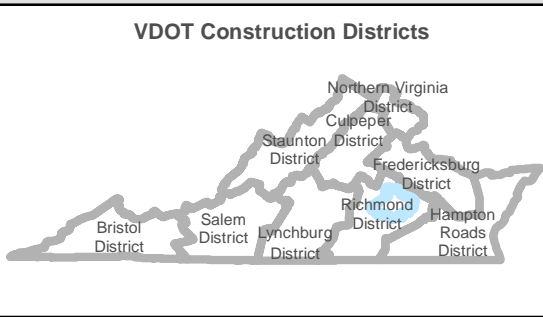
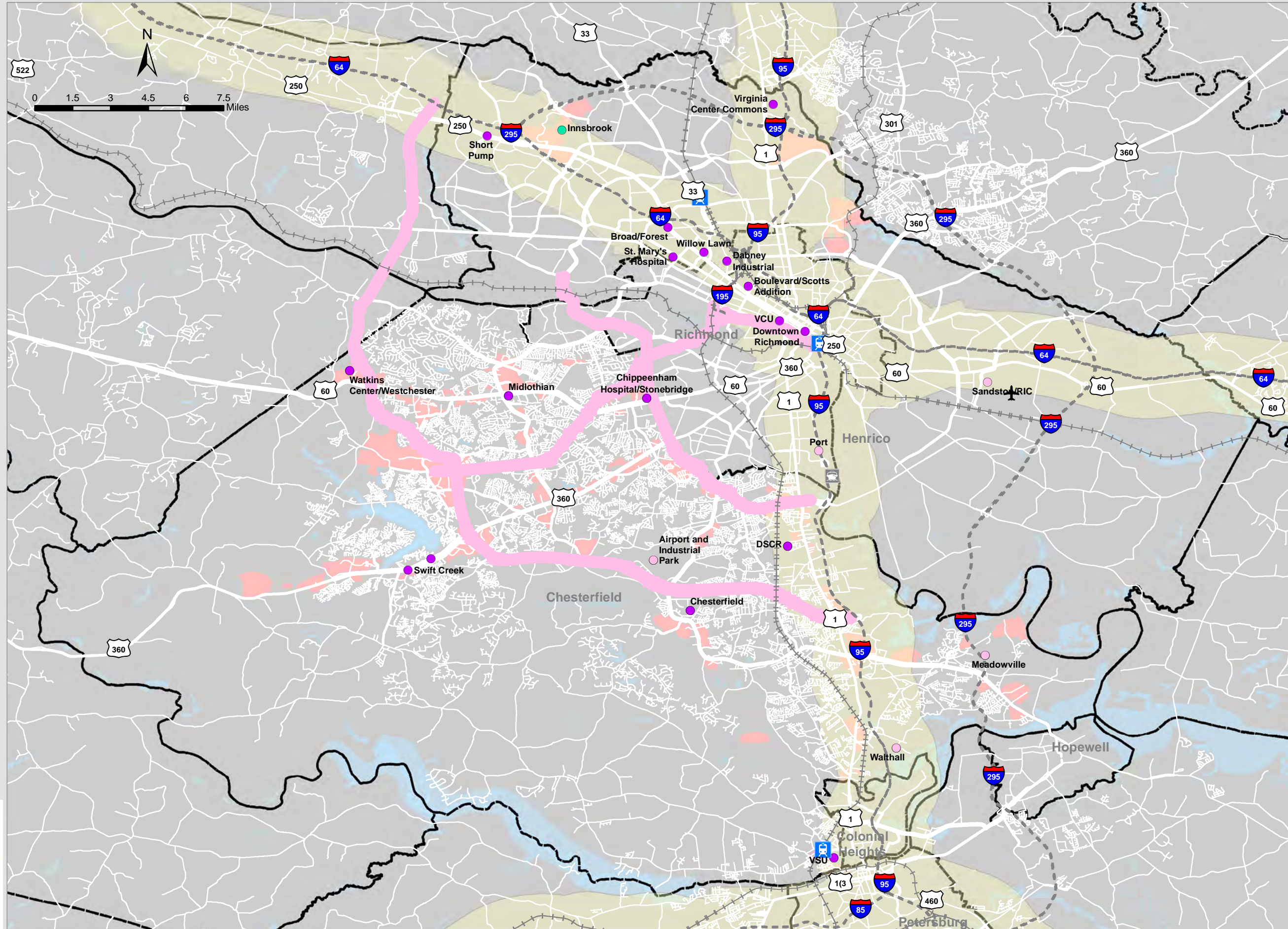


Regional Workshop - Richmond Area Central

August 14, 2019

Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates
- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000
- Other Selected Limited Access Facilities
- Rail Network
- Urban Development
- Buffer around Primary COSS Facilities
- Regional Network
- Counties and Cities
- Water



Date: 8/13/2019

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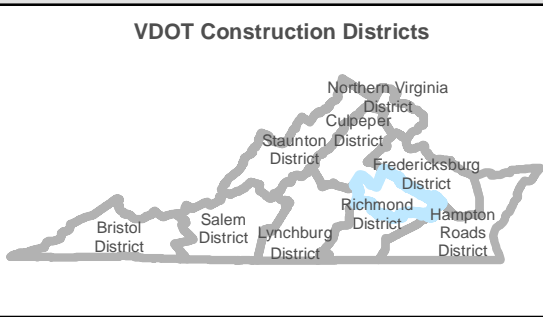
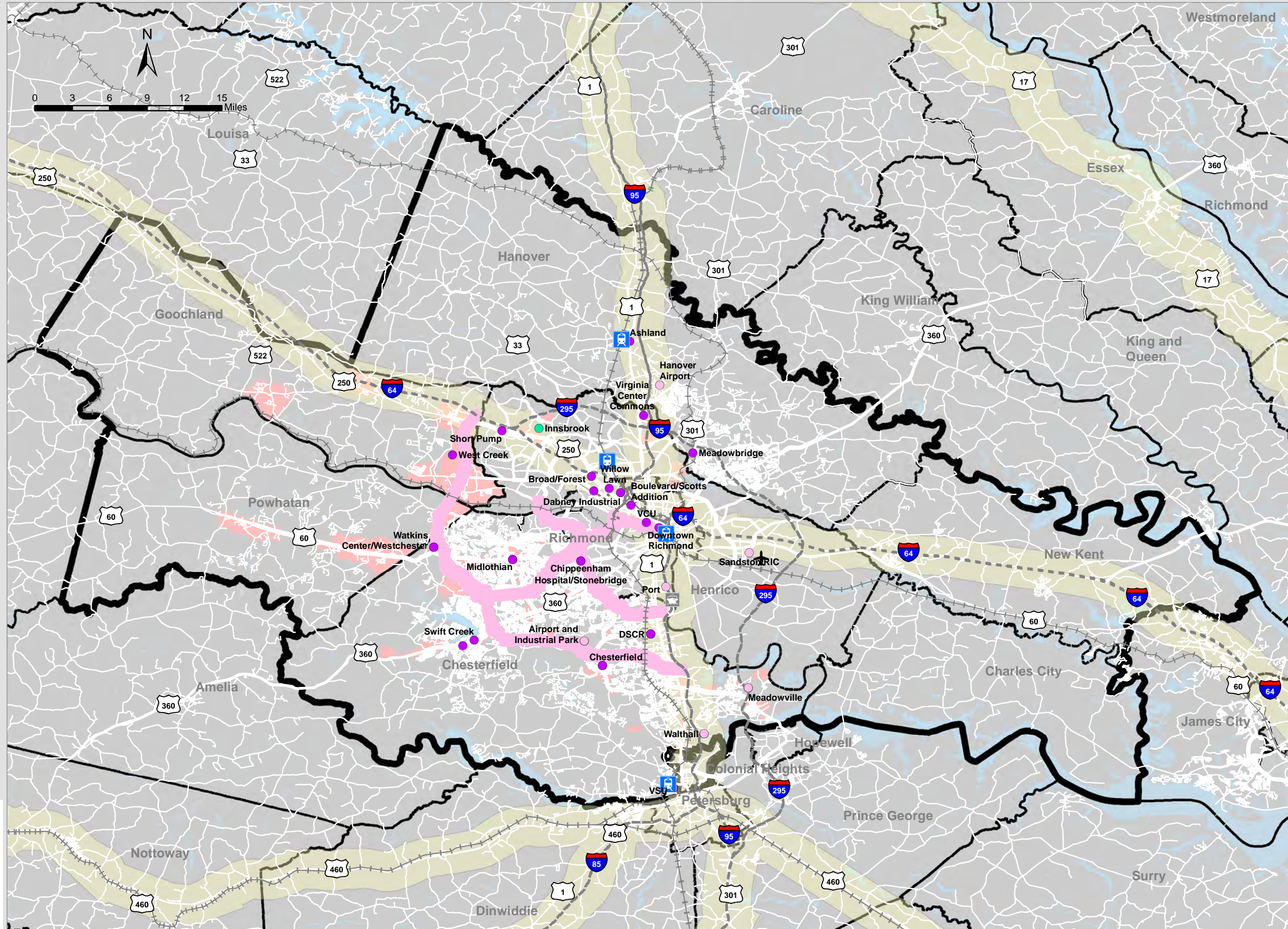
DRAFT

Regional Workshop - Richmond Area

August 14, 2019

Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates
- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000
- Other Selected Limited Access Facilities
- Rail Network
- Urban Development
- Buffer around Primary COSS Facilities
- Regional Network
- Counties and Cities
- Water



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DRAFT

Congestion Measure for Interstates and Select Limited Access Facilities: Richmond Area Central

August 14, 2019

Percent Person of Miles Travel In Excessively Congested Conditions, (PECC), Weekday, 60% of Posted Speed Limit

- 0% - 10%
- 10% - 15%
- 15% - 20%
- 20% - 25%
- Greater than 25%
- No Data

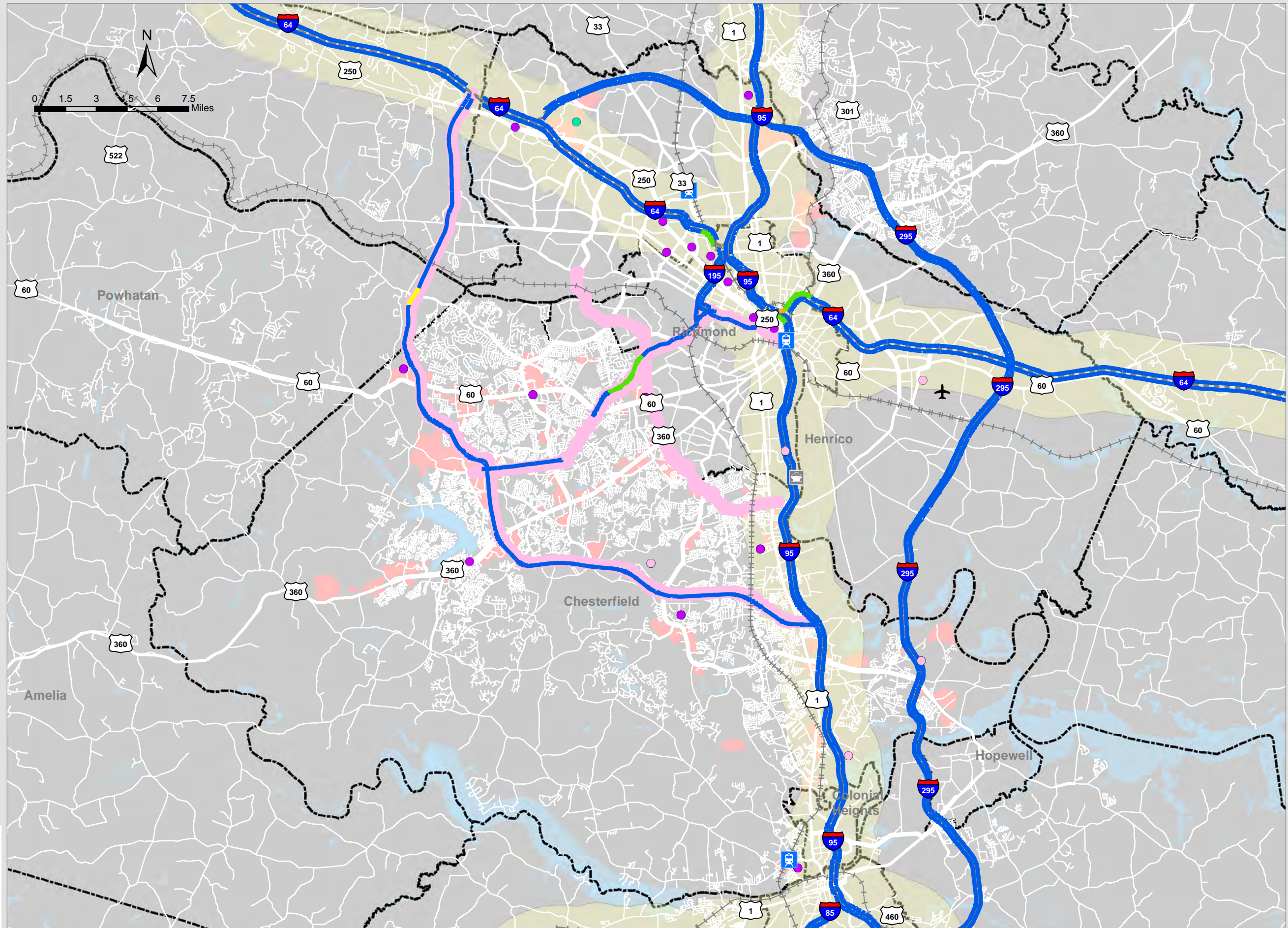
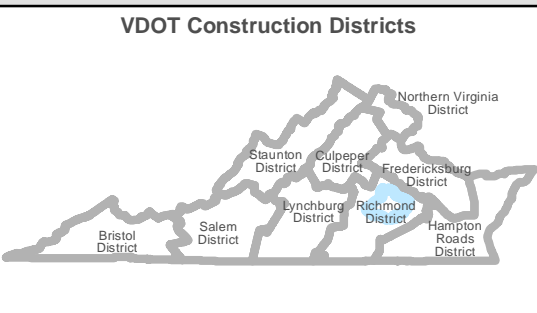
Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000

- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development Areas
- Regional Network
- Counties and Cities
- Water



Date: 8/13/2019

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DRAFT

Congestion Measure for Interstates and Select Limited Access Facilities: Richmond Area

August 14, 2019

Percent Person of Miles Travel In Excessively Congested Conditions, (PECC), Weekday, 60% of Posted Speed Limit

- 0% - 10%
- 10% - 15%
- 15% - 20%
- 20% - 25%
- Greater than 25%
- No Data

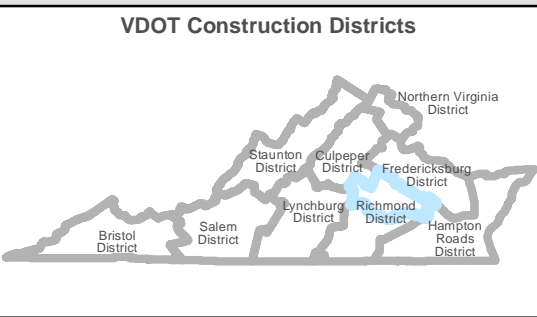
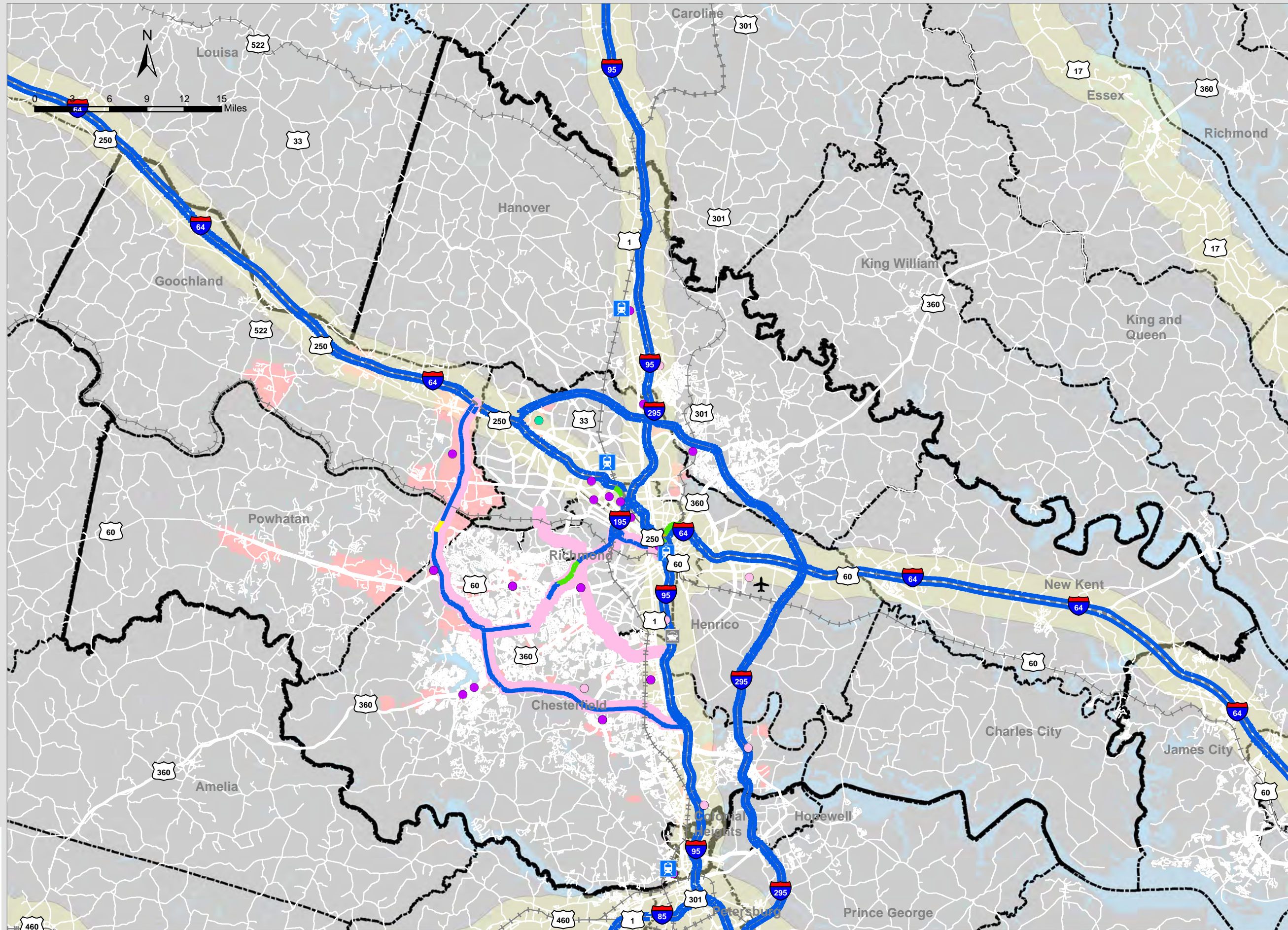
Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000

- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development Areas
- Regional Network
- Counties and Cities
- Water



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DRAFT

Congestion Measure for Interstates and Select Limited Access Facilities: Richmond Area Central

August 14, 2019
 Percent Person of Miles Travel In Excessively Congested Conditions, (PECC),
 Weekday, 75% of Posted Speed Limit

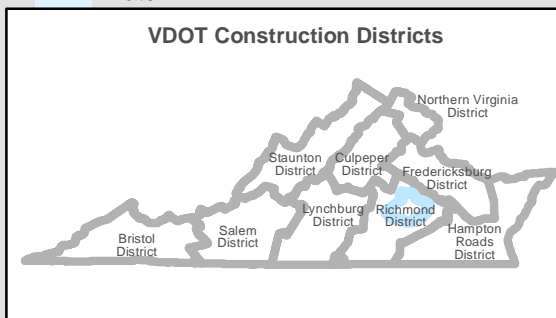
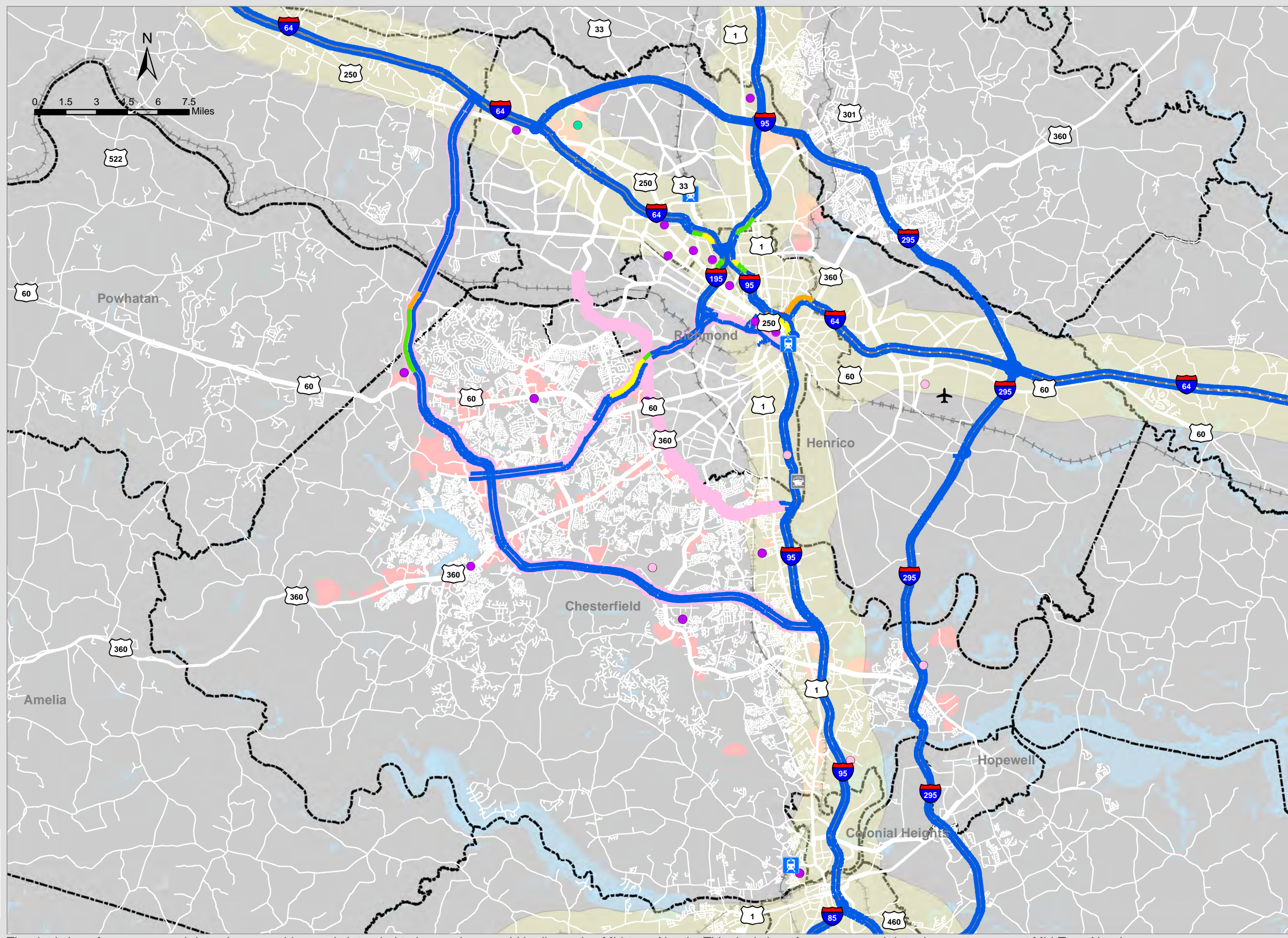
- 0% - 10%
- 10% - 15%
- 15% - 20%
- 20% - 25%
- Greater than 25%
- No Data

Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000
- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development
- Regional Network
- Counties and Cities
- Water



Office of **INTERMODAL** Planning and Investment

VTRANS VIRGINIA'S TRANSPORTATION PLAN

Date: 8/13/2019

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DRAFT

Congestion Measure for Interstates and Select Limited Access Facilities: Richmond Area

August 14, 2019

Percent Person of Miles Travel In Excessively Congested Conditions, (PECC),

Weekday, 75% of Posted Speed Limit

- 0% - 10%
- 10% - 15%
- 15% - 20%
- 20% - 25%
- Greater than 25%
- No Data

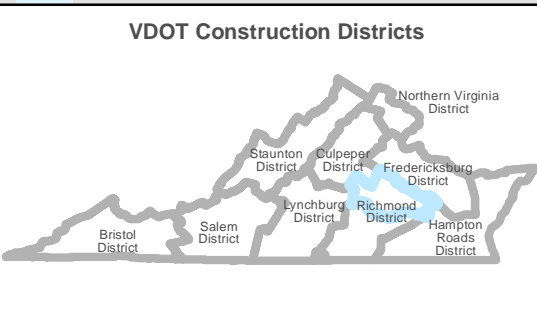
Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates

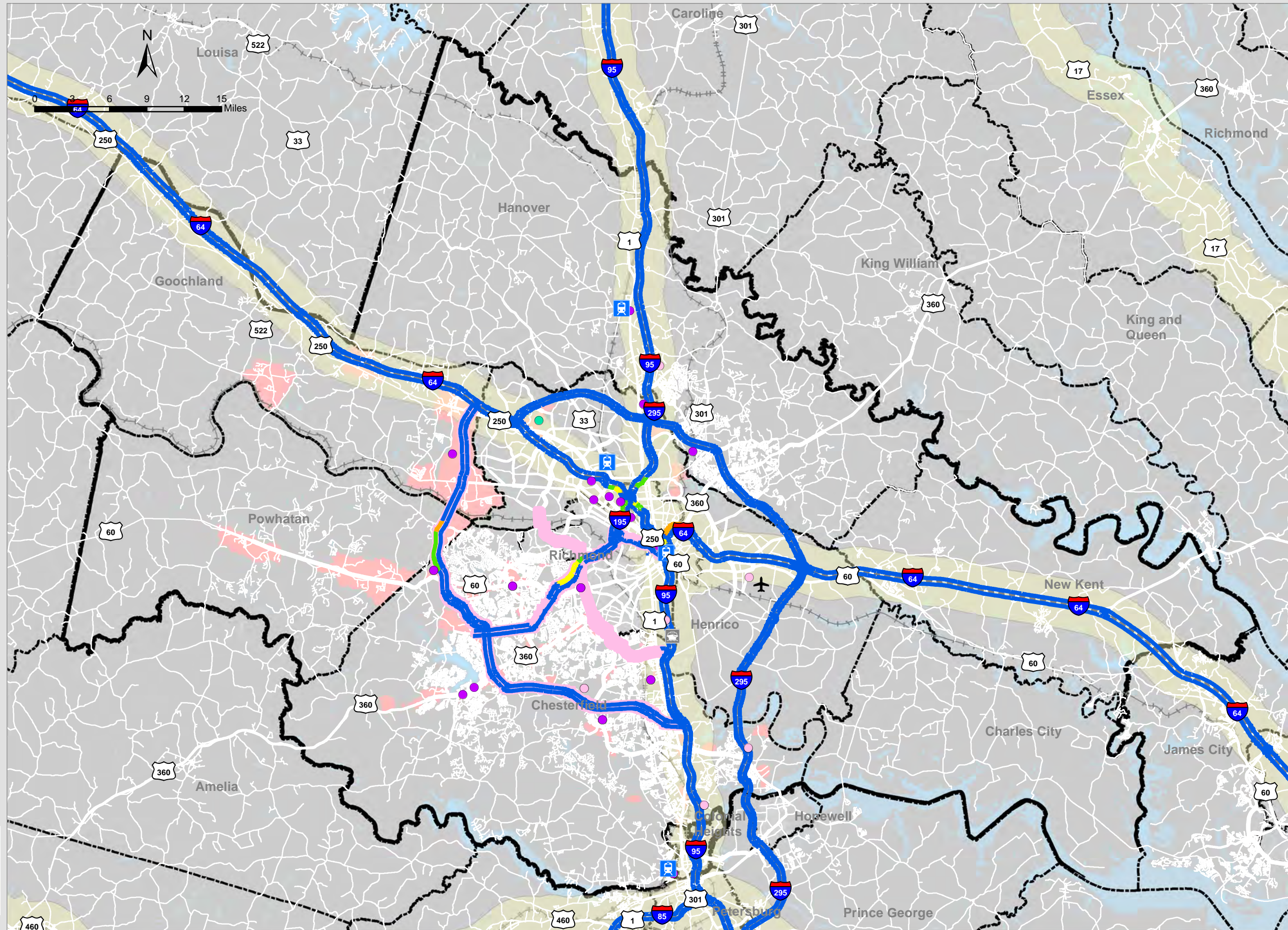
Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000

- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development
- Regional Network
- Counties and Cities
- Water



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DRAFT

Congestion Measure for Interstates and Select Limited Access Facilities: Richmond Area Central

August 14, 2019

Percent Person of Miles Travel In Excessively Congested Conditions, (PECC), Weekday, 90% of Posted Speed Limit

- █ 0% - 10%
- █ 10% - 15%
- █ 15% - 20%
- █ 20% - 25%
- █ Greater than 25%
- No Data

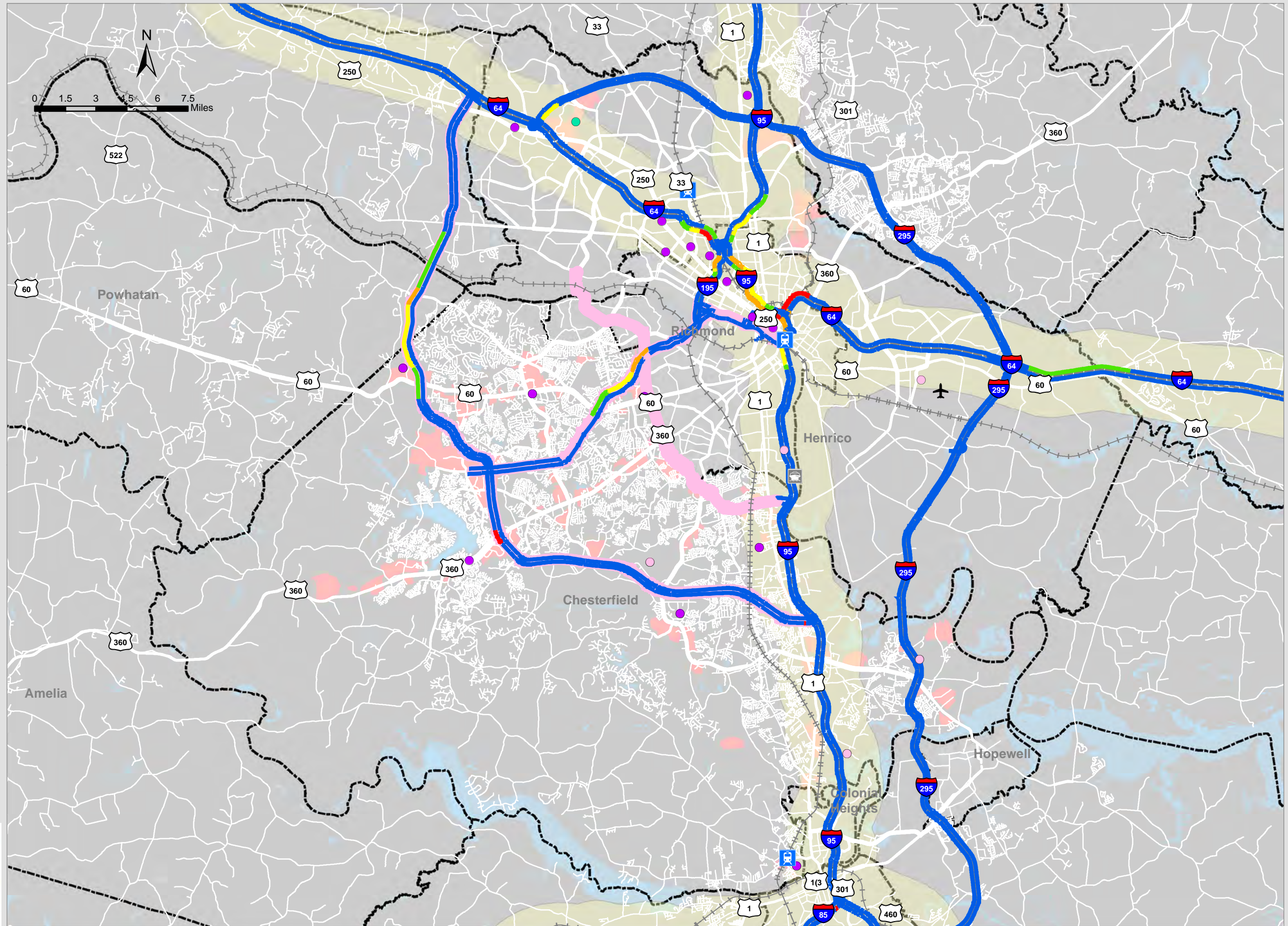
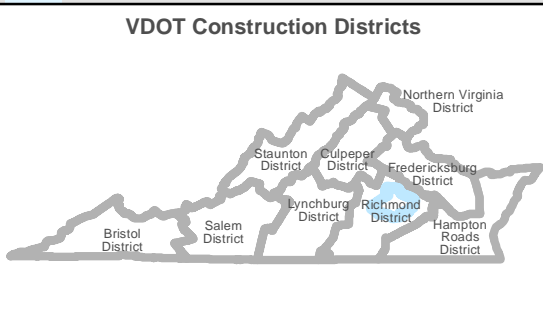
Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- - - Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000

- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development
- Regional Network
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DRAFT

Congestion Measure for Interstates and Select Limited Access Facilities: Richmond Area

August 14, 2019

Percent Person of Miles Travel In Excessively Congested Conditions, (PECC), Weekday, 90% of Posted Speed Limit

- █ 0% - 10%
- █ 10% - 15%
- █ 15% - 20%
- █ 20% - 25%
- █ Greater than 25%
- No Data

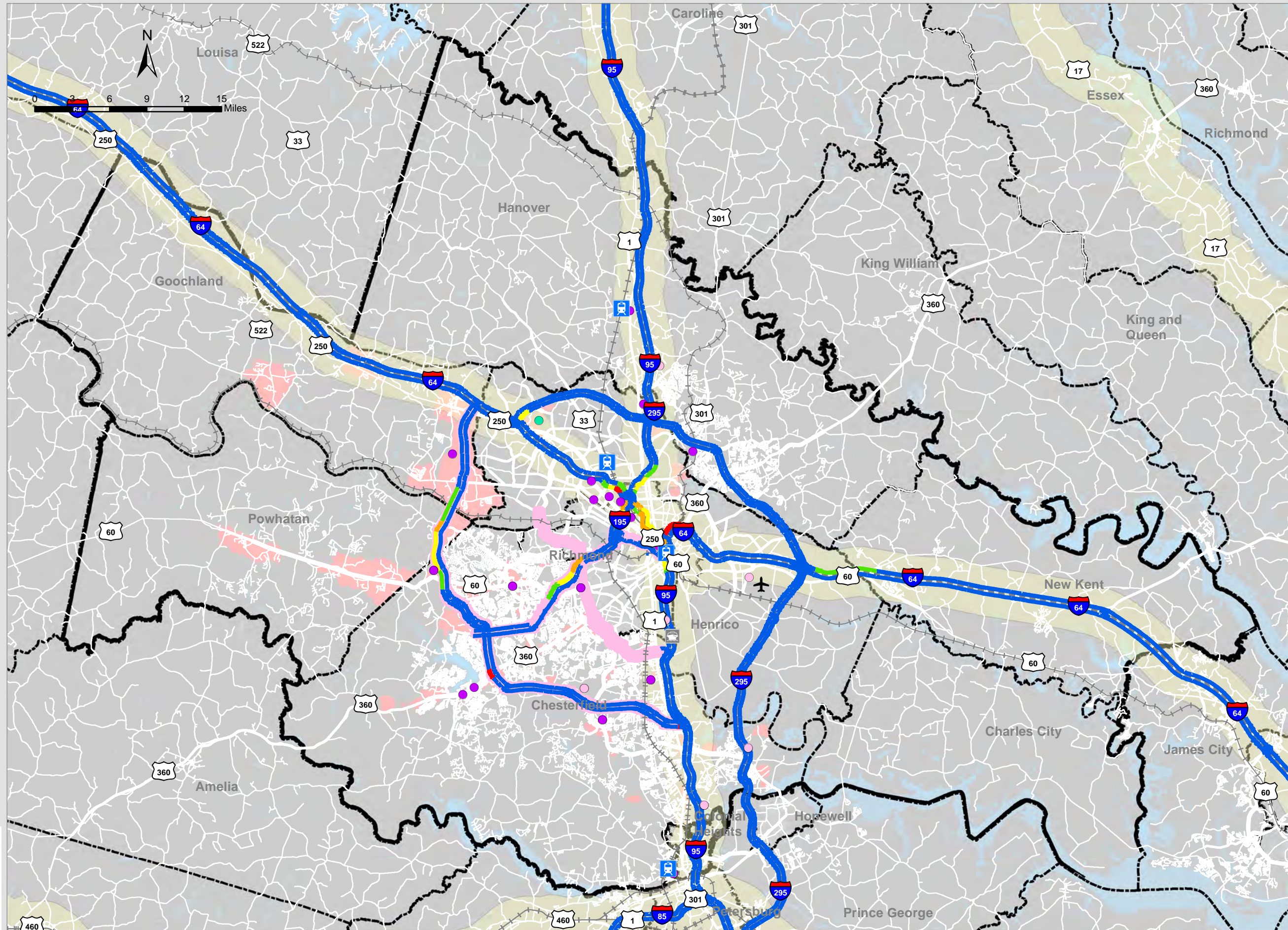
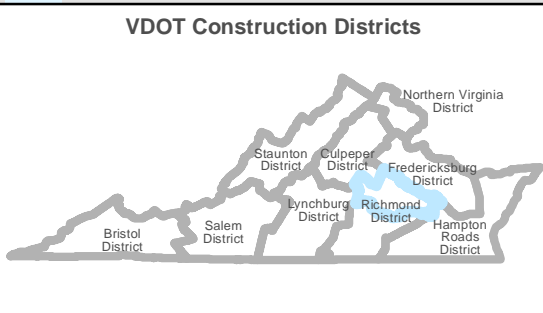
Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- - - Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000

- Rail Network
- Other Selected Limited Access Facilities
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- Regional Network
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DRAFT

Congestion Measure for Non-Limited-Access COSS and Regional Network: Richmond Area Central

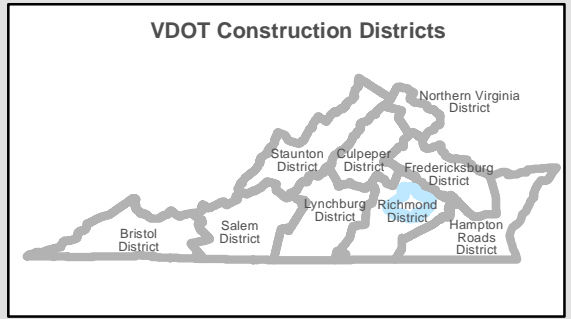
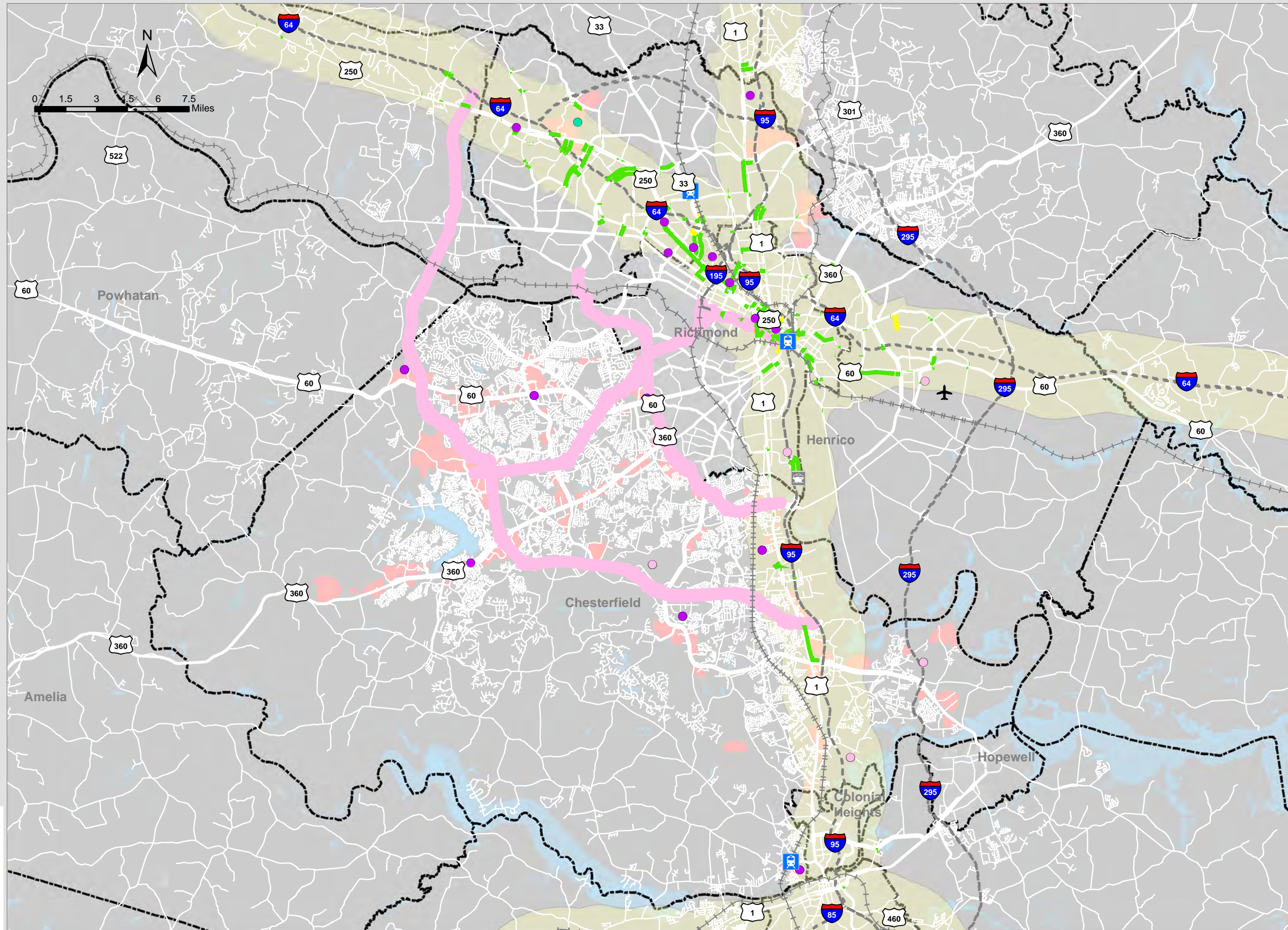
August 14, 2019

minimum TTI value shown 1.5

- 1.5 - 2.0
- 2.0 - 2.5
- 2.5 - 3.0
- Greater than 3.0

- Activity Centers**
- Freight dependent
 - Knowledge
 - Local serving
 - Ports
 - Amtrak/Passenger Rail Stations
 - Airports
 - Interstates

- Annual Average Daily Traffic (AADT)**
- 0
 - 1 - 10,000
 - 10,000 - 25,000
 - 25,000 - 50,000
 - 50,000 - 75,000
 - Greater than 75,000
 - Other Selected Limited Access Facilities
 - Buffer around Primary COSS Facilities
 - Rail Network
 - Urban Development Areas
 - Regional Network
 - Counties and Cities
 - Water



Date: 8/13/2019

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Congestion Measure for Non-Limited-Access COSS and Regional Network: Richmond Area

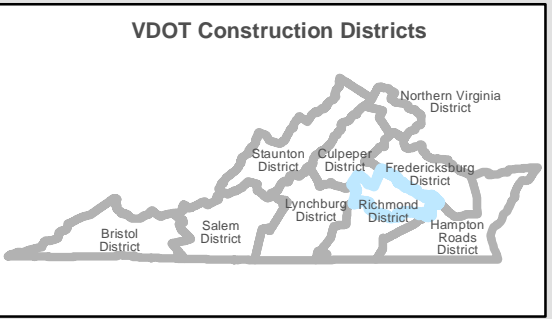
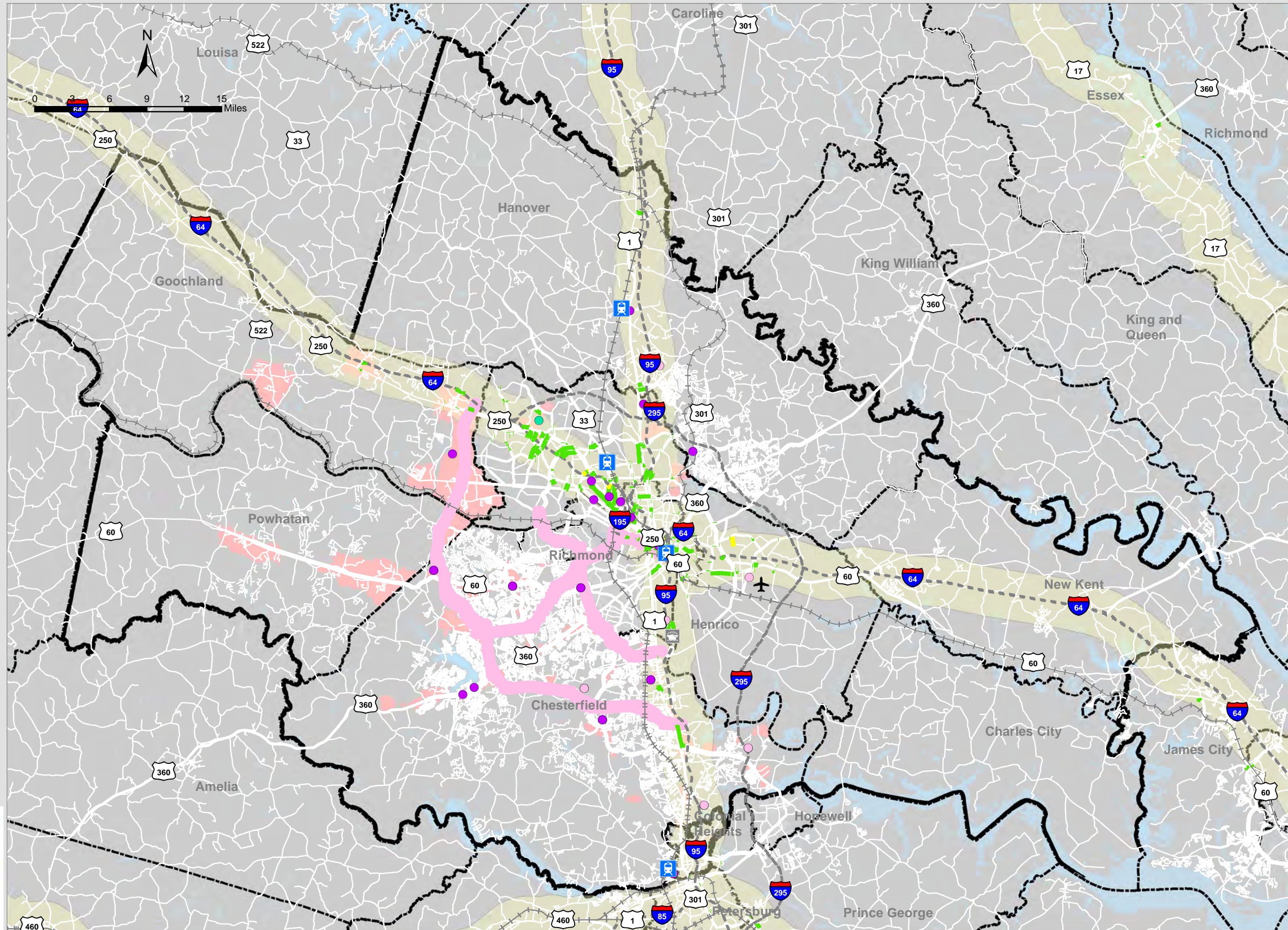
August 14, 2019

minimum TTI value shown 1.5

- 1.5 - 2.0
- 2.0 - 2.5
- 2.5 - 3.0
- Greater than 3.0

- Activity Centers**
- Freight dependent
 - Knowledge
 - Local serving
 - Ports
 - Amtrak/Passenger Rail Stations
 - Airports
 - Interstates

- Annual Average Daily Traffic (AADT)**
- 0
 - 1 - 10,000
 - 10,000 - 25,000
 - 25,000 - 50,000
 - 50,000 - 75,000
 - Greater than 75,000
 - Other Selected Limited Access Facilities
 - Buffer around Primary COSS Facilities
 - Rail Network
 - Urban Development Areas
 - Regional Network
 - Counties and Cities
 - Water



Office of
INTERMODAL
Planning and Investment

VTRANS | VIRGINIA'S
TRANSPORTATION PLAN

Date: 8/13/2019

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DRAFT

Unreliable Delay (UD) - Number of person-hours of delay during Unreliable Conditions: Richmond Area Central

August 14, 2019
Minimum 80th/50th percentile
travel time equal to 1.5 or higher -
Weekday

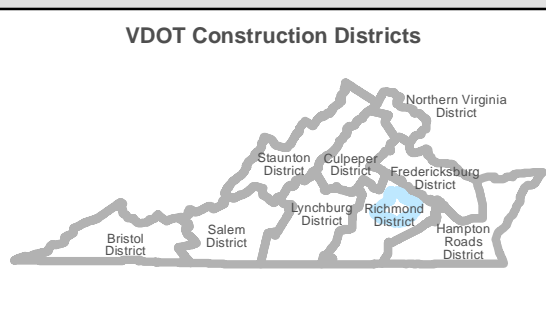
- 0 - 750
- 750 - 2,600
- 2,600 - 7,400
- 7,400 - 21,800
- >21,800

Activity Centers

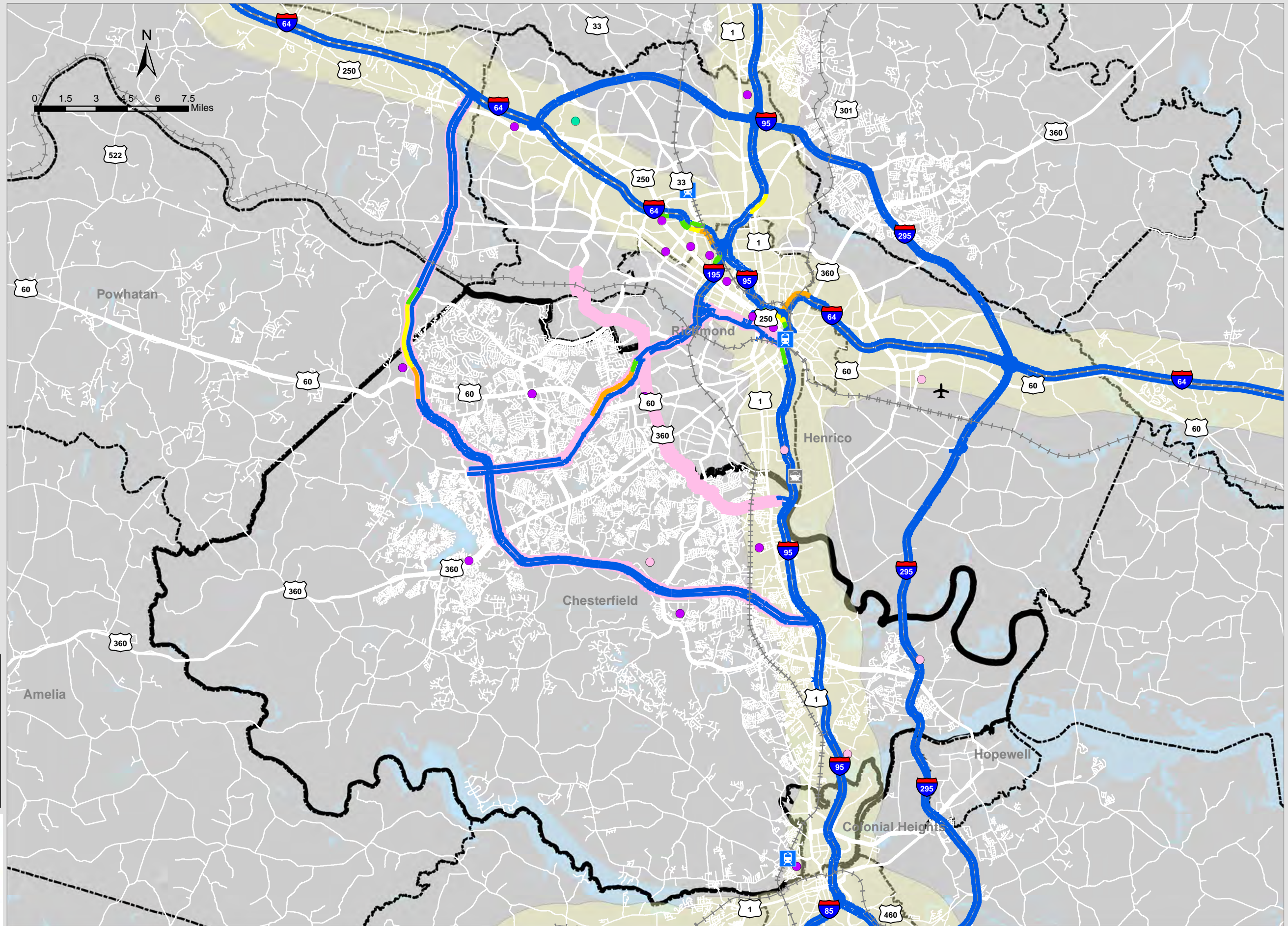
- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000
- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development Areas
- Regional Network
- Counties and Cities
- Water



Date: 8/13/2019

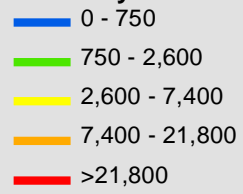


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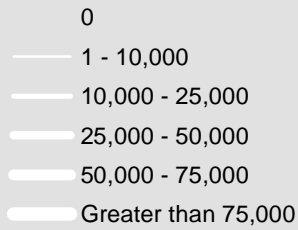
Unreliable Delay (UD) - Number of person-hours of delay during Unreliable Conditions: Richmond Area

August 14, 2019
 Minimum 80th/50th percentile travel time equal to 1.5 or higher - Weekday

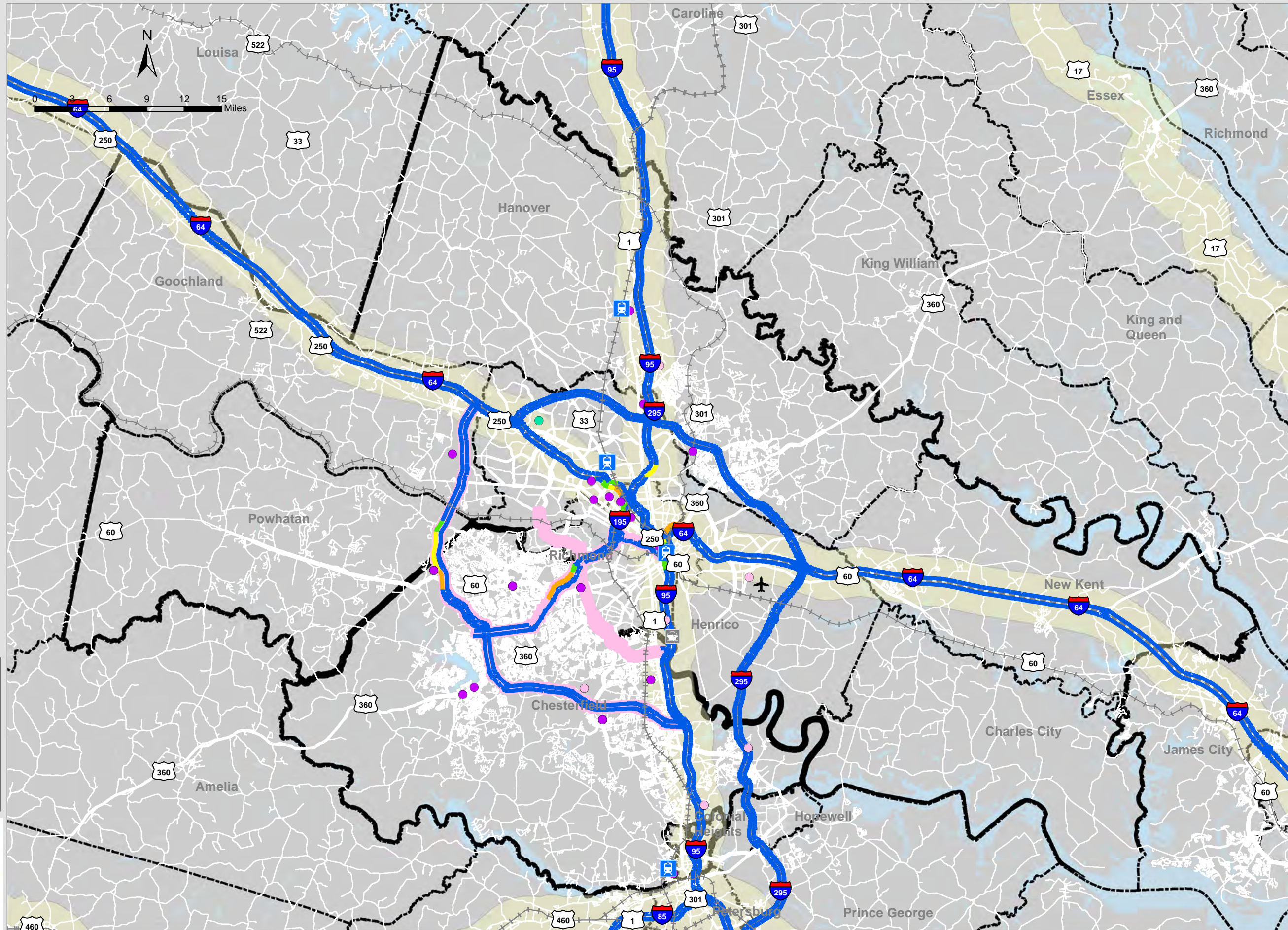
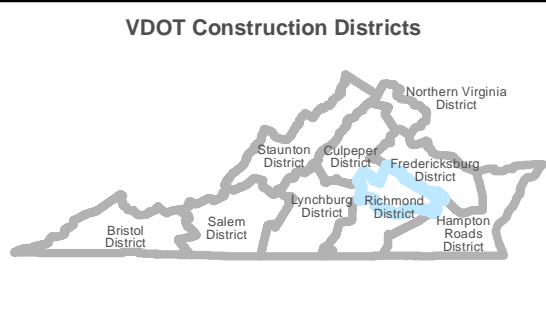


- Activity Centers**
- Freight dependent
 - Knowledge
 - Local serving
 - Ports
 - Amtrak/Passenger Rail Stations
 - Airports
 - Interstates

Annual Average Daily Traffic (AADT)



- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development Areas
- Regional Network
- Counties and Cities
- Water

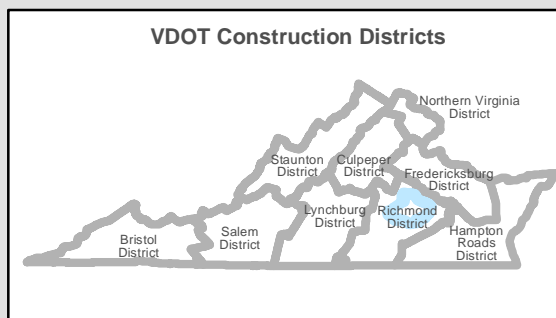
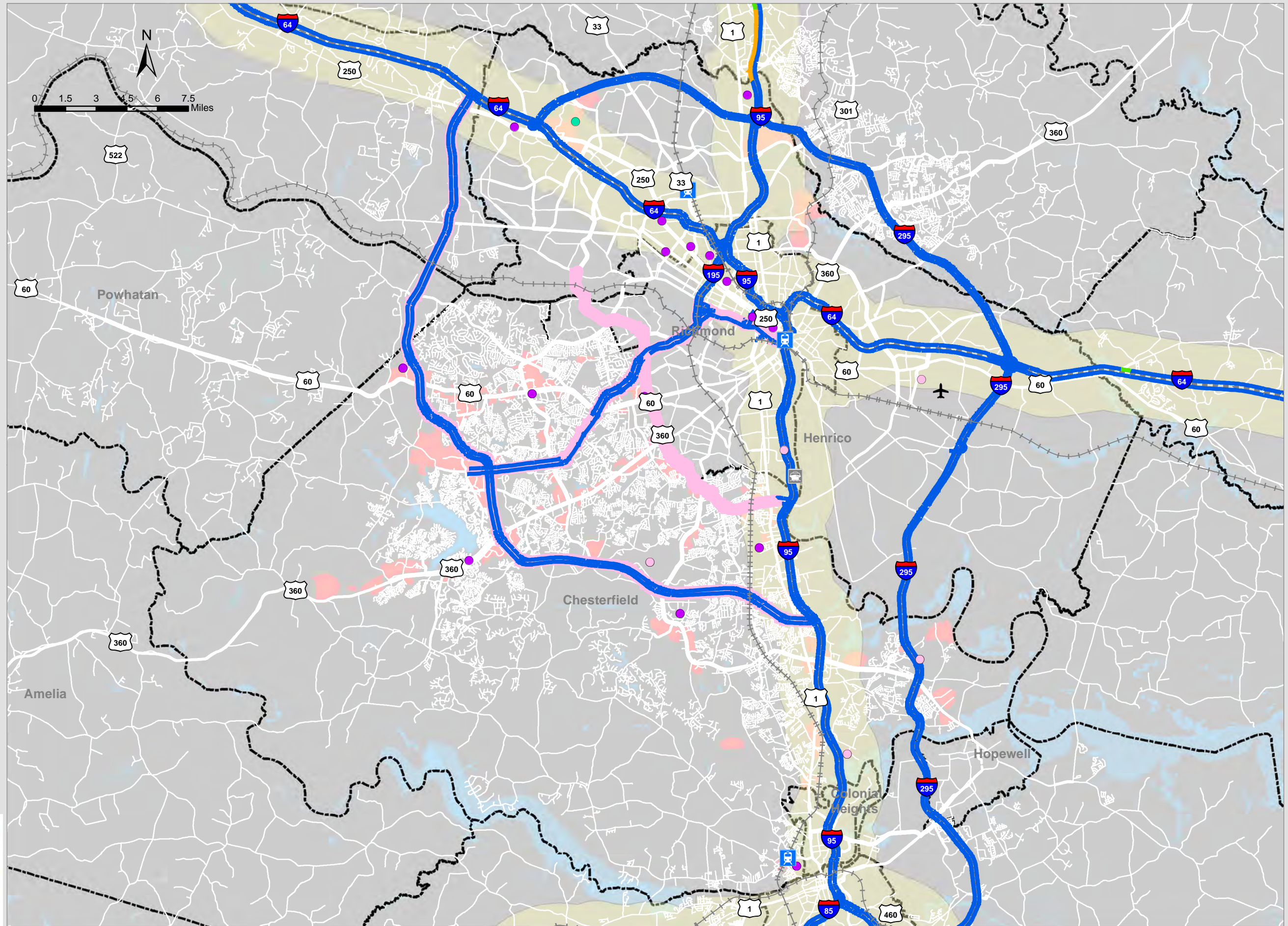


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Unreliable Delay (UD) - Number of person-hours of delay during Unreliable Conditions: Richmond Area Central

August 14, 2019
Minimum 80th/50th percentile travel time equal to 1.5 or higher - Weekend

- 0 - 750
 - 750 - 2,600
 - 2,600 - 7,400
 - 7,400 - 21,800
 - >21,800
- Activity Centers**
- Freight dependent
 - Knowledge
 - Local serving
 - Ports
 - Amtrak/Passenger Rail Stations
 - Airports
 - Interstates
- Annual Average Daily Traffic (AADT)**
- 0
 - 1 - 10,000
 - 10,000 - 25,000
 - 25,000 - 50,000
 - 50,000 - 75,000
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Office of INTERMODAL Planning and Investment

VTRANS VIRGINIA'S TRANSPORTATION PLAN

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DRAFT

Unreliable Delay (UD) - Number of person-hours of delay during Unreliable Conditions: Richmond Area

August 14, 2019
 Minimum 80th/50th percentile travel time equal to 1.5 or higher - Weekend

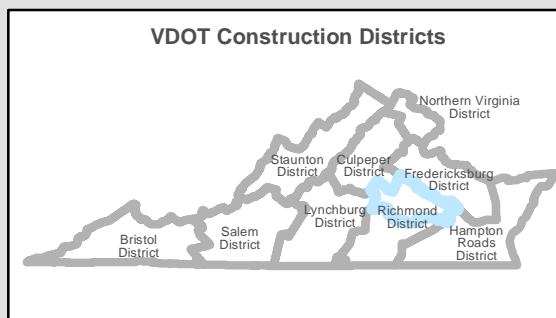
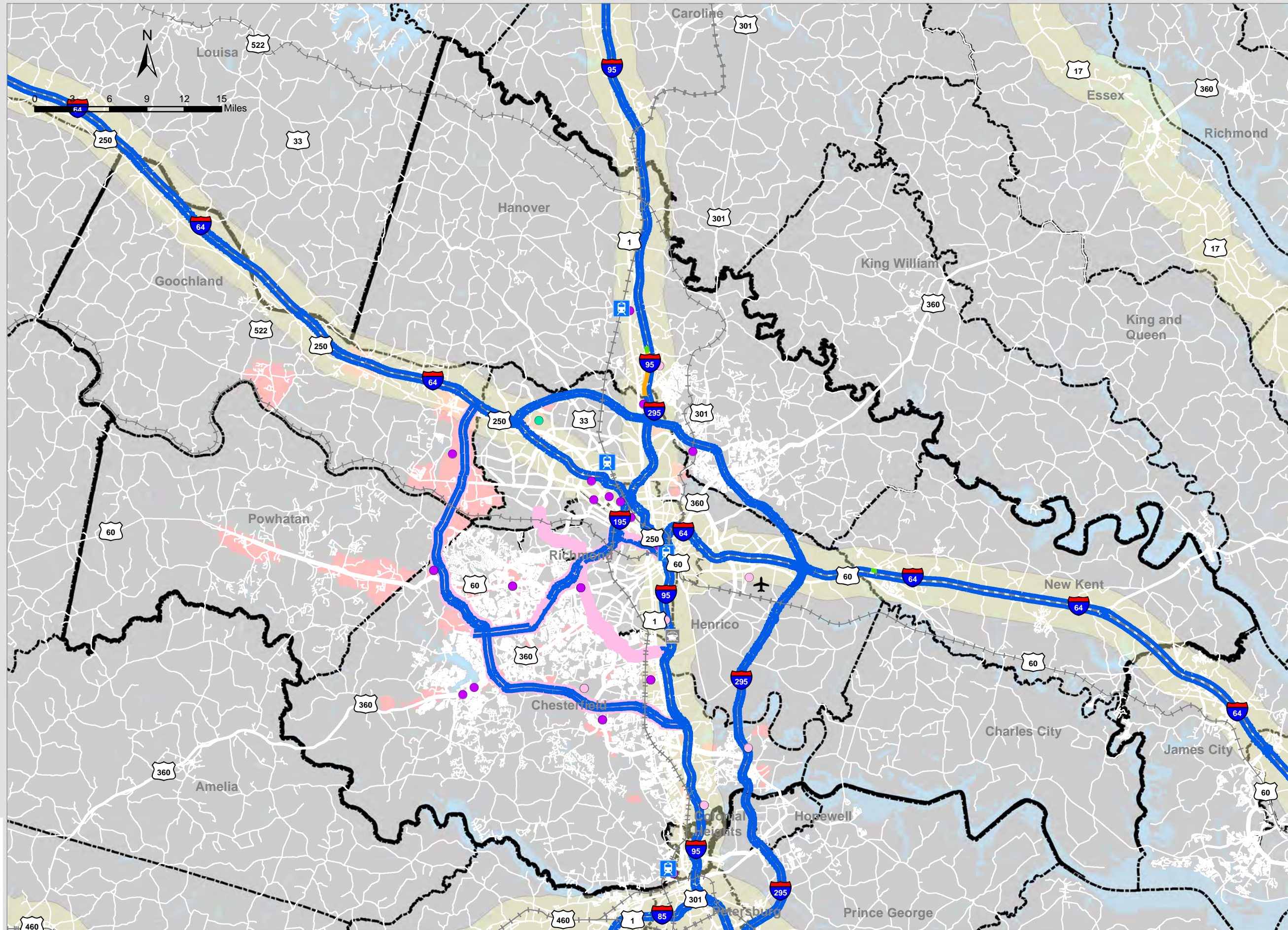
- 0 - 750
- 750 - 2,600
- 2,600 - 7,400
- 7,400 - 21,800
- >21,800

Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
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- Rail Network
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DRAFT

Reliability Measure for Non-Limited-Access COSS and Regional Network: Richmond Area Central

August 14, 2019

Minimum BTI value shown is 0.5

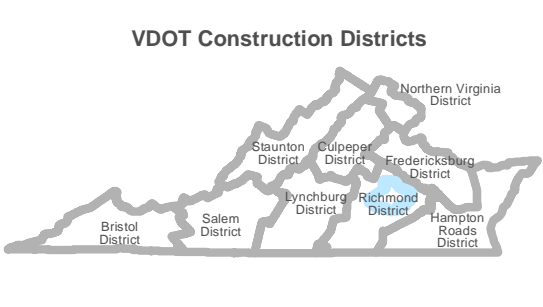
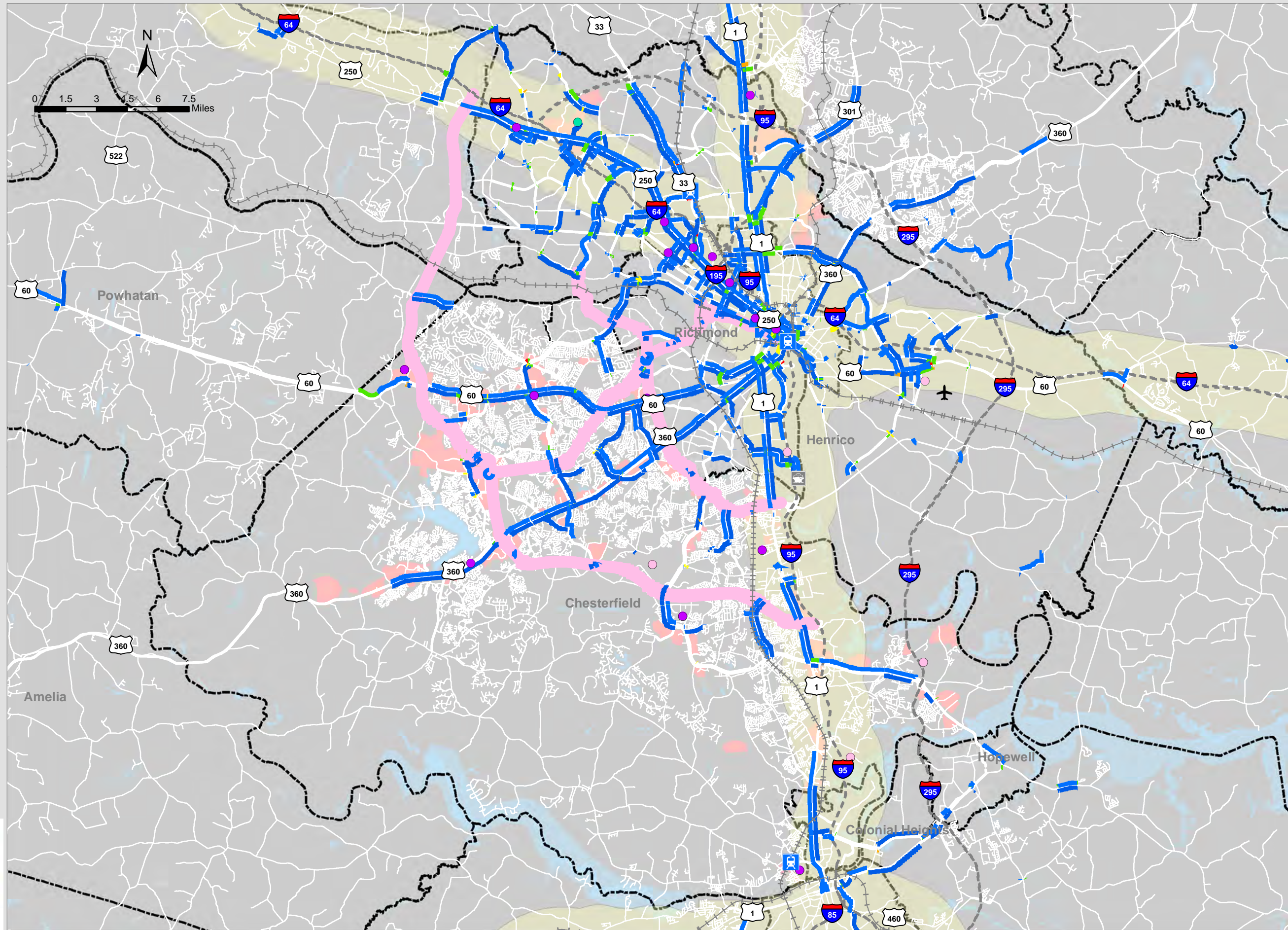
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5
- Greater than 2.5

Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000
- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development
- Regional Network
- Counties and Cities
- Water



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DRAFT

Reliability Measure for Non-Limited-Access COSS and Regional Network: Richmond Area

August 14, 2019

Minimum BTI value shown is 0.5

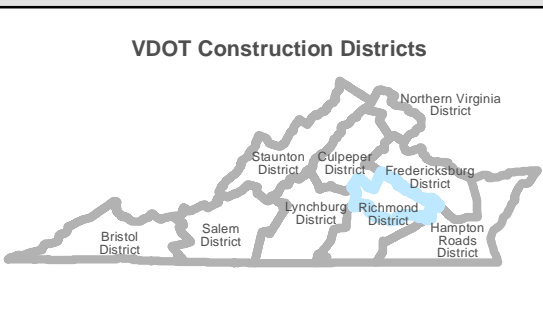
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 2.5
- Greater than 2.5

Activity Centers

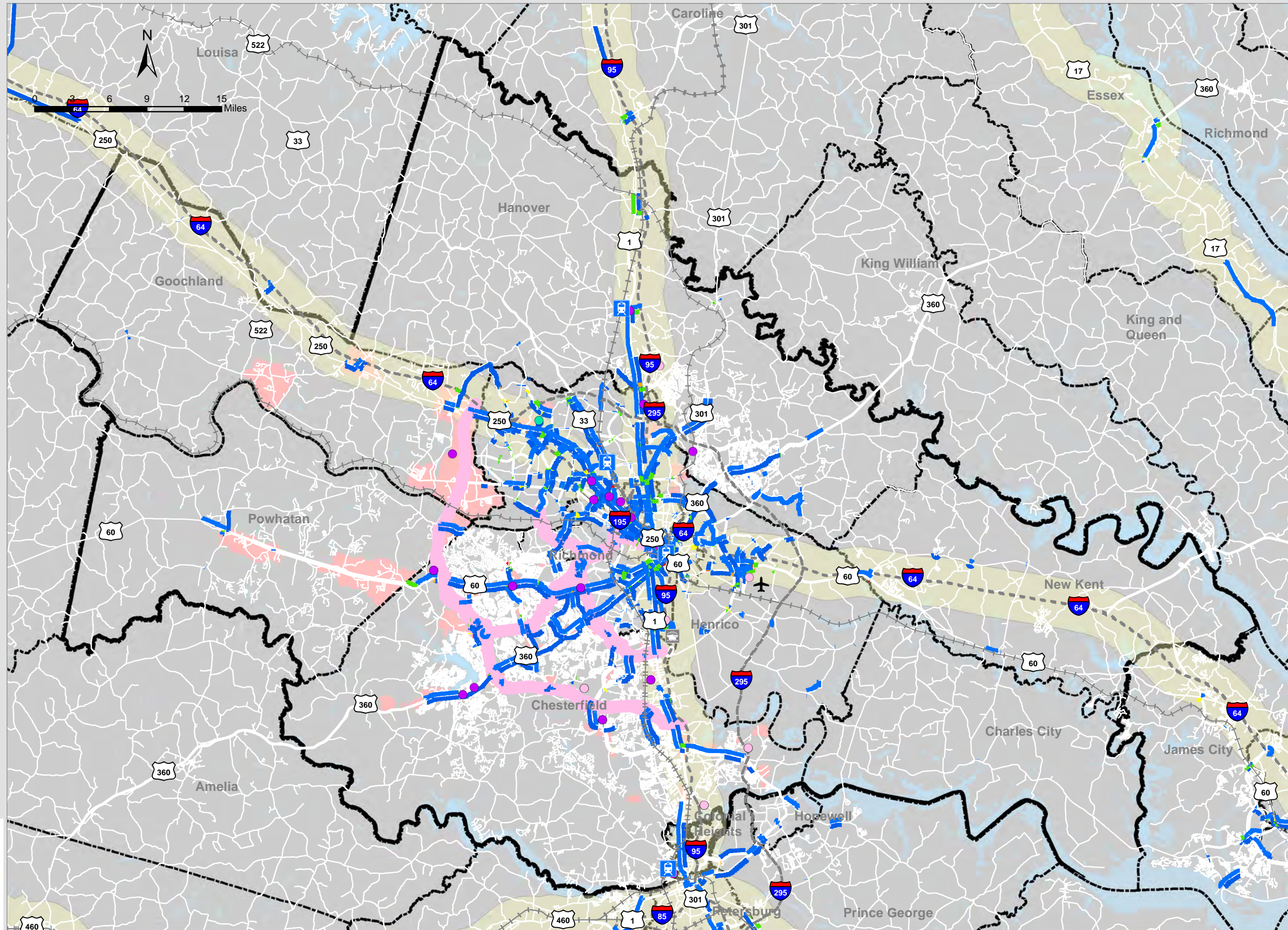
- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
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- Rail Network
- Other Selected Limited Access Facilities
- Buffer around Primary COSS Facilities
- Urban Development
- Regional Network
- Counties and Cities
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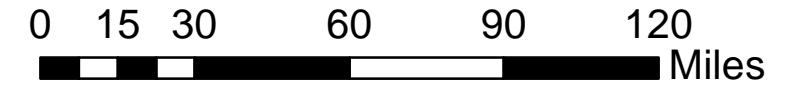
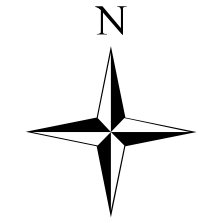
Date: 8/13/2019



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Amtrak On Time Rail Performance Averages 2018



Amtrak Station (Average On-Time Performance)

- 0% - 39%
- 40% - 49%
- 50% - 59%
- 60% - 69%
- 70% - 79%
- 80% - 85%

Amtrak Routes

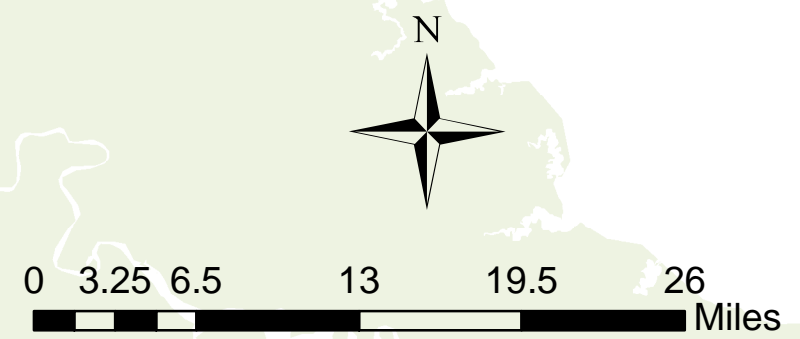
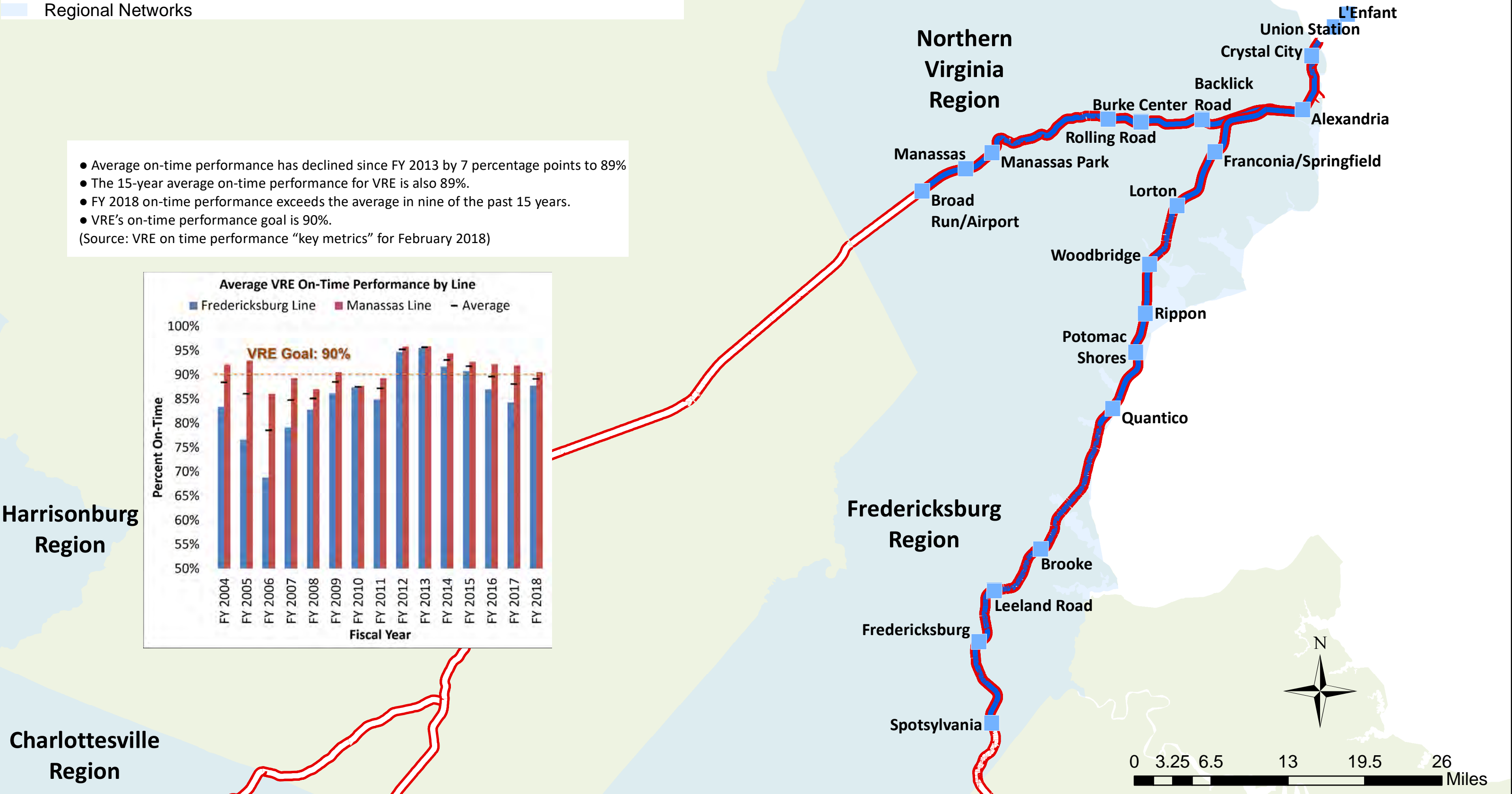
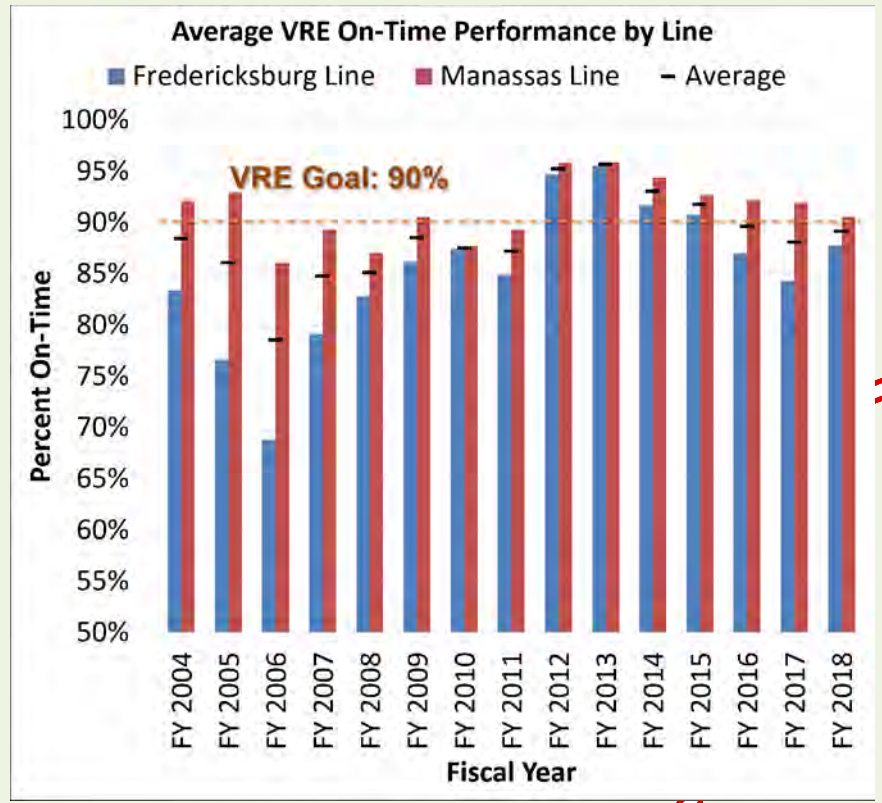
Regional Networks



Virginia Railway Express On-Time Performance

- VRE Stations
- ▬ VRE Routes
- ▬ Amtrak Routes
- ▬ Regional Networks

- Average on-time performance has declined since FY 2013 by 7 percentage points to 89%
 - The 15-year average on-time performance for VRE is also 89%.
 - FY 2018 on-time performance exceeds the average in nine of the past 15 years.
 - VRE's on-time performance goal is 90%.
- (Source: VRE on time performance "key metrics" for February 2018)



Accessibility to Activity Centers: Regional Workshop - Richmond Area Central

August 14, 2019

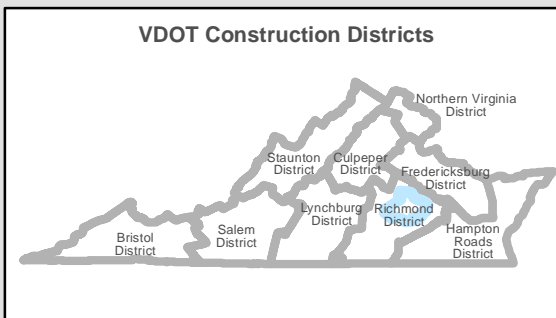
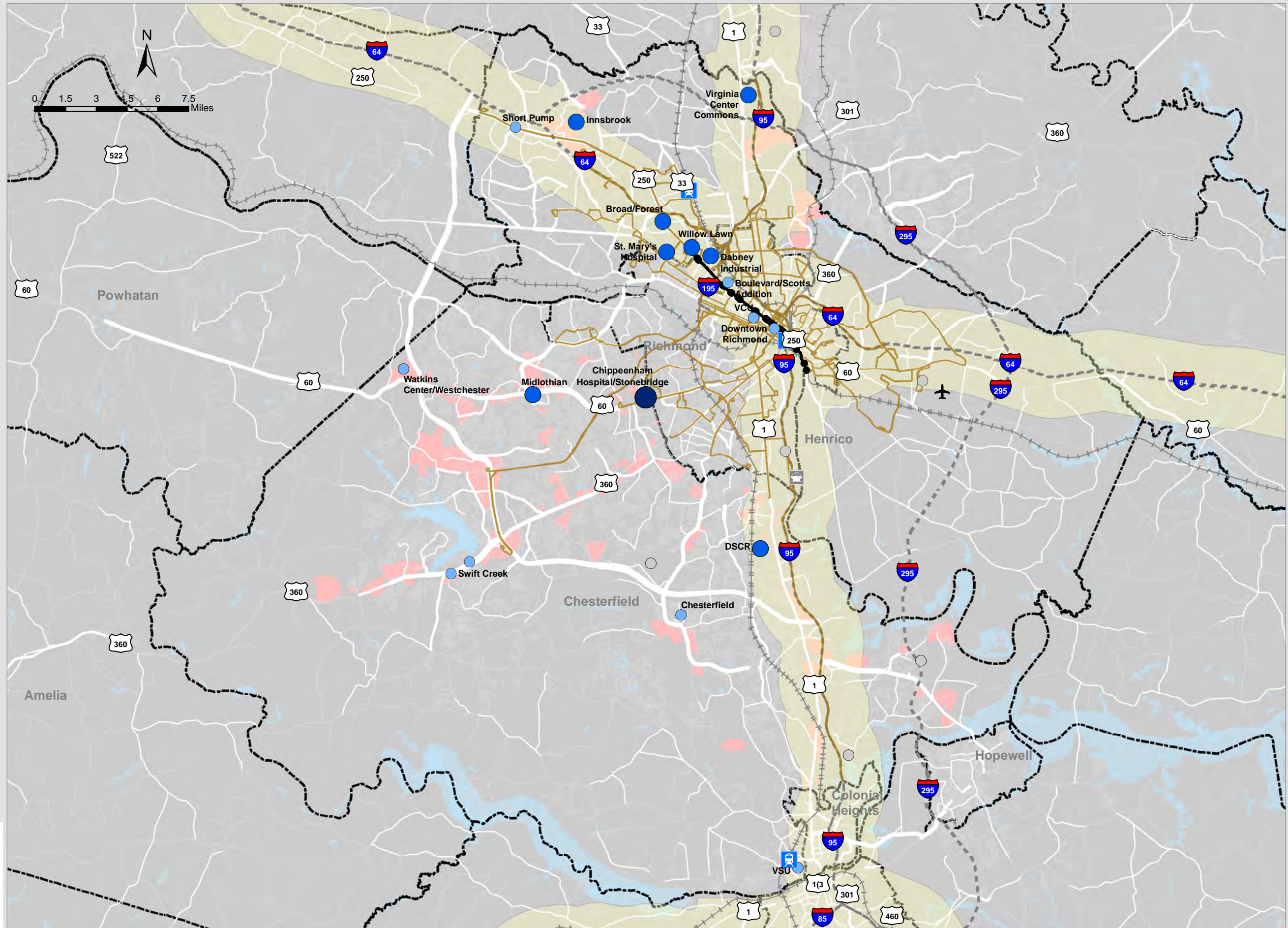
Transit Access Deficit to Local-Serving and Knowledge-Based Activity Center for Workers
Deficit levels, (high, medium, low) are relative to each region

- High
- Medium
- Low
- Freight-Dependent Activity Center
- Pulse Line Stops
- Pulse Line
- Transit Routes
- Ports
- Amtrak/Passenger Rail Stations
- ✈ Airports
- Interstates
- Local Roads

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000

- Rail Network
- Buffer around Primary COSS Facilities
- Urban Development
- Regional Network
- Counties and Cities
- Water



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Accessibility to Activity Centers: Regional Workshop - Richmond Area

August 14, 2019

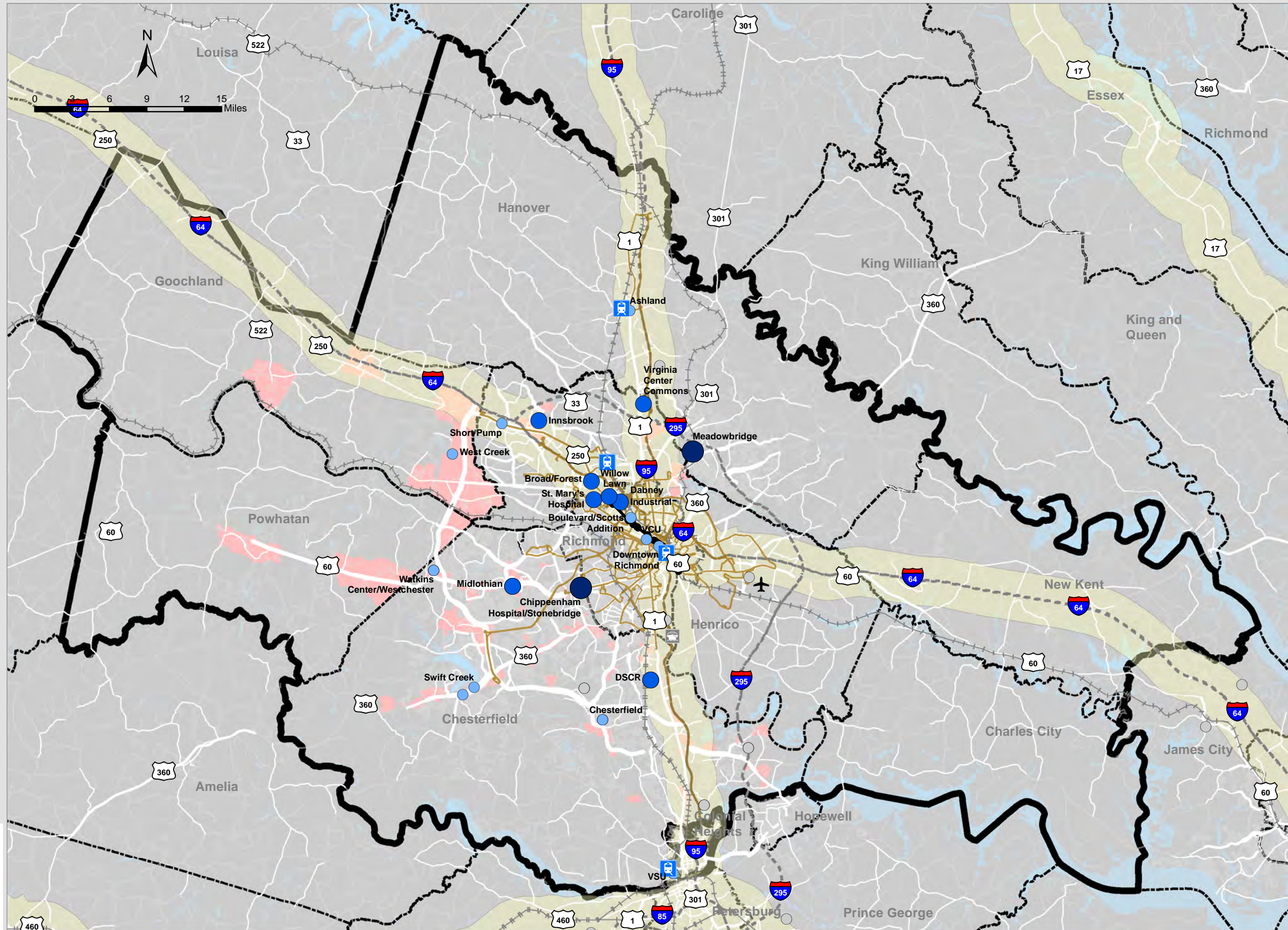
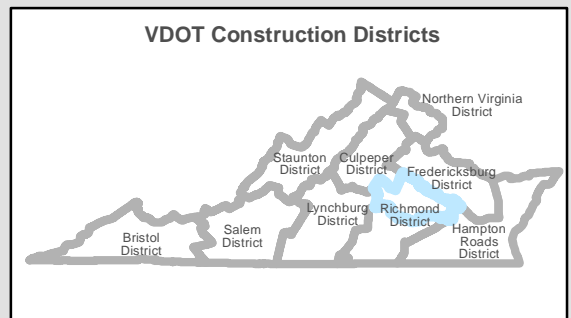
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- Rail Network
- Buffer around Primary COSS Facilities
- Urban Development
- Regional Network
- Counties and Cities
- Water



Office of INTERMODAL Planning and Investment

VTRANS VIRGINIA'S TRANSPORTATION PLAN

Date: 8/14/2019

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Disadvantaged Population beyond 1/4 mile Access to Transit Service: Regional Workshop - Richmond Area Central

August 14, 2019

Disadvantaged block groups beyond 1/4-mile access to fixed-route transit service and local rail or BRT service, 80% Threshold

Disadvantaged and Not Viable for fixed route service, local rail, or BRT

Disadvantaged and Viable for fixed route service, local rail, or BRT

Pulse Line Stops

Pulse Line

Transit Routes

Activity Centers

Freight dependent

Knowledge

Local serving

Ports

Amtrak/Passenger Rail Stations

Airports

Interstates

Local Roads

Annual Average Daily Traffic (AADT)

0

1 - 10,000

10,000 - 25,000

25,000 - 50,000

50,000 - 75,000

Greater than 75,000

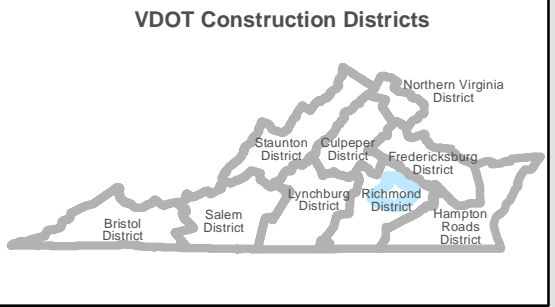
Rail Network

Regional Network

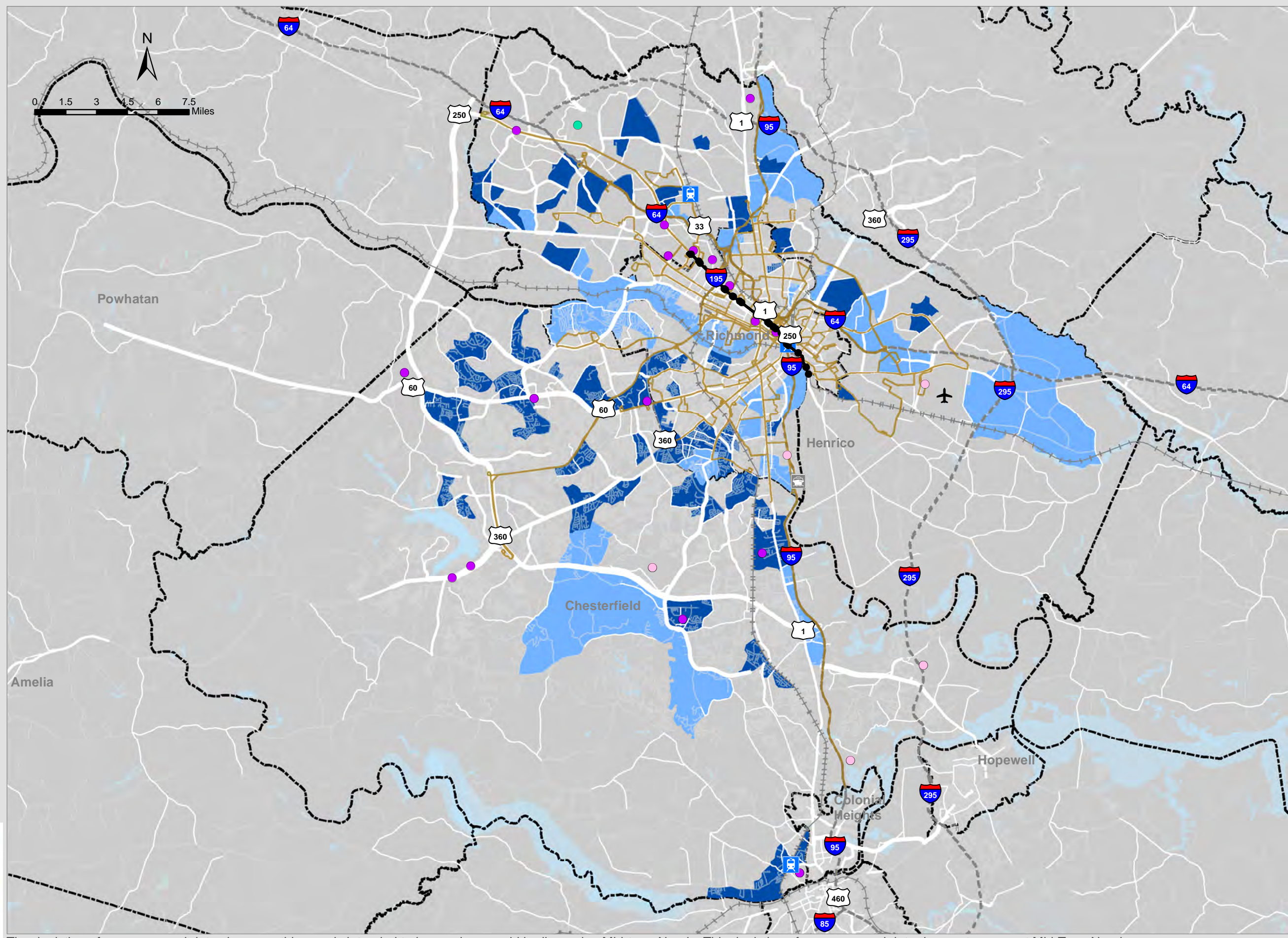
Counties and Cities

Water

Disadvantaged population access to transit accounts for existing transit service where the data is available.



Date: 8/14/2019



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DRAFT

Disadvantaged Population beyond 1/4 mile Access to Transit Service: Regional Workshop - Richmond Area

August 14, 2019

Disadvantaged block groups beyond 1/4-mile access to fixed-route transit service and local rail or BRT service, 80% Threshold

Disadvantaged and Not Viable for fixed route service, local rail, or BRT

Disadvantaged and Viable for fixed route service, local rail, or BRT

Pulse Line Stops

Pulse Line

Transit Routes

Activity Centers

Freight dependent

Knowledge

Local serving

Ports

Amtrak/Passenger Rail Stations

Airports

Interstates

Local Roads

Annual Average Daily Traffic (AADT)

0

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10,000 - 25,000

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Greater than 75,000

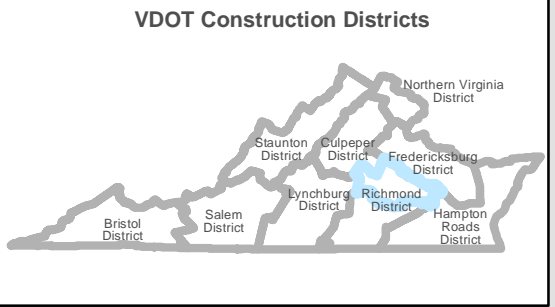
Rail Network

Regional Network

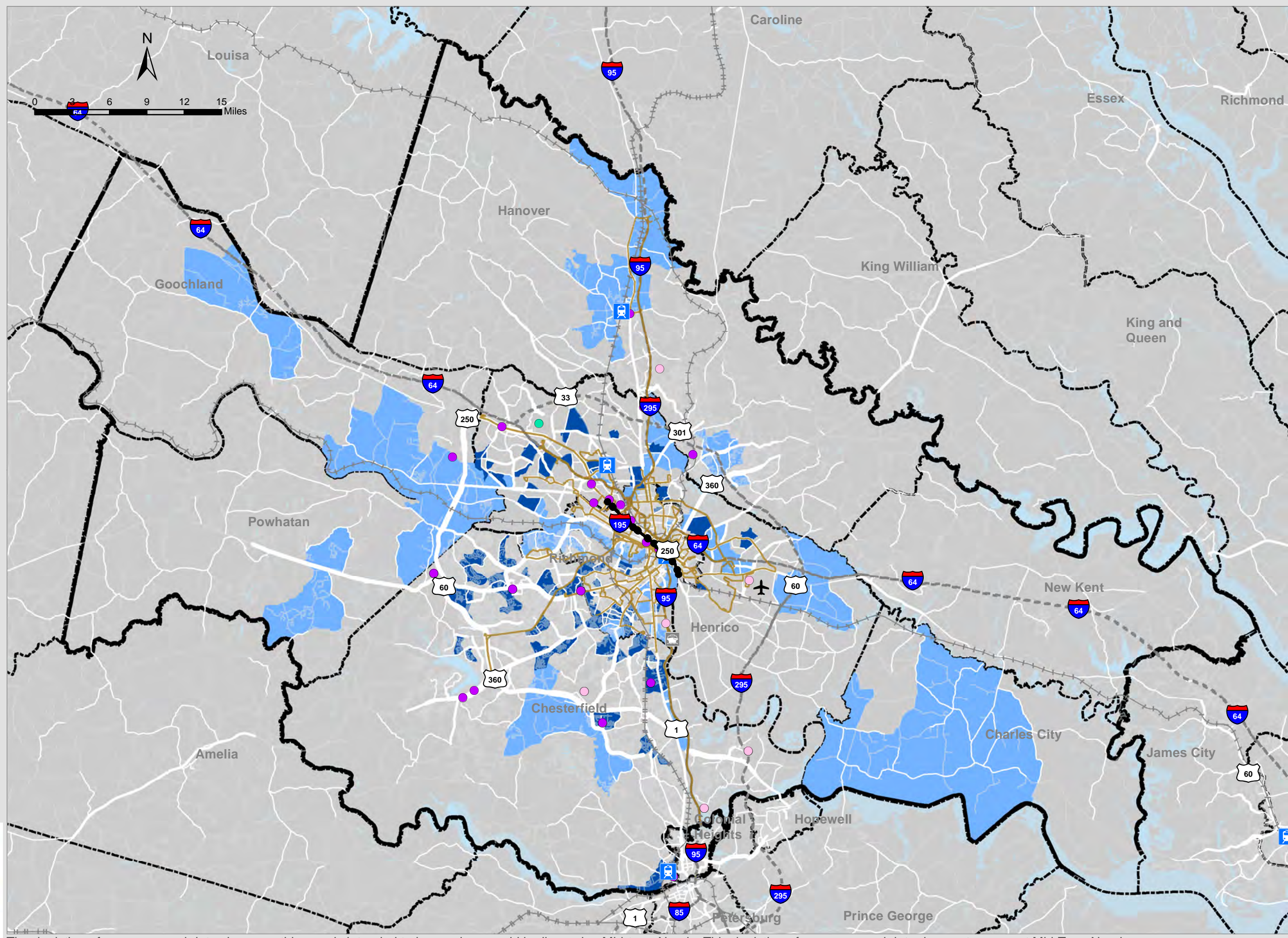
Counties and Cities

Water

Disadvantaged population access to transit accounts for existing transit service where the data is available.



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DRAFT

Disadvantaged Population beyond ¼ mile Access to Transit Service: Regional Workshop - Richmond Area Central

August 14, 2019

Disadvantaged block groups beyond 1/4-mile access to fixed-route transit service and local rail or BRT service, 90% Threshold

- Disadvantaged and Not Viable for fixed route service, local rail, or BRT
- Disadvantaged and Viable for fixed route service, local rail, or BRT
- Pulse Line Stops
- Pulse Line
- Transit Routes

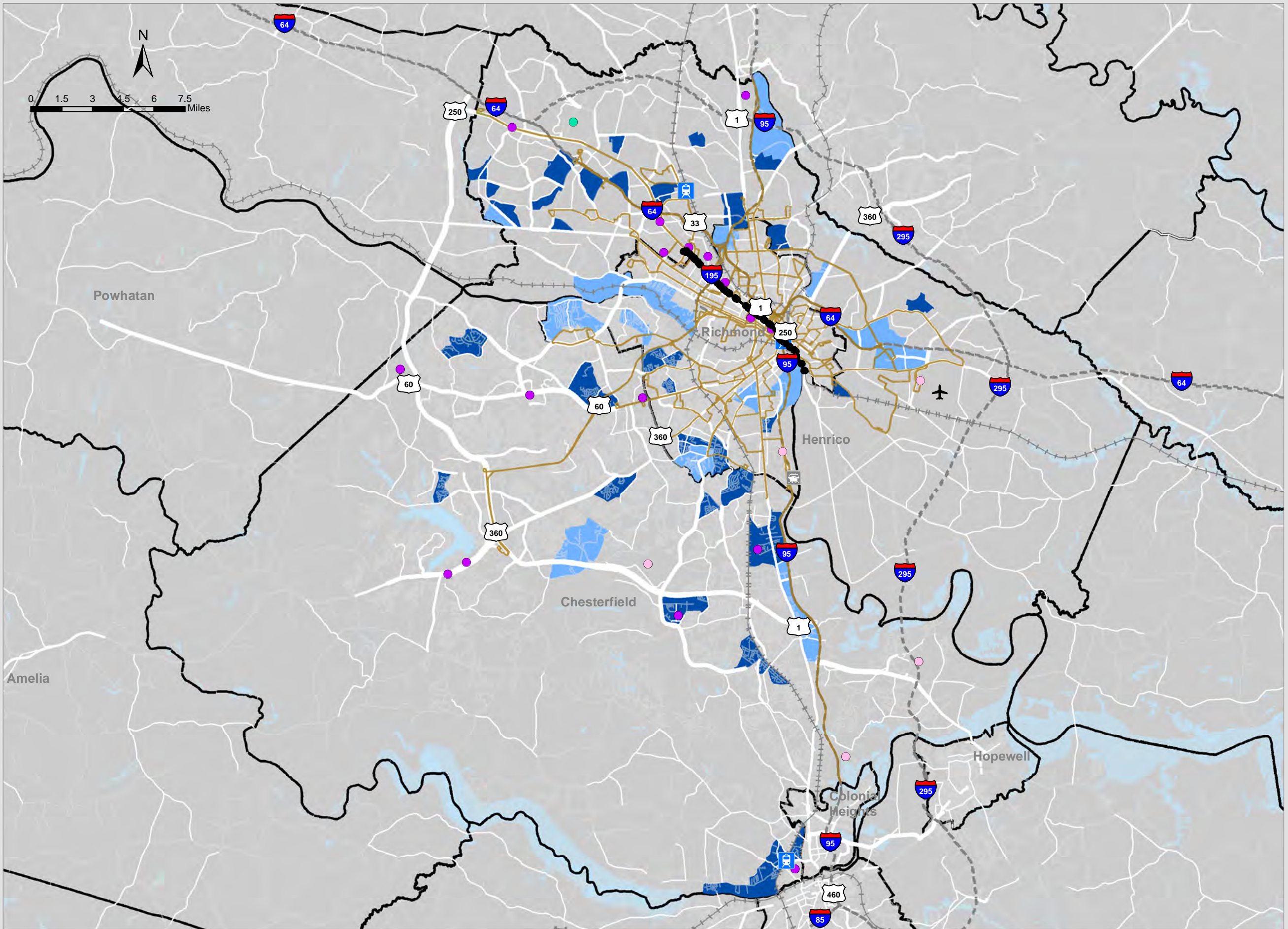
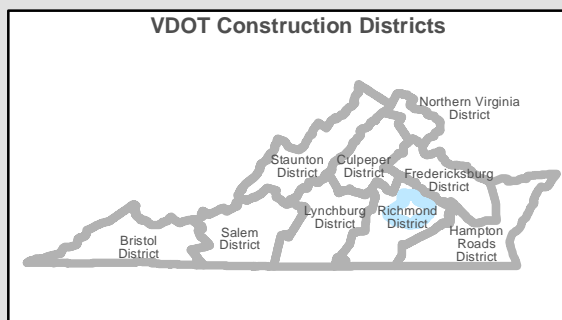
Activity Centers

- Freight dependent
- Knowledge
- Local serving
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Interstates
- Local Roads

Annual Average Daily Traffic (AADT)

- 0
- 1 - 10,000
- 10,000 - 25,000
- 25,000 - 50,000
- 50,000 - 75,000
- Greater than 75,000
- +— Rail Network
- Regional Network
- Counties and Cities

■ Water
Disadvantaged population access to transit accounts for existing transit service where the data is available.



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DRAFT

Disadvantaged Population beyond ¼ mile Access to Transit Service: Regional Workshop - Richmond Area

August 14, 2019

Disadvantaged block groups beyond 1/4-mile access to fixed-route transit service and local rail or BRT service, 90% Threshold

Disadvantaged and Not Viable for fixed route service, local rail, or BRT

Disadvantaged and Viable for fixed route service, local rail, or BRT

Pulse Line Stops

Pulse Line

Transit Routes

Activity Centers

Freight dependent

Knowledge

Local serving

Ports

Amtrak/Passenger Rail Stations

Airports

Interstates

Local Roads

Annual Average Daily Traffic (AADT)

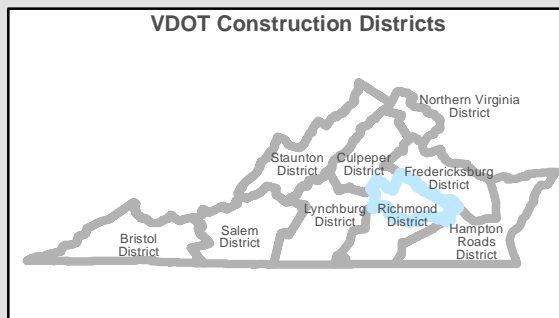
- 0
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- 10,000 - 25,000
- 25,000 - 50,000
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- Greater than 75,000

Rail Network

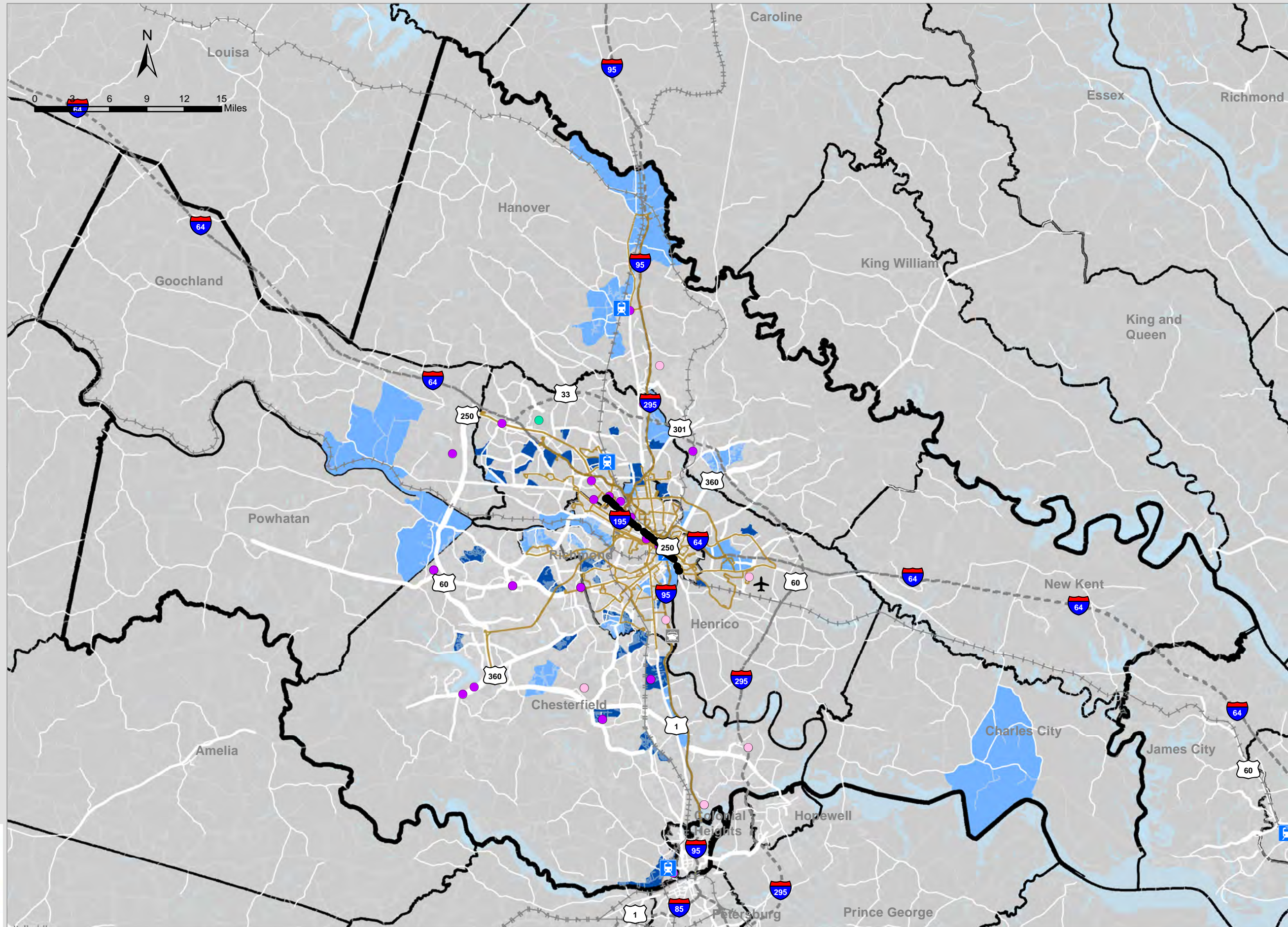
Regional Network

Counties and Cities

Water
Disadvantaged population access to transit accounts for existing transit service where the data is available.



Date: 8/14/2019



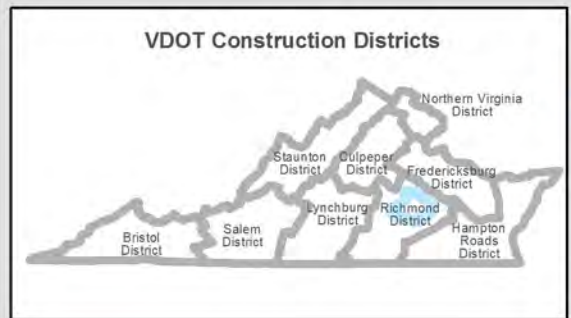
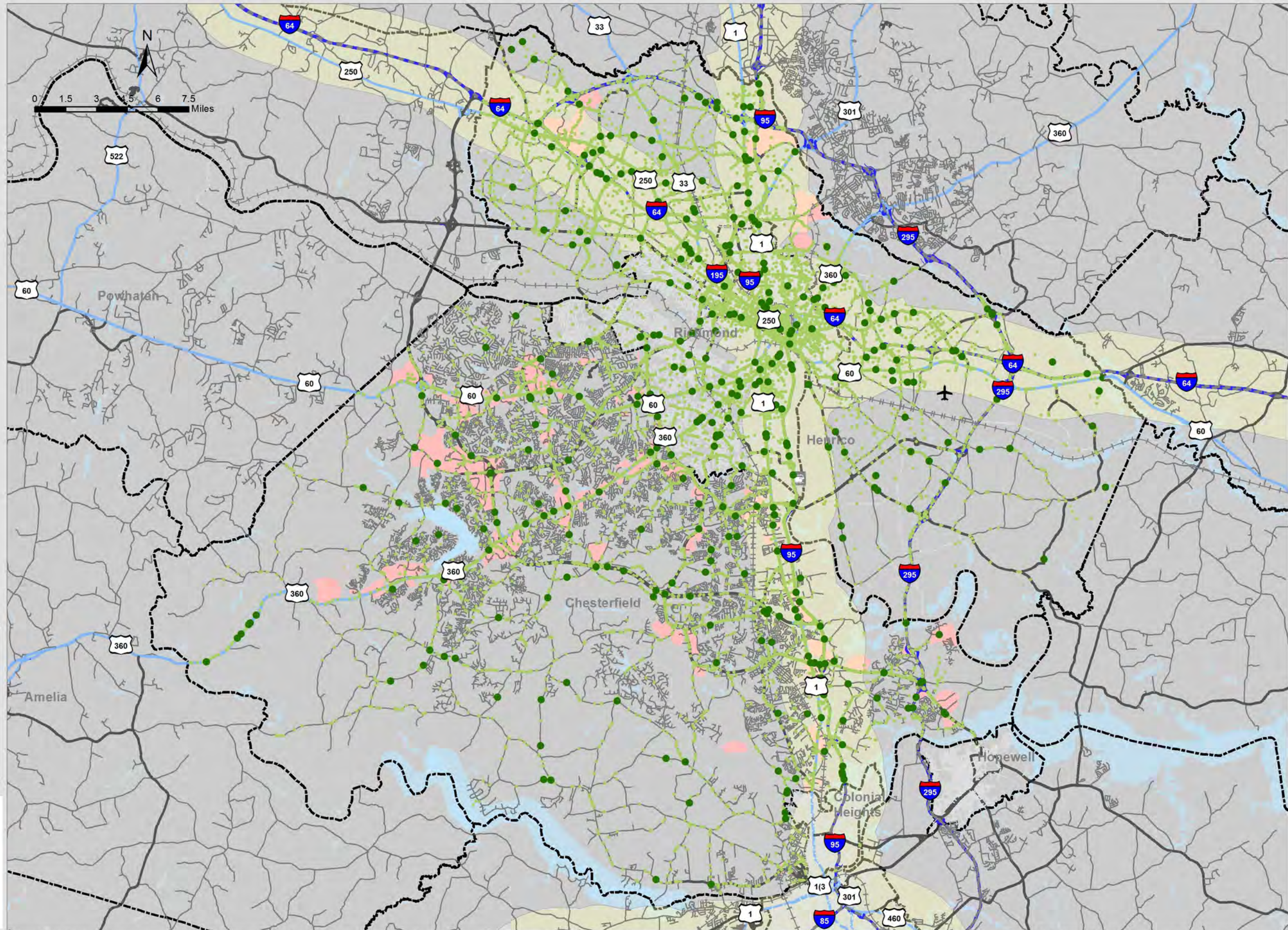
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Vehicular Crashes January 2013 - April 2019: Regional Workshop - Richmond Area Central

August 14, 2019

- Crash Severity**
- Fatal Crash
 - Injury Crash
- Roadway Functional Classes**
- Interstate
 - U.S. Route
 - State Route
 - Frontage Road
 - Secondary Route
 - Urban Road
- Ports
- Amtrak/Passenger Rail Stations
- Airports
- Rail Network
- Buffer around Primary COSS Facilities
- Urban Development Areas
- Regional Network
- Counties and Cities
- Water



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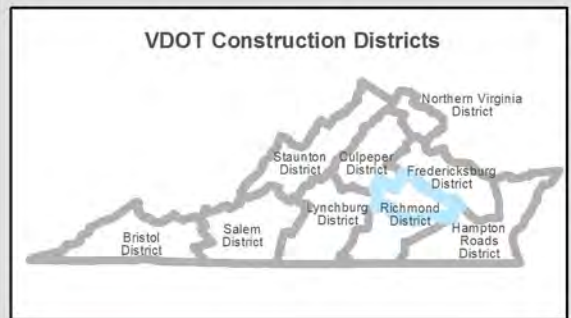
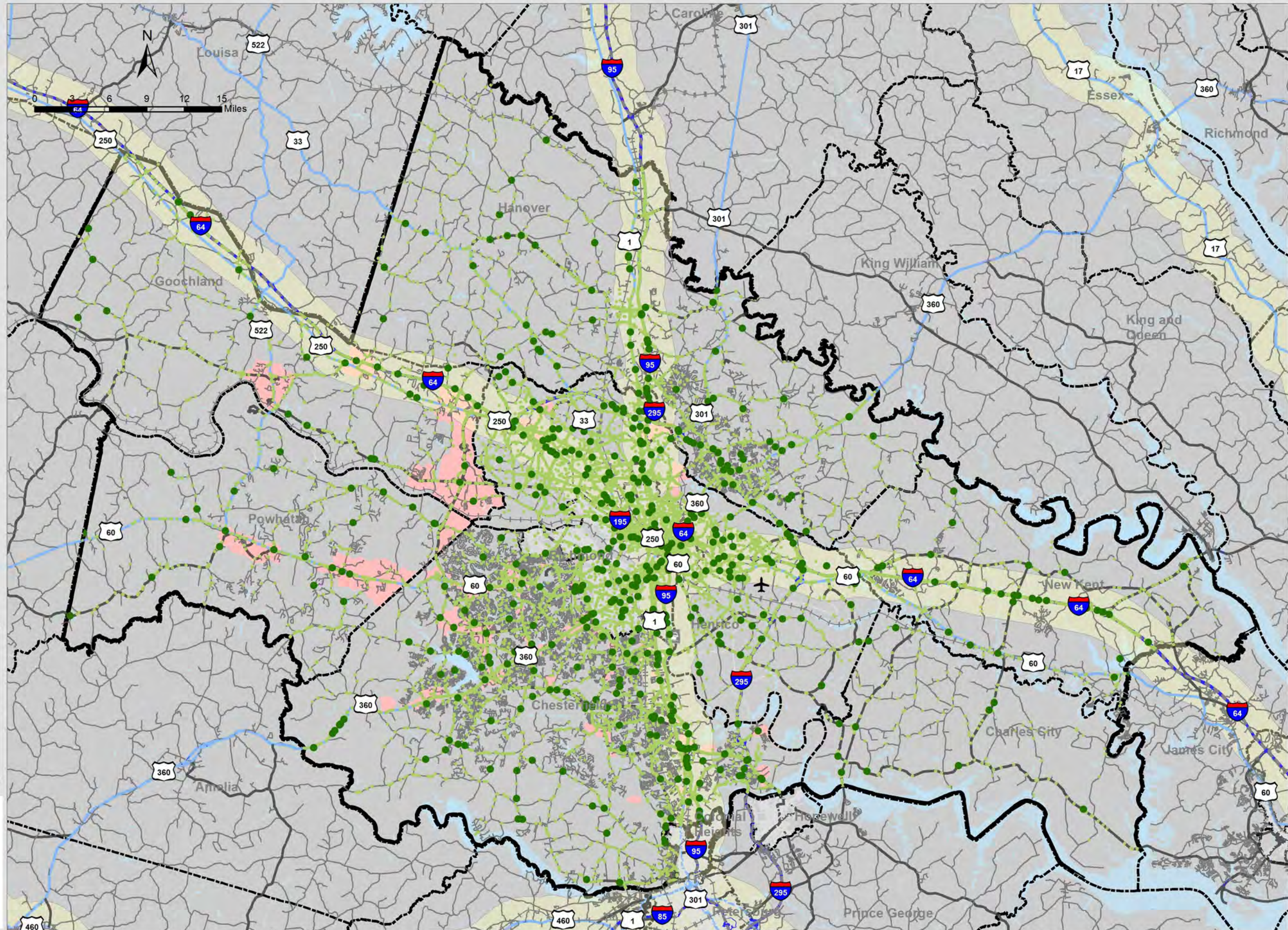
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Vehicular Crashes January 2013 - April 2019: Regional Workshop - Richmond Area

August 14, 2019

- Crash Severity**
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