

# Regional Congestion Mapping

TAC Planning  
April 12, 2018



# Quantifying Congestion

- Staff has quantified congestion for all principal and A-minor arterials for the Council's planning area
- Data derived from the StreetLight InSight application; represents conditions from July 2016 to June 2017
- Congestion is defined as the percent decrease between the free flow speed (defined as 12:00 a.m. to 6:00 a.m.) and hours during the peak periods
  - 6:00 a.m. to 10:00 a.m.
  - 3:00 p.m. to 7:00 p.m.
- In total, 8,995 “segments” were created and analyzed

# Quantifying Congestion

Example – Roadway X:

Free-flow (reference) speed: 68 mph

Speed at 5:00 p.m: 47 mph

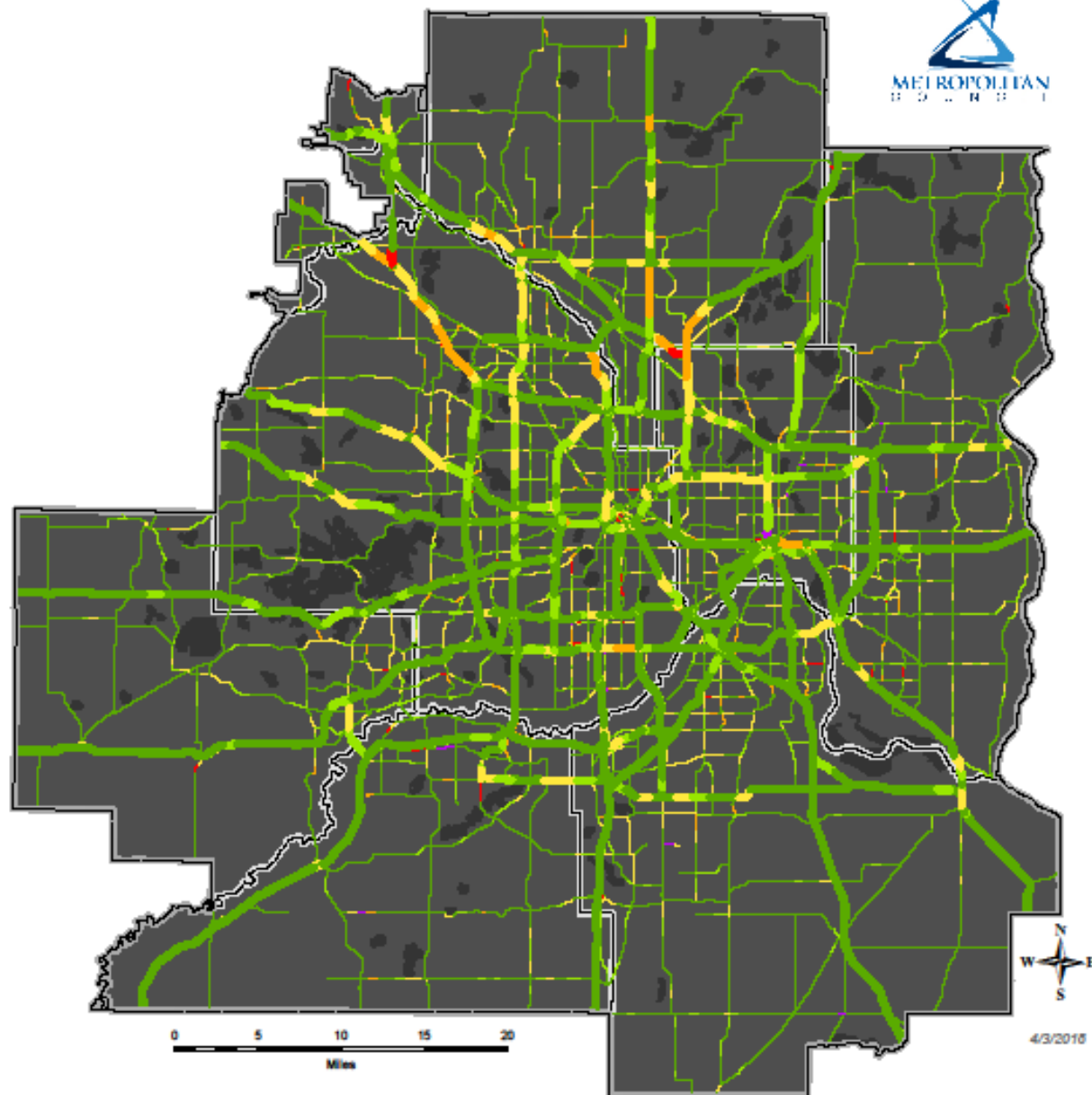
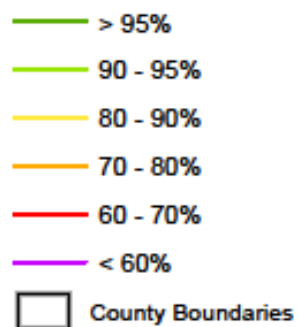
$$47/64=0.73$$

Segment X is 73% of reference speed at 5:00 p.m.

**Map #1:  
Twin Cities Arterial Corridor  
6:00 - 7:00 AM Congestion  
Working Draft Map**



**Hour Speed  
Percent of Reference Speed\***



*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

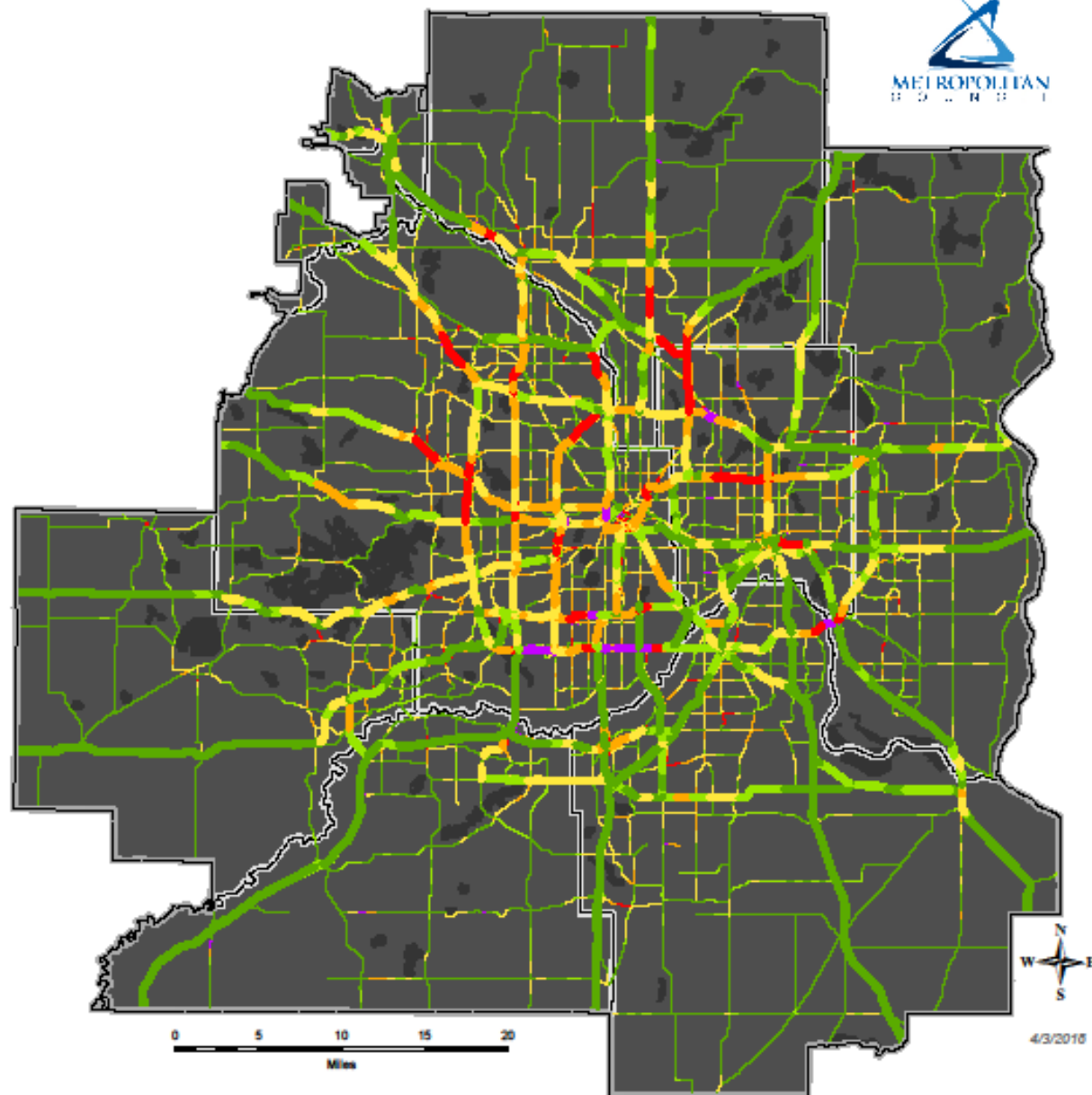
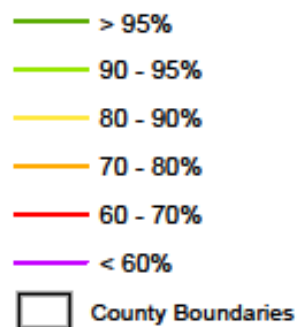
Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc.



**Map #2:  
Twin Cities Arterial Corridor  
7:00 - 8:00 AM Congestion  
Working Draft Map**



**Hour Speed  
Percent of Reference Speed\***



*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

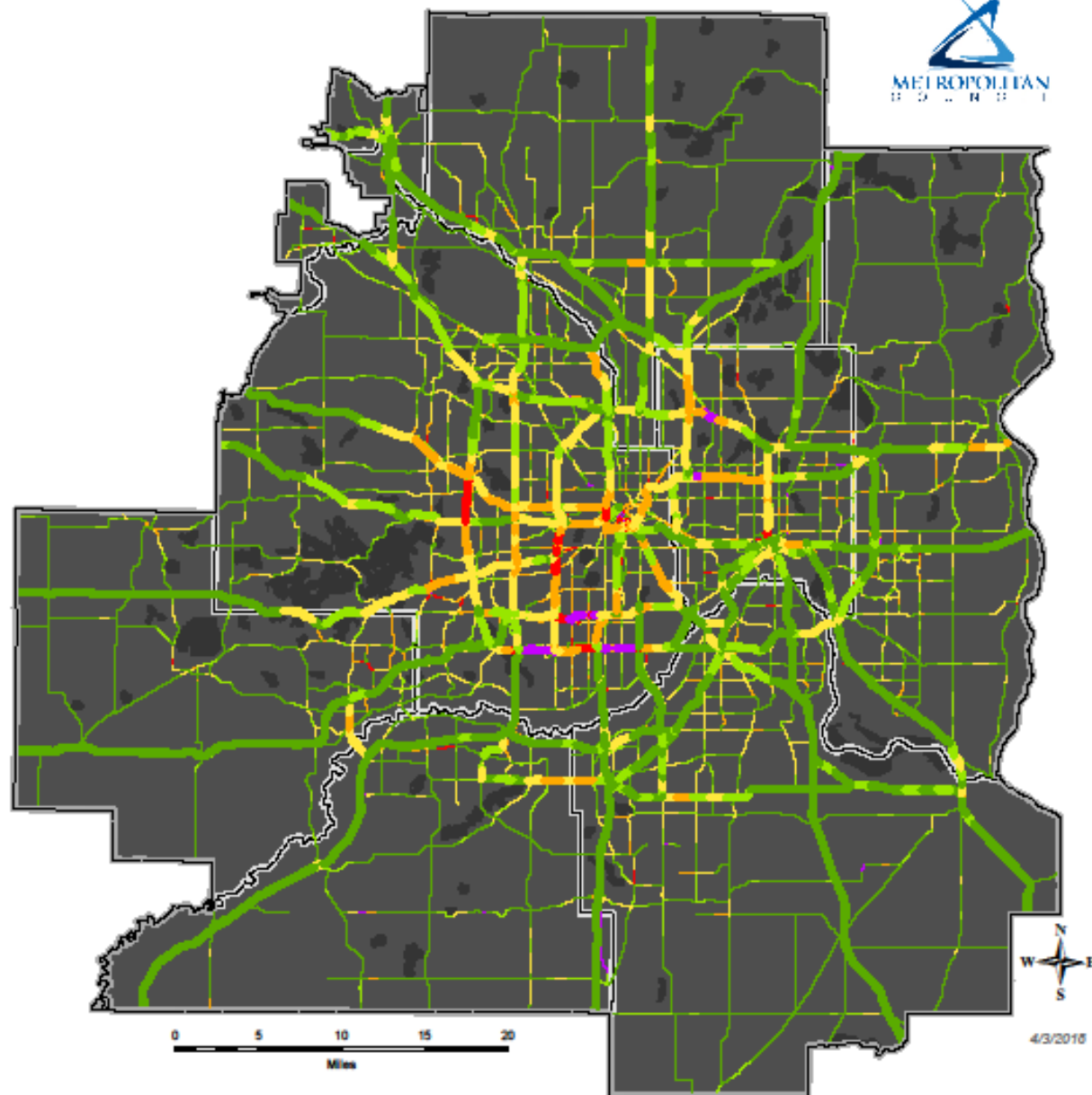
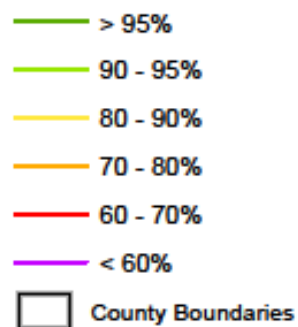
Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc.



**Map #3:  
Twin Cities Arterial Corridor  
8:00 - 9:00 AM Congestion  
Working Draft Map**



**Hour Speed  
Percent of Reference Speed\***



*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

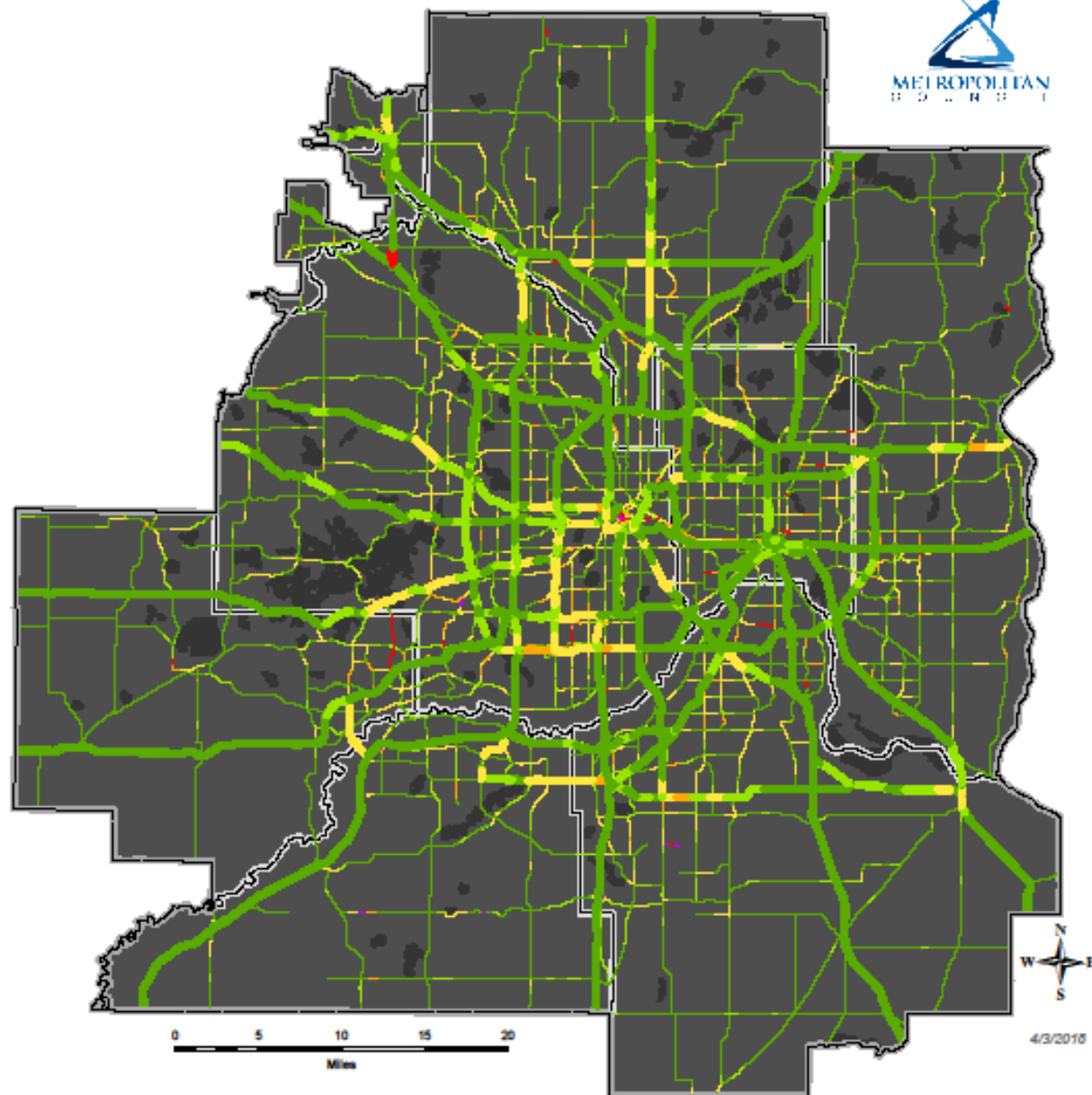
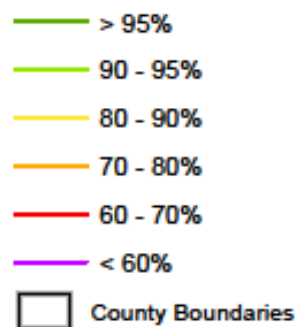
Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc.



**Map #4:  
Twin Cities Arterial Corridor  
9:00 - 10:00 AM Congestion  
Working Draft Map**



**Hour Speed  
Percent of Reference Speed\***



*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

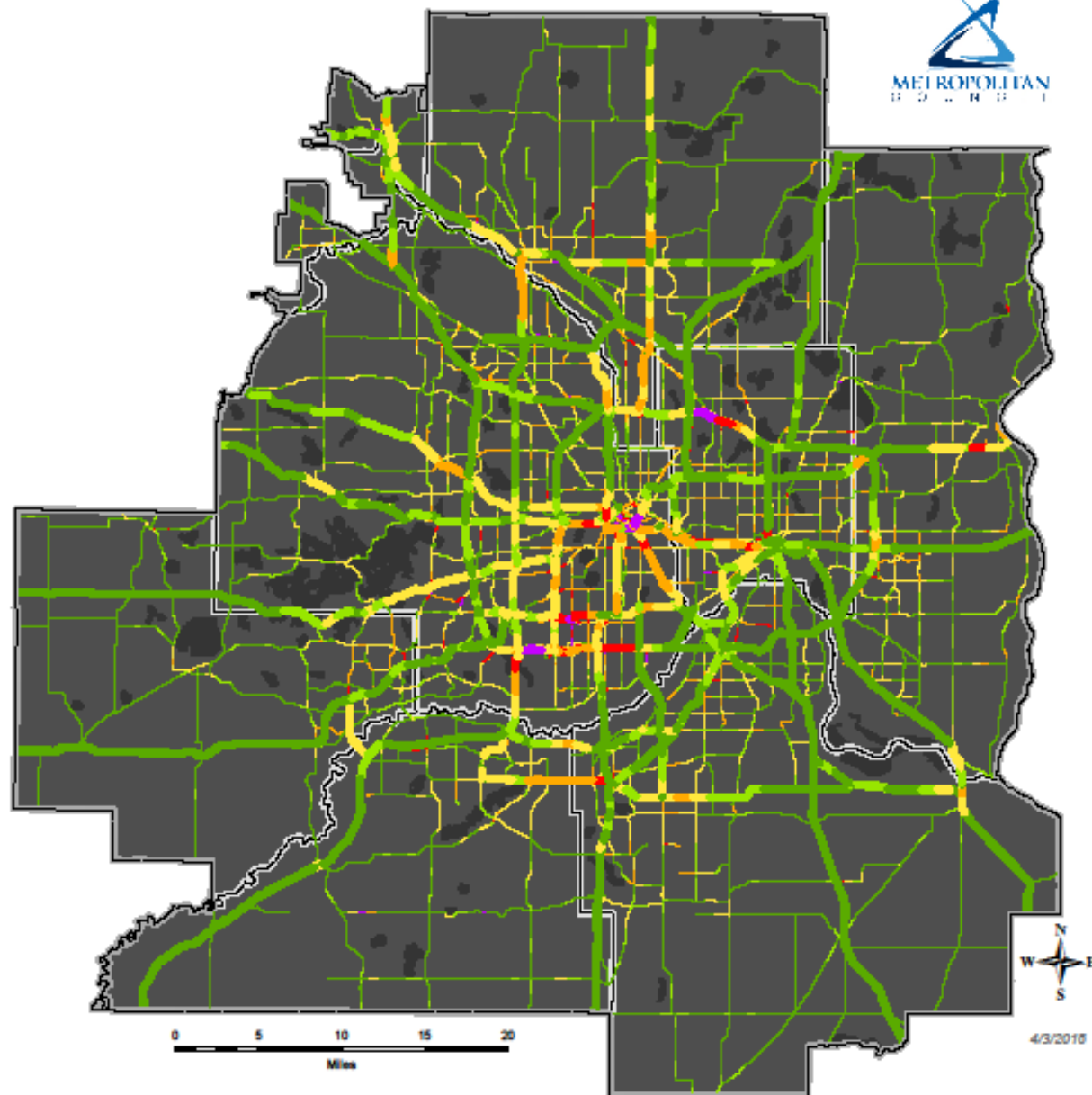
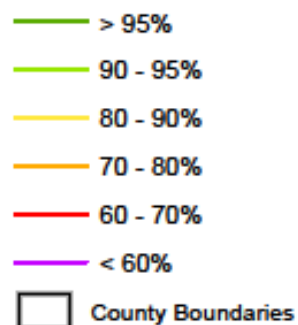
Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc.



**Map #5:  
Twin Cities Arterial Corridor  
3:00 - 4:00 PM Congestion  
Working Draft Map**



**Hour Speed  
Percent of Reference Speed\***



*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc.

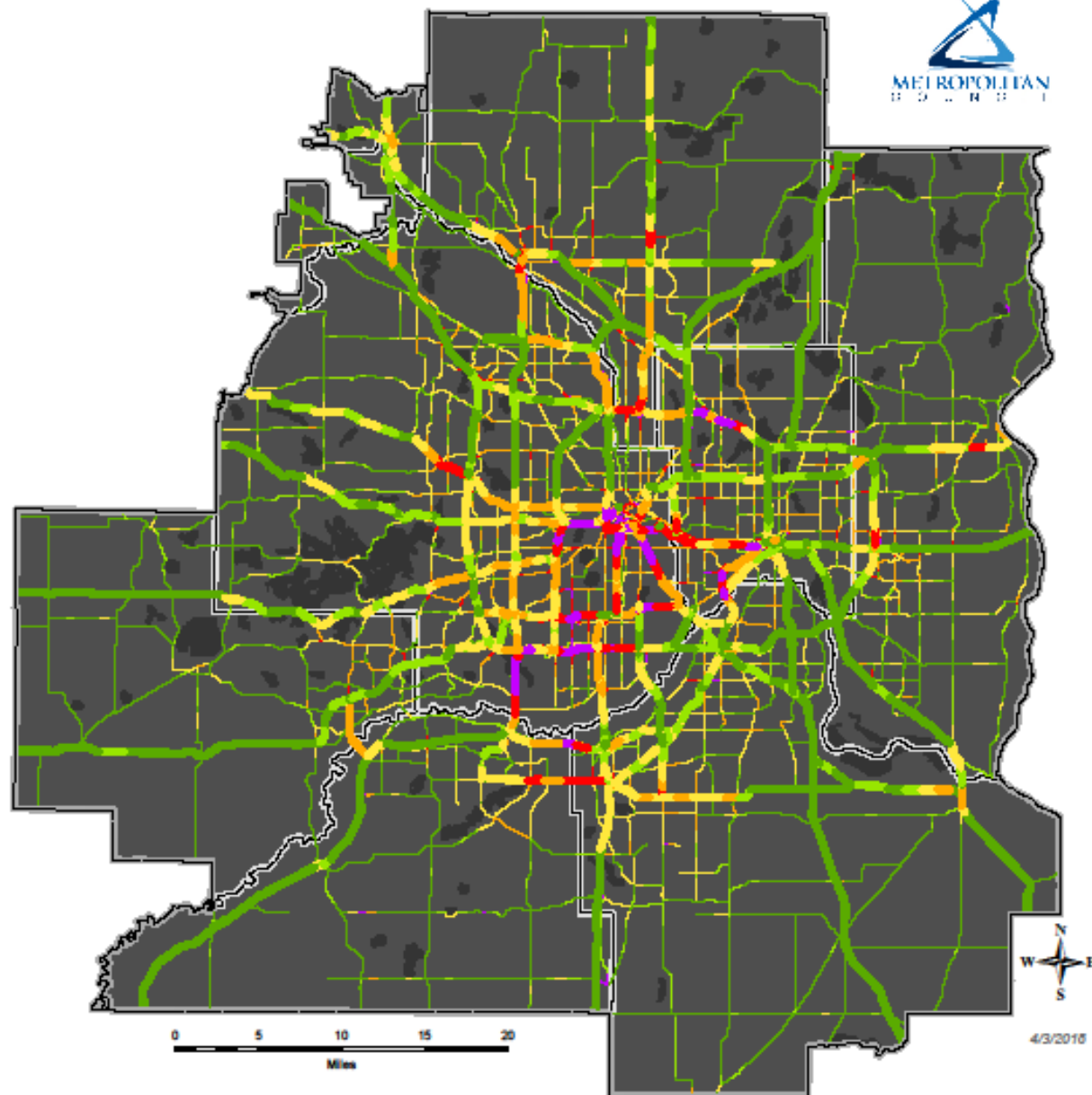
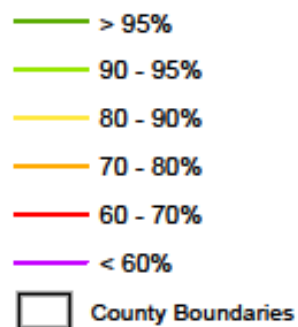




**Map #6:  
Twin Cities Arterial Corridor  
4:00 - 5:00 PM Congestion  
Working Draft Map**



**Hour Speed  
Percent of Reference Speed\***



*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc.

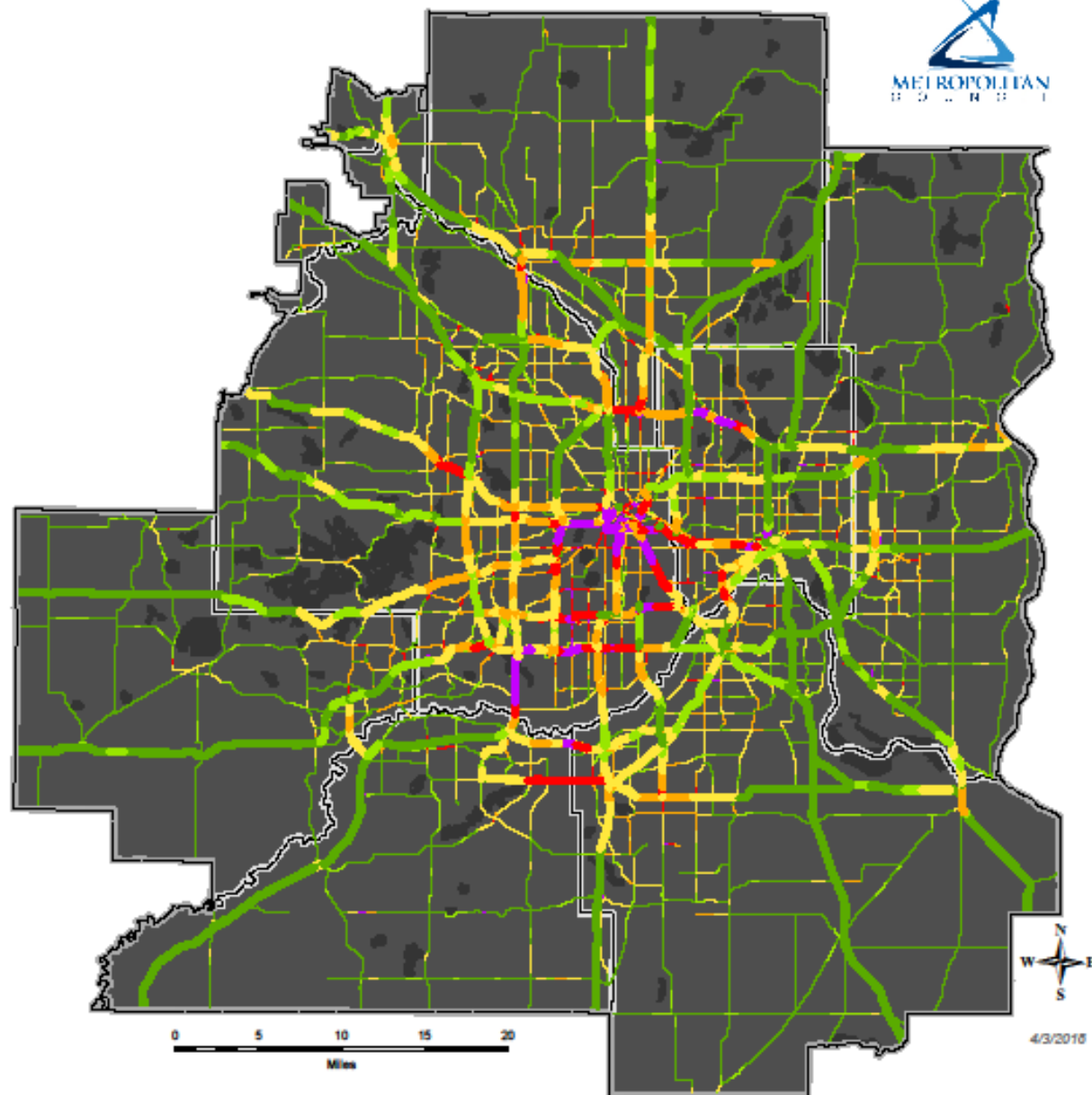


**Map #7:  
Twin Cities Arterial Corridor  
5:00 - 6:00 PM Congestion  
Working Draft Map**



**Hour Speed  
Percent of Reference Speed\***

- > 95%
- 90 - 95%
- 80 - 90%
- 70 - 80%
- 60 - 70%
- < 60%
- County Boundaries



*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc.

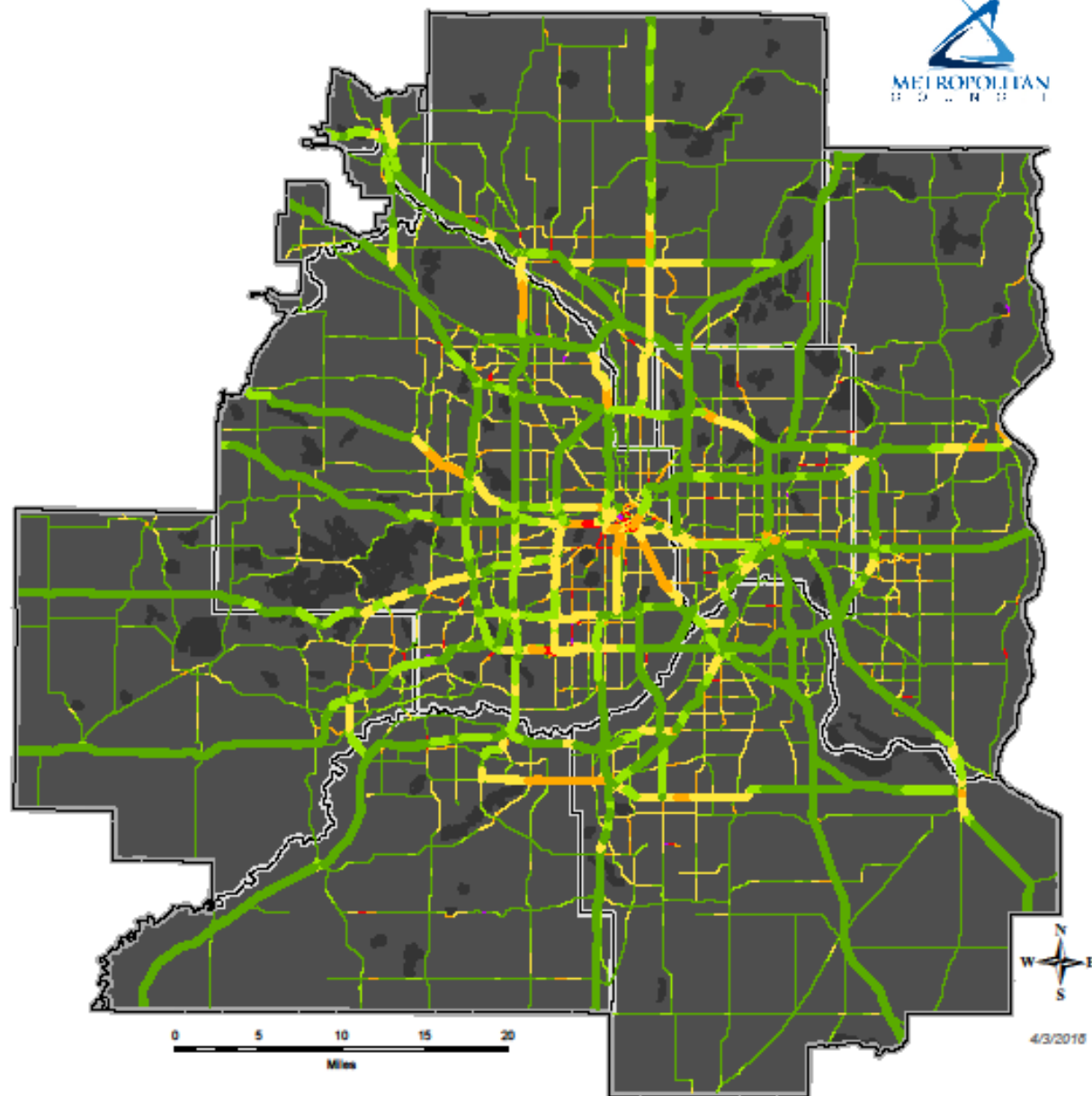


**Map #8:  
Twin Cities Arterial Corridor  
6:00 - 7:00 PM Congestion  
Working Draft Map**



**Hour Speed  
Percent of Reference Speed\***

- > 95%
- 90 - 95%
- 80 - 90%
- 70 - 80%
- 60 - 70%
- < 60%
- County Boundaries



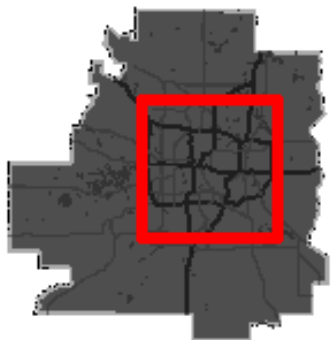
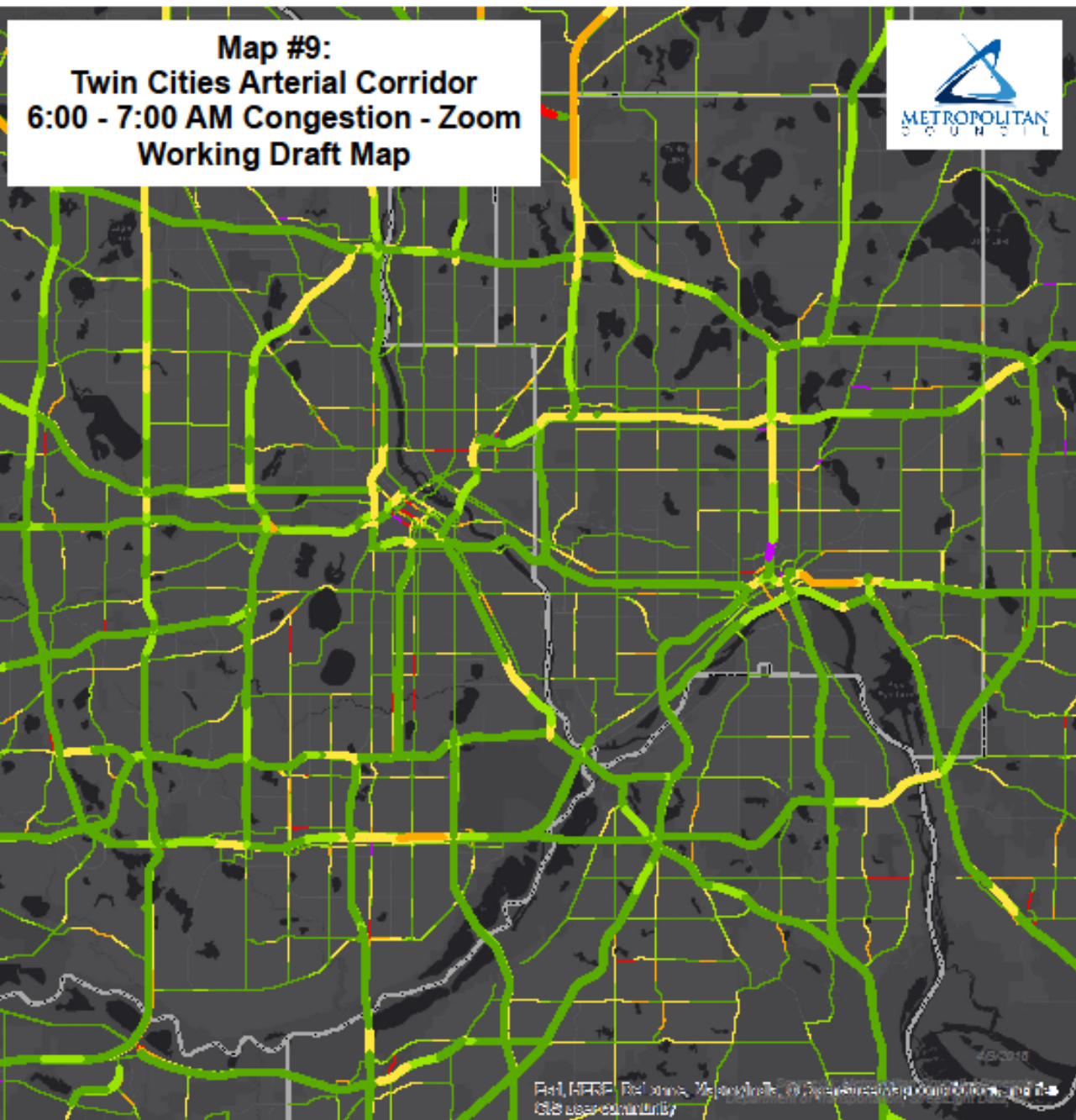
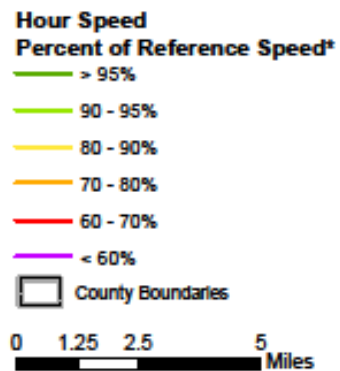
4/3/2018

*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc.





Notes:  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.  
Data reflects observations collected from July 2016 to June 2017.  
Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc. 4/3/2018

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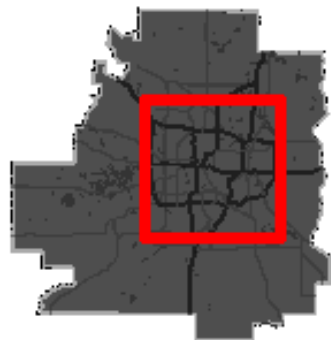


**Hour Speed  
Percent of Reference Speed\***

- > 95%
- 90 - 95%
- 80 - 90%
- 70 - 80%
- 60 - 70%
- < 60%

County Boundaries

0 1.25 2.5 5 Miles

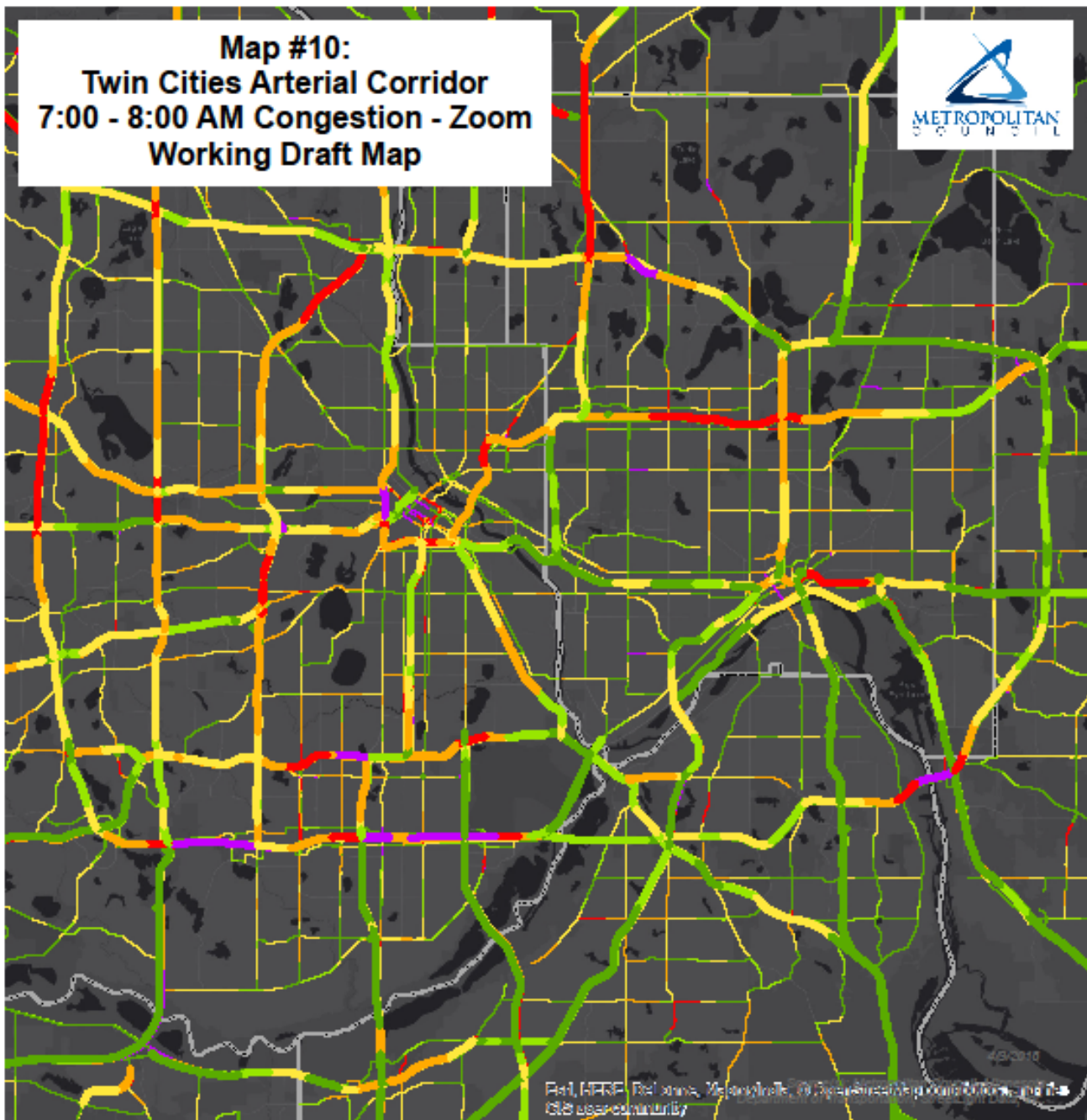


Notes:  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc. 4/3/2018

**Map #10:  
Twin Cities Arterial Corridor  
7:00 - 8:00 AM Congestion - Zoom  
Working Draft Map**




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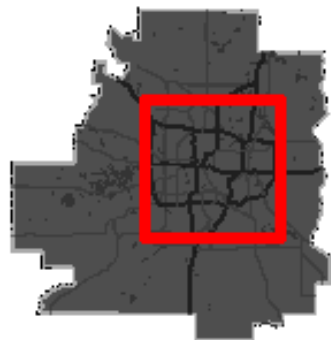
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**Hour Speed  
Percent of Reference Speed\***

- > 95%
- 90 - 95%
- 80 - 90%
- 70 - 80%
- 60 - 70%
- < 60%

 County Boundaries

0 1.25 2.5 5 Miles

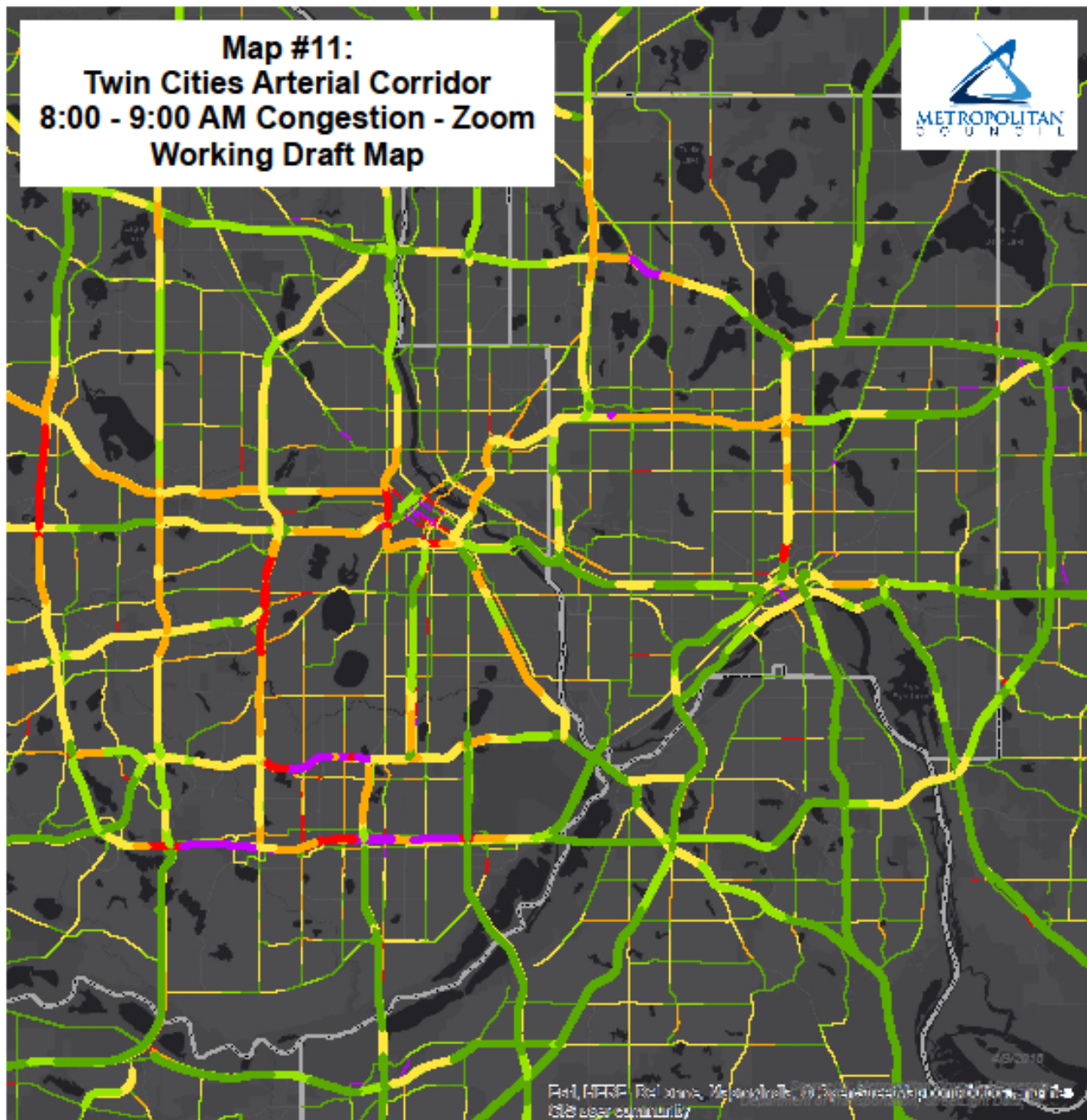


*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc. 4/3/2018

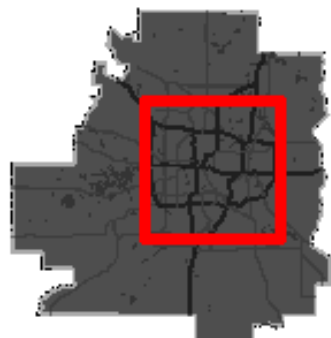
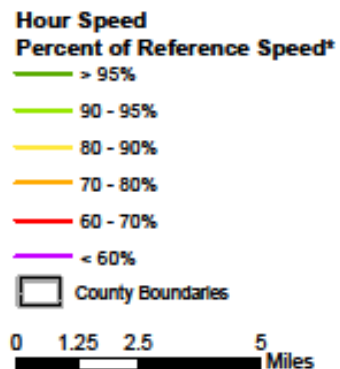
**Map #11:  
Twin Cities Arterial Corridor  
8:00 - 9:00 AM Congestion - Zoom  
Working Draft Map**



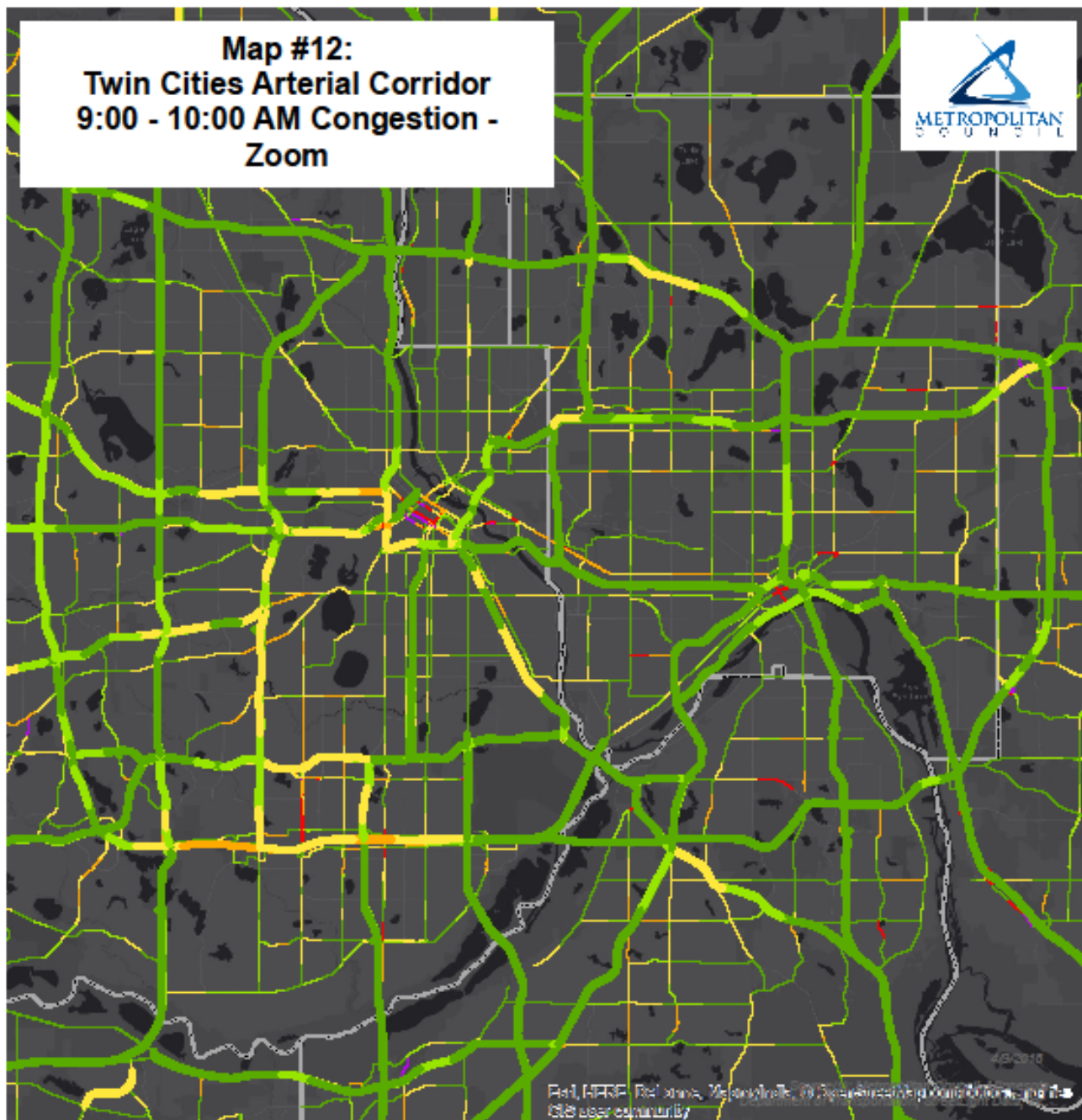
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Notes:  
 \*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.  
 Data reflects observations collected from July 2016 to June 2017.  
 Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc. 4/3/2018

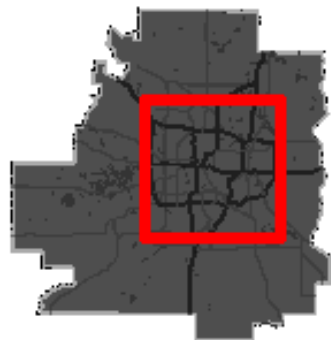


**Hour Speed  
Percent of Reference Speed\***

- > 95%
- 90 - 95%
- 80 - 90%
- 70 - 80%
- 60 - 70%
- < 60%

 County Boundaries

0 1.25 2.5 5 Miles

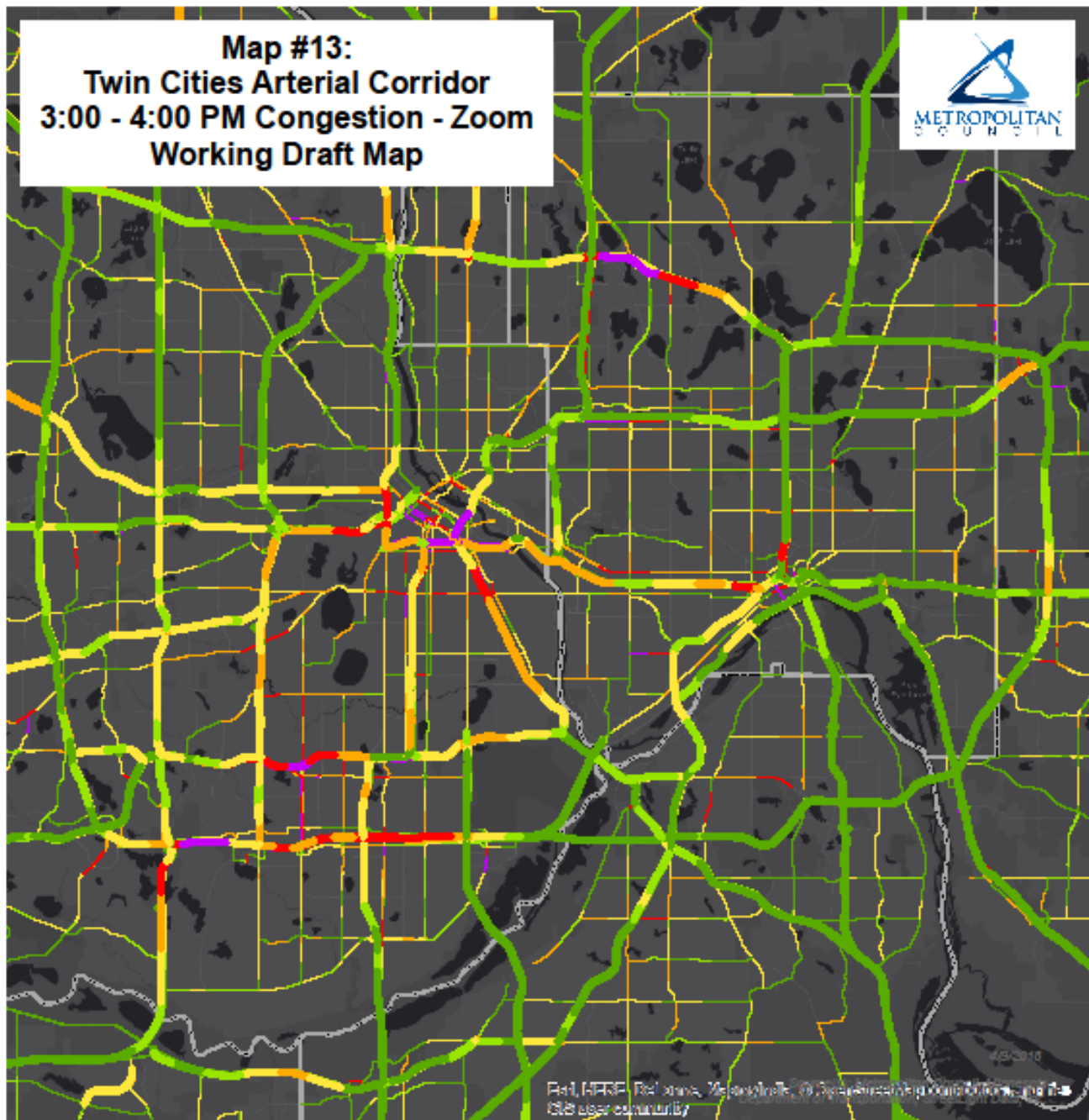


*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc. 4/3/2018

**Map #13:  
Twin Cities Arterial Corridor  
3:00 - 4:00 PM Congestion - Zoom  
Working Draft Map**



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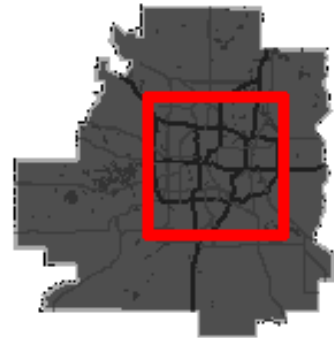
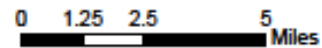




**Hour Speed  
Percent of Reference Speed\***

- > 95%
- 90 - 95%
- 80 - 90%
- 70 - 80%
- 60 - 70%
- < 60%

County Boundaries

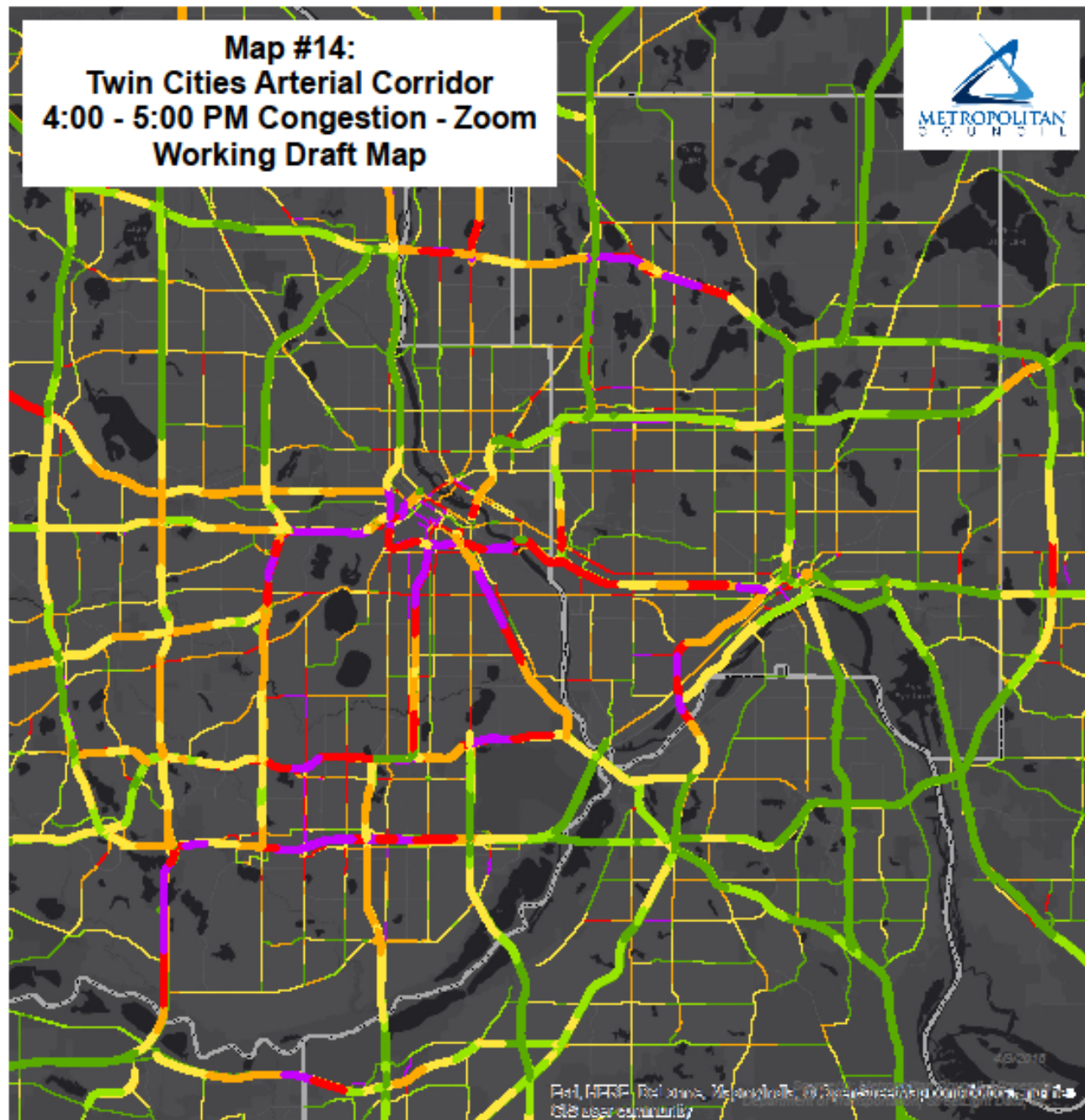


Notes:  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc. 4/3/2018

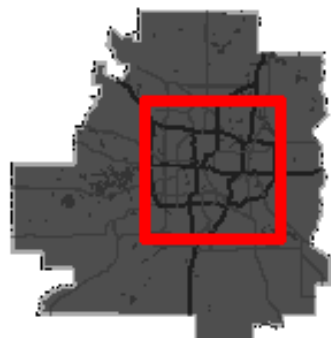
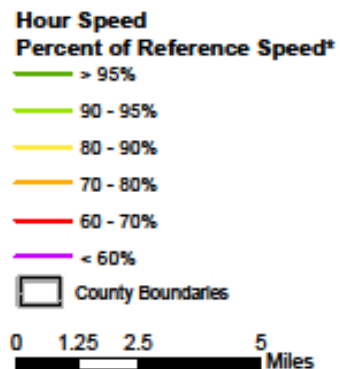
**Map #14:  
Twin Cities Arterial Corridor  
4:00 - 5:00 PM Congestion - Zoom  
Working Draft Map**



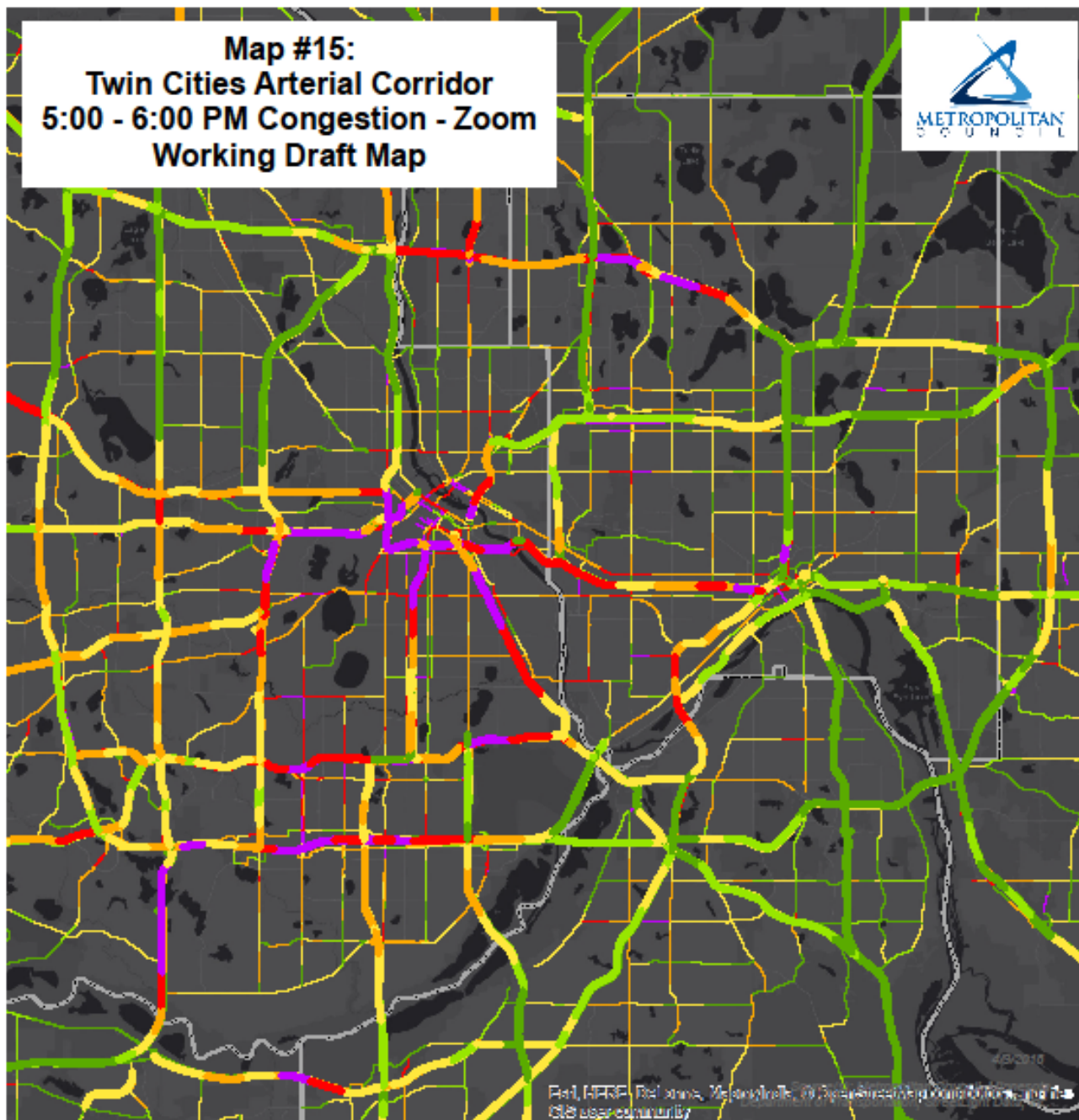
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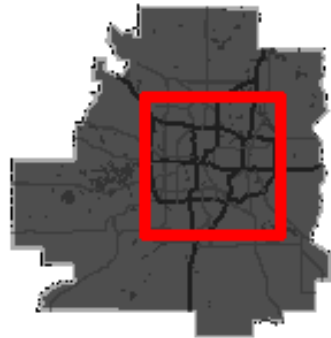
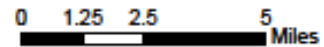
Notes:  
 \*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.  
 Data reflects observations collected from July 2016 to June 2017.  
 Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc. 4/3/2018



**Hour Speed  
Percent of Reference Speed\***

- > 95%
- 90 - 95%
- 80 - 90%
- 70 - 80%
- 60 - 70%
- < 60%

 County Boundaries

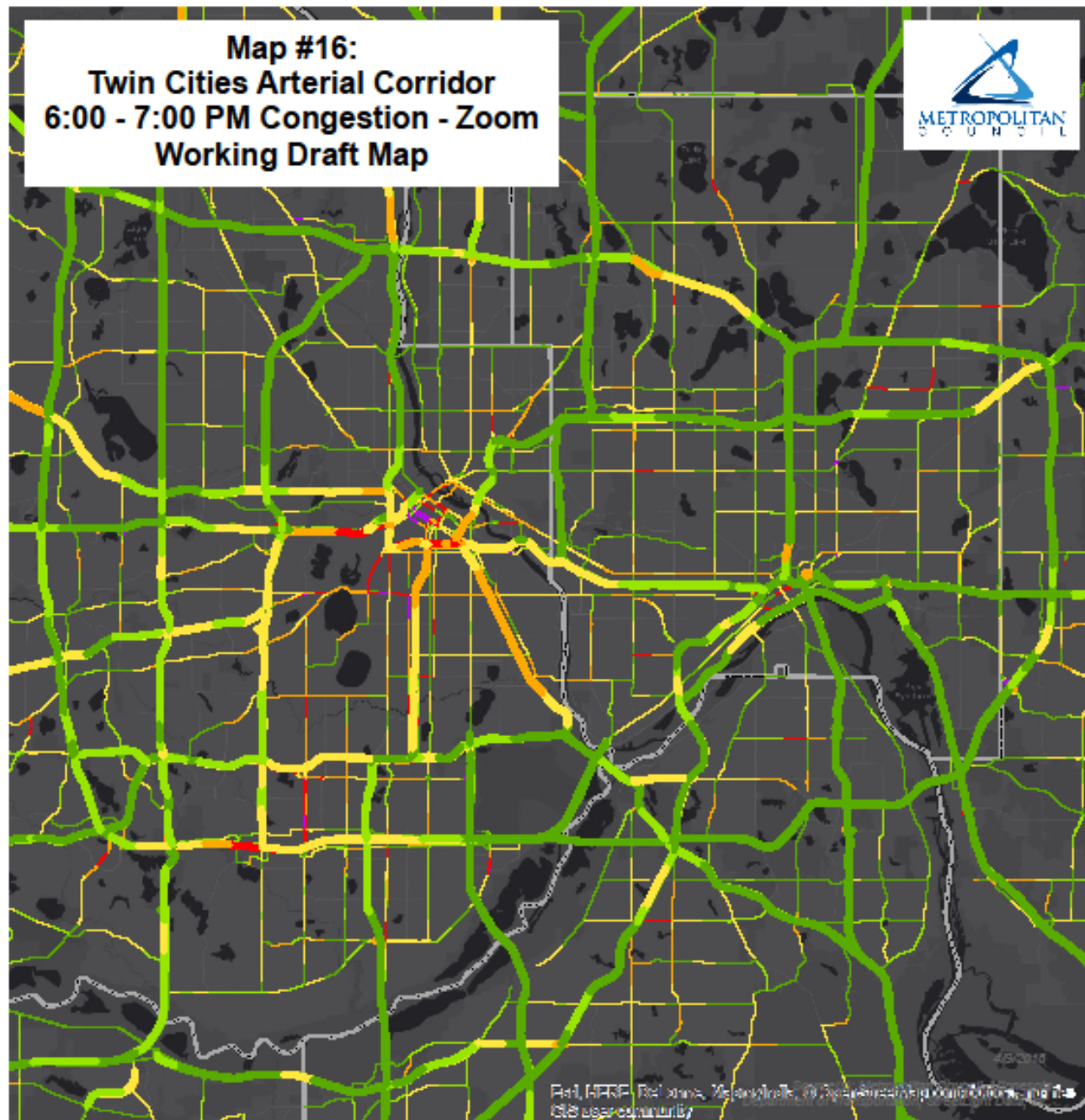


*Notes:*  
\*Reference speed is the average speed recorded overnight (between 12am and 6am) for each segment.

Data reflects observations collected from July 2016 to June 2017.

Source(s): Metropolitan Council, Minnesota Department of Transportation, StreetLight Data, Inc. 4/3/2018

**Map #16:  
Twin Cities Arterial Corridor  
6:00 - 7:00 PM Congestion - Zoom  
Working Draft Map**



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# Uses and Next Steps

- Uses:

- Congestion Management Process
- Defining the CMP network/identifying corridors of concern
- Monitor system performance
- Evaluate the effectiveness of implemented strategies
- Better communicate system performance with policy makers, the public, and partner agencies
- Will also be used as a criterion for measuring congestion in the 2018 regional solicitation

- Next steps:

- Will update maps to reflect CY 2017 conditions
- Produce maps at the county level
- Continue to refine maps as the CMP Plan is developed



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