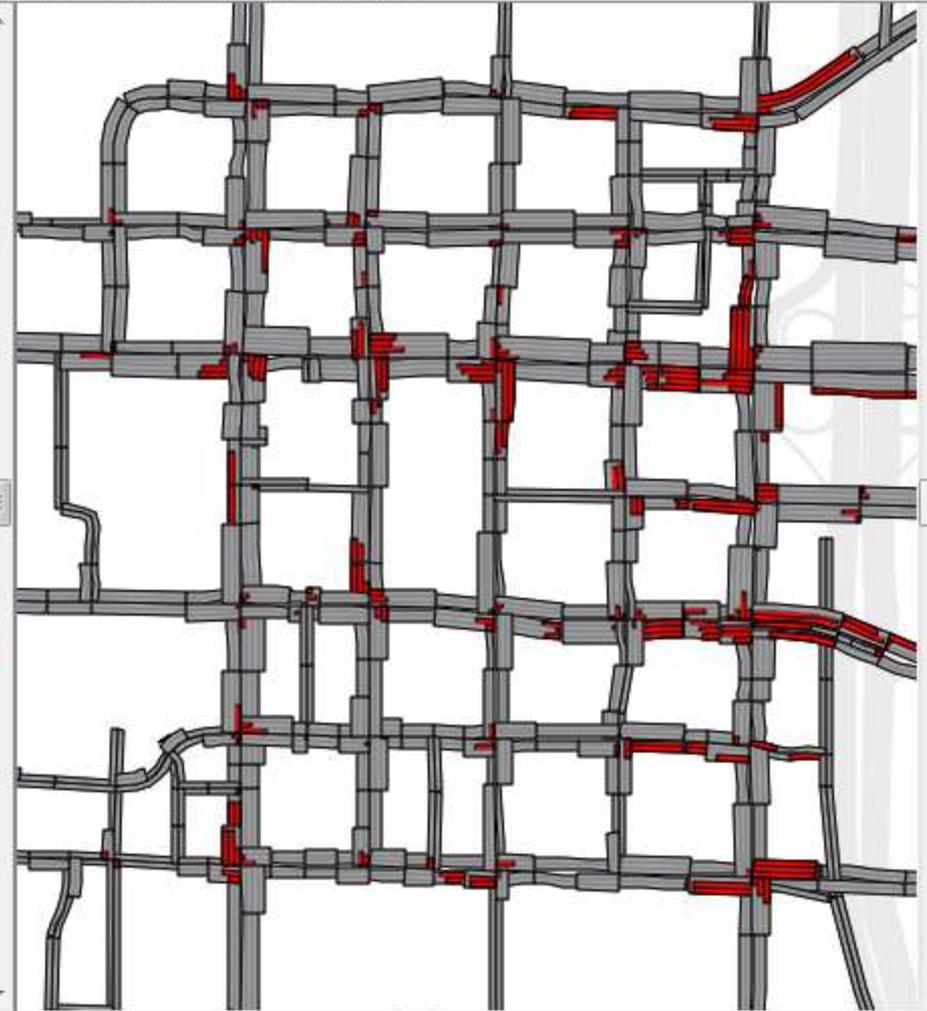
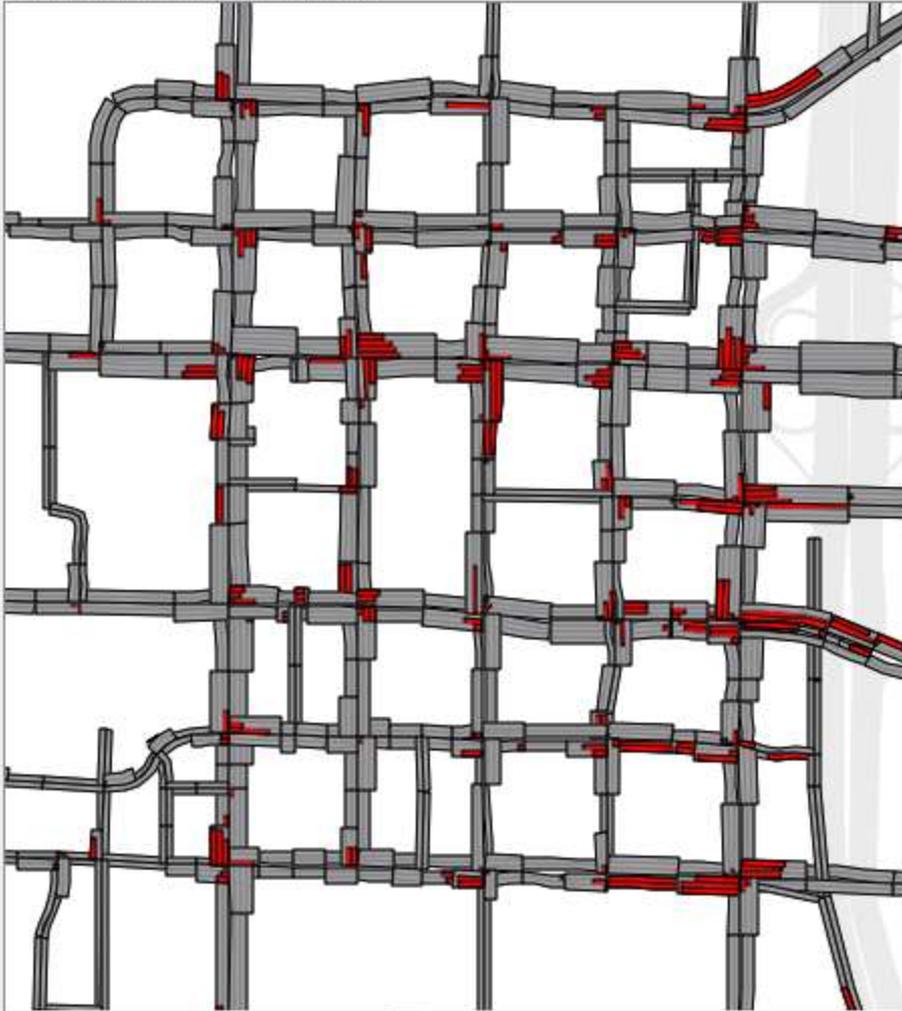
Queuing patterns

Optional Slides, if appropriate.

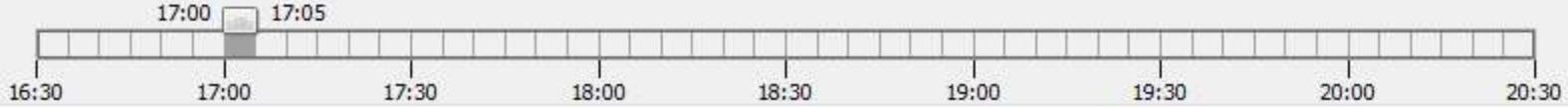
These are on website to view
individually.

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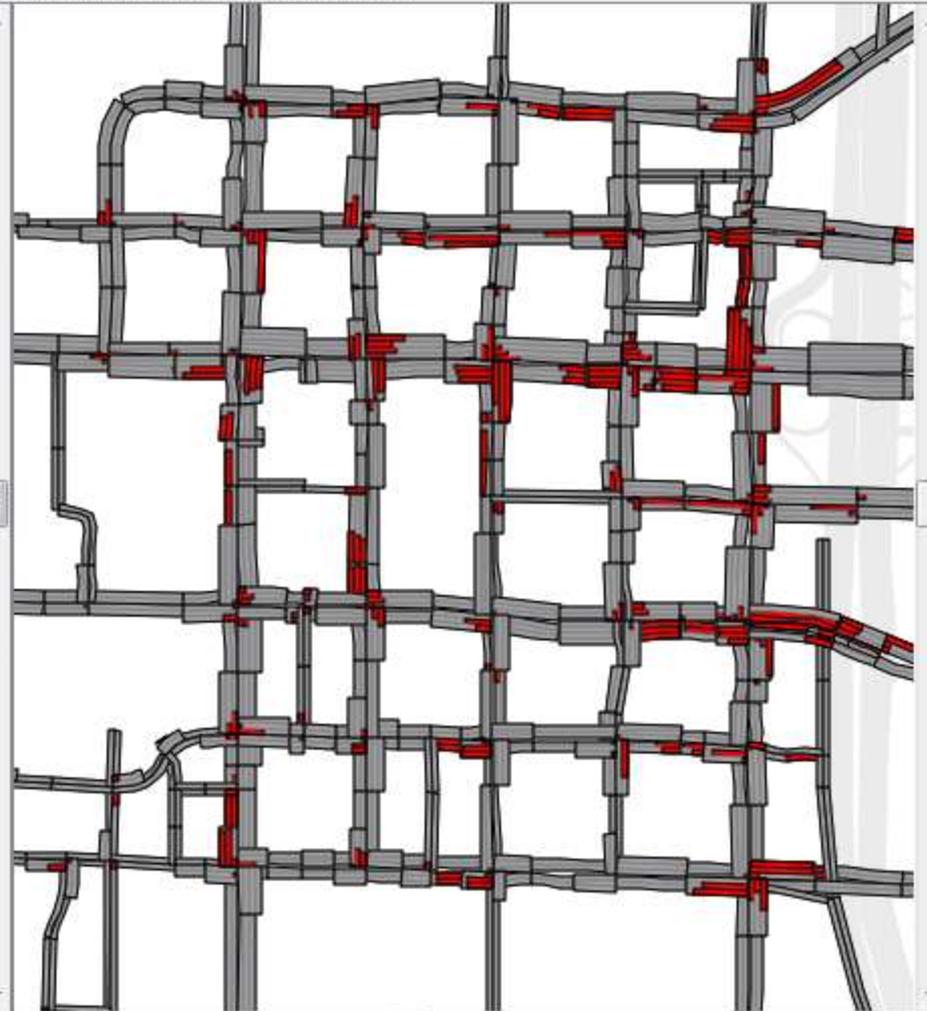
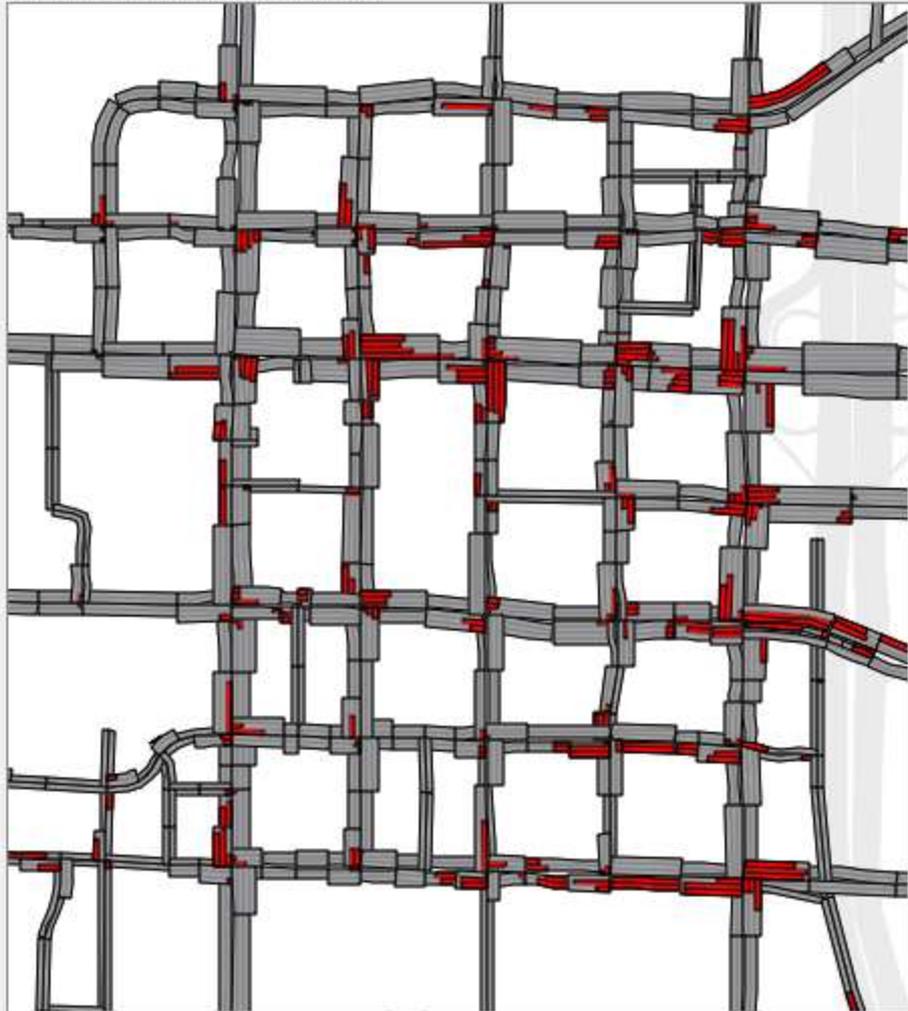
Results Interval



Build on left No Build on right

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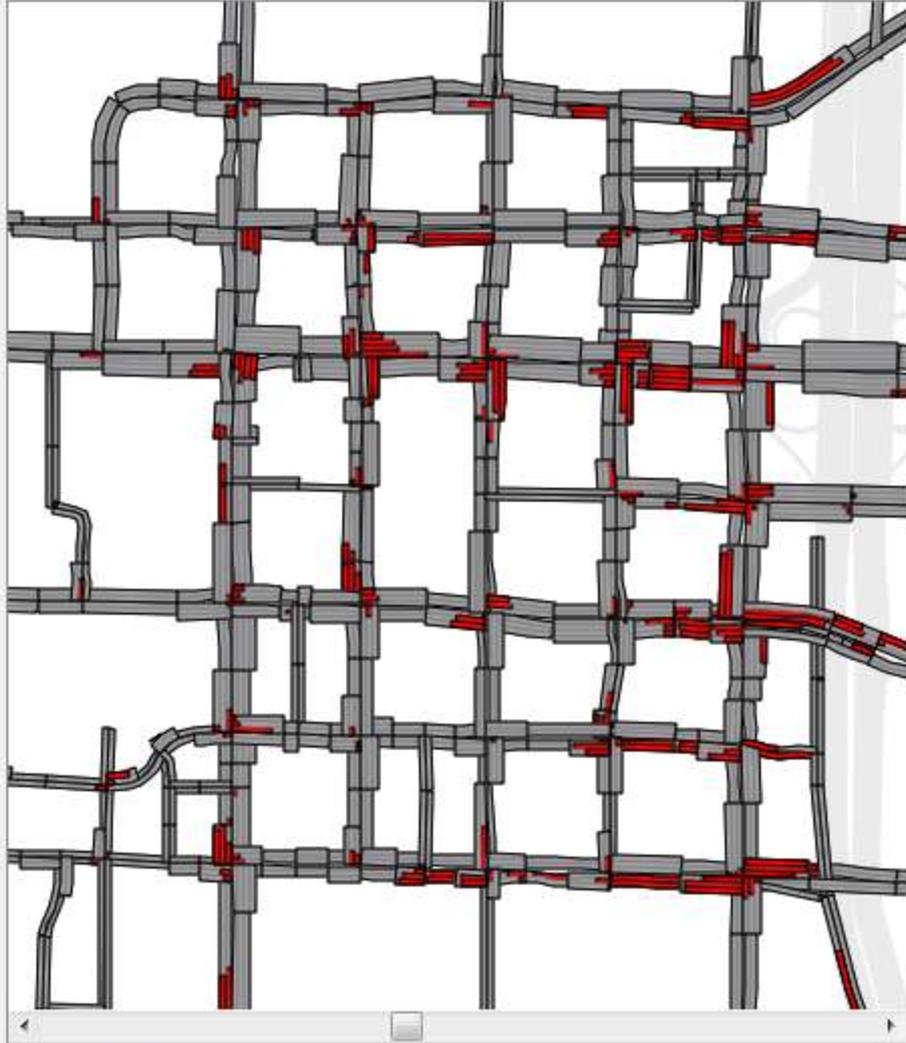
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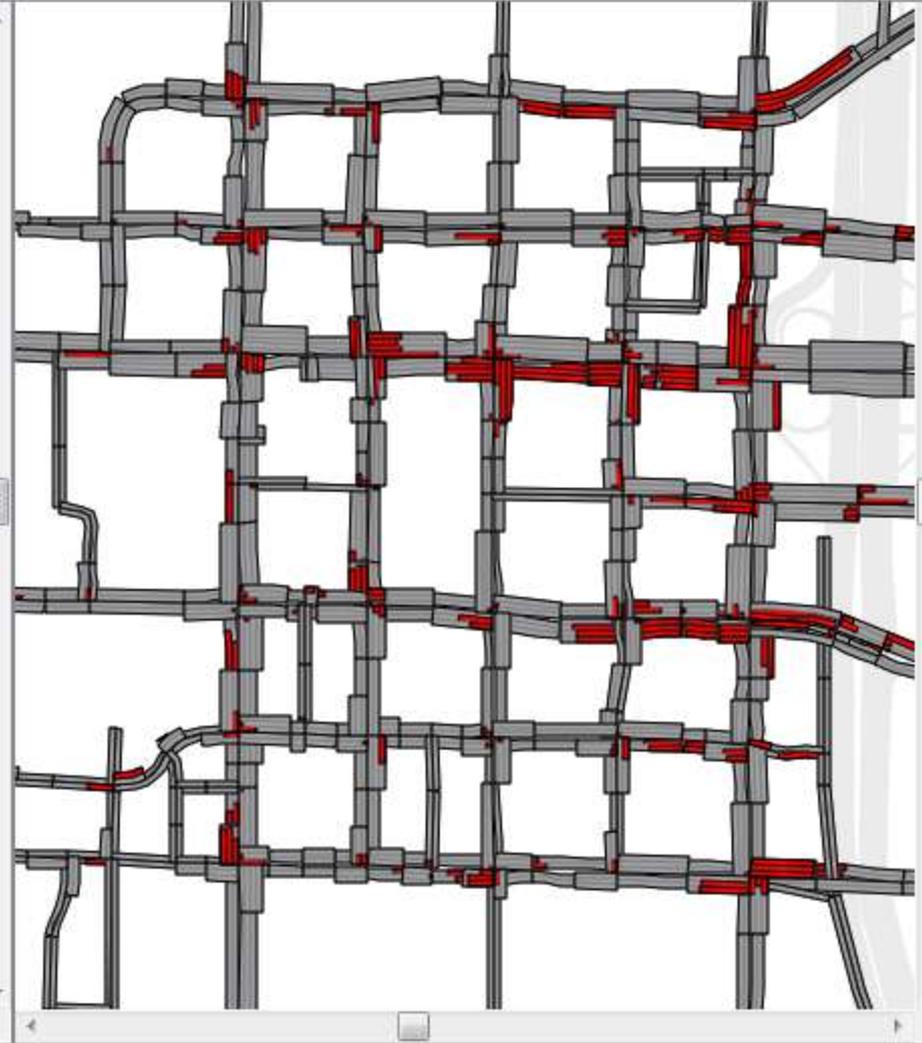
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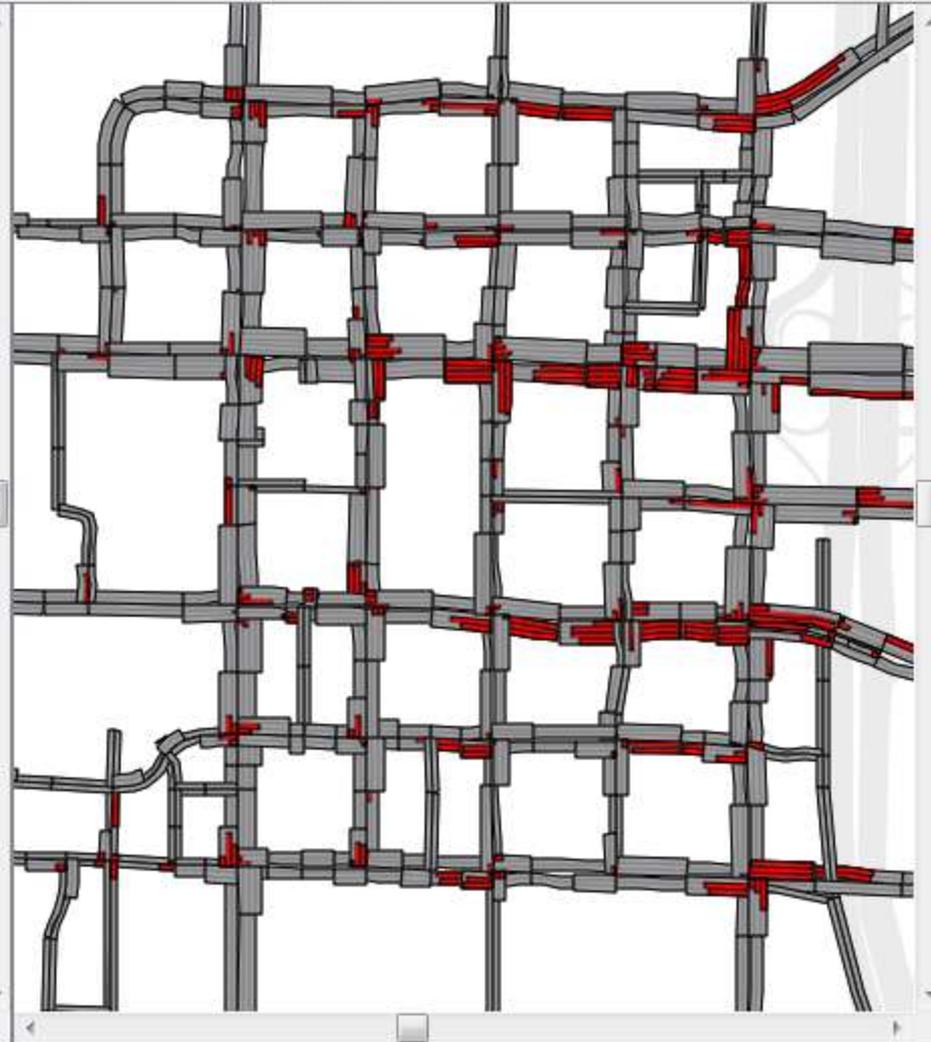
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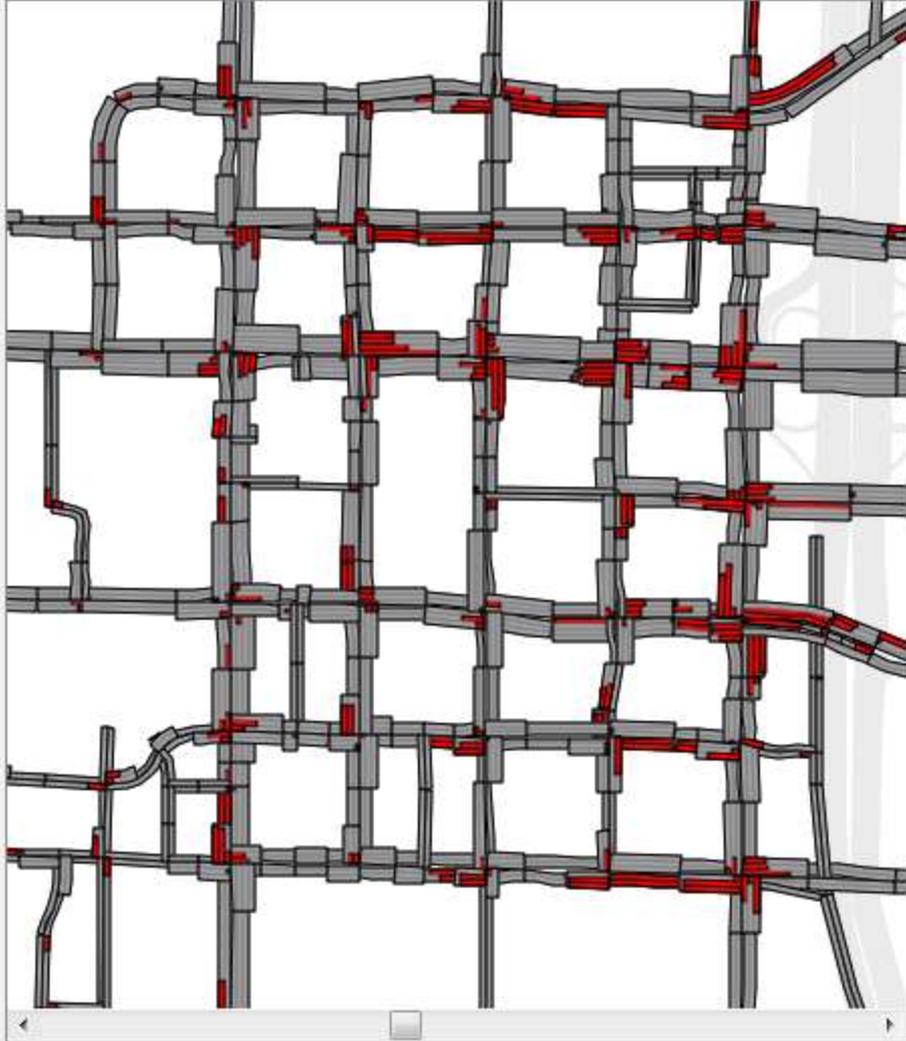


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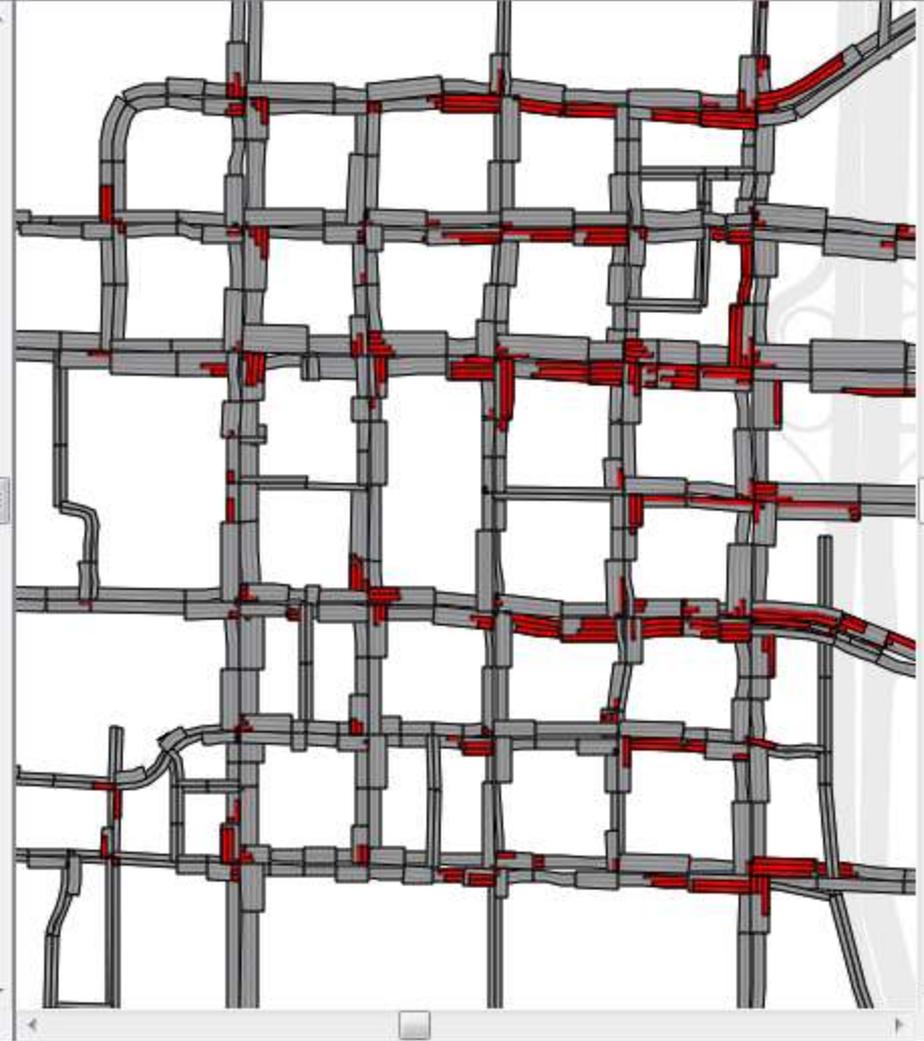


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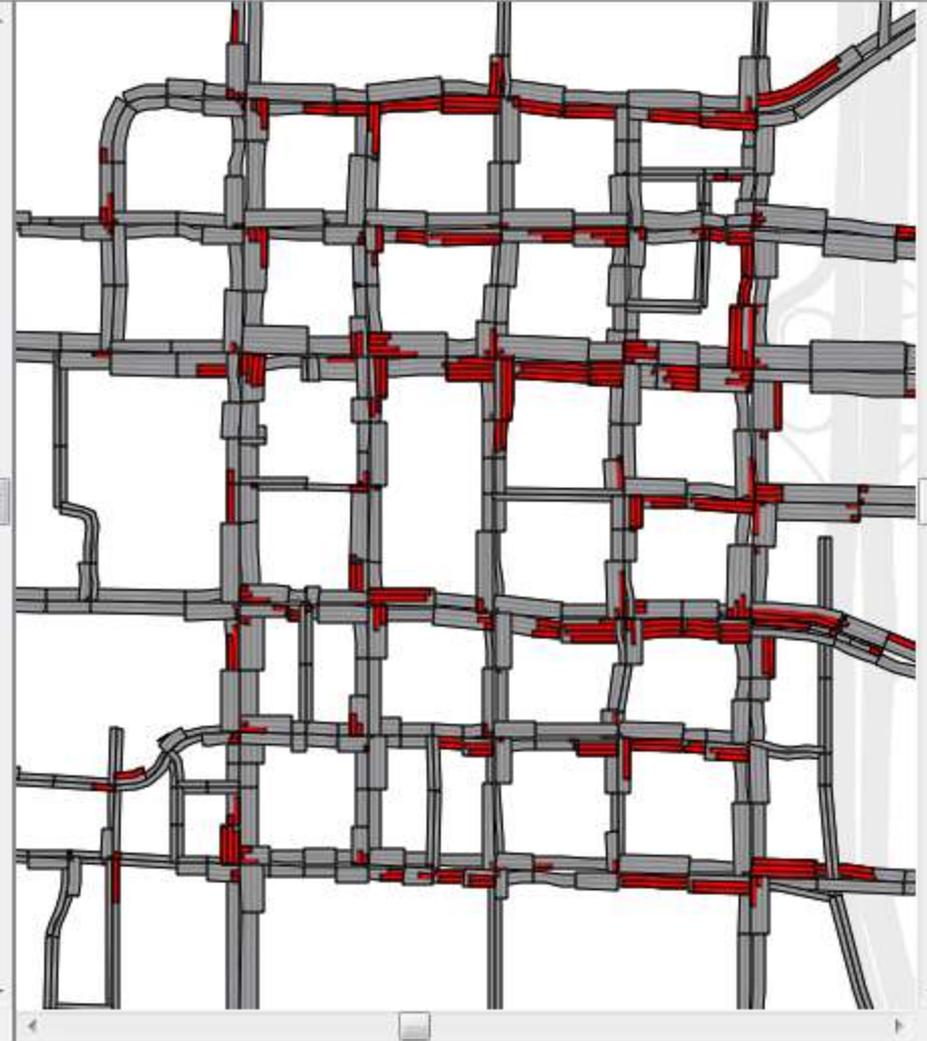


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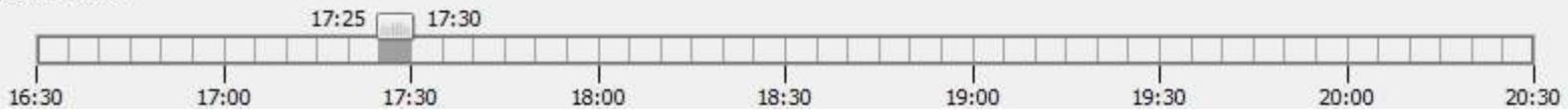
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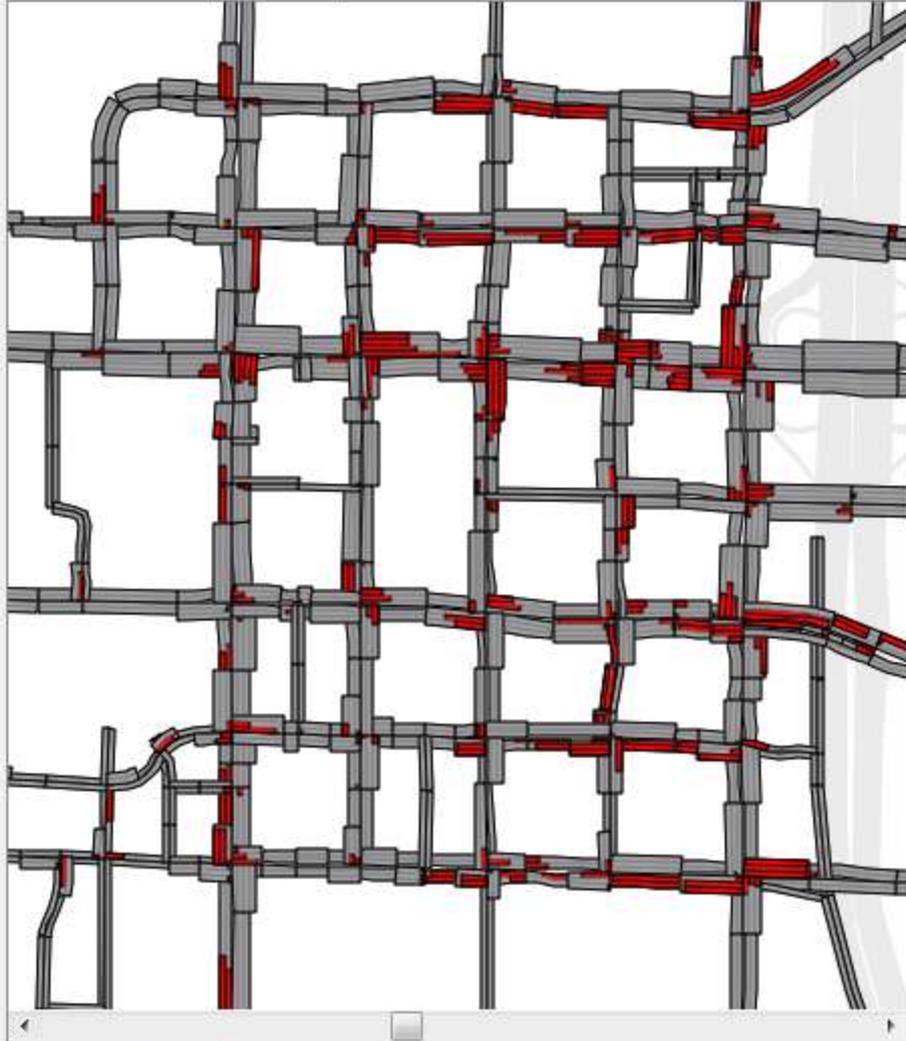


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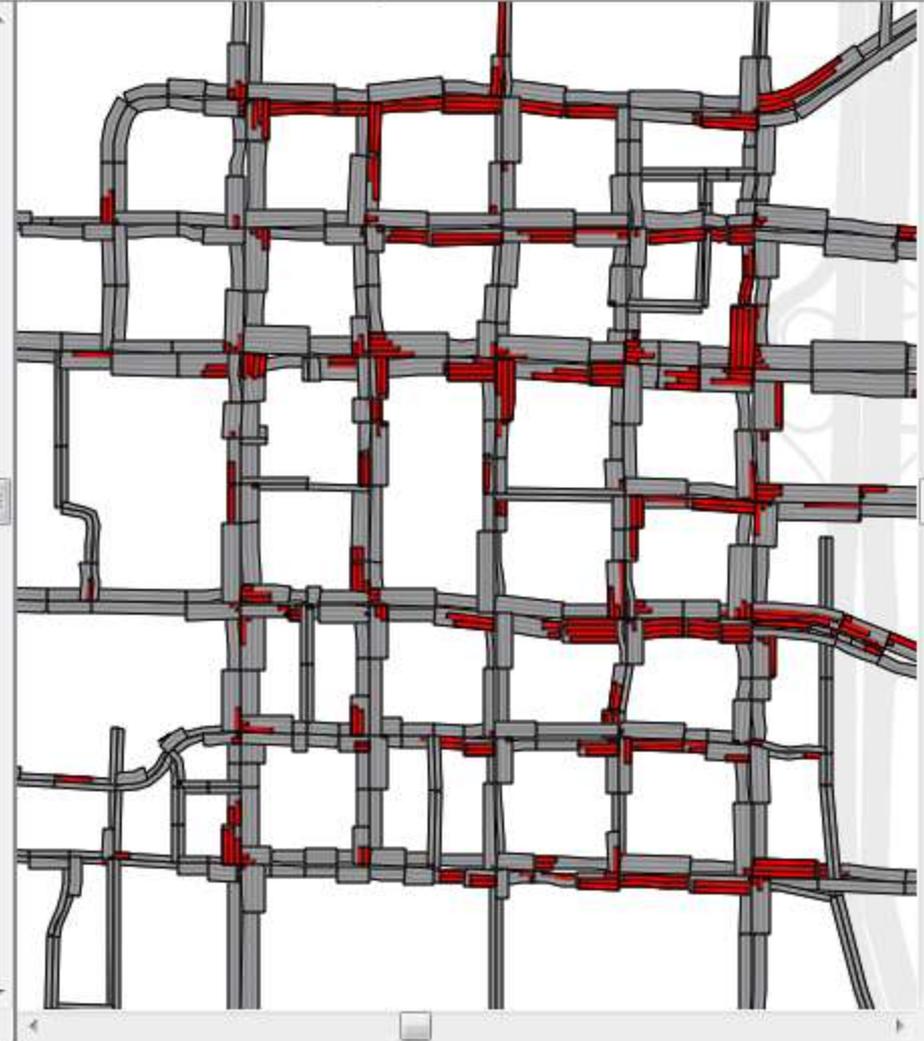


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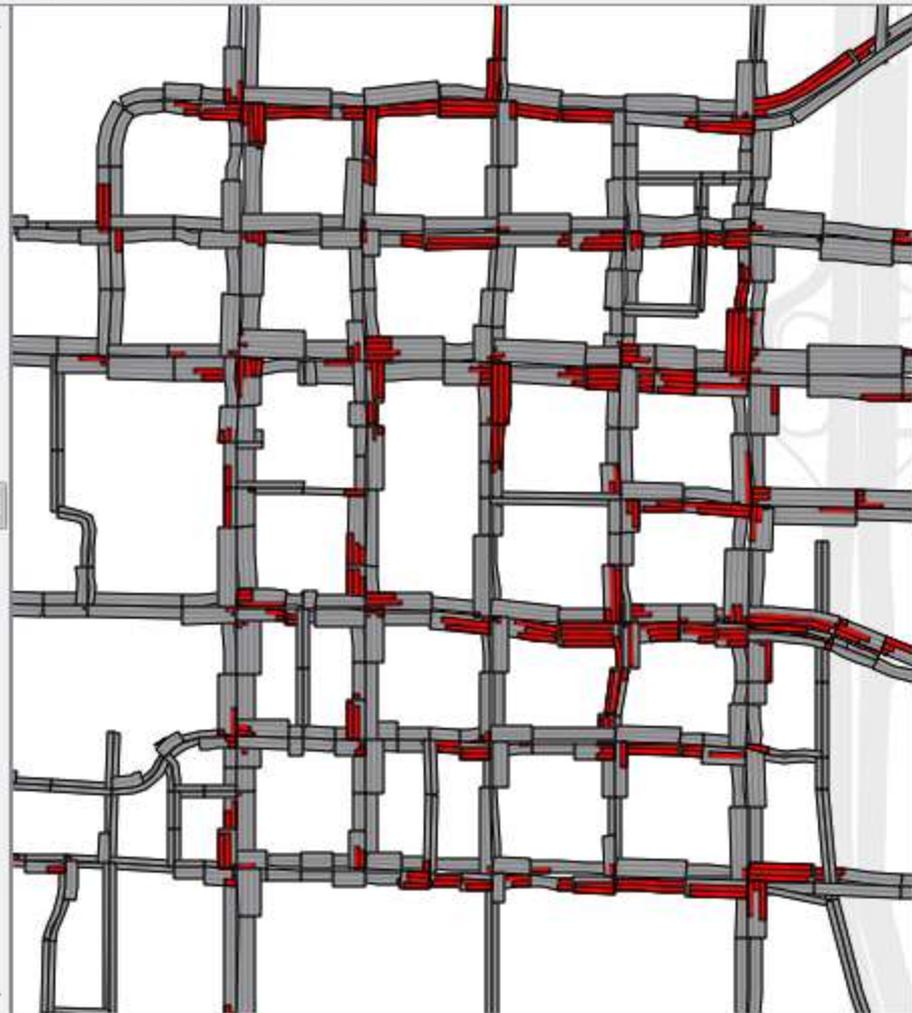
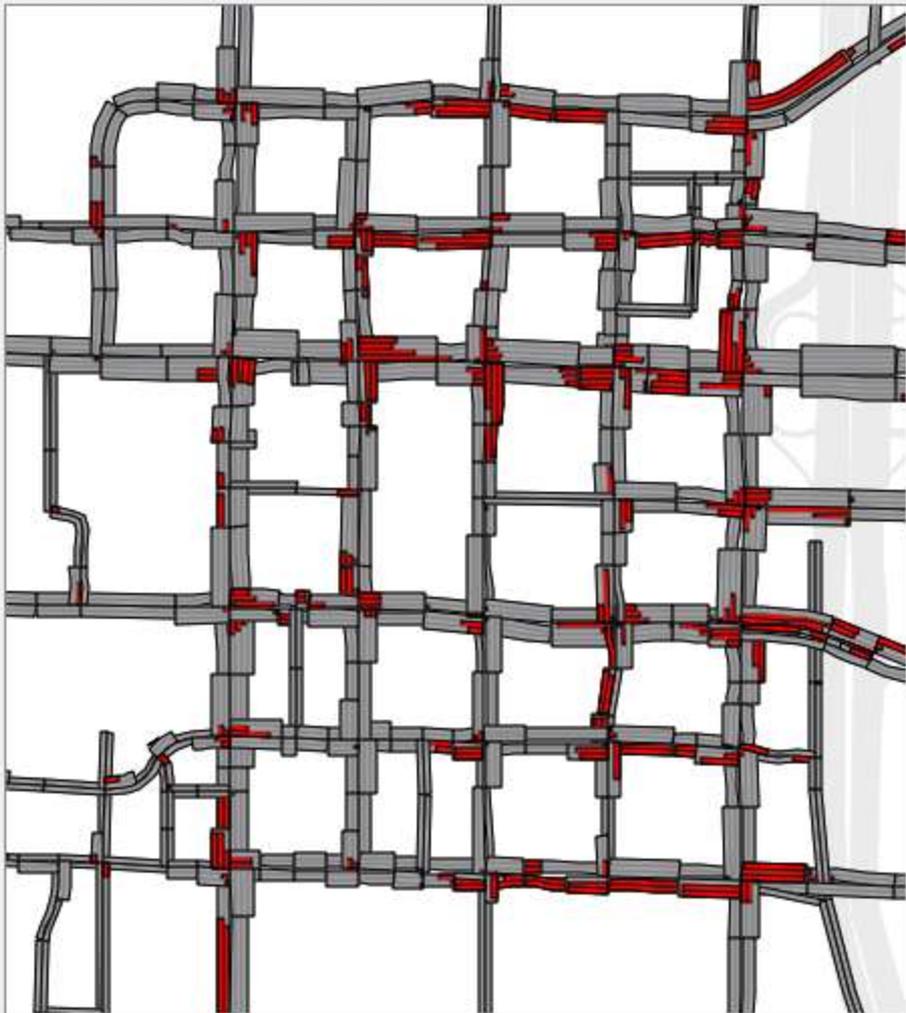


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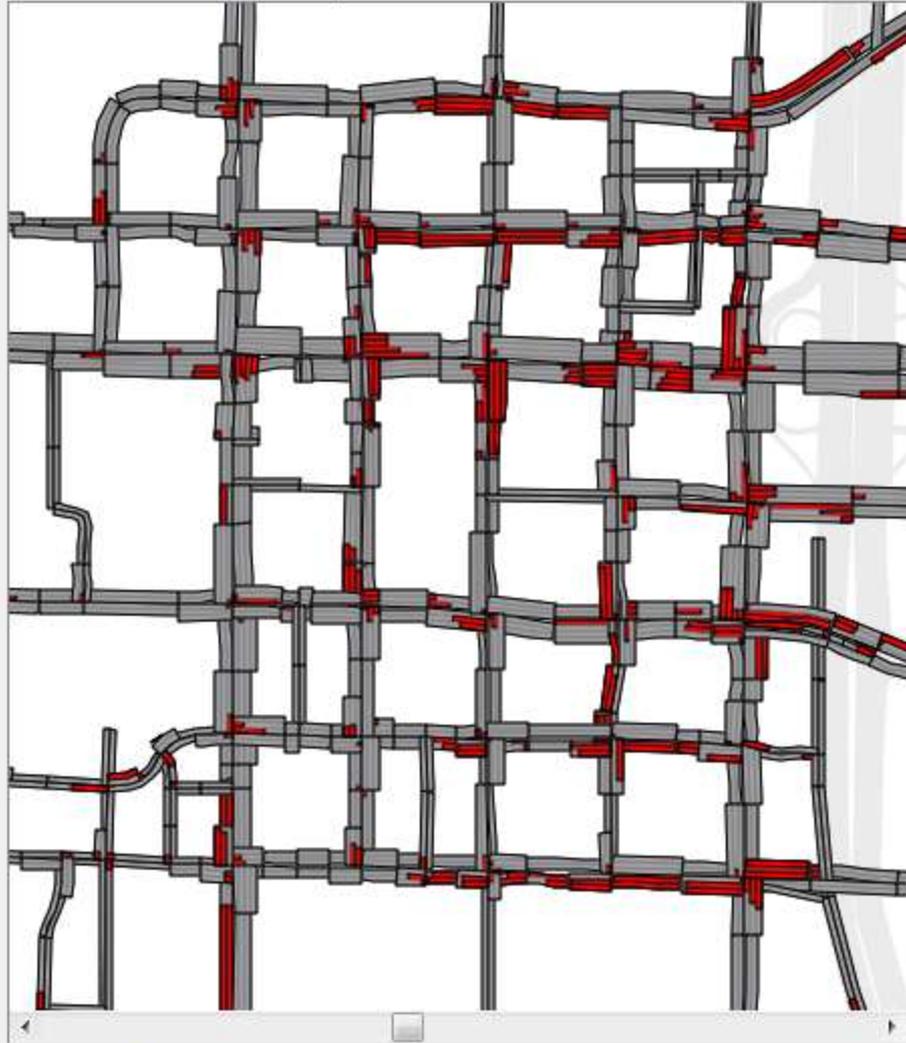


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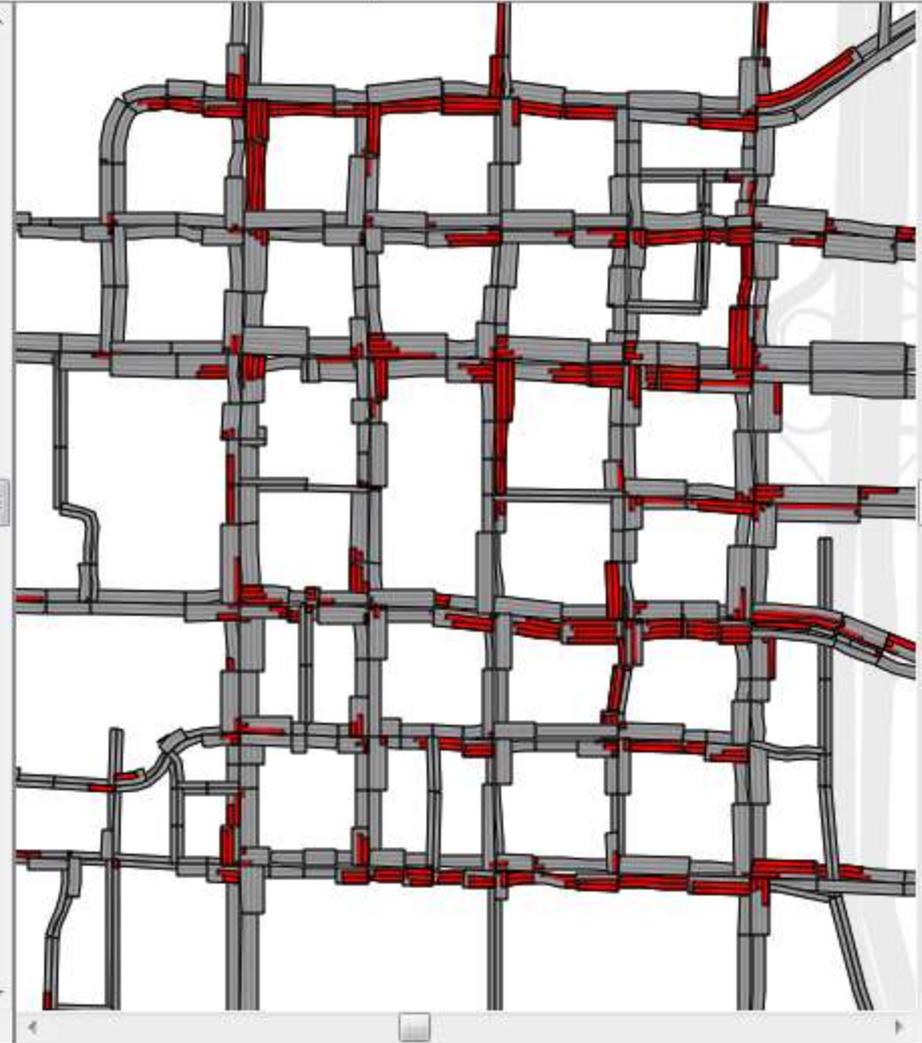


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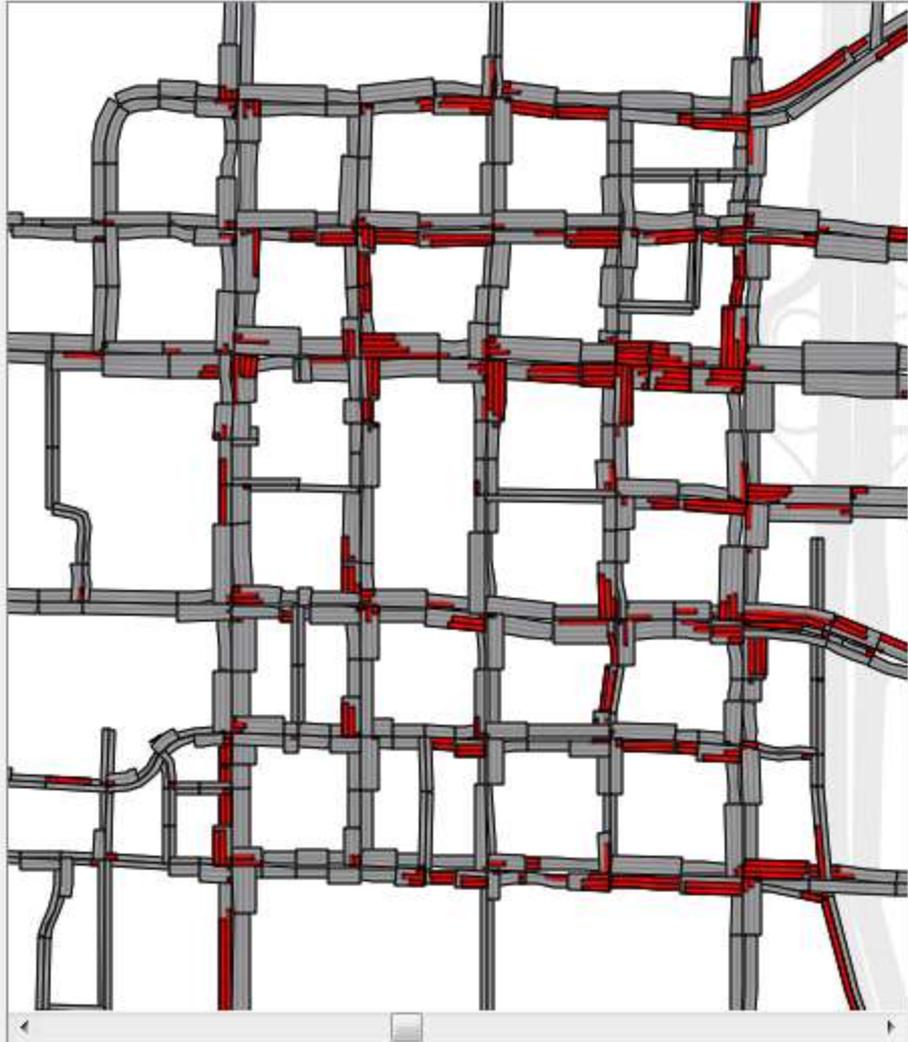
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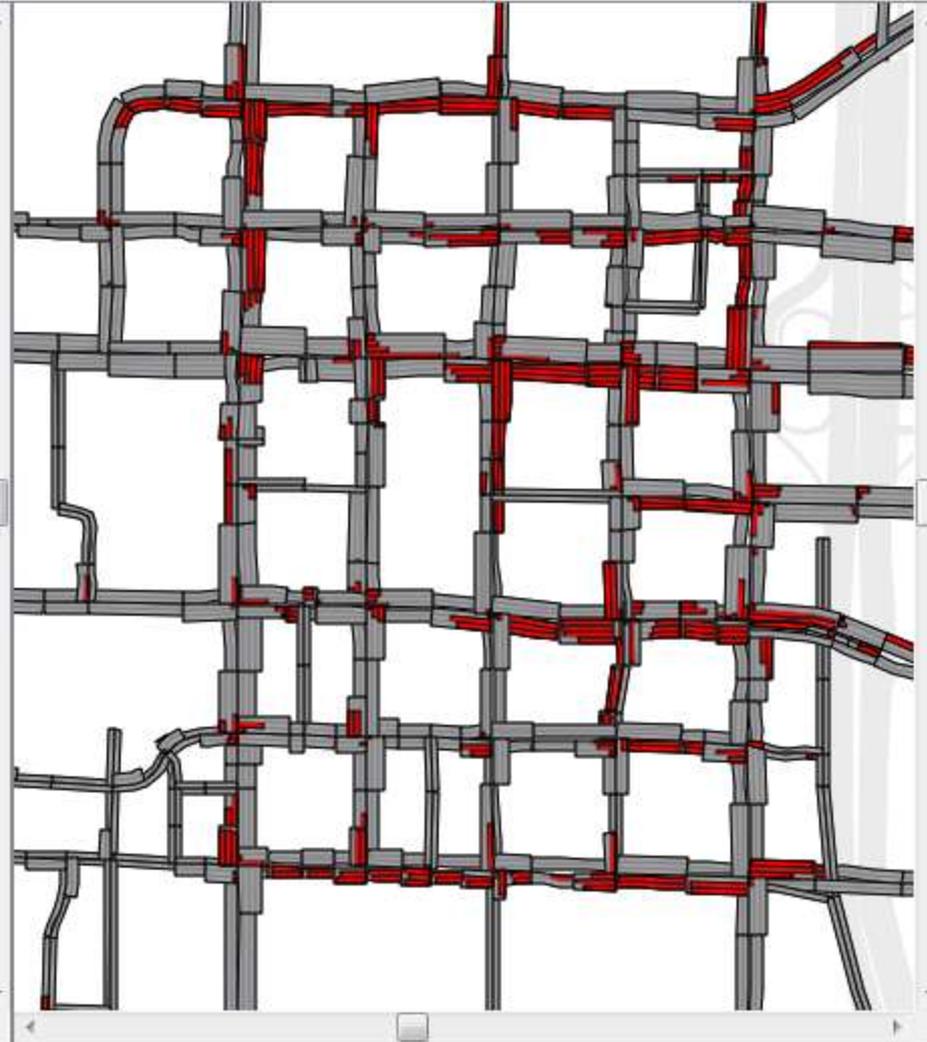
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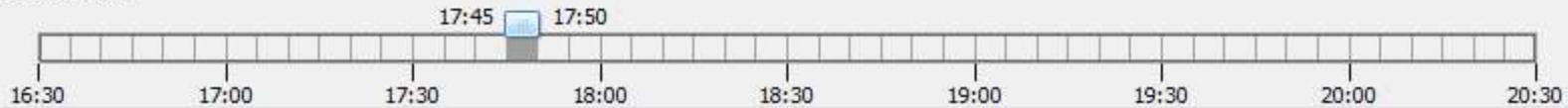
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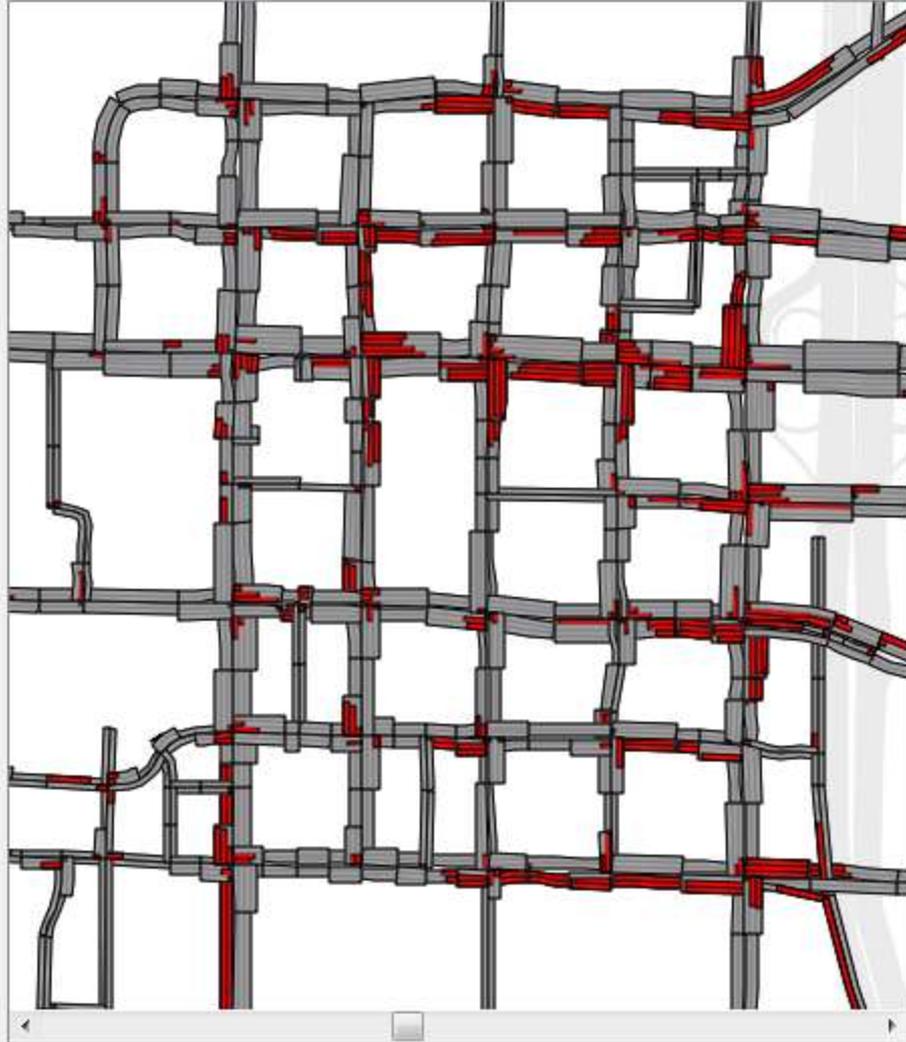


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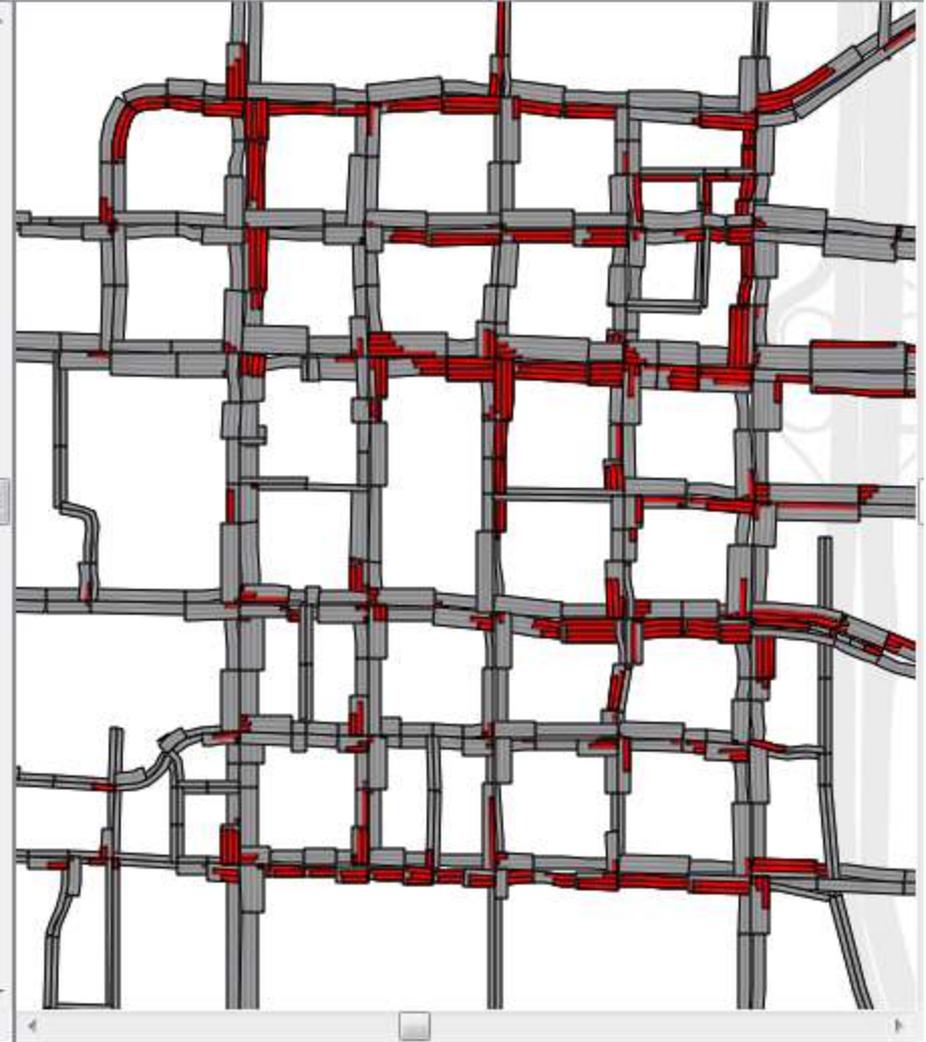


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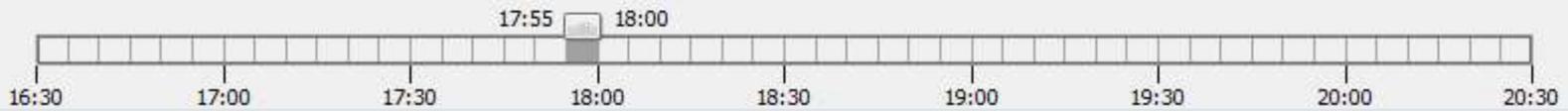
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