

2040 MTP and CTP

Alternatives – Congestion Maps (V/C maps)

Use of Congestion Maps

The Performance Measures provide a general indicator of the overall transportation system. On the other hand, the Congestion Maps show the forecasted level of service on specific road segments based on the average of the four-hour afternoon peak hour. These maps are sometimes called “V/C” maps (V over C maps) because the level of service, or existence of congestion, is derived by dividing the traffic volume by the traffic capacity of the road segment. For example, a volume of 9,000 vehicles on a road that is capable of carrying 10,000 vehicles will produce a V/C of 0.9. A V/C of 1.0 is equal to a Level of Service (LOS) of “E”, which can be described as:

Limit of acceptable delay, unstable flow, poor signal progression, traffic near roadway capacity, frequent cycle failures.

It should be noted that these congestion maps show the average for the afternoon peak. The total volume for the four-hour afternoon peak period is divided by the total capacity for the same period. Thus, the V/C ratio for the afternoon peak is likely to be less than the one-hour peak, or peak-of-the-peak, often experienced by motorists.

Although the term traffic congestion is subjective in that it means different levels of delay to different people, it can be said that any road segment approaching a V/C of 1.0, which is indicated on the maps with an **orange color**, experiences some delays. A V/C greater than 1.0, which is indicated on the maps by the **red color**, means frequent delays for the motorist and as the V/C approaches a value of 1.1 most motorists experience what might be termed unacceptable travel delays.

The Triangle Regional Model (the travel demand model for the Triangle Region) uses travel behavior data for the Triangle Region, future transportation system networks, and future population and employment data, to forecast the volume and capacity values needed to produce these maps. The forecasts are for the year 2040. Each congestion map represents one of the Alternatives, which are comprised of a specific transportation network and land use scenario.

Review and comparison of the congestion maps for the various Alternatives will show how well a particular Alternative addresses travel demand on the key roadway segments and corridors in the MPO planning area.

Of particular importance is the comparison of any one Alternative with the **E+C map** (Existing plus Committed), which can be considered a benchmark. The E+C map uses a transportation network with the current roadways and transit services plus any others that have been committed to being implemented, and the Socioeconomic Data (i.e., population and employment) for the year 2040. This map shows the level of service to be

experienced if no additional roadways improvements or transit services are implemented, and thus helps to answer the question, “When we make our next transportation investment decision, where do we need to focus our investment?” Furthermore, by comparing the E+C Congestion Map with the other Alternatives, you can see how well the transportation investments in that Alternative address the congestion in the E+C.

The 2010 congestion map is provided, as well, to give an additional benchmark. The 2010 basically represents current conditions because it is based on the current transportation network and socioeconomic data.

Presentation of Congestion Maps

The 2010 and E+C congestion maps are presented first, followed by the Alternatives. Each Alternative provides the following map views:

- Durham County
- Close up for City of Durham
- Orange County
- Close up for Chapel Hill and Carrboro
- Chatham County

2010 Durham County V/C

Map layers

- County Boundary
- MPO Boundary

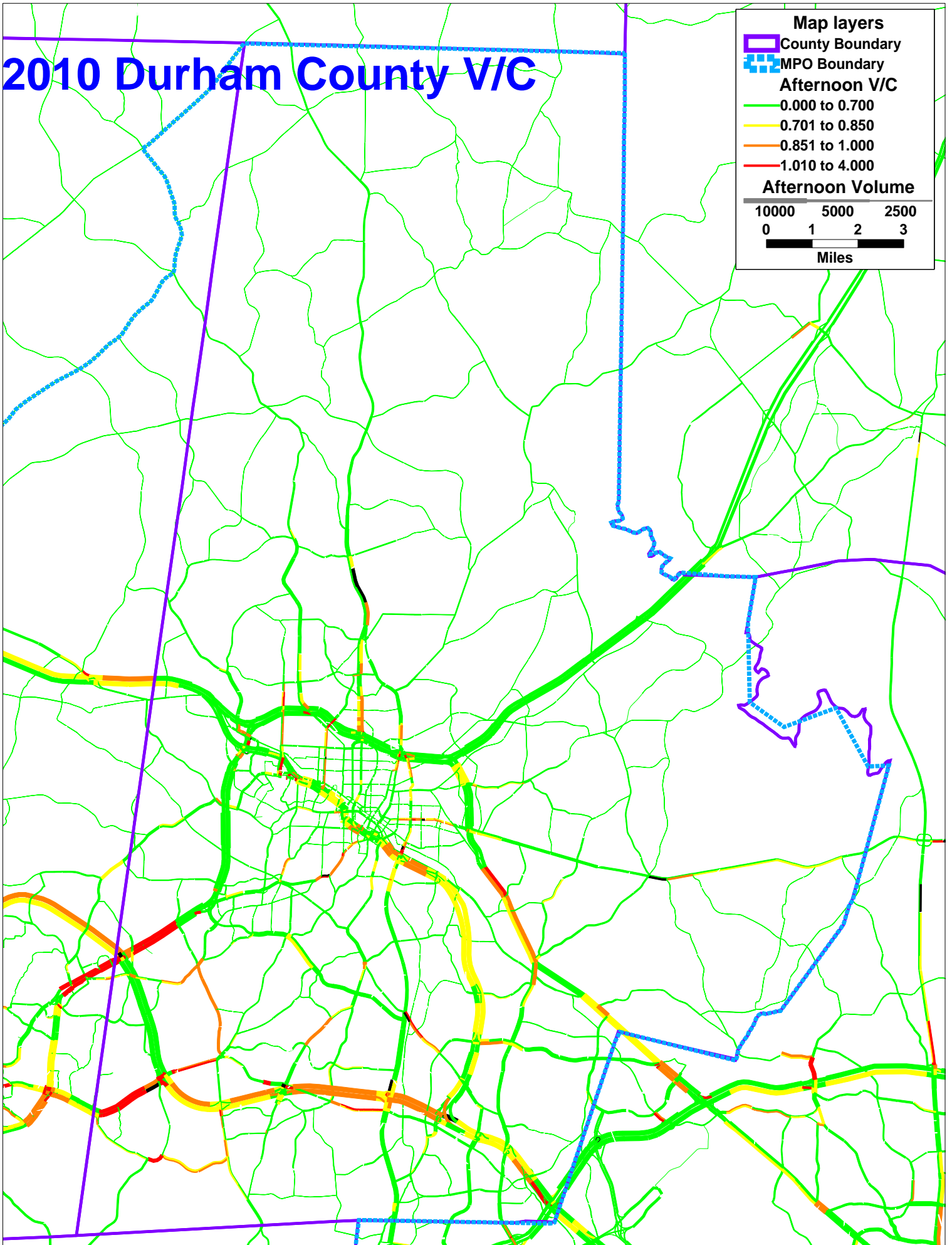
Afternoon V/C

- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.010 to 4.000

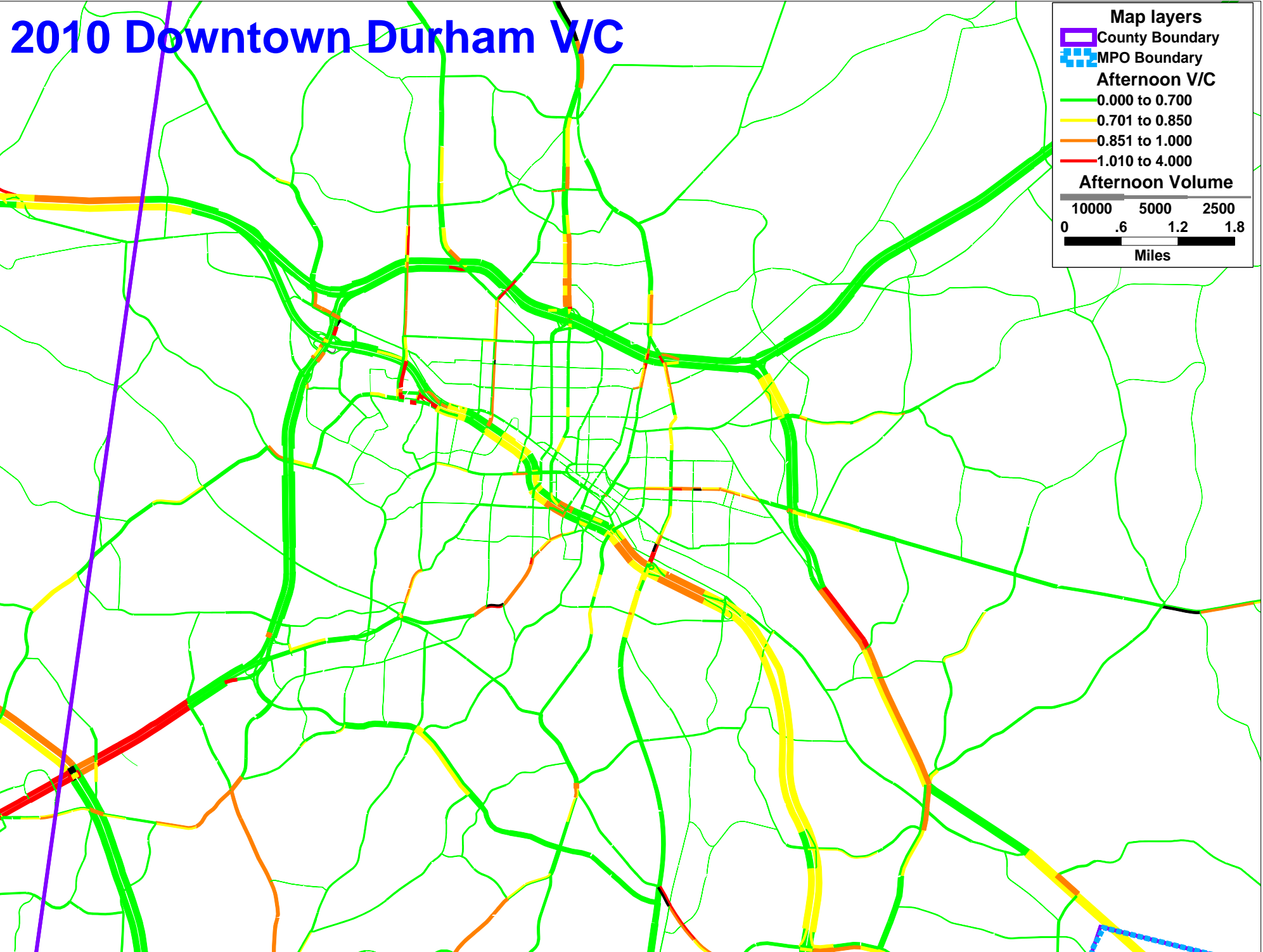
Afternoon Volume

10000	5000	2500	
0	1	2	3

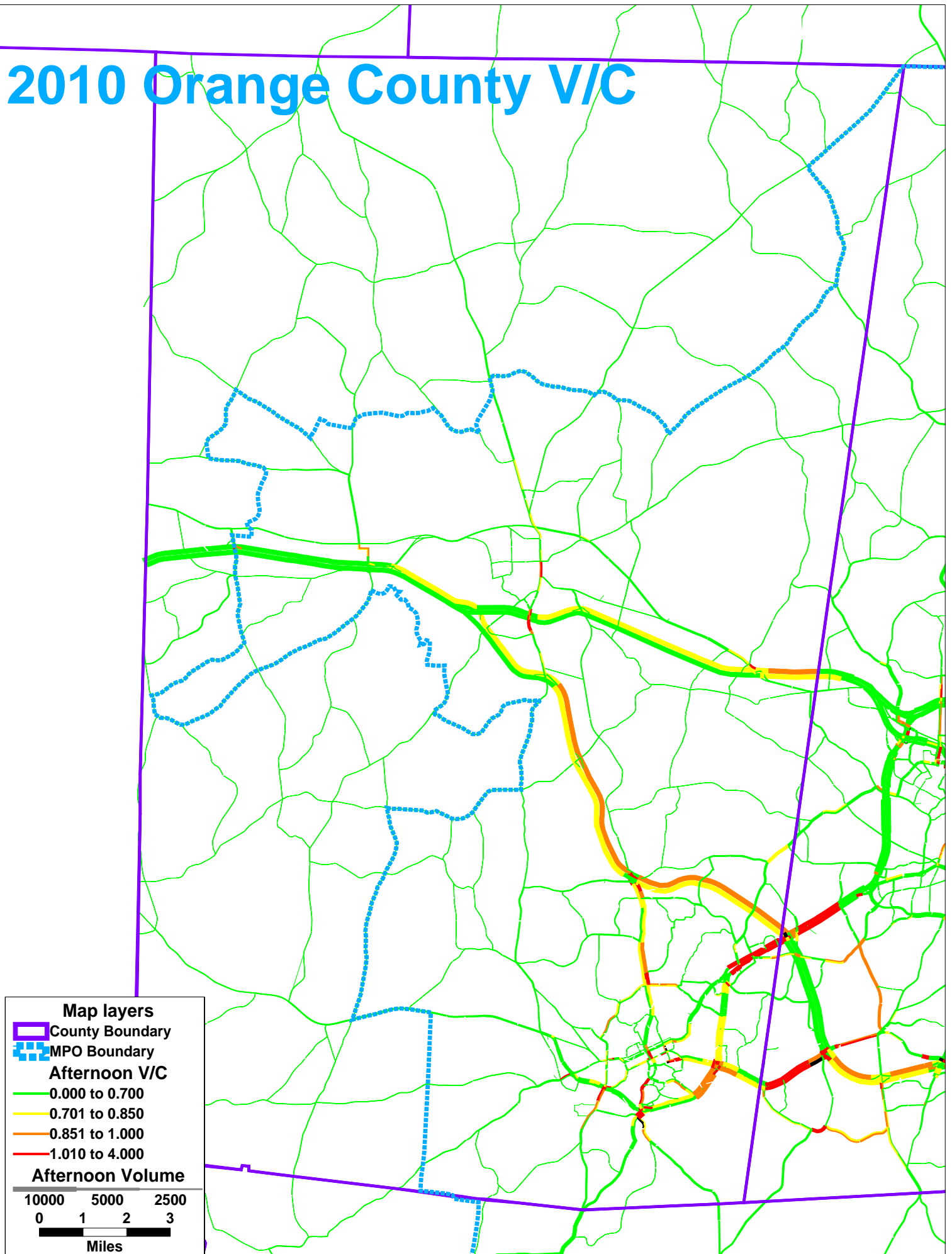
Miles



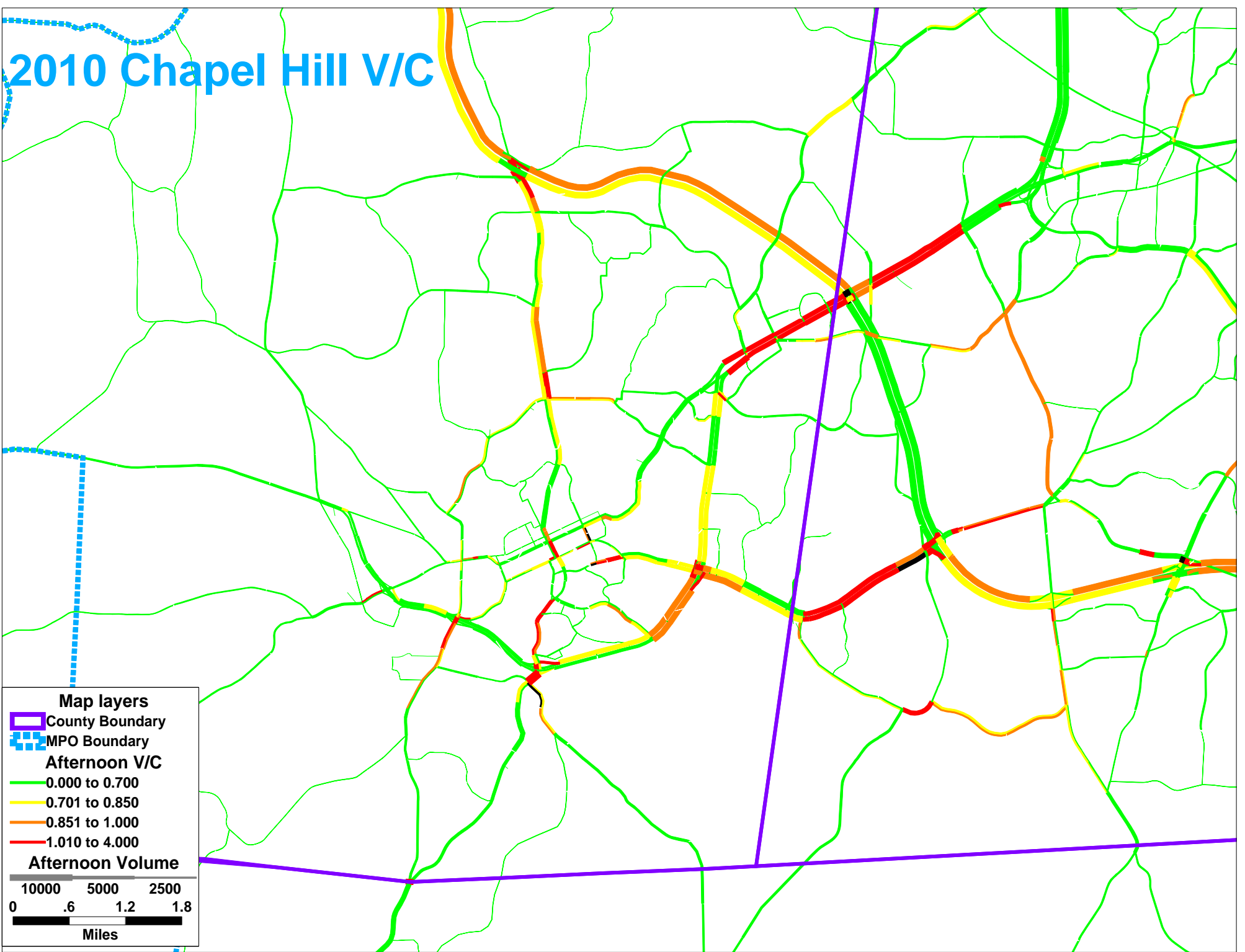
2010 Downtown Durham V/C



2010 Orange County V/C



2010 Chapel Hill V/C



Map layers

- County Boundary
- MPO Boundary

Afternoon V/C

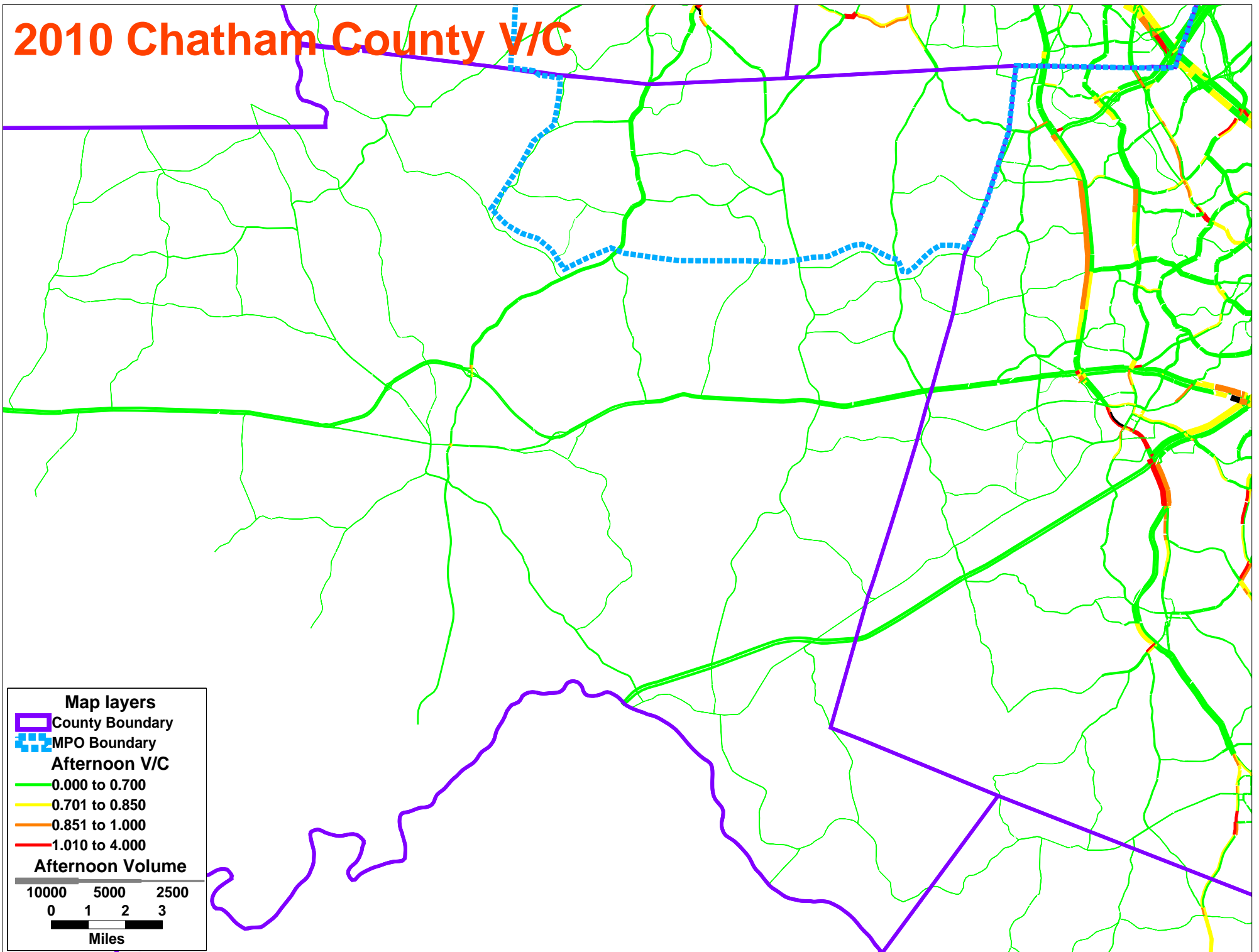
- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.010 to 4.000

Afternoon Volume

10000	5000	2500	
0	.6	1.2	1.8

Miles

2010 Chatham County V/C



2040 Durham County V/C

E plus C

Map layers

- County Boundary
- MPO Boundary

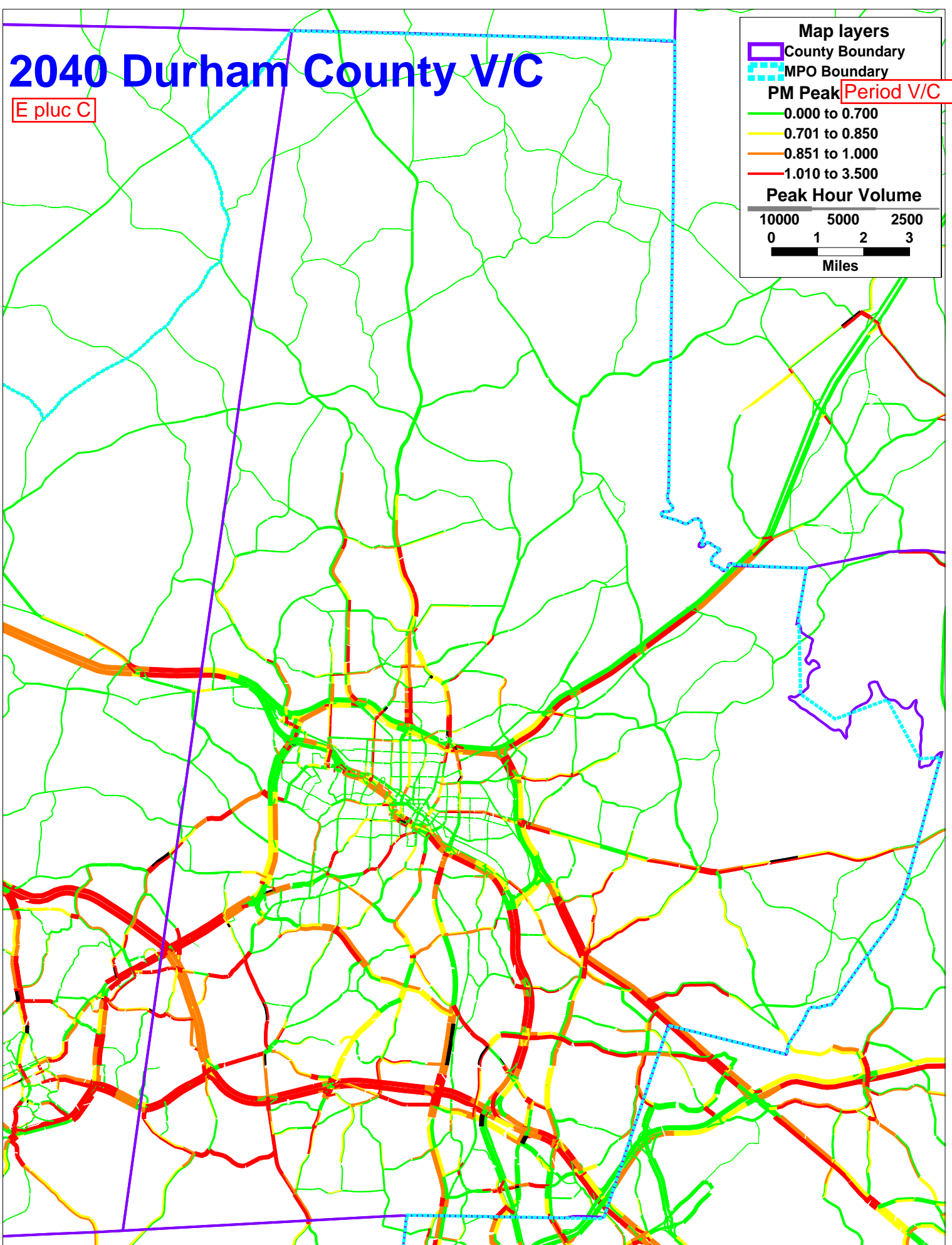
PM Peak Period V/C

- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.010 to 3.500

Peak Hour Volume

10000	5000	2500	
0	1	2	3

Miles



2040 Downtown Durham V/C

E plus C

Map layers

- County Boundary
- MPO Boundary

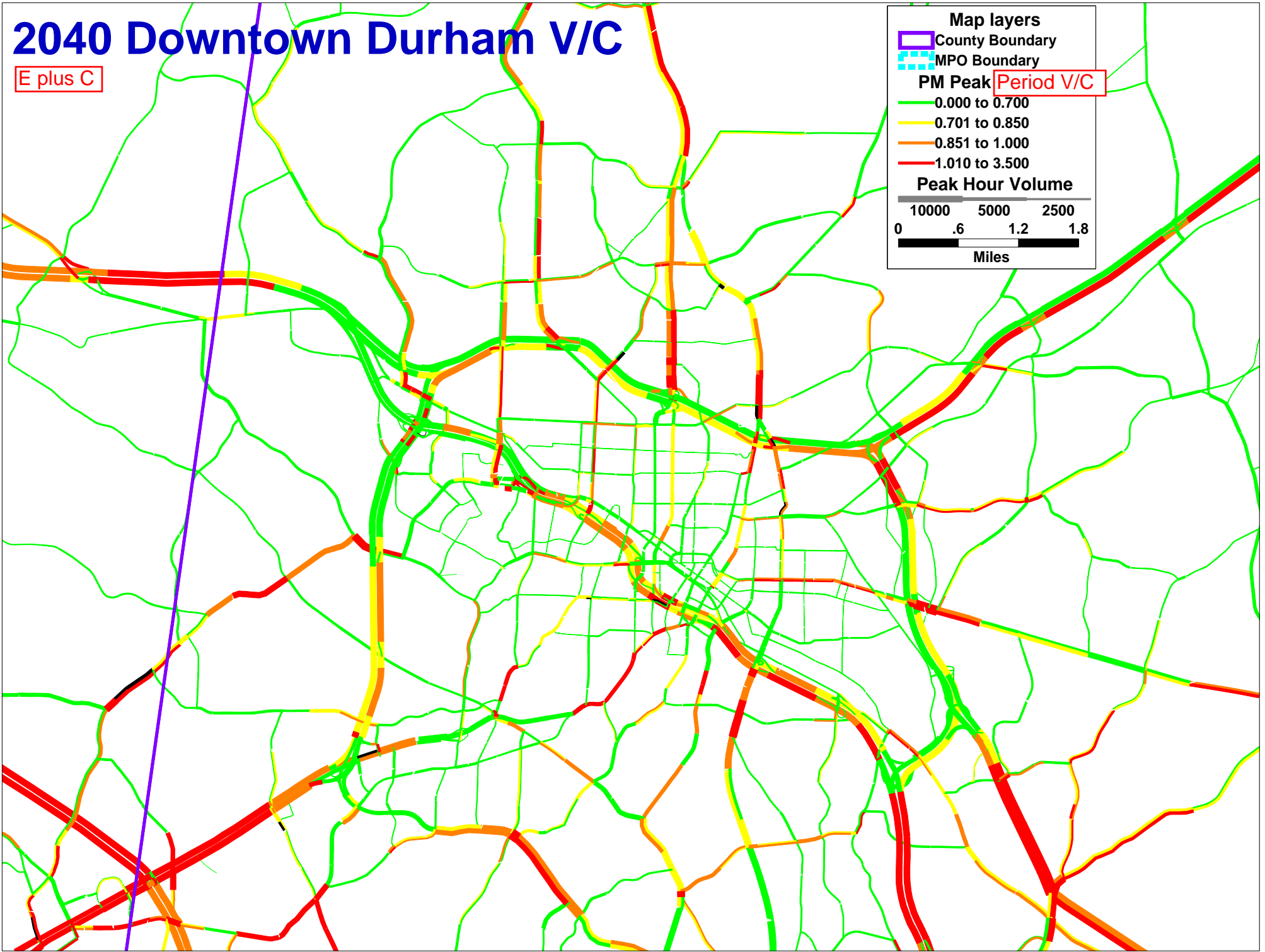
PM Peak Period V/C

- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.010 to 3.500

Peak Hour Volume

10000	5000	2500	
0	.6	1.2	1.8

Miles



2040 Orange County V/C

E plus C

Map layers

- County Boundary
- MPO Boundary

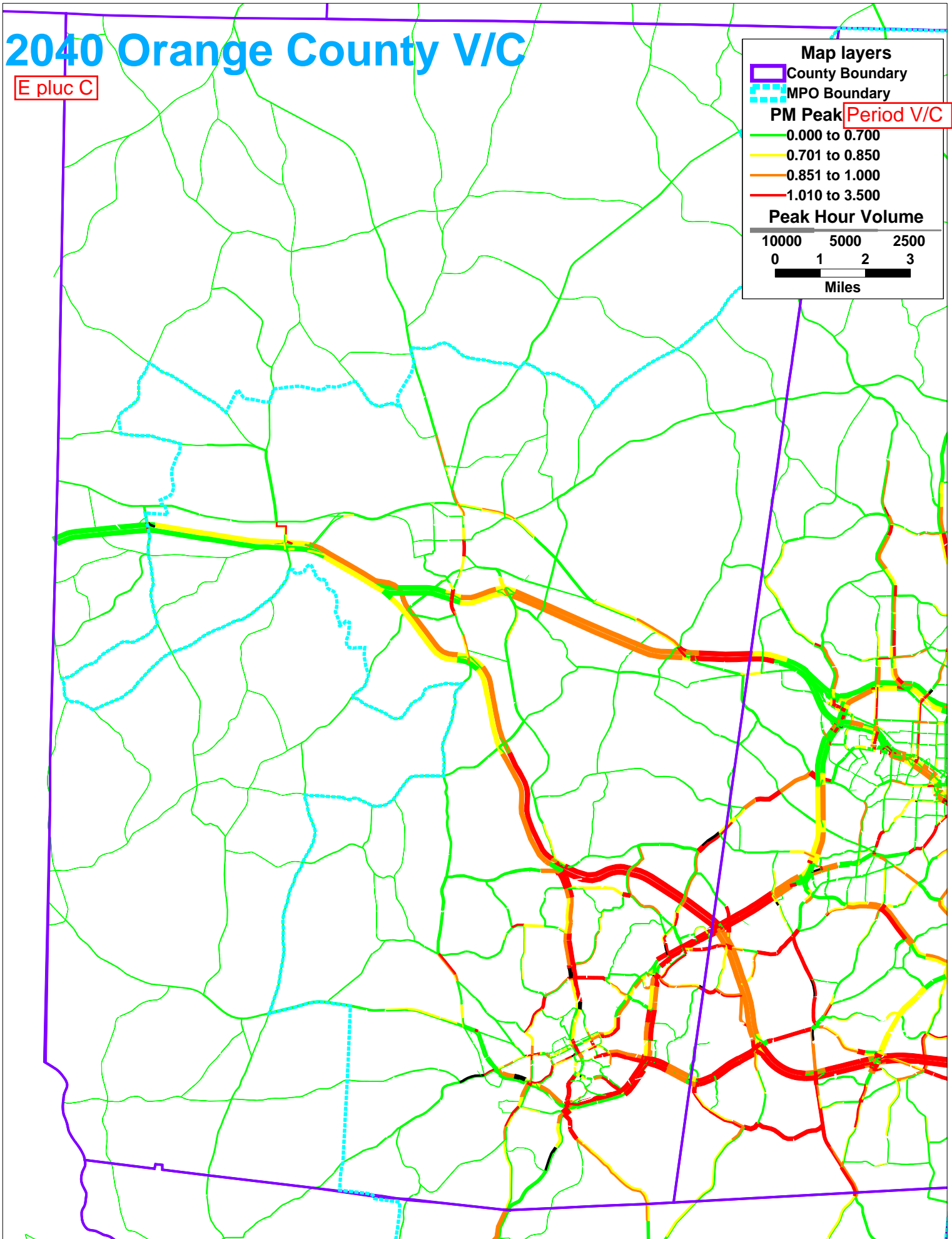
PM Peak Period V/C

- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.010 to 3.500

Peak Hour Volume

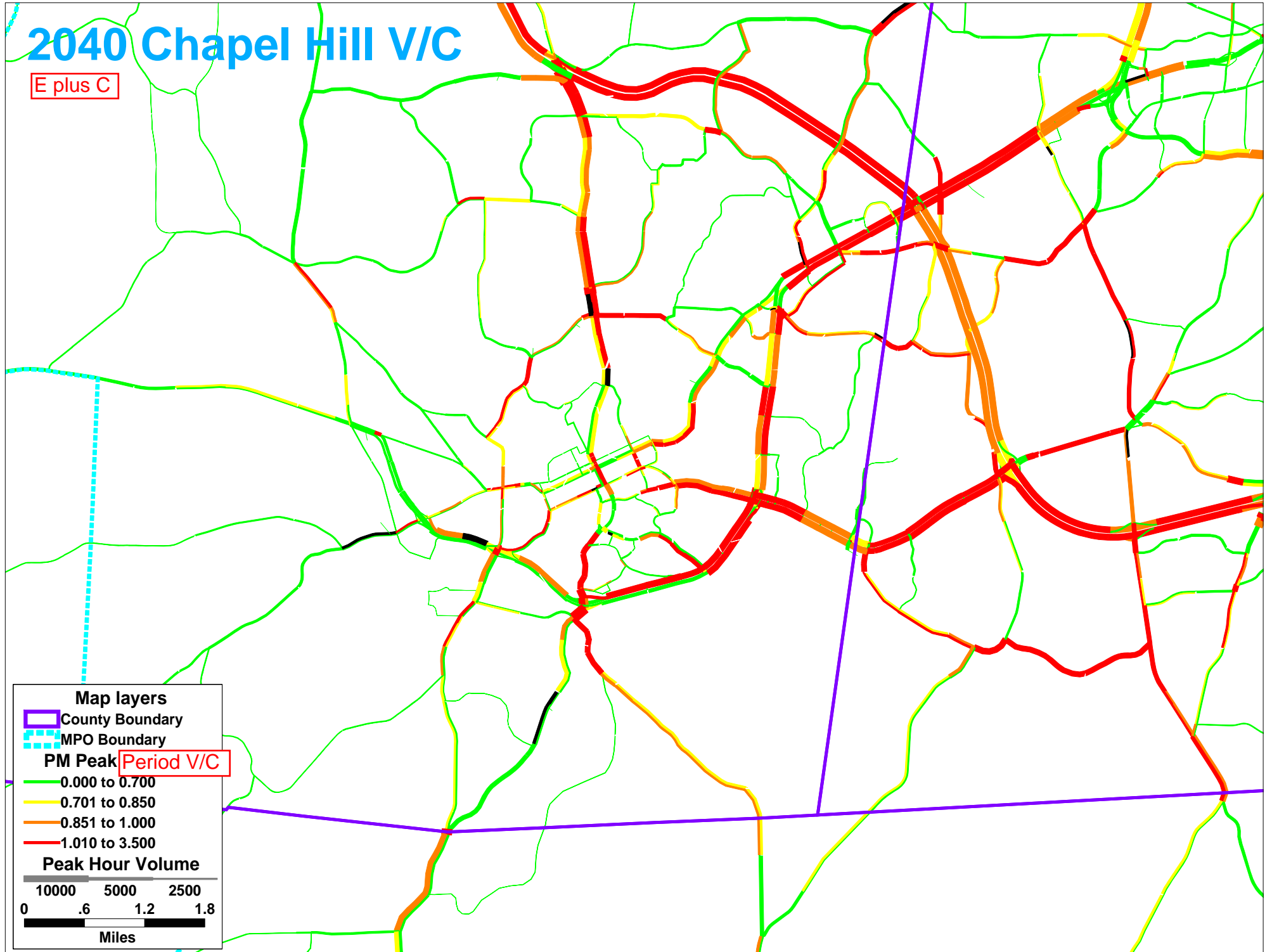
10000	5000	2500	
0	1	2	3

Miles



2040 Chapel Hill V/C

E plus C



Map layers

- County Boundary
- MPO Boundary

PM Peak Period V/C

- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.010 to 3.500

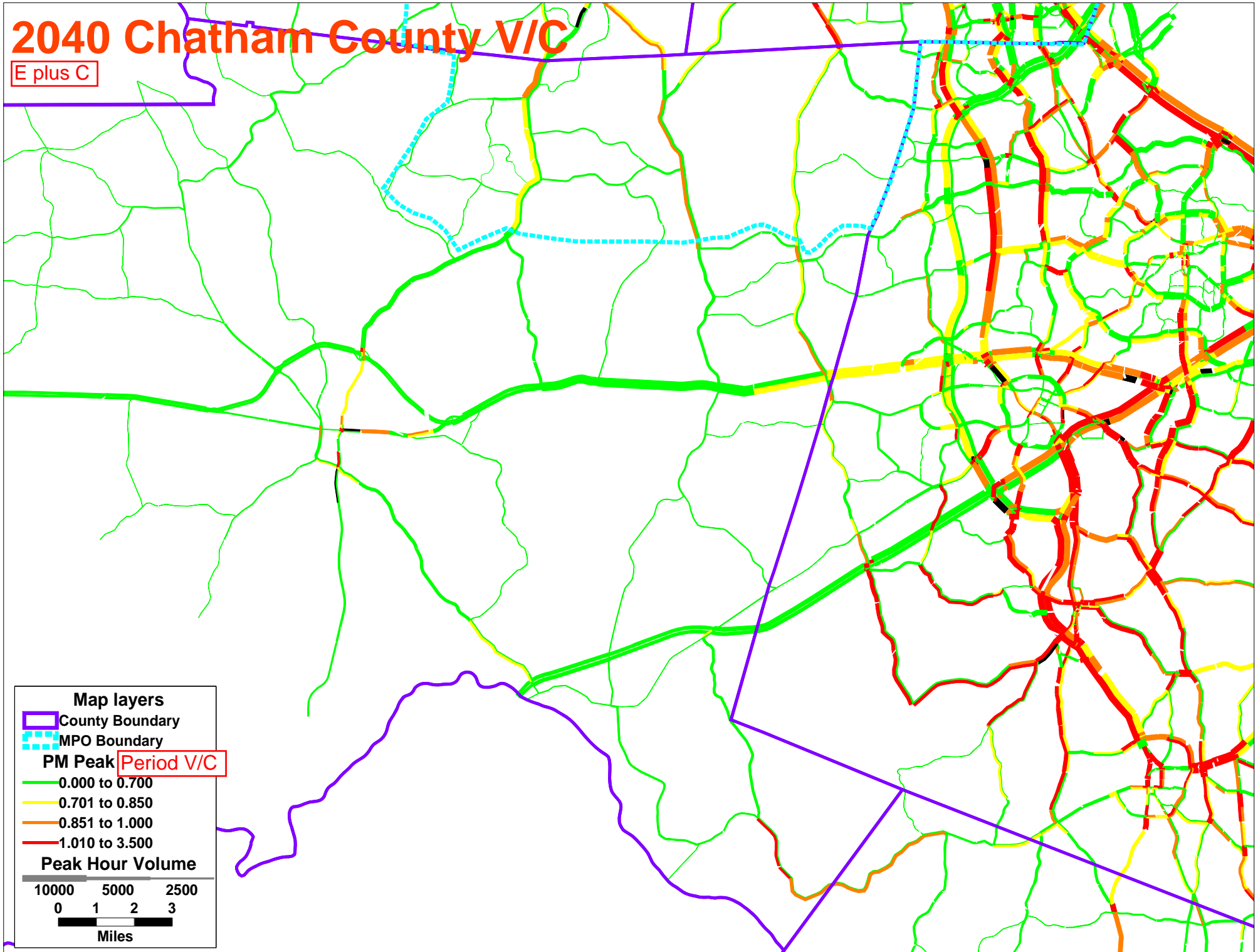
Peak Hour Volume

10000	5000	2500	
0	.6	1.2	1.8

Miles

2040 Chatham County V/C

E plus C



Map layers

- County Boundary
- MPO Boundary

PM Peak Period V/C

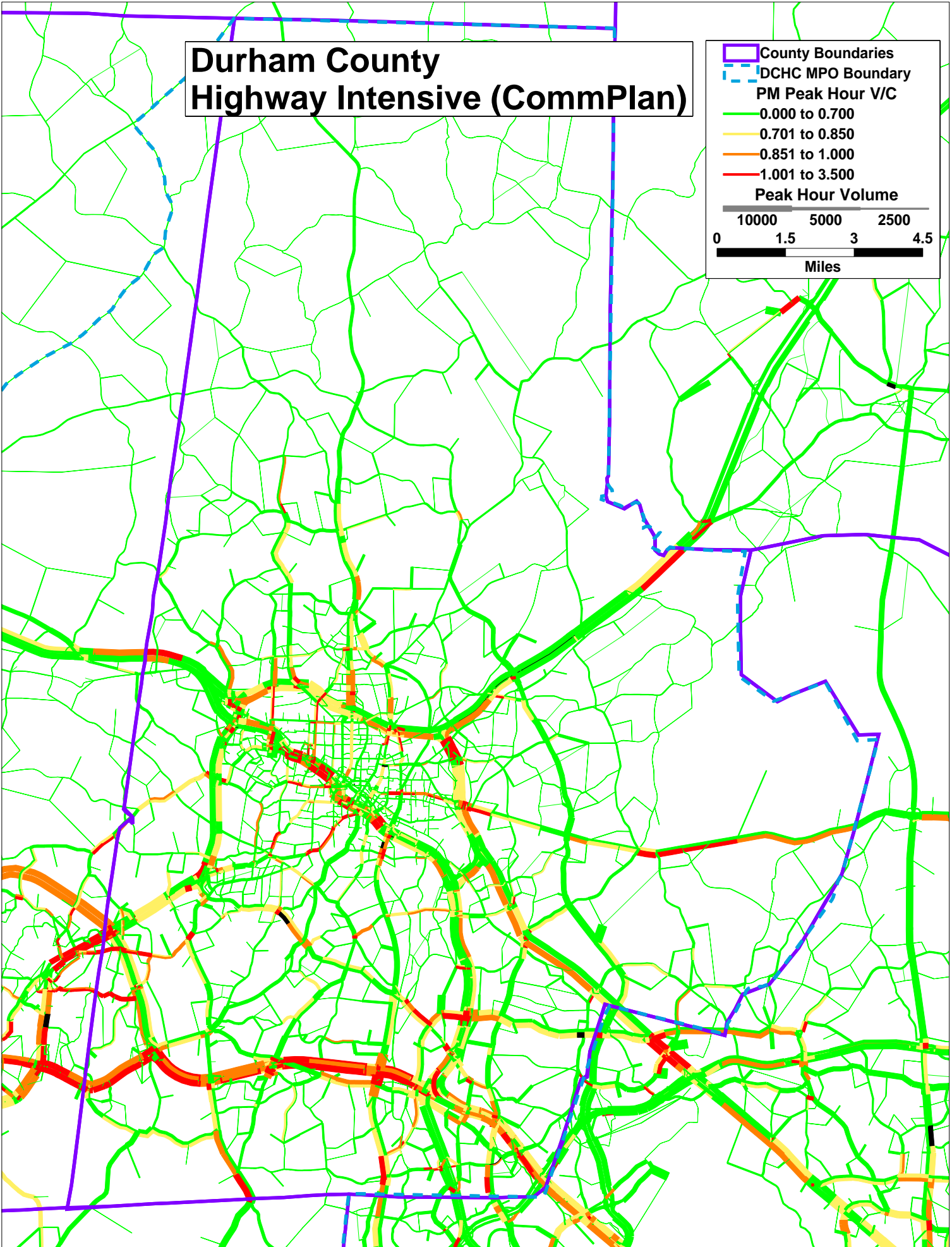
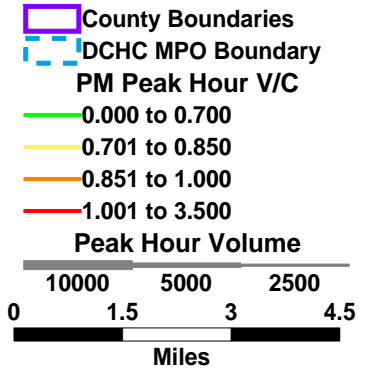
- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.010 to 3.500

Peak Hour Volume

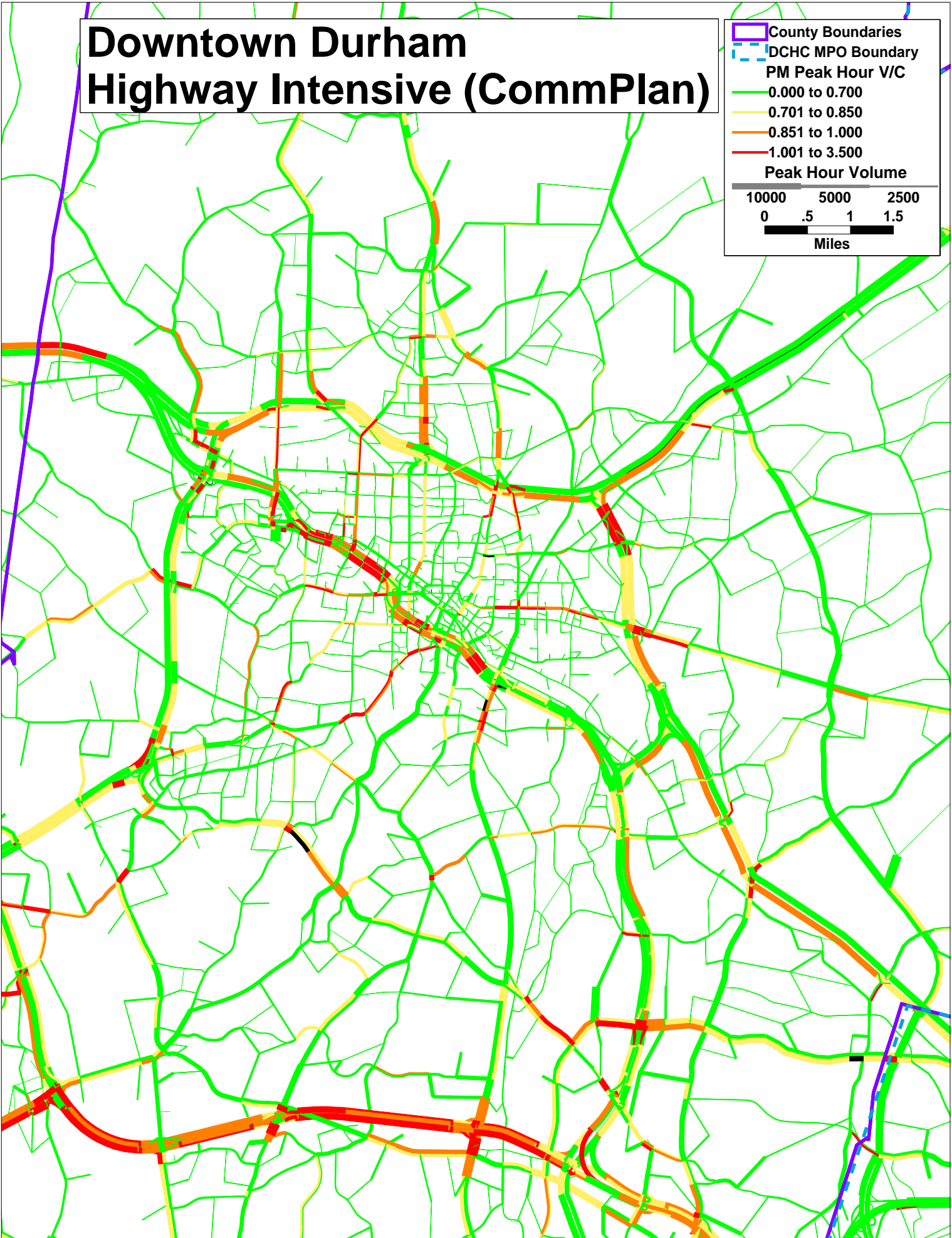
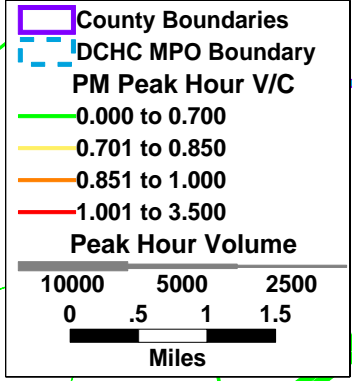
10000	5000	2500	
0	1	2	3

Miles

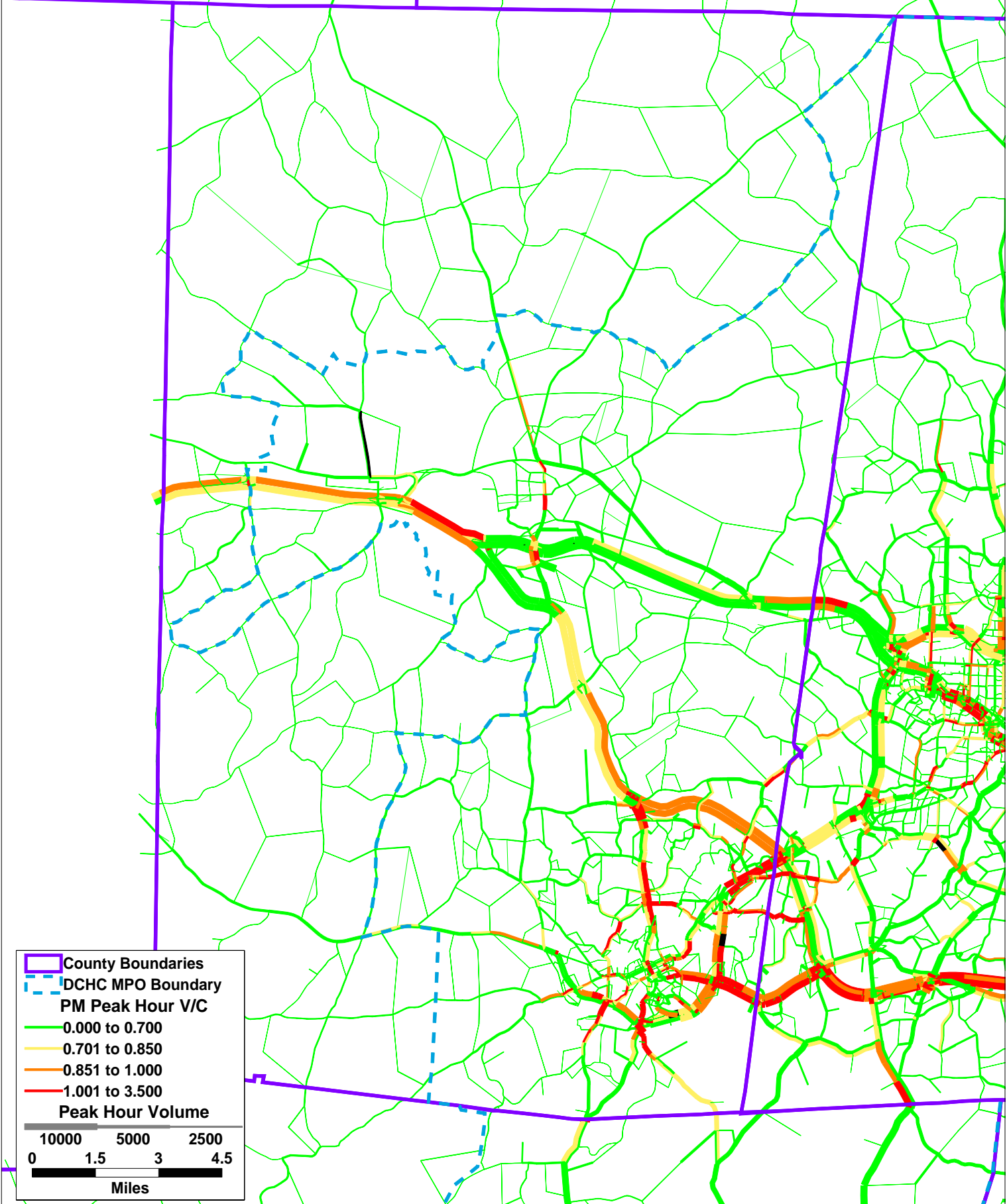
Durham County Highway Intensive (CommPlan)



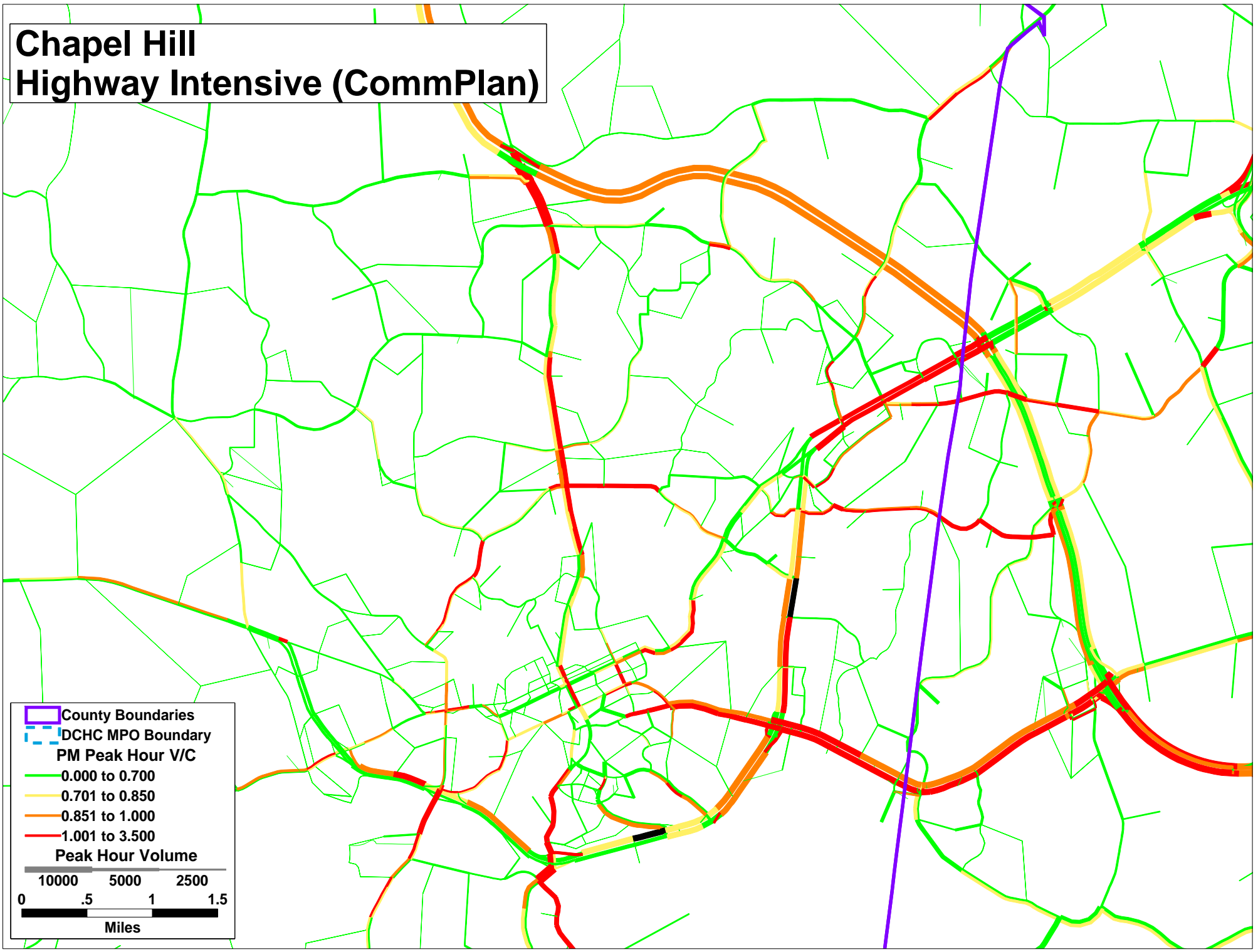
Downtown Durham Highway Intensive (CommPlan)



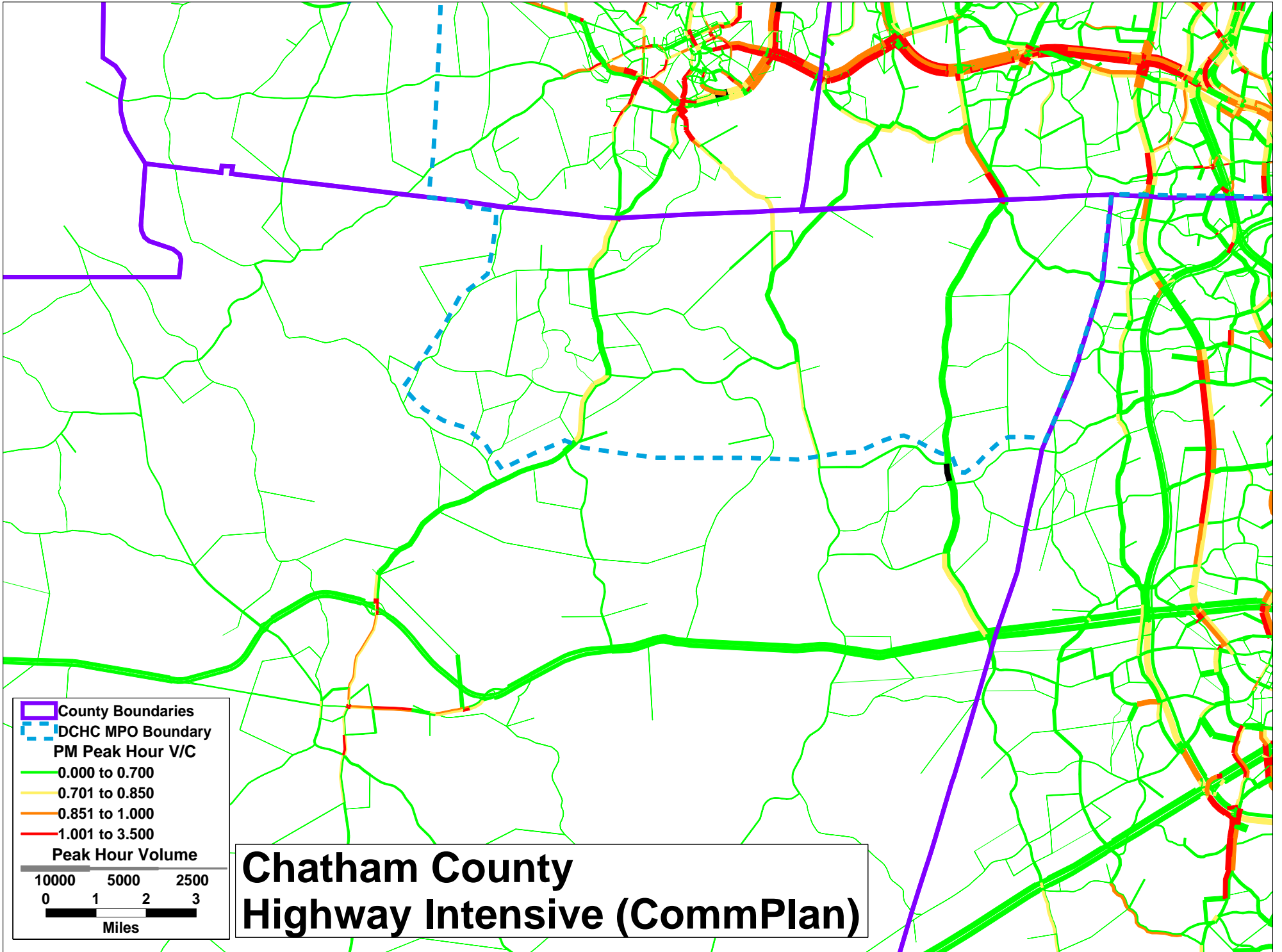
Orange County Highway Intensive (CommPlan)



Chapel Hill Highway Intensive (CommPlan)



County Boundaries
DCHC MPO Boundary
PM Peak Hour V/C
0.000 to 0.700
0.701 to 0.850
0.851 to 1.000
1.001 to 3.500
Peak Hour Volume
10000 5000 2500
0 .5 1 1.5
Miles



Durham County Moderate (CommPlan)

County Boundary
DCHC MPO Boundary

PM Peak Hour V/C

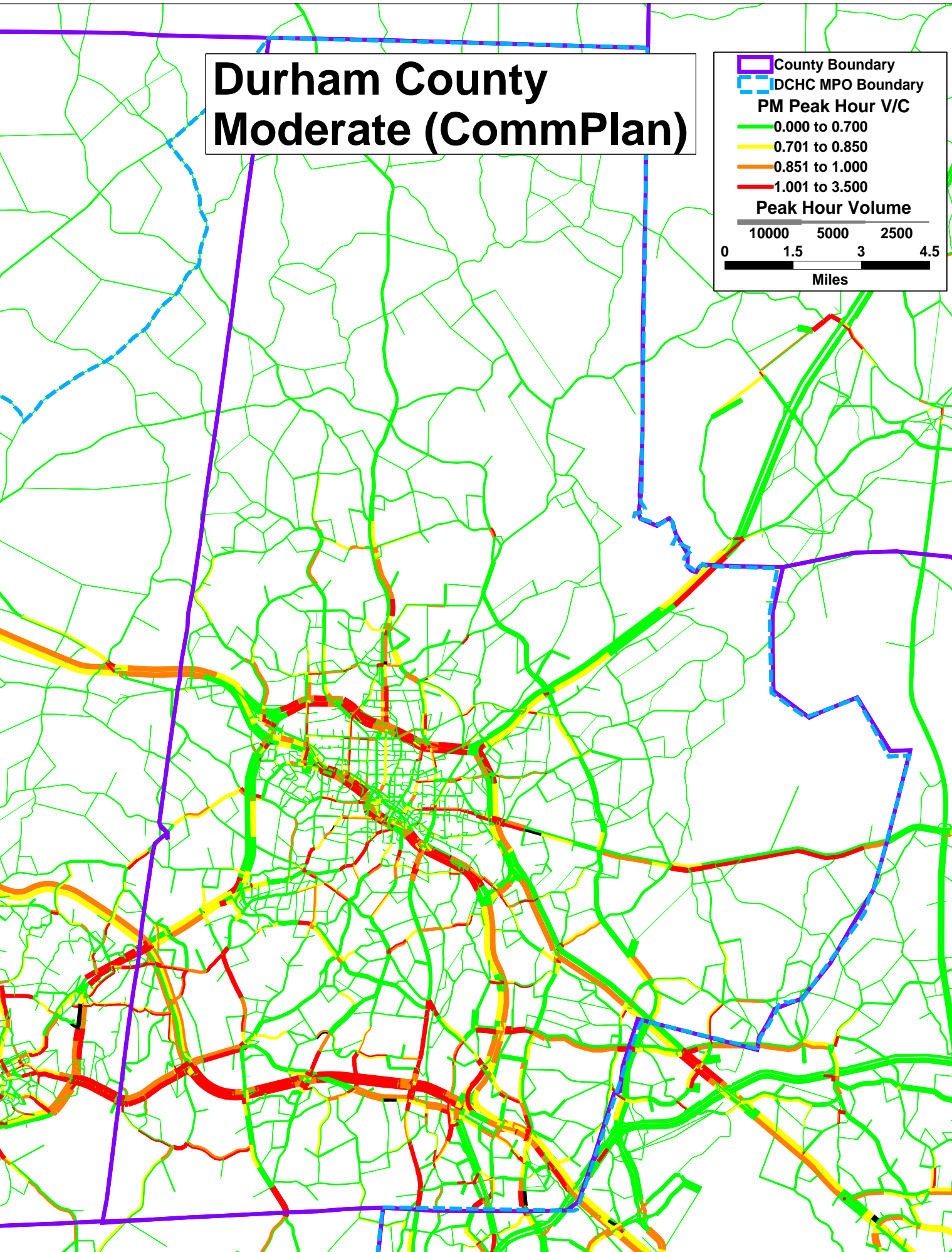
- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.001 to 3.500

Peak Hour Volume

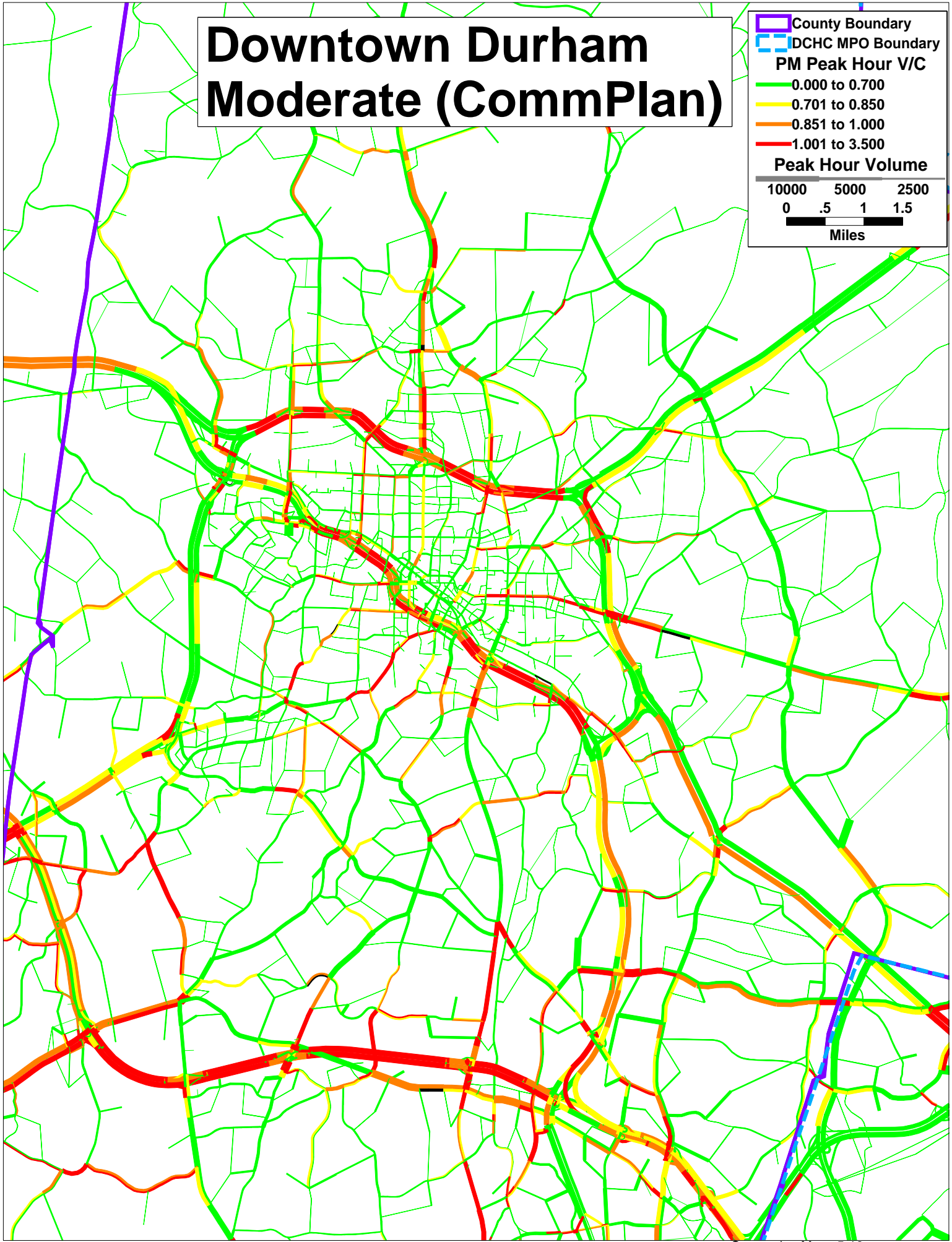
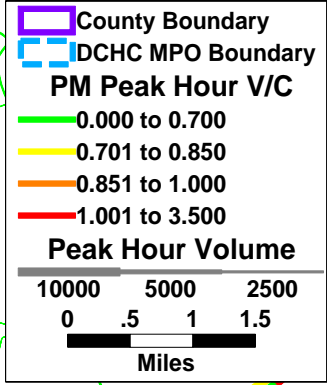
10000 5000 2500

0 1.5 3 4.5

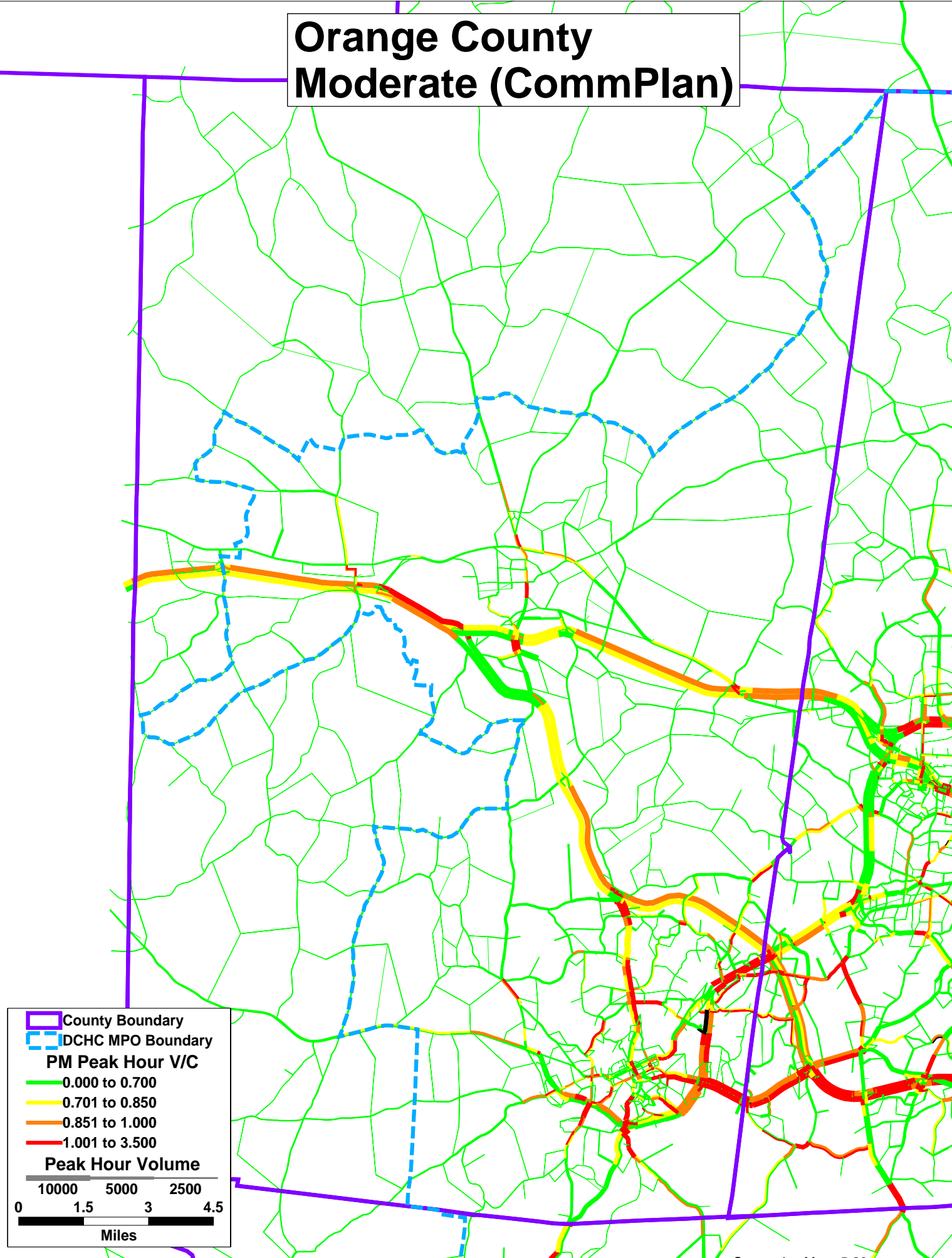
Miles



Downtown Durham Moderate (CommPlan)



Orange County Moderate (CommPlan)



County Boundary
County Boundary

DCHC MPO Boundary
DCHC MPO Boundary

PM Peak Hour V/C

- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.001 to 3.500

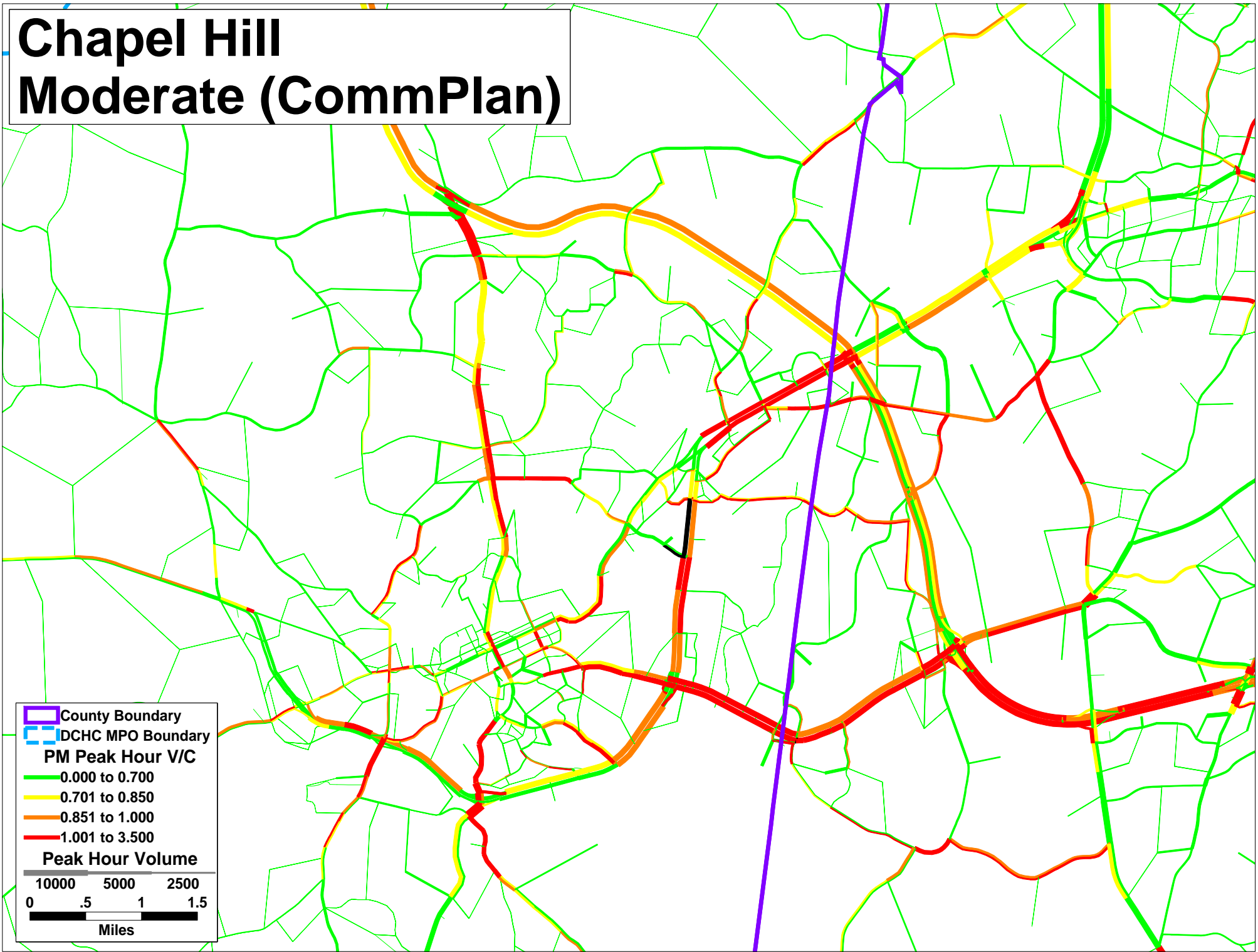
Peak Hour Volume

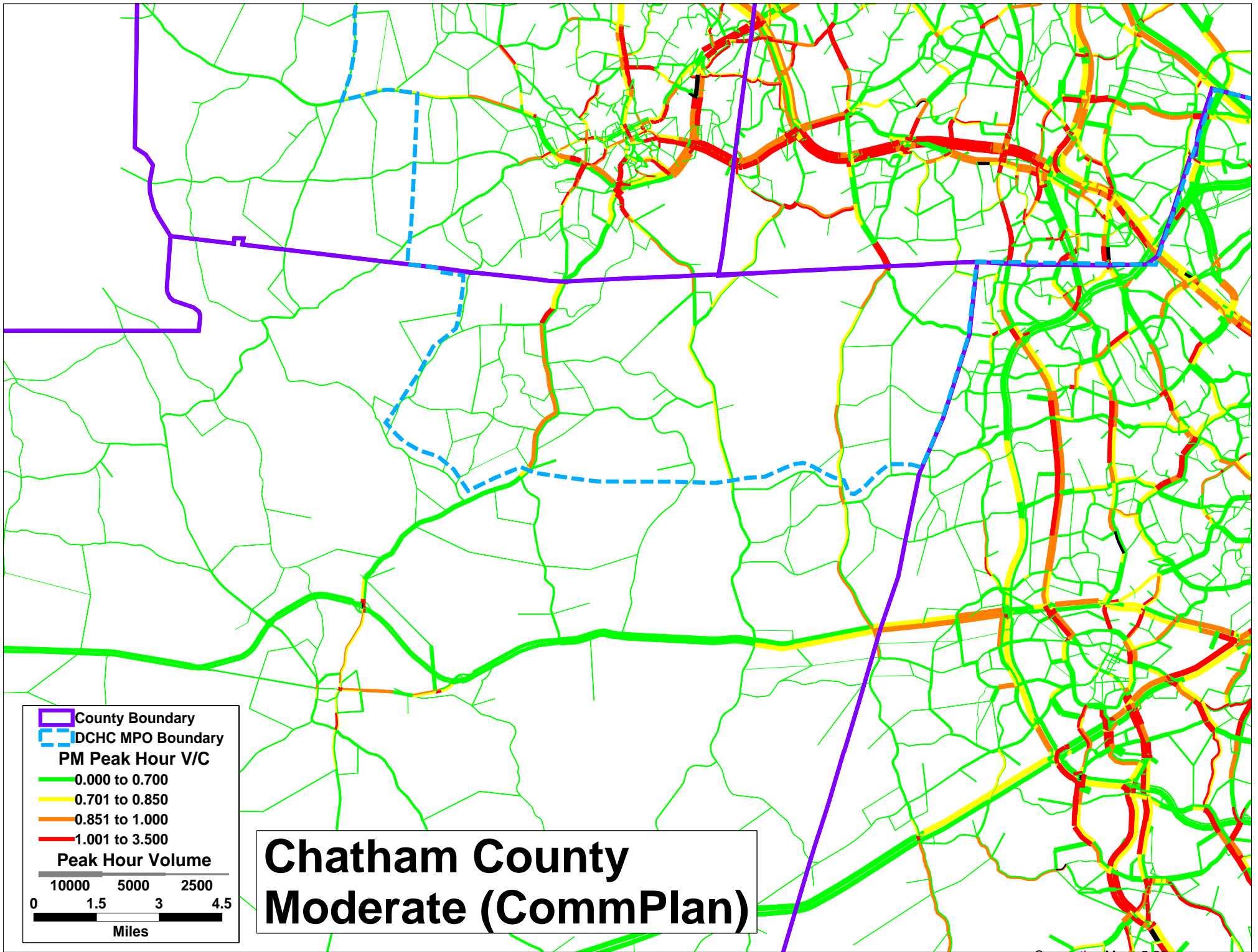
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0 1.5 3 4.5

Miles

Chapel Hill Moderate (CommPlan)





Durham County Moderate (AIT)

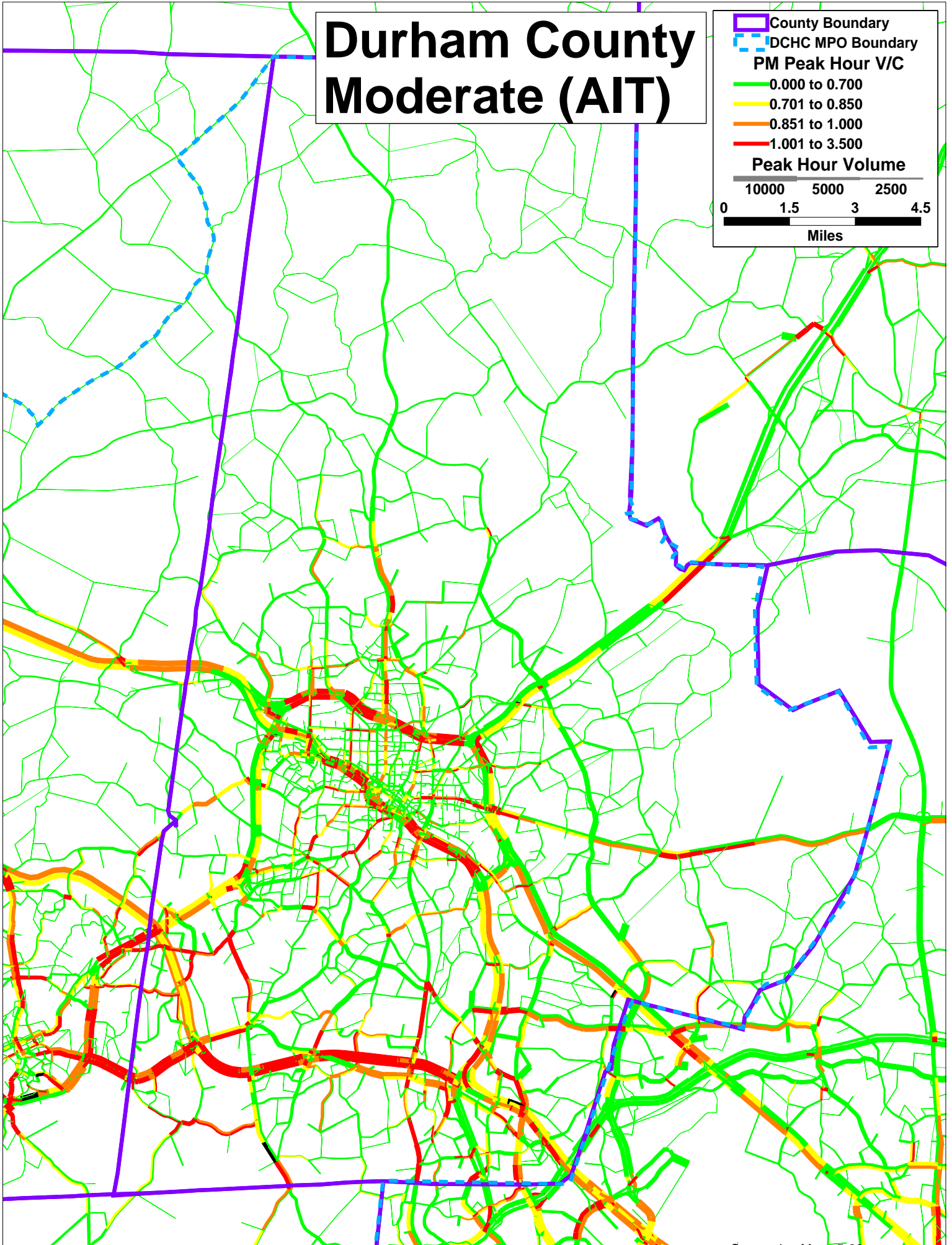
County Boundary
DCHC MPO Boundary
PM Peak Hour V/C

- 0.000 to 0.700
- 0.701 to 0.850
- 0.851 to 1.000
- 1.001 to 3.500

Peak Hour Volume

10000	5000	2500	
0	1.5	3	4.5

Miles



Downtown Durham Moderate (AIT)

County Boundary
DCHC MPO Boundary

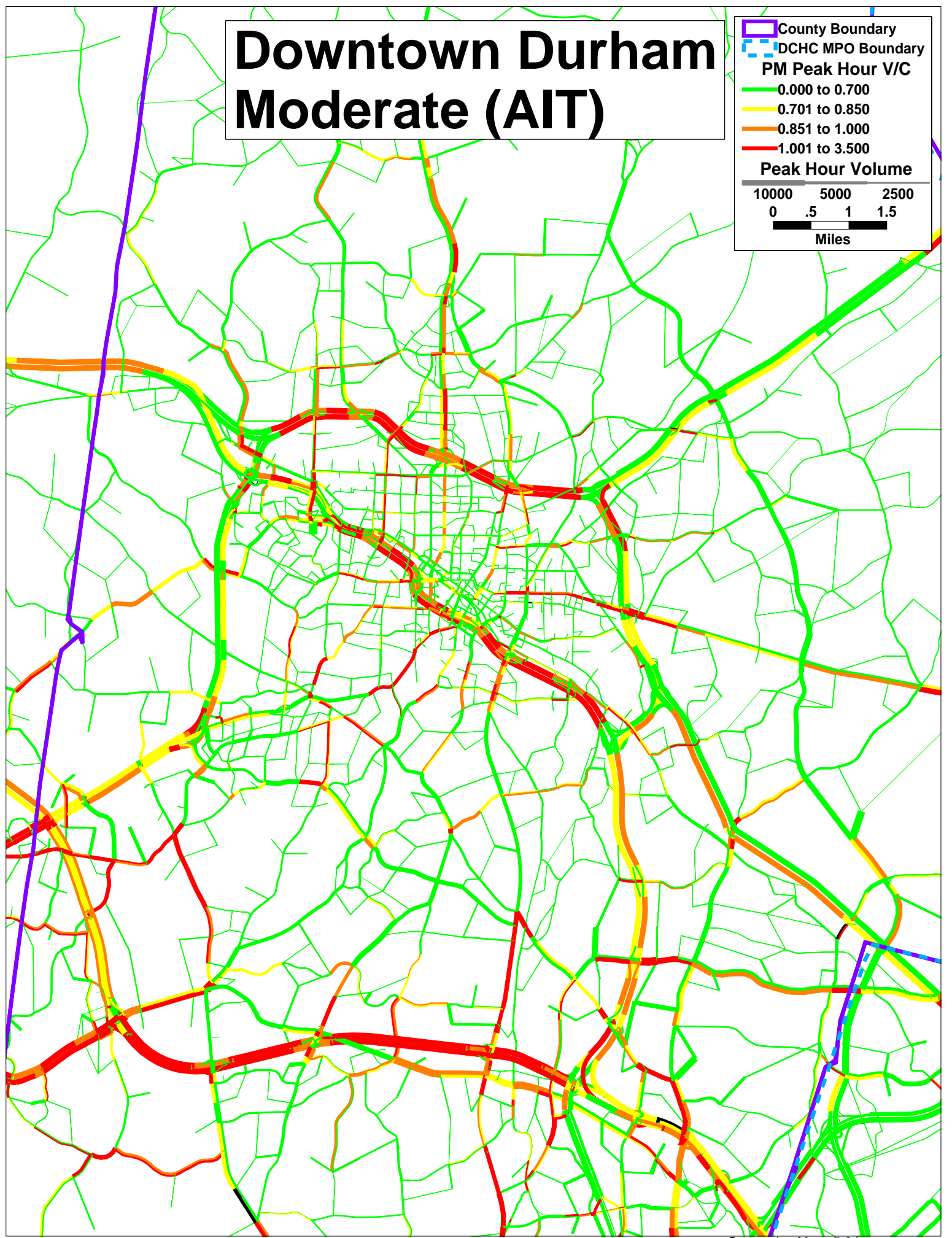
PM Peak Hour V/C

- 0.000 to 0.700
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- 1.001 to 3.500

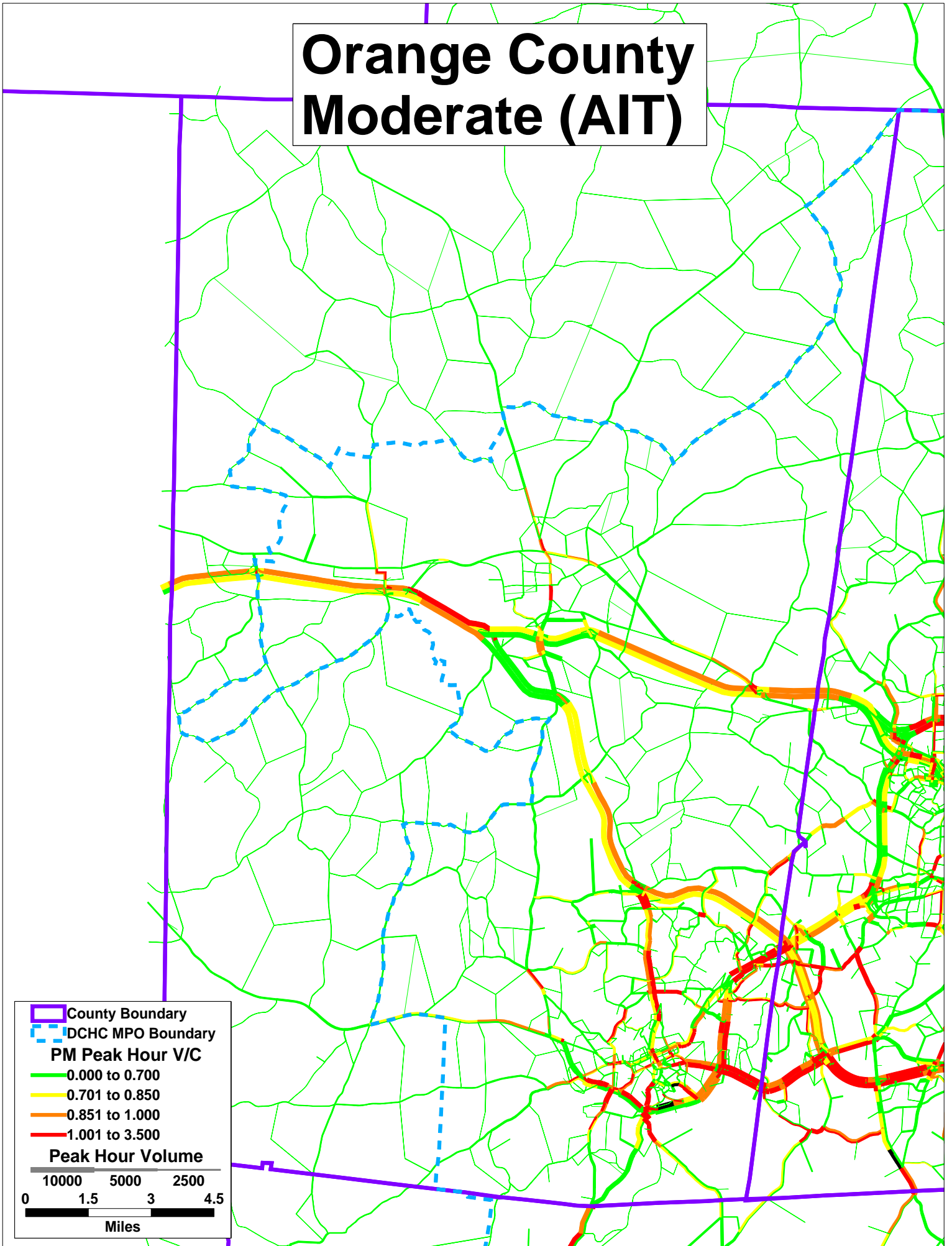
Peak Hour Volume

10000	5000	2500	
0	.5	1	1.5

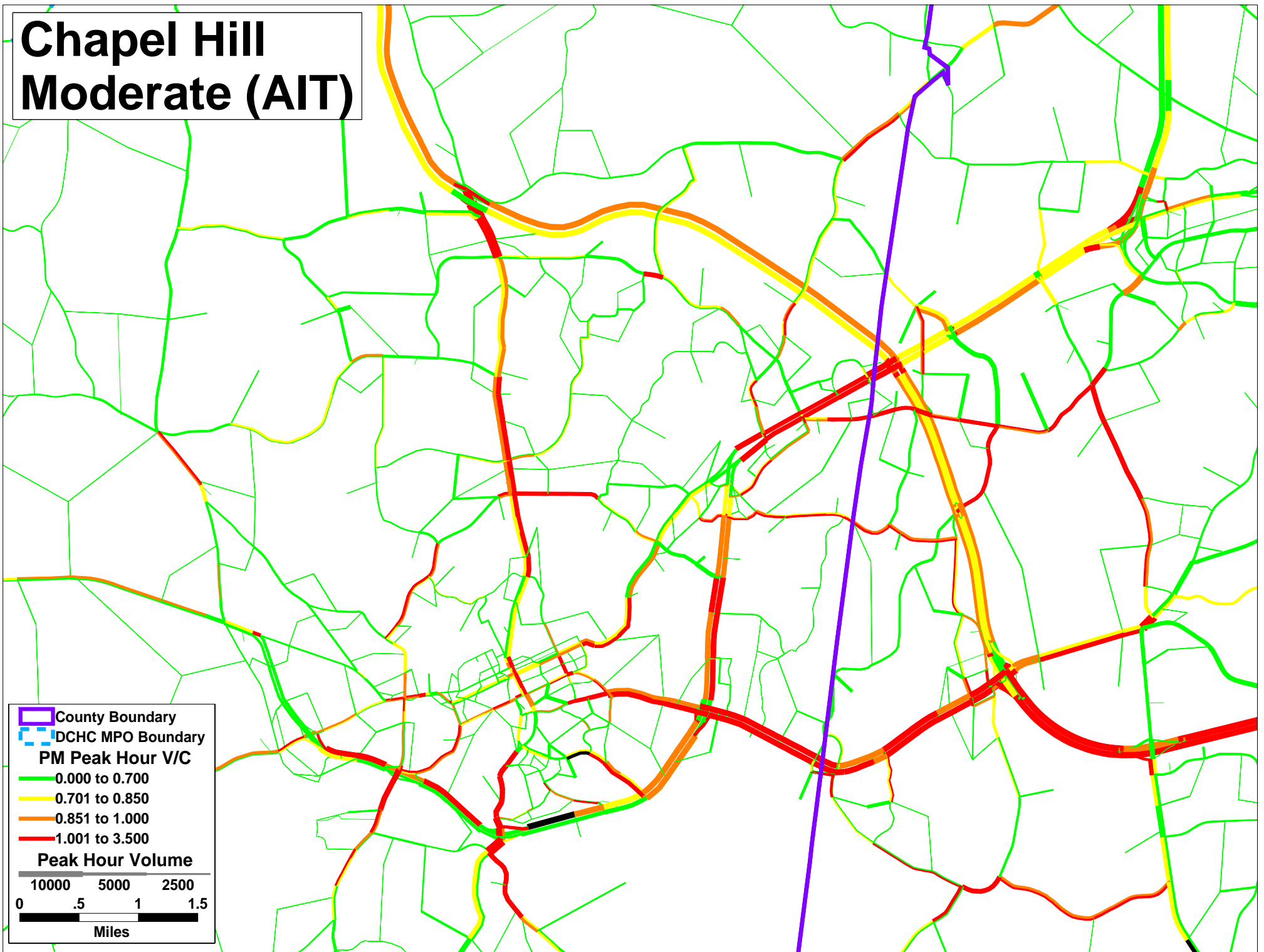
Miles

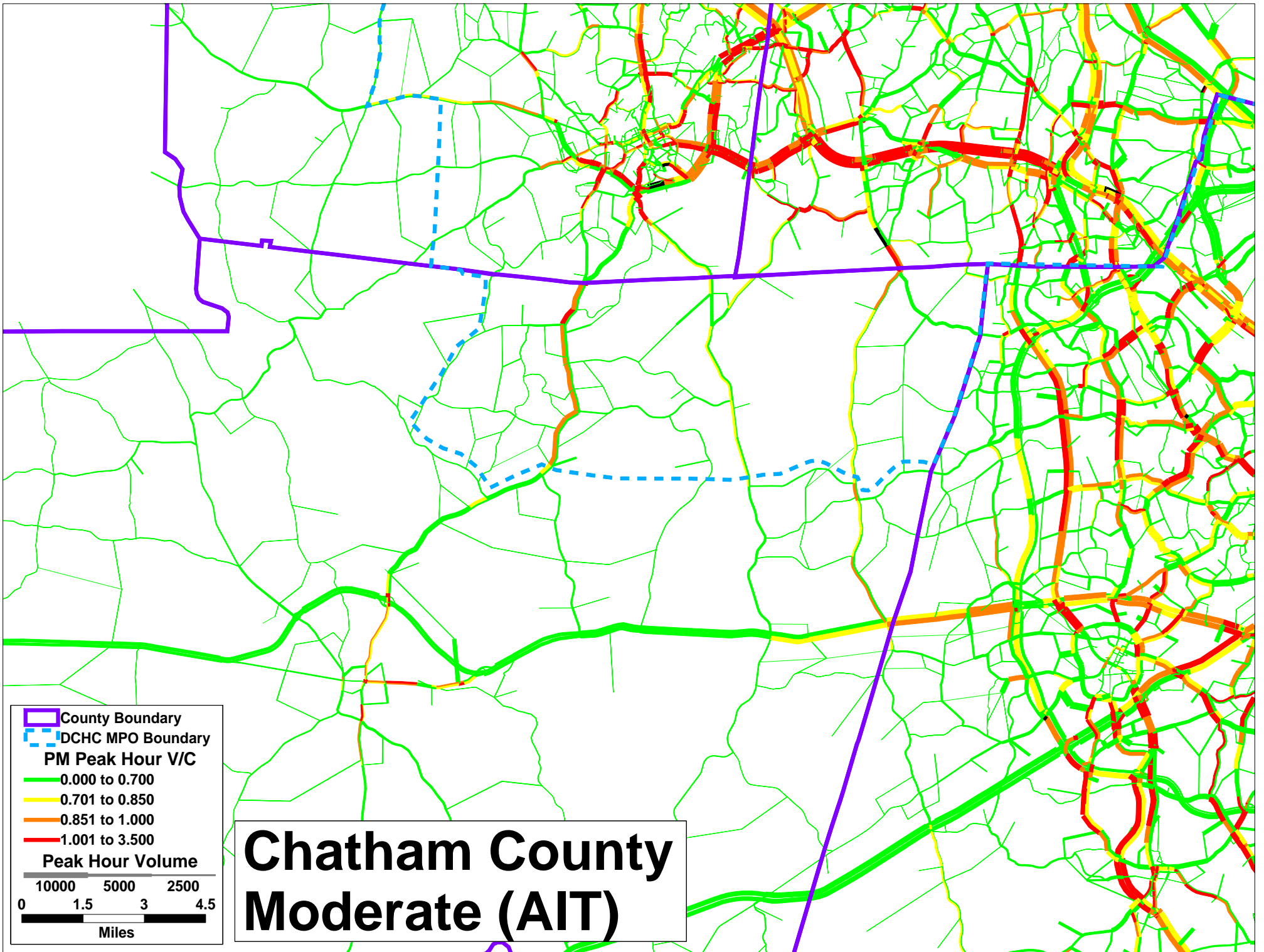


Orange County Moderate (AIT)

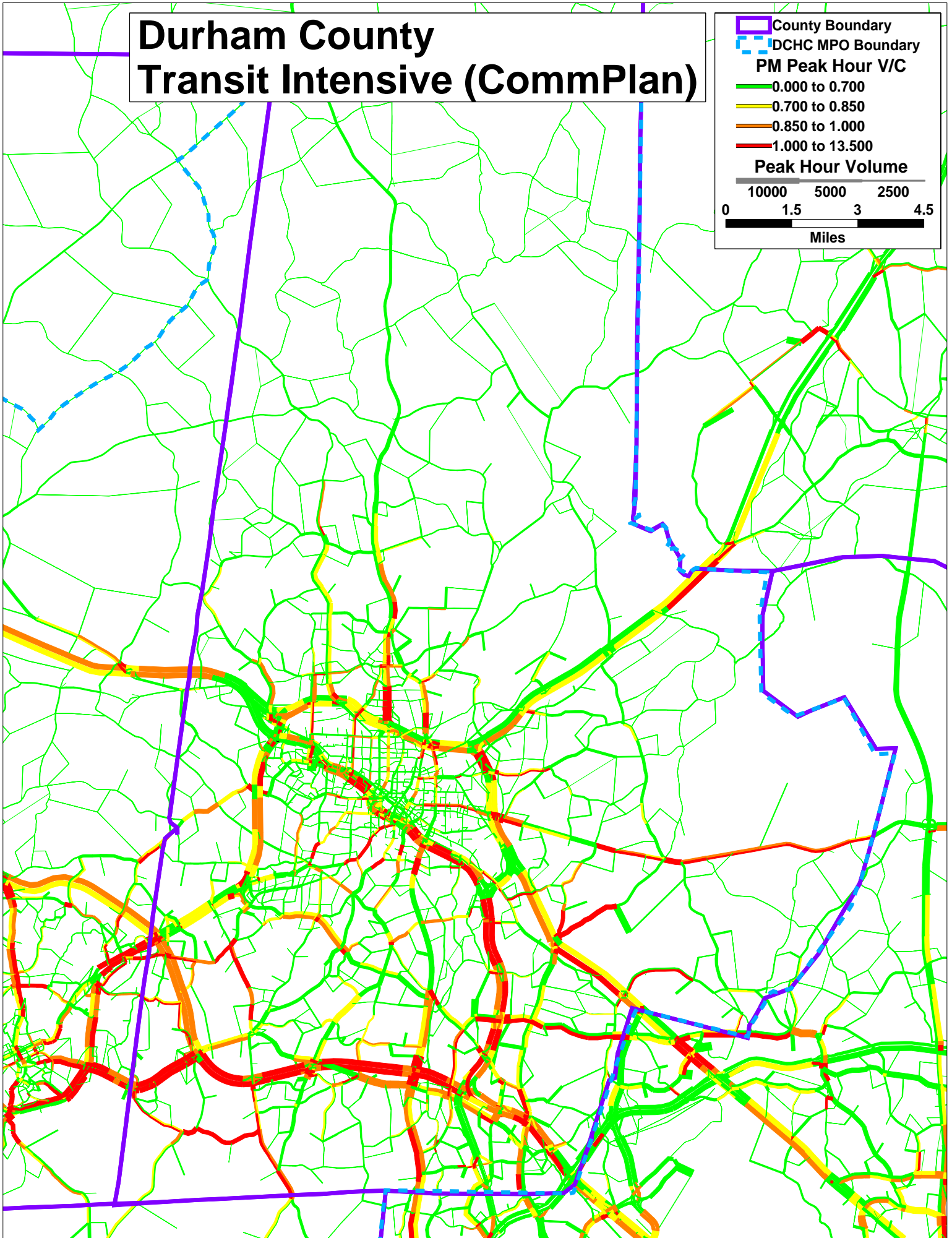
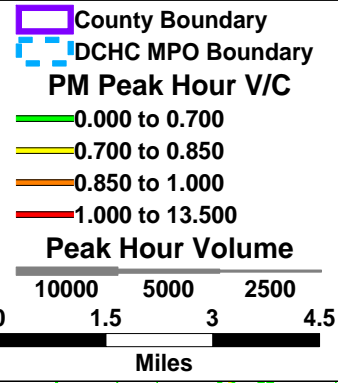


Chapel Hill Moderate (AIT)

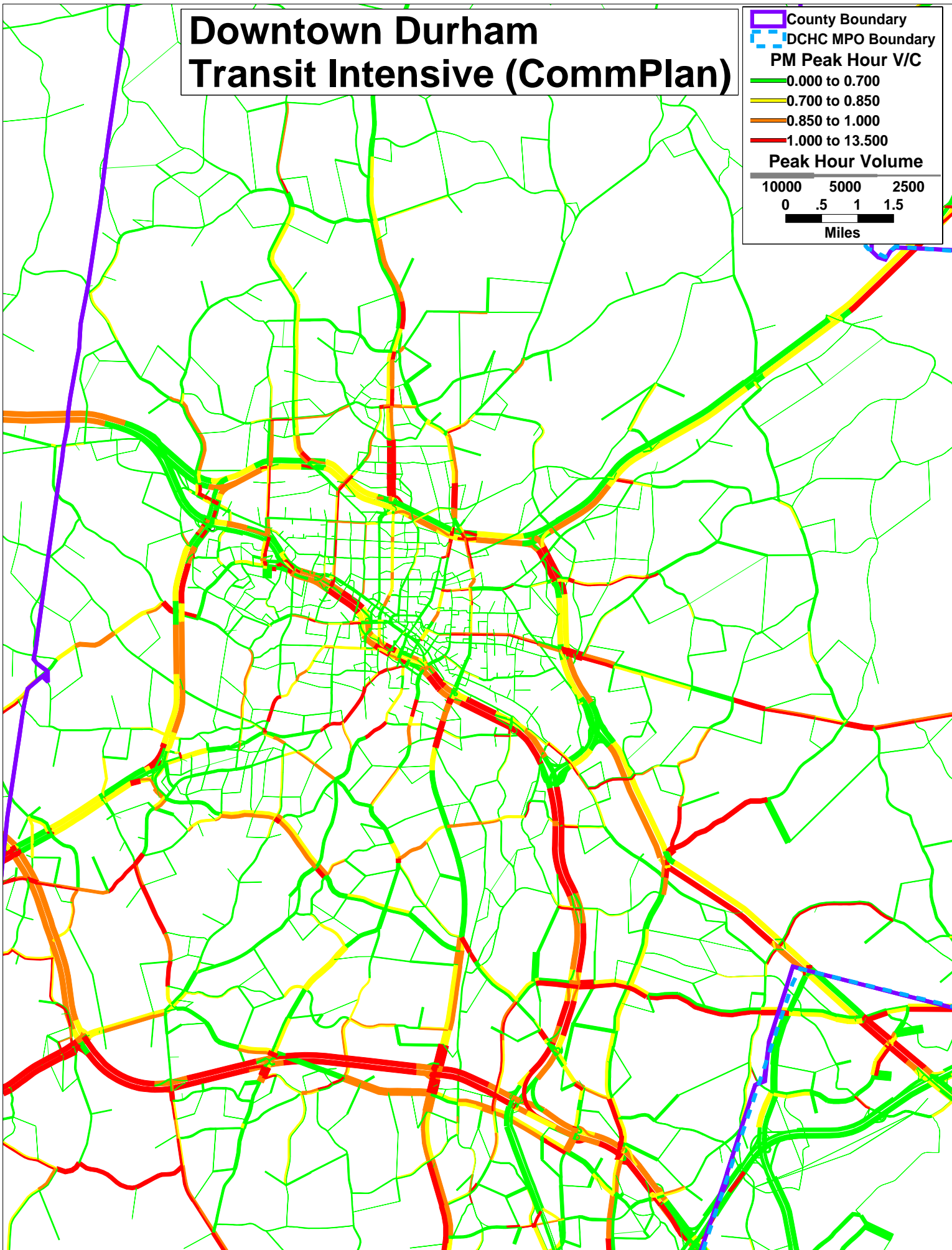
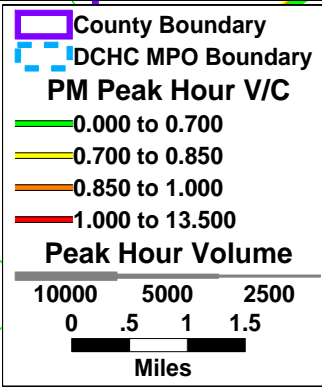




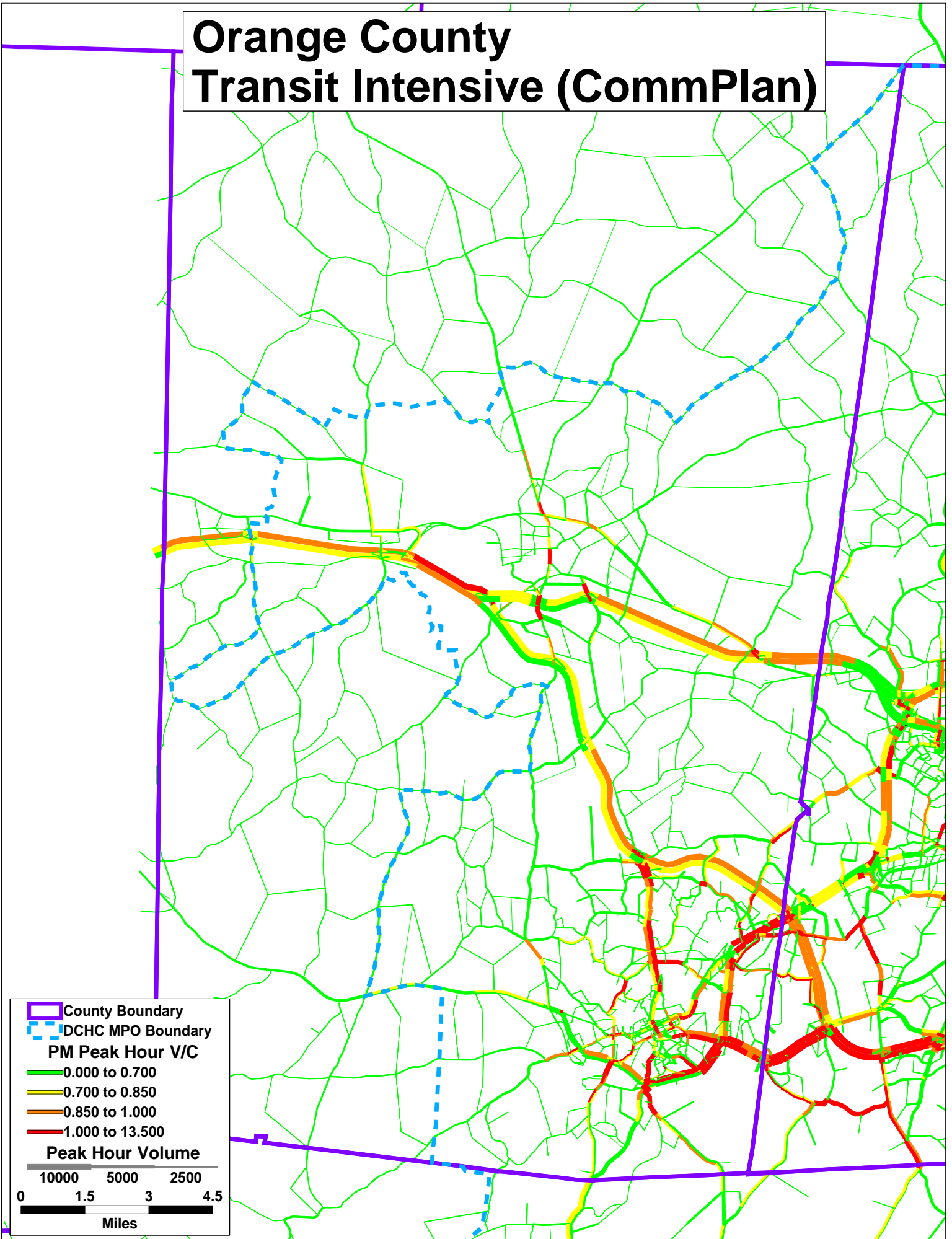
Durham County Transit Intensive (CommPlan)



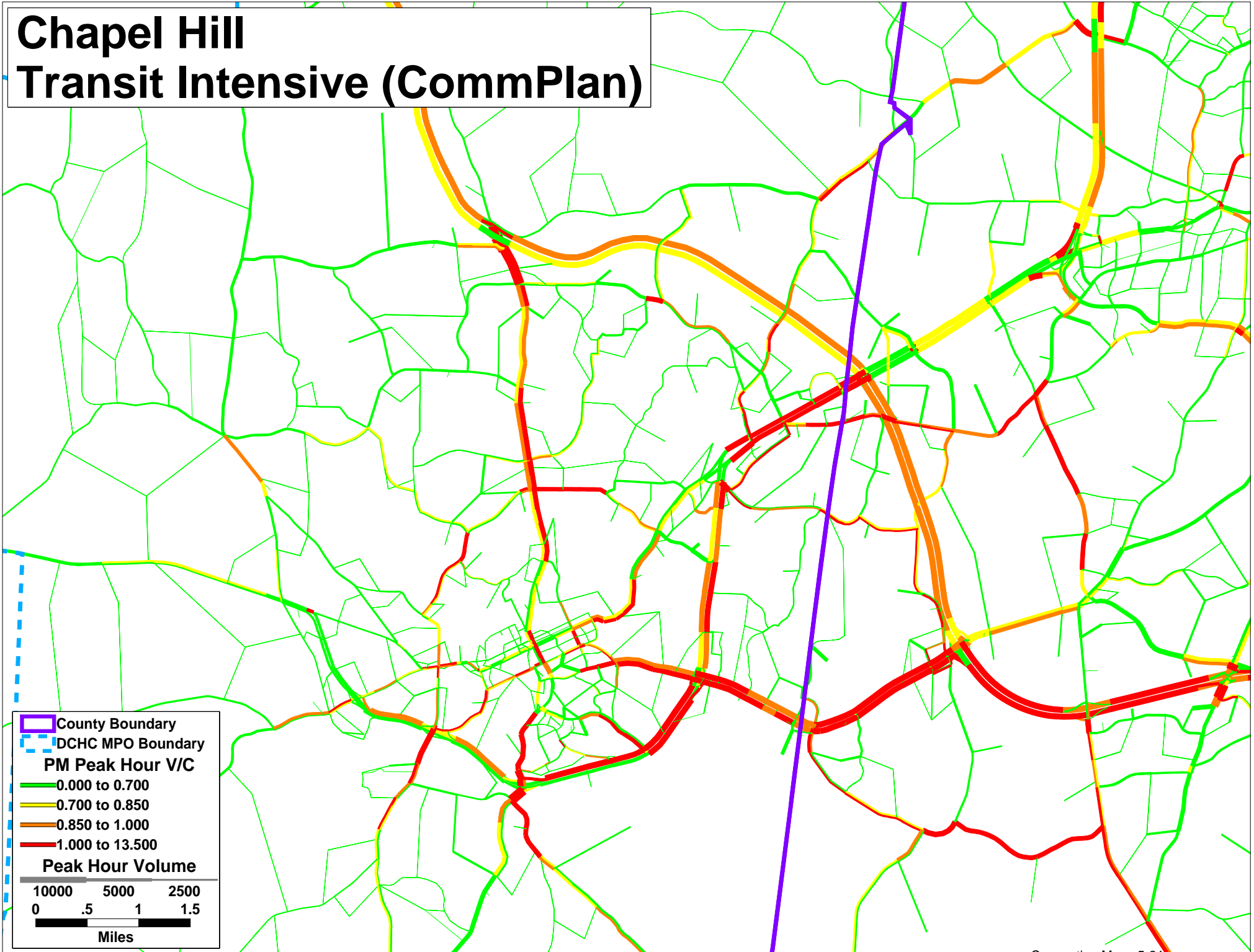
Downtown Durham Transit Intensive (CommPlan)

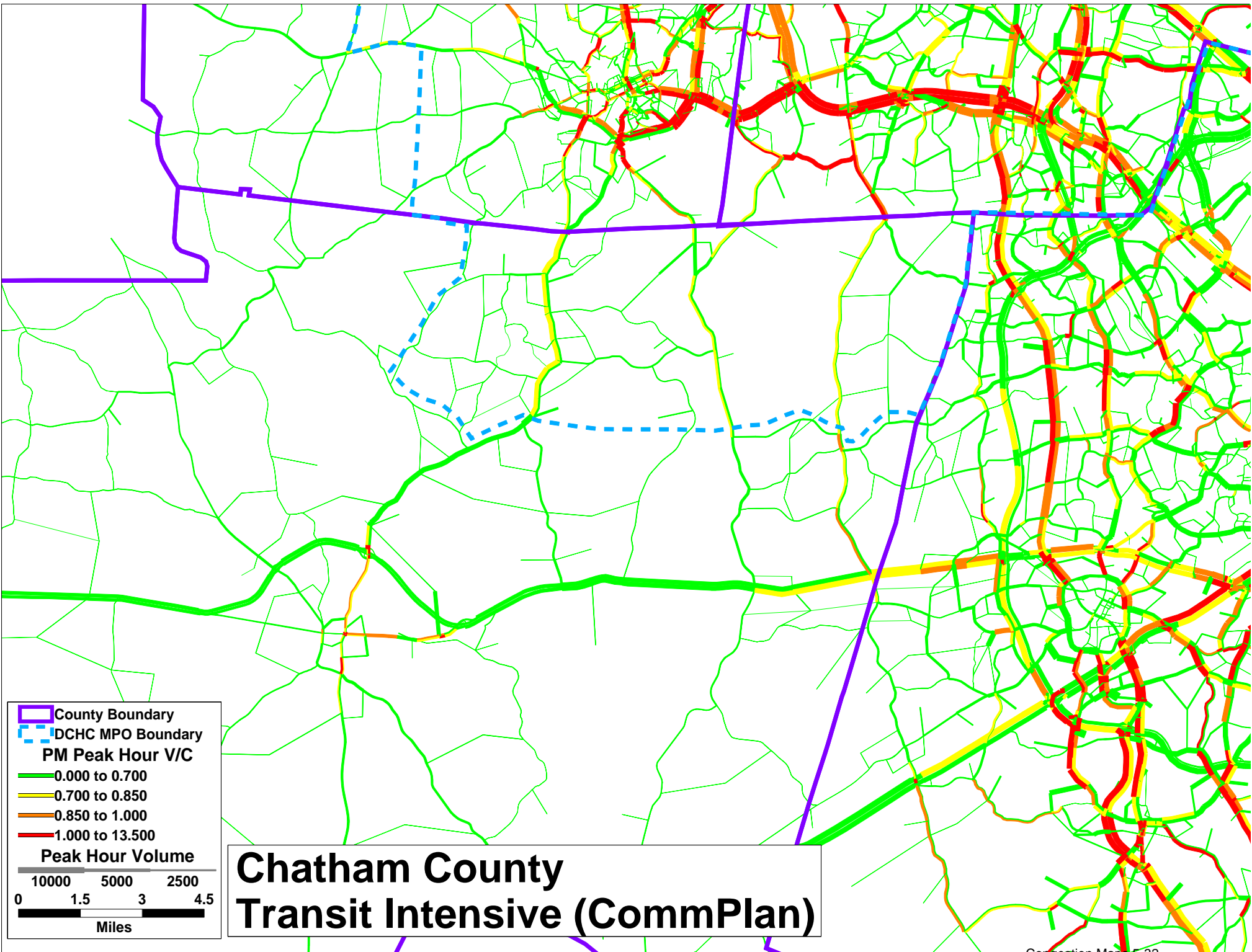


Orange County Transit Intensive (CommPlan)



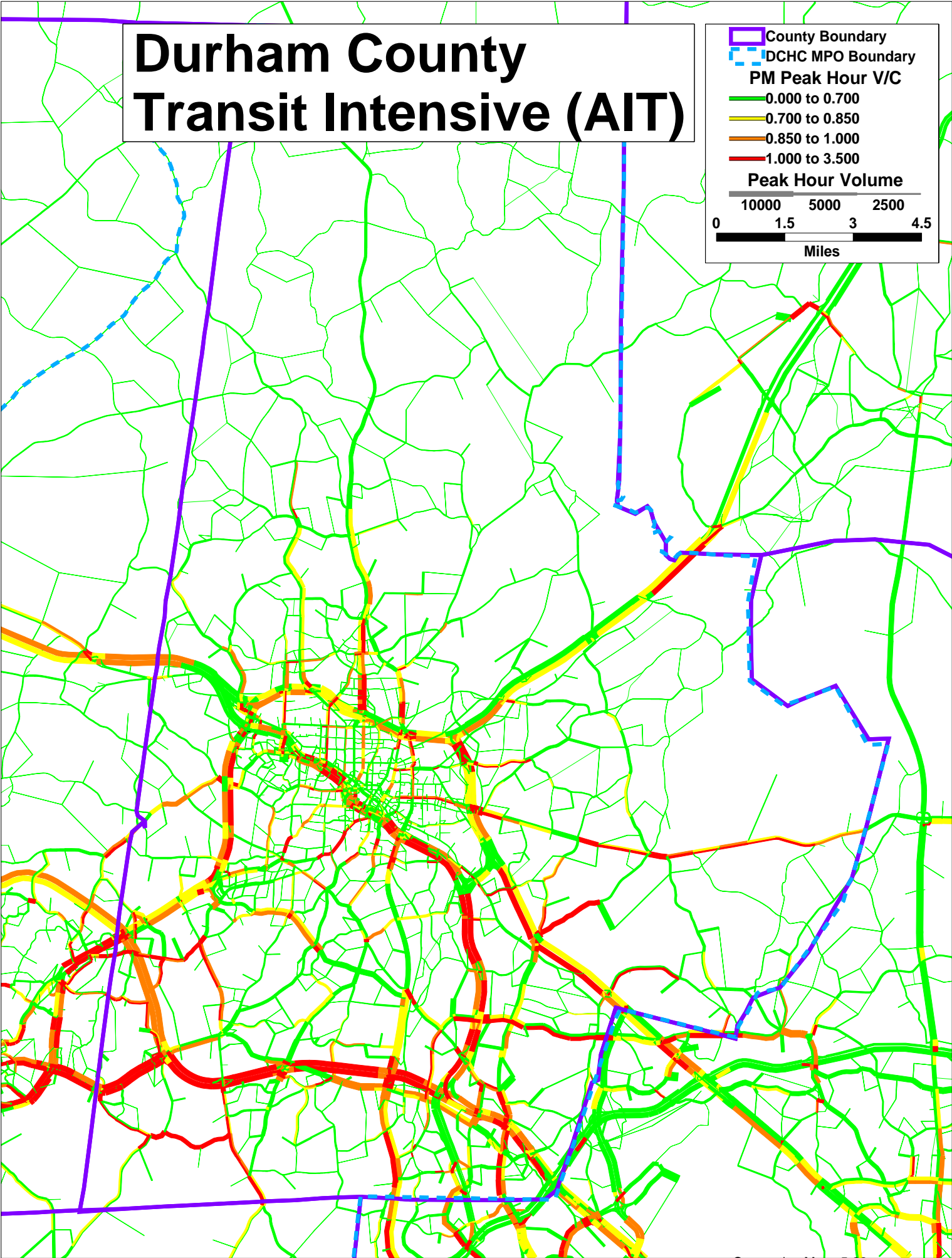
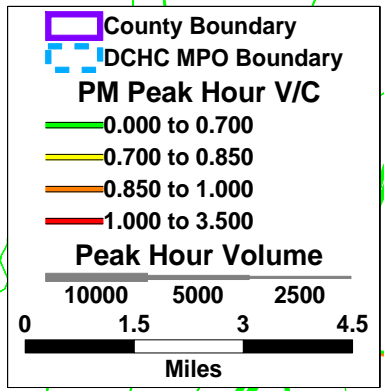
Chapel Hill Transit Intensive (CommPlan)





Chatham County Transit Intensive (CommPlan)

Durham County Transit Intensive (AIT)



Downtown Durham Transit Intensive (AIT)

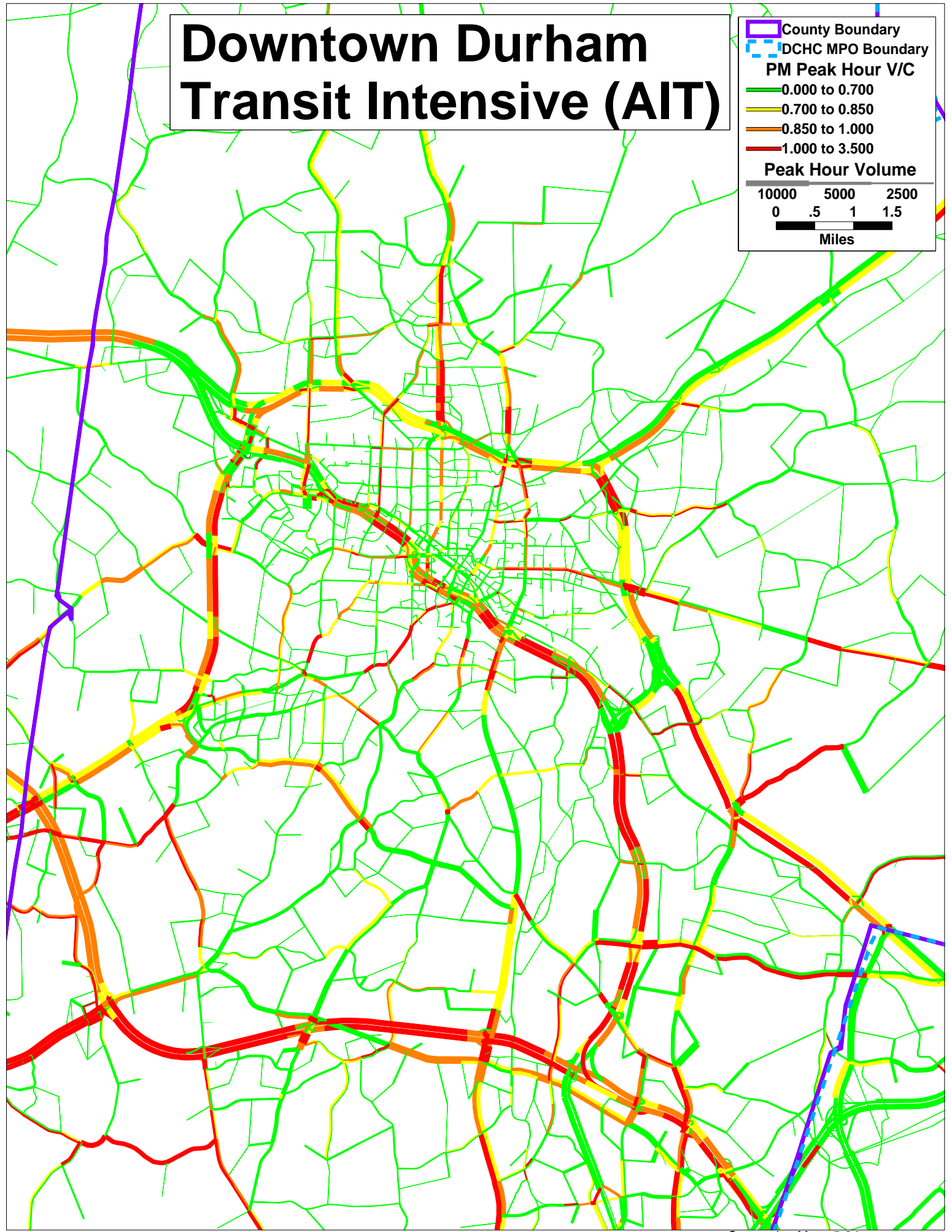
County Boundary
DCHC MPO Boundary
PM Peak Hour V/C

- 0.000 to 0.700
- 0.700 to 0.850
- 0.850 to 1.000
- 1.000 to 3.500

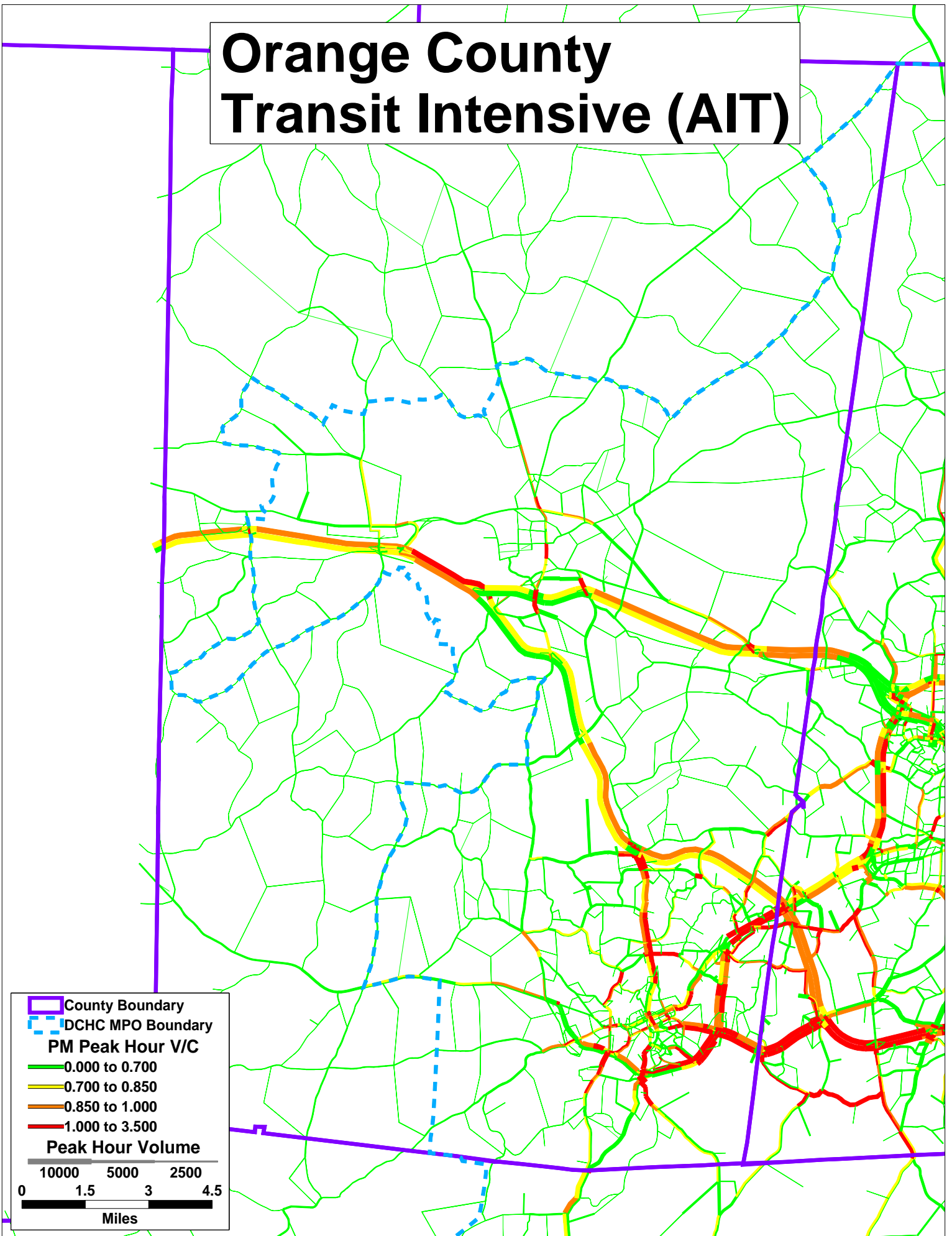
Peak Hour Volume

10000	5000	2500	
0	.5	1	1.5

Miles



Orange County Transit Intensive (AIT)



Chapel Hill Transit Intensive (AIT)

