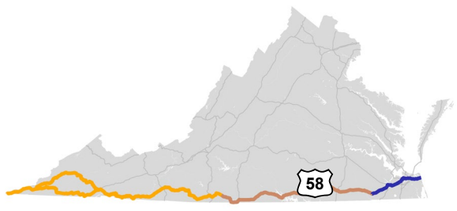
VTrans2040 Multimodal Transportation Plan

Corridors of Statewide Significance Needs Assessment

Southside Corridor (J)



Office of INTERMODAL Planning and Investment

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See *Corridors of Statewide Significance, Needs Assessment: Executive Summary and Methodology Report* for details on the overall assessment approach, data sources, and performance measures used throughout this report.

I. Corridor Overview

Corridors of Statewide Significance

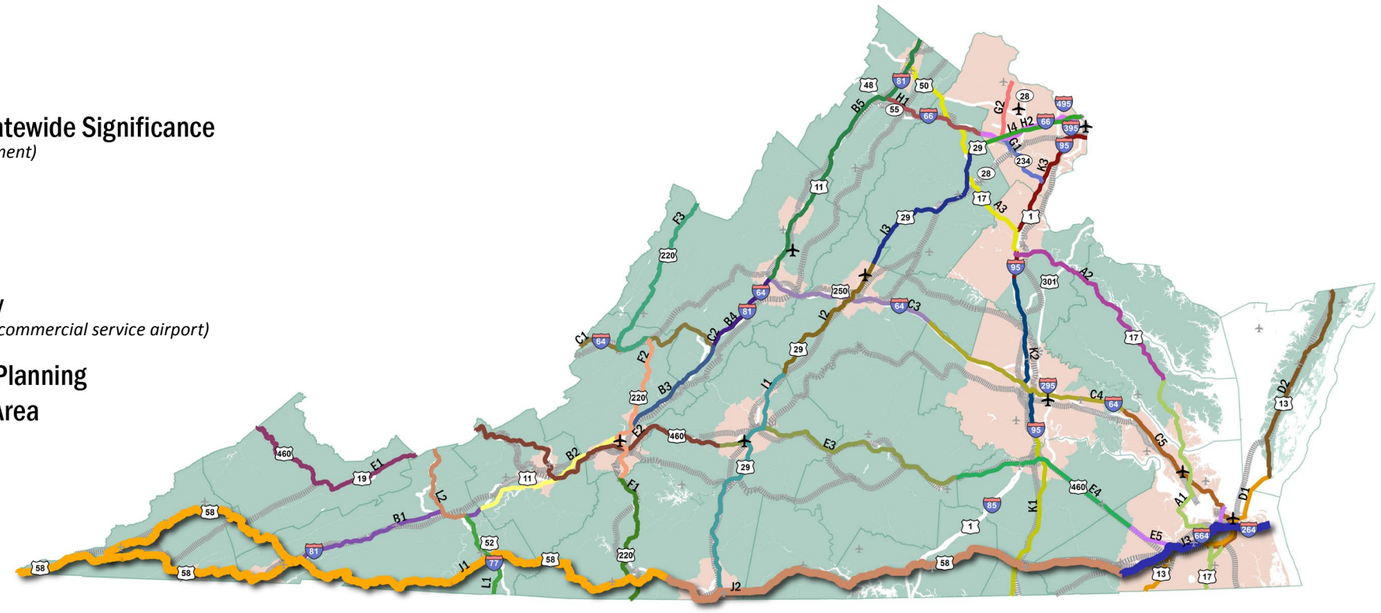
A	Coastal Corridor (US 17)
B	Crescent Corridor (I-81)
C	East-West Corridor (I-64)
D	Eastern Shore Corridor (US 13)
E	Heartland Corridor (US 460)
F	North Carolina to West Virginia Corridor (US 220)
G	North-South Corridor (Route 234)
H	Northern Virginia Corridor (I-66)
I	Seminole Corridor (US 29)
J	Southside Corridor (US 58)
K	Washington to North Carolina Corridor (I-95)
L	Western Mountain Corridor (I-77)

Corridor of Statewide Significance
(color varies by segment)

Railroad

Airport Facility
(grey denotes not a commercial service airport)

Metropolitan Planning Organization Area



The Southside Corridor (Corridor J) is defined primarily by US 58, which runs east to west for more than 500 miles, mostly in southern Virginia. US 58 acts as the major corridor for this part of the state, and it connects with and provides connections to all of the major north-south corridors in the Commonwealth, including I-81, I-85, I-95, and US 29. Within the Hampton Roads Area, many other major facilities can be accessed directly from US 58. US 58 shifts between two-lane and multi-lane sections and travels through 14 counties west of the Hampton Roads Area.

There are no true parallel facilities to US 58, although the highway accesses other major corridors and many other major routes run concurrently for stretches. US 58 Business and US 58 Bypass spurs exist through several of the urbanized areas in the corridor, including Martinsville, Danville, Emporia, Franklin, and Suffolk. US 58 Alternate runs parallel to US 58 in the far western portions of the state, west of Bristol. US 58 runs concurrently with other CoSS facilities for short stretches including I-77 (Corridor L), US 29 (Corridor I), US 220 (Corridor F), and US 460 (Corridor E).

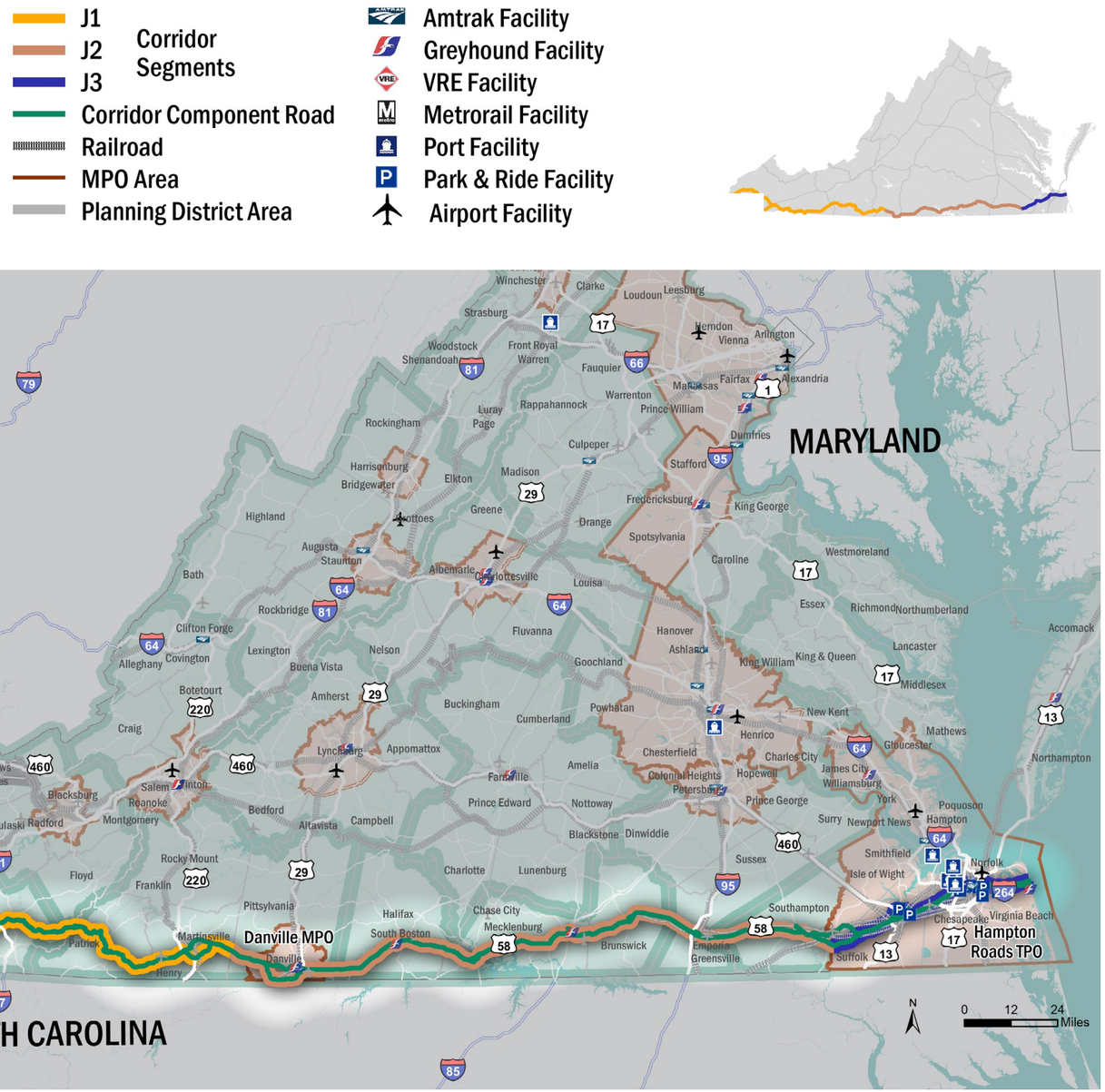
Passenger travel along the Southside Corridor is accomplished primarily via the highway facilities. Other travel options include:

- Transit service, available in the Hampton Roads Area;
- Numerous Park-and-Ride facilities, present in the Hampton Roads Area, including Suffolk, Chesapeake, Portsmouth, and Virginia Beach. In addition, many Park-and-Ride facilities are available in the western part of the state directly along the Southside Corridor, in Lee and Scott Counties, and along US 58 Alternate in the western part of Virginia;
- Three Greyhound bus stations, which operate in the Hampton Roads Area, with one each in Norfolk, Hampton, and Virginia Beach, as well as in Danville, South Boston, South Hill, and Emporia;
- Amtrak passenger rail, which can be accessed in Danville and Norfolk; and
- Fifteen airports, including two reliever facilities with commercial service in the Hampton Roads Area. In addition, US 58 provides indirect access to the two commercial-service airports in the area, Norfolk International and Newport News-Williamsburg Airports.

The Southside Corridor does not directly access the Port of Virginia, but it provides indirect access to the three port facilities via US 13. There are multiple rail lines along the Southside Corridor, although none run throughout the entire length of the corridor. CSX operates a spur of its National Gateway Corridor from Weldon, North Carolina, just south of the Virginia border, to the Hampton Roads Area to connect with the Port of Virginia facilities in that area. This corridor is CSX's primary freight corridor connecting the Port of Virginia with national markets. Norfolk Southern provides rail lines along the Southside Corridor from Brunswick County east to the Hampton Roads Area and the Port of Virginia facilities located there. Norfolk Southern also operates rail lines within the Southside Corridor and near US 58 Alternate in the western part of the state as part of its Heartland Corridor and Coal Corridor. The Southside Corridor also crosses multiple north-south freight rail corridors, including the main line of the National Gateway Corridor near Emporia, the Norfolk Southern Crescent Corridor, and the Norfolk Southern Coal Corridor.

Corridor Components

Highway Facilities	
Primary Facility	• US 58
Other Highway Facilities	• US 58 Business • US 58 Alt • US 58 Bypass
Transit Services	
	• Intercity bus service
Rail Facilities	
	• CSX National Gateway Corridor
Port Facilities	
	• Norfolk International Terminal • Portsmouth Marine Terminal • Virginia Internaitonal Gateway
Airport Facilities	
	• Norfolk International Airport • Newport News/ Williamsburg International Airport



Demographics and Economic Trends

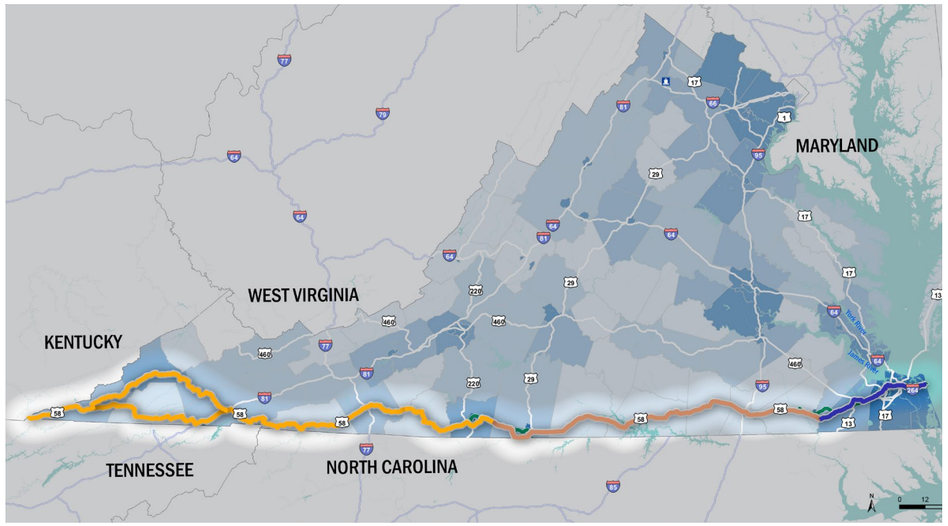
The primary population centers with greater than 500 persons per square mile along Corridor J are found in the cities along US 58 including the Cities of Bristol, Galax, Martinsville, Danville, Emporia, and Franklin. In addition, several larger cities in the Hampton Roads Area have high population densities, including Chesapeake, Norfolk, and Virginia Beach. Scott, Grayson, Patrick, Halifax, Mecklenburg, Brunswick, Greenville, and Southampton Counties have the lowest density along the corridor, with less than 50 persons per square mile. The most densely-populated segment along the corridor is Segment J3 in the Hampton Roads Area. Between 2012 and 2025, the City of Suffolk, in the Hampton Roads Area, is predicted to have the largest population growth (greater than 25 percent) among jurisdictions along the corridor. The Cities of Chesapeake, Emporia, and Galax are anticipated to have population growth between 11 and 25 percent. Overall, other than the Hampton Roads Area, population along the corridor is not expected to grow significantly, with populations decreasing in a few counties and in the City of Virginia Beach.

Current employment centers follow a pattern similar to the population centers, with employment highly concentrated in the cities along the corridor. The highest employment growth (11 to 25 percent) is anticipated in the Hampton Roads Area, the City of Emporia, and in Lee, Grayson, and Floyd Counties.

Corridor J passes through four Metropolitan Planning Organization (MPO) areas along its route, each with a different size and focus for its local economy. The Hampton Roads Transportation Planning Organization (TPO) Area has the highest GDP of any of the MPO areas in the corridor. The largest industry sectors in the corridor are health care, retail trade, and wholesale trade.

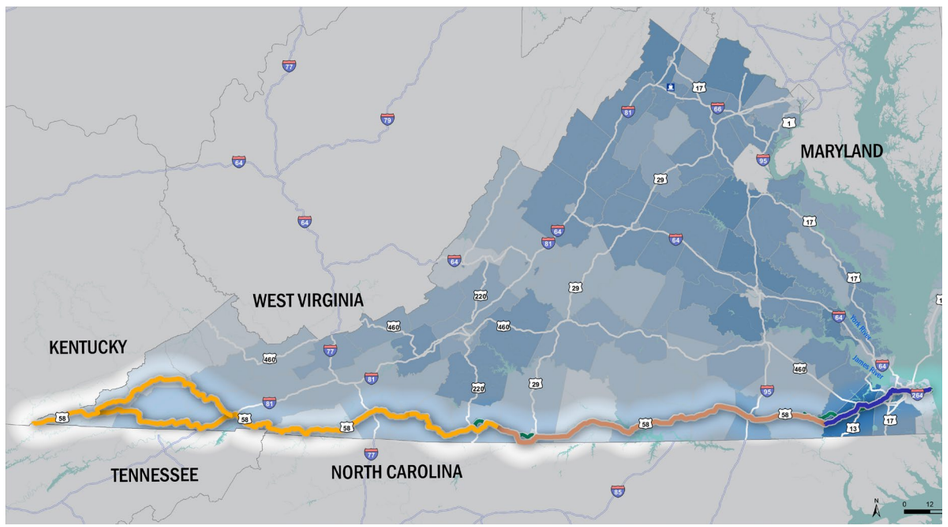
2012 Population Density (Persons / Square Mile)

- 0 - 50
- 50 - 100
- 100 - 250
- 250 - 500
- 500 +



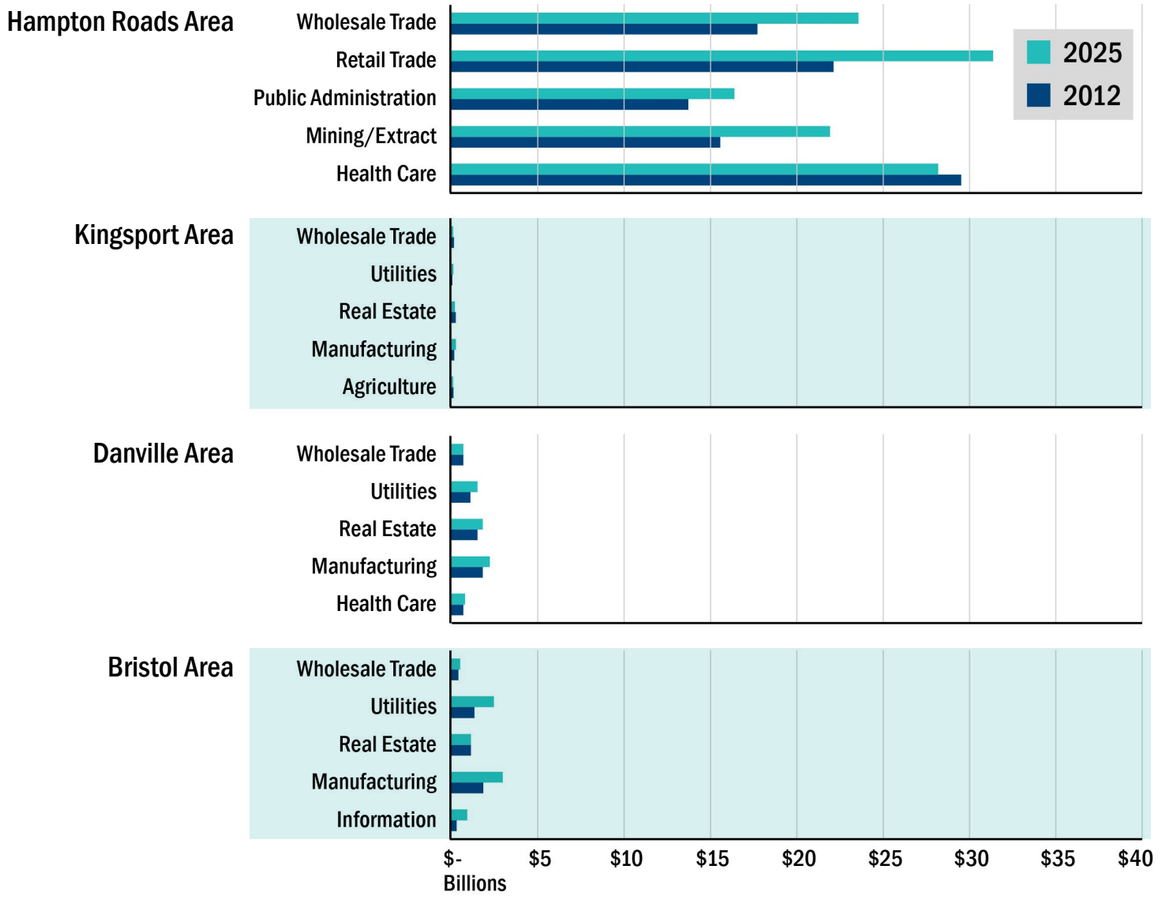
Population Growth (2012 - 2025 Percent Change)

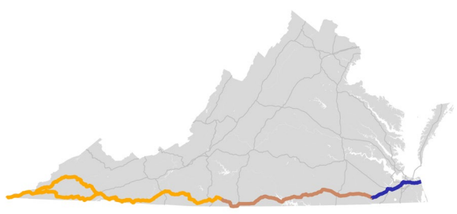
- -7% - 0%
- 1% - 5%
- 6% - 10%
- 11% - 25%
- 26% - 69%



CORRIDOR J OVERVIEW

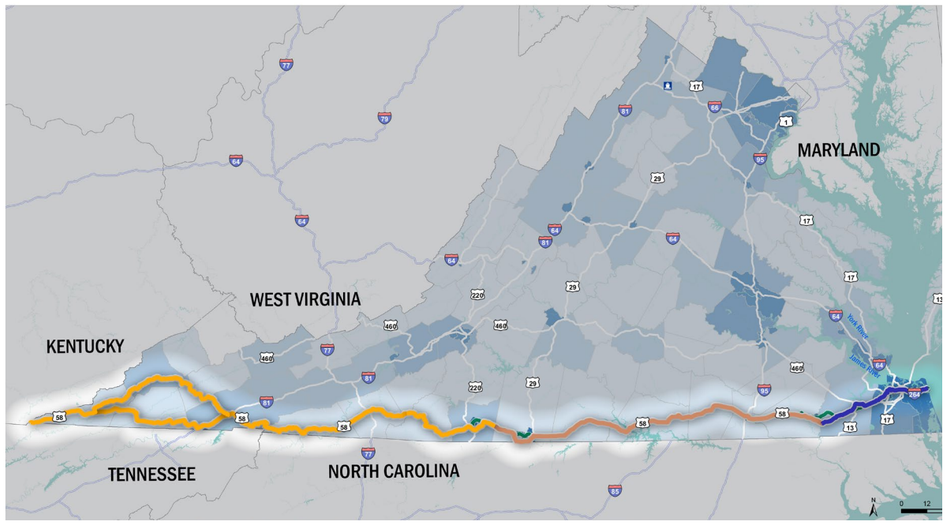
Top Industries (GDP)





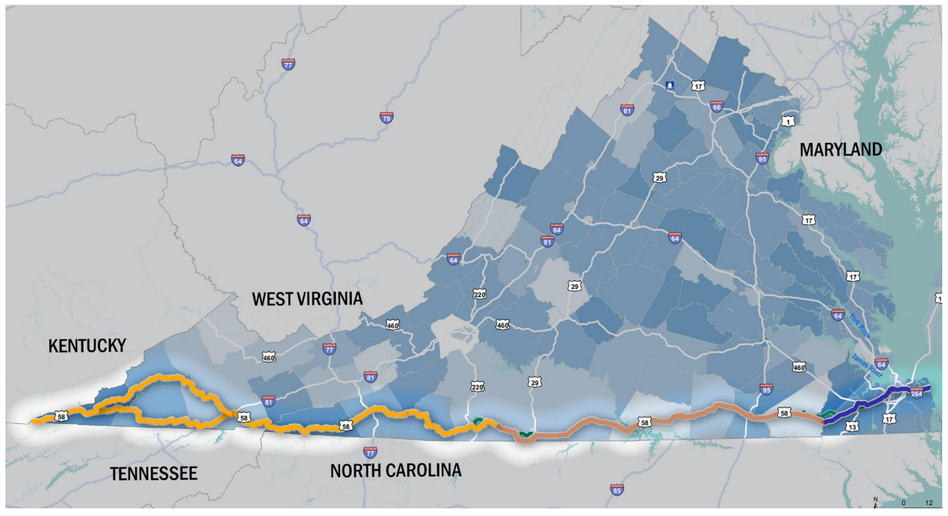
2012 Employment Density Jobs / Square Mile

- < 25
- 25 - 100
- 100 - 250
- 250 - 500
- > 500

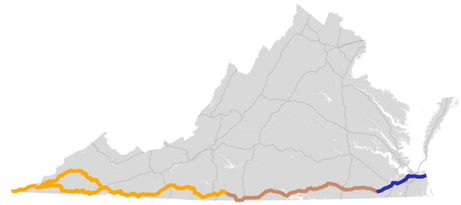


Employment Growth (2012 - 2025 Percent Change)

- -7% - 0%
- 1% - 5%
- 6% - 10%
- 11% - 25%
- 26% - 69%



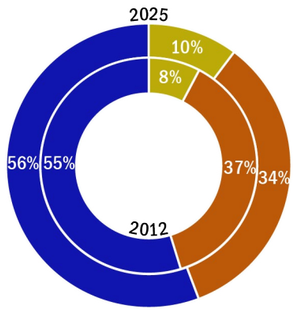
Corridor Travel Patterns



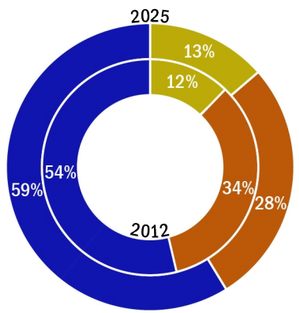
Passenger

Corridor J provides connections to Tennessee and Kentucky in the far southwestern corner of the state and passes through four MPO Areas - Kingsport, Bristol, Danville, and Hampton Roads - en route to its terminus on the Atlantic coast in Virginia Beach. In the Kingsport and Bristol Areas, traffic along Corridor J is dominated by through traffic with more than 60 percent of the traffic in each region having neither its origin nor its destination in the region. In the Danville Area, the proportion of local and through traffic is more evenly divided; 30 percent of traffic is through travel, 22 percent is local traffic within the Danville area, and the remainder of traffic within the corridor has only one trip end in the area. In the Hampton Roads Area, the vast majority of traffic along Corridor J (over 80 percent) is local, internal to the Hampton Roads Area.

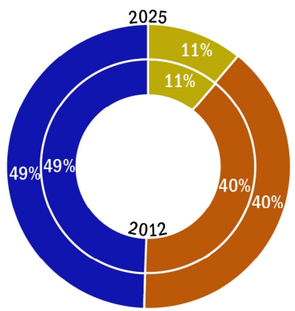
Kingsport Area



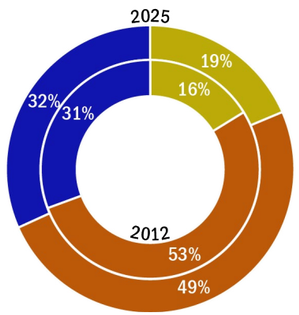
Bristol Area



Danville Area



Hampton Road Area



Freight

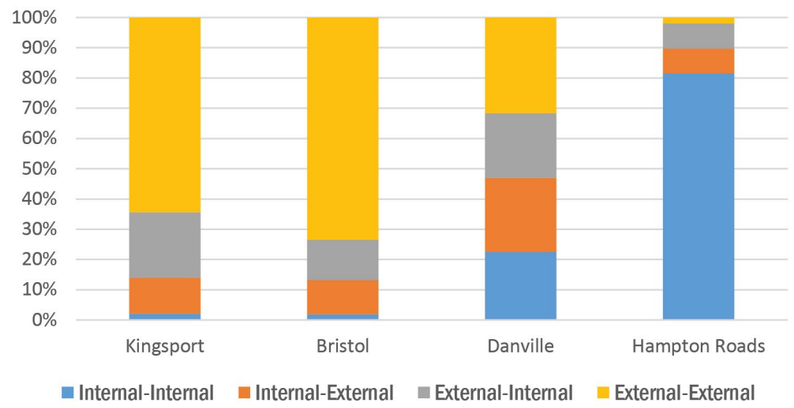
By truck, Corridor J carried 92 million tons of freight worth $147 billion in 2012, and is estimated to carry 125 million tons of freight worth $226 billion in 2025. On Corridor J, 45 percent of the truck freight tonnage, and 60 percent of the truck freight value, passes through Virginia. The major truck freight interstate through patterns are similar to those observed on Corridor B as a result of a concurrency between US 58 (Segment J1) and I-81 (Segment B1). In terms of tonnage, the largest truck freight flows on Corridor J are between North Carolina and the Hampton Roads Area, accounting for more than eight percent of the total truck freight tonnage on the corridor. North Carolina and Tennessee are the largest generators and attractors of truck freight tonnage on Corridor J, with 29 percent of the truck freight tonnage originating in these locations and 22 percent destined for these locations.

By rail, Corridor J carried 34 million tons of freight worth $26 billion in 2012, and is estimated to carry 36 million tons of freight worth $32 billion in 2025. On Corridor J, the majority of rail freight either originates from or is destined for Virginia, with only four percent of the rail freight tonnage and two percent of the total rail freight value passing through the Commonwealth. In terms of tonnage, the dominant flow of rail freight on Corridor I is from West Virginia, Kentucky, and Wise and Buchanan Counties in Virginia to the Port of Virginia marine terminal in Norfolk, accounting for more than 43 percent of the total corridor rail freight tonnage. Tennessee and Georgia are also major attractors of rail freight tonnage along Corridor J, with significant rail freight flows from Wise County and Kentucky. In terms of value, the dominant movement of rail freight on Corridor J is between the states of Illinois and Ohio and the Port of Virginia facilities in the Hampton Roads Area. These flows account for more than 55 percent of the total rail freight value on the corridor.

GDP by Sector, 2012 and 2025

- Freight Dependent
- Local Serving
- Knowledge-based

Distribution of Internal and External Travel



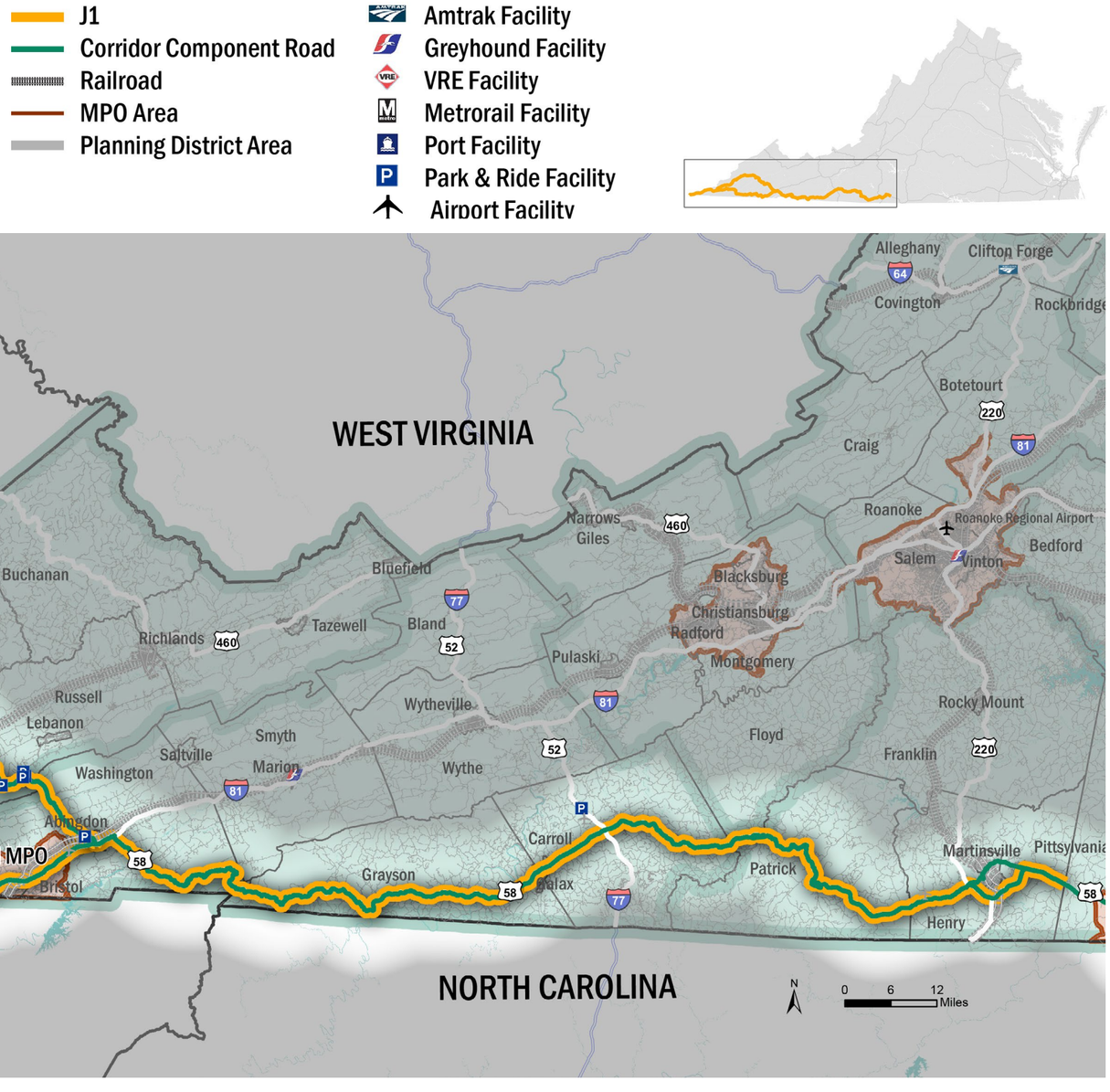
Truck Freight

2012	2025
Rail Freight Value	
$26 Billion	$32 Billion
Rail Freight Tonnage	
34 Million Tons	36 Million Tons
Freight Value per Ton	
$748	$874
Corridor Tonnage Passing Through	
4%	4%

Rail Freight

2012	2025
Truck Freight Value	
$147 Billion	$226 Billion
Truck Freight Tonnage	
92 Million Tons	125 Million Tons
Freight Value per Ton	
$1602	$1810
Corridor Tonnage Passing Through	
46%	46%

II. Segment J1



Corridor Segment J1 Components

- US 58
- US 58 Business
- US 58 Alt
- US 58 Bypass
- CSX National Gateway Corridor
- Intercity bus service

J1 SEGMENT PROFILE

Segment J1 begins at the Tennessee and Kentucky border and ends at the western border of Pittsylvania County. The segment serves 12 counties and four independent cities while traversing two MPO Areas - Kingsport and Bristol. US 58 is an important freight corridor in Virginia and provides access to economic opportunities in a relatively undeveloped portion of the state.

Highway Facilities: US 58 is primarily a two-lane rural highway through Segment J1, although sections are as wide as six lanes in the City of Bristol. US 58 Alternate is a mostly four-lane rural highway that parallels US 58 to the north through Big Stone Gap, Norton, and Russell County, rejoining US 58 at Abingdon. US 58 Business spurs provide local access in the urbanized areas in the segment, including Gate City and Martinsville. US 58 runs concurrently with other CoSS facilities in Segment J1, including I-81 between Bristol and Abingdon and US 220 near Martinsville.

Transit Services: District Three Public Transit provides Dial-a-Ride service for the localities of the Mount Rogers Planning District, which includes Bland, Carroll and Grayson Counties, the Towns of Abingdon, Marion, and Wytheville, and the independent City of Galax.

Rail Facilities: Norfolk Southern operates rail lines within the Southside Corridor and near US 58 Alternate in the western part of the state as part of its Heartland Corridor and Coal Corridor. North-south running rail lines, including both lines of the Norfolk Southern Crescent Corridor and Coal Corridor, can be accessed along the Southside Corridor.

Port Facilities: No port facilities are located directly adjacent to Segment J1, but the Southside Corridor does provide connections to the Port of Virginia facilities in the Hampton Roads Area.

Airport Facilities: There are no commercial airports located within this segment.

Major planned and future projects include:

Lee County:

- Install rumble strips on the existing paved shoulders along US 58 from the Tennessee border to Route 652; and
- Improve the transition alignment from the two-lane to four-lane section of US 58 Alternate in conjunction with the replacement of the bridge at Morgan Avenue.

Wise County:

- Install adaptive signal control equipment to improve traffic flow and safety on all portions of Segment J1 within Wise County;
- Install communication equipment to connect traffic signals to existing resources, sharing fiber optic cable along all portions of Segment J1 within Wise County;
- Install two- to four-foot paved shoulders, rumble strips, and guardrails along US 58 Alternate between Norton and St. Paul; and
- Install four-foot paved shoulders and rumble trips along US 23, including the portion where US 58 and US 23 are concurrent.

City of Bristol:

- Reconstruction of Old Airport Road at I-81/US 58 near exit 7, underneath US 58.

Washington County:

- Reconstruction with added capacity on US 58 from 0.61 km east of Route 708 to 0.2 km west of the western town limit of Damascus

Washington County and Russell County:

- Install four-foot paved shoulders and rumble strips on Porterfield Hwy (US 19/ US 58 Alternate/) between Route 660 and US 58 Alternate.

Grayson County:

- Install rumble strips on existing four-foot paved shoulders from Route 274 to the City of Galax.

City of Galax:

- Provide safety improvements to the US 58 corridor within Galax City limits.

Town of Hillsville:

- Upgrade existing span wire signal to mast arms at the intersection of US 58/ US 221 and US 52.

Carroll County:

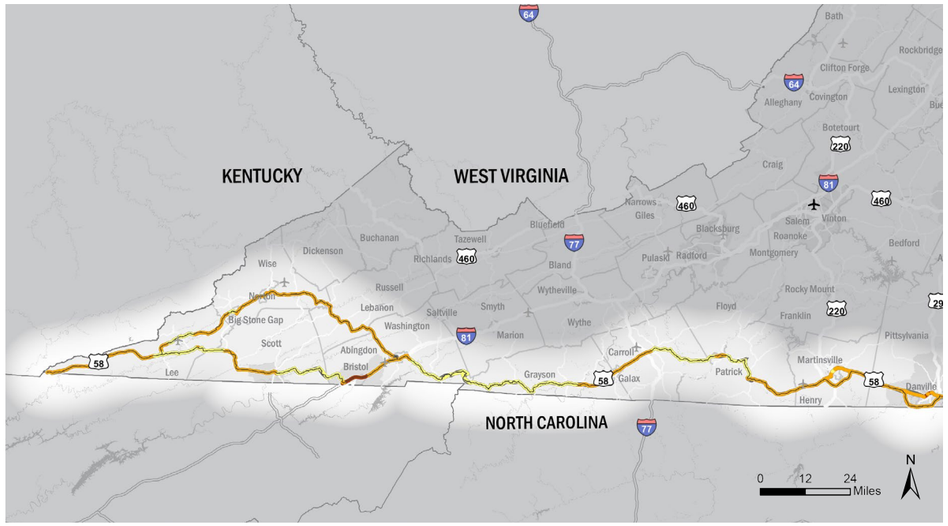
- Reconstruction with added capacity from 0.13 km west of Route 820 to 0.49 km east of Big Reed Island Creek.

Patrick County:

- Reconstruction with added capacity from 0.18 km west of Route 795 to 0.66 km east of Route 610; and
- Reconstruction with added capacity from 0.66 km east of Route 714 to the Stuart Bypass

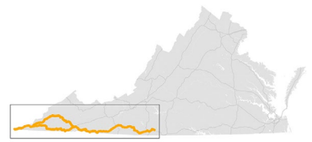
Henry County:

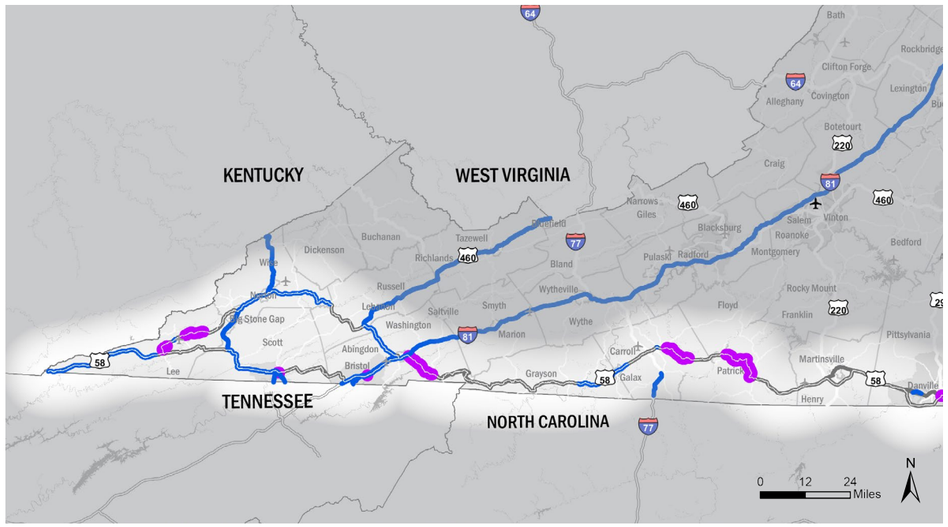
- Replace existing mast arm signal at the intersection of US 220 Business and US 58 Bypass ramps.



Number of Lanes (both directions)

- 2
- 3 - 4
- 5 - 6
- 7 - 8
- 9 - 12
- Primary facility





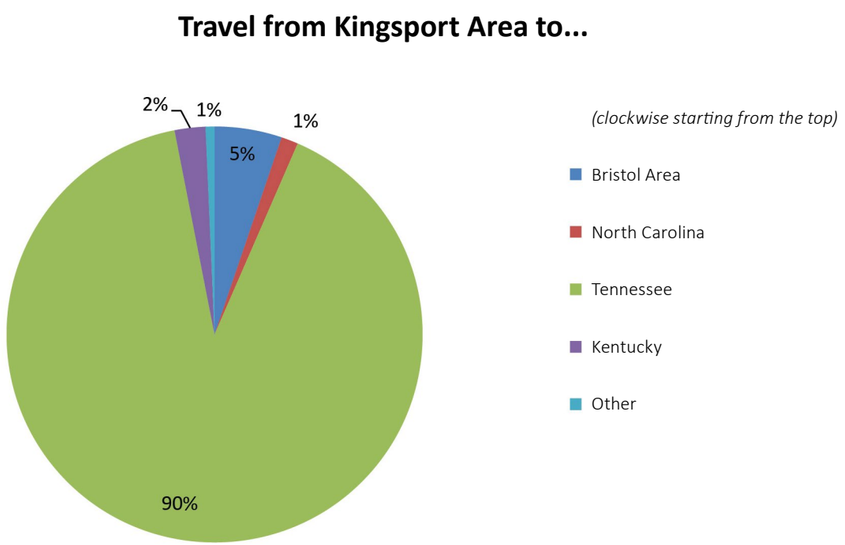
Future Projects

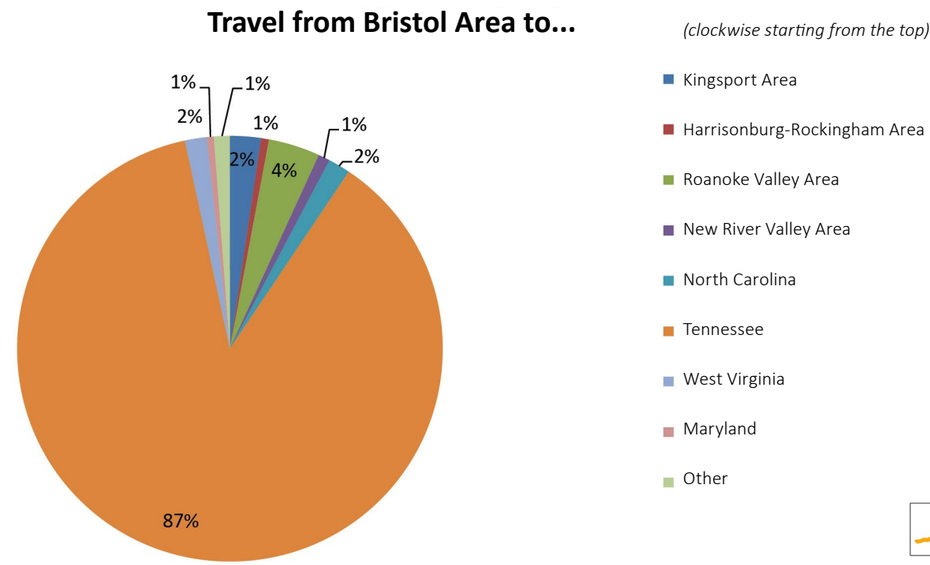
- Reconstruction with added capacity
- Safety improvements
- Primary facility

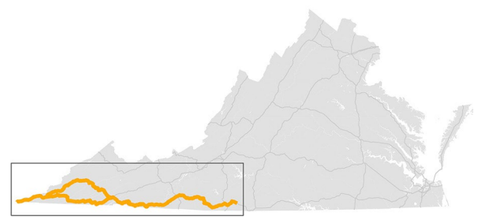
Travel Demand

Passenger Demand

Segment J1, the westernmost segment of Corridor J, provides connections through many counties in southwestern Virginia, in addition to the Kingsport and Bristol Areas. The vast majority (90 percent) of intercity travel originating in the Kingsport Area is destined for locations in Tennessee. An additional five percent is destined for the Bristol Area, and would make use of Segment J1. Intercity travel from the Bristol Area is also dominated by travel to Tennessee, which accounts for 87 percent of such travel. Travel to the Roanoke Area, which uses portions of Segment J1, accounts for four percent of intercity travel, and travel to Kingsport accounts for an additional two percent. Travel to all other destinations along Corridor J, or elsewhere in the state, is minimal.







J1 SEGMENT PROFILE

Freight Demand

By truck, Segment J1 carried 54 million tons of freight worth $107 billion in 2012, and is estimated to carry 75 million tons of freight worth $165 billion in 2025. On Corridor J, 45 percent of the truck freight tonnage, and 60 percent of the truck freight value, passes through Virginia. The major truck freight interstate through patterns are similar to those observed on Corridor B as a result of a concurrency between US 58 (Segment J1) and I-81 (Segment B1). In terms of tonnage, the largest truck freight flows on Corridor J are between North Carolina and the Hampton Roads Area, accounting for more than eight percent of the total truck freight tonnage on the corridor. North Carolina and Tennessee are the largest generators and attractors of truck freight tonnage on Corridor J, with 29 percent of the truck freight tonnage originating in these locations and 22 percent destined for these locations. The jurisdictions adjacent to Segment J1 are not major generators or attractors of truck freight on the corridor, with less than three percent of the total freight value originating in Segment J1 and less than two percent destined for the segment.

By rail, Segment J1 carried six million tons of freight worth $11 billion in 2012, and is estimated to carry eight million tons of freight worth $16 billion in 2025. On Corridor J, the majority of rail freight either originates from or is destined for Virginia, with only four percent of the rail freight tonnage and two percent of the total rail freight value passing through the Commonwealth. In terms of tonnage, the dominant flow of rail freight on Corridor I is from West Virginia, Kentucky, and Wise and Buchanan Counties in Virginia to the Port of Virginia marine terminal in Norfolk, accounting for more than 43 percent of the total corridor rail freight tonnage. Tennessee and Georgia are also major attractors of rail freight tonnage along Corridor J, with significant rail freight flows from Wise County and Kentucky. In terms of value, the dominant movement of rail freight on Corridor J is between the states of Illinois and Ohio and the Port of Virginia facilities in the Hampton Roads Area. These flows account for more than 55 percent of the total rail freight value on the corridor. The jurisdictions adjacent to Segment J1 are significant generators of low-value rail freight, accounting for more 23 percent of the total corridor rail freight tonnage, but representing only one percent of the total rail freight value on the corridor. The major rail freight generators along Segment J1 are Wise and Lee Counties.

Truck Freight

Major Origins (by Tonnage)
1. Virginia (27% / 27%)
2. North Carolina (18% / 18%)
3. Tennessee (11% / 10%)
4. Pennsylvania (4% / 5%)
5. Texas (4% / 4%)

Corridor Tonnage Originating in Segment J1: 7% / 6%

Major Origin-Destination Pairs for Freight
City of Norfolk* and North Carolina
City of Virginia Beach and North Carolina
North Carolina and Maryland
City of Chesapeake and North Carolina
Pennsylvania and Tennessee

Percentages represent 2012 / 2025 values.
*Includes freight passing through the Port of Virginia.

Major Destinations (by Tonnage)
1. Virginia (33% / 33%)
2. North Carolina (13% / 14%)
3. Tennessee (9% / 9%)
4. Pennsylvania (5% / 4%)
5. New York (4% / 4%)

Corridor Tonnage Destined for Segment J1: 6% / 5%

Rail Freight

Major Origins (by Tonnage)
1. Virginia (47% / 46%)
2. West Virginia (28% / 25%)
3. Wise County (21% / 19%)
4. Kentucky (8% / 8%)
5. Buchanan County (7% / 6%)

Corridor Tonnage Originating in Segment J1: 26% / 23%

Major Origin-Destination Pairs for Freight
City of Norfolk* and West Virginia
Wise County and City of Norfolk*
Buchanan County and City of Norfolk*
Wise County and Georgia
City of Norfolk* and Kentucky

Percentages represent 2012 / 2025 values.
*Includes freight passing through the Port of Virginia.

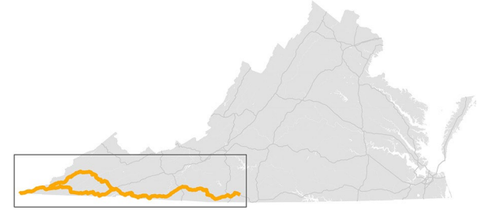
Major Destinations (by Tonnage)
1. Virginia (75% / 74%)
2. City of Norfolk* (62% / 57%)
3. Tennessee (7% / 6%)
4. City of Chesapeake (6% / 9%)
5. Georgia (5% / 5%)

Corridor Tonnage Destined for Segment J1: <1% / <1%

Traffic Conditions

Traffic Volume and AADT

On most sections of Segment J1, traffic volume is lower than traffic volumes elsewhere on Corridor J. Average daily traffic volumes vary across the segment, with the highest volumes reaching almost 50,000 vehicles per day on the section where US 58 runs concurrently with I-81. Off of I-81, traffic volumes on Segment J1 do not exceed 27,000 vehicles per day, which occurs in Scott County. Traffic volumes on all sections of Segment J1 (excluding the portion which runs concurrently with I-81) are projected to increase by fewer than 4,000 additional vehicles per day by 2025. The highest growth in traffic is projected to occur in Carroll County, east of the City of Galax.

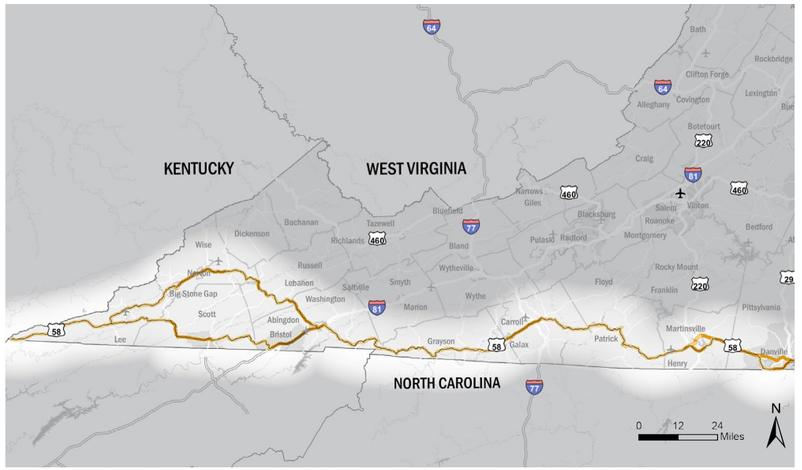


Traffic Volume 2014 (AADT)

- < 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- > 200,000
- Primary facility

Traffic Volume 2025 (AADT)

- < 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- > 200,000
- Primary facility



Change in Traffic Volume 2014- 2025 (AADT)

- Decreased
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 20,000
- > 20,000
- Primary facility

J1 SEGMENT PROFILE

Traffic Distribution

On average, traffic on Segment J1 is distributed throughout the day as shown in the graphs below. Weekday traffic shows morning and evening peak periods, with a steady increase in the flow between the two peak periods. The highest hourly traffic occurs between 5 and 6 p.m. which accounts for 7.8 percent of daily traffic and a less busy morning peak between 8 and 9 a.m. accounts for 5.9 percent of daily traffic. The combined weekday traffic from 7 a.m. to 7 p.m. period accounts for 78 percent of total daily traffic. Truck traffic exhibits a single peak during the midday period, showing the highest hourly flow of 6.2 percent of daily traffic between 11 a.m. and noon. Weekend traffic patterns also show a single peak during the middle of the day with the highest hourly flow between noon and 1 p.m. (7.9 percent of daily traffic) for all traffic, and noon to 1 p.m. (6.5 percent of daily traffic) for truck traffic.

Weekday traffic volumes on Segment J1 vary by as much as 33 percent throughout the year, with the highpoint in August (around 18,000 vehicles per day) and the low point in January (around 14,000 vehicles per day). Truck volumes vary less than passenger volumes, with the June high (around 2,500 vehicles per day) 19 percent higher than the January low (around 2,000 vehicles per day). Weekend traffic levels also vary over the course of the year, and the highest levels of weekend traffic (August, around 15,000 vehicles per day) are 44 percent higher than January levels (around 10,000 vehicles per day). Weekend truck traffic is steadier than all vehicle traffic, with the June high 26 percent higher than the April low. Since truck volumes account for a relatively small portion of traffic on Segment J1, traffic conditions are much more responsive to variations in automobile traffic than truck traffic.

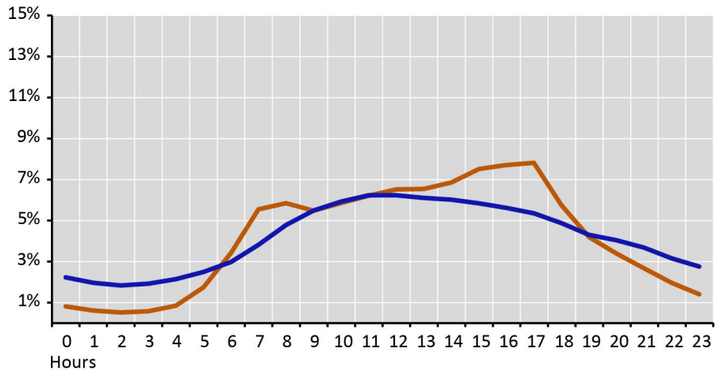
Truck Volumes

The percent of daily traffic comprised of heavy trucks on Segment J1 is lower than on other segments of Corridor J. On most sections of Segment J1, heavy trucks comprise five percent or less of total daily traffic. Where US 58 runs concurrently with I-81 in Segment J1, heavy trucks make up about ten percent of total traffic. On some sections of US 58 in Patrick County, heavy trucks comprise eight to 13 percent of daily traffic.

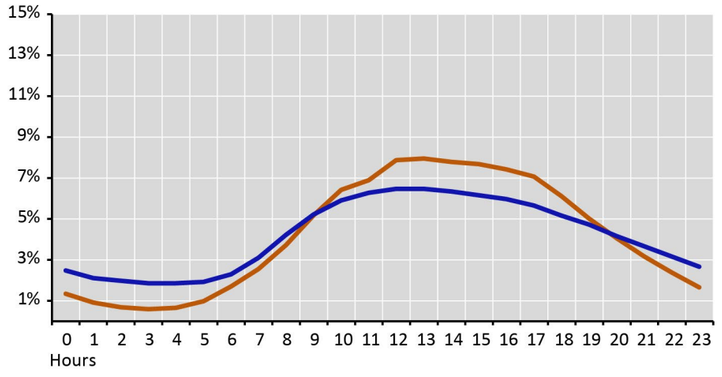
Percent Heavy Trucks

- < 5%
- 5% - 10%
- 10% - 15%
- 15% - 20%
- > 20%
- Primary facility

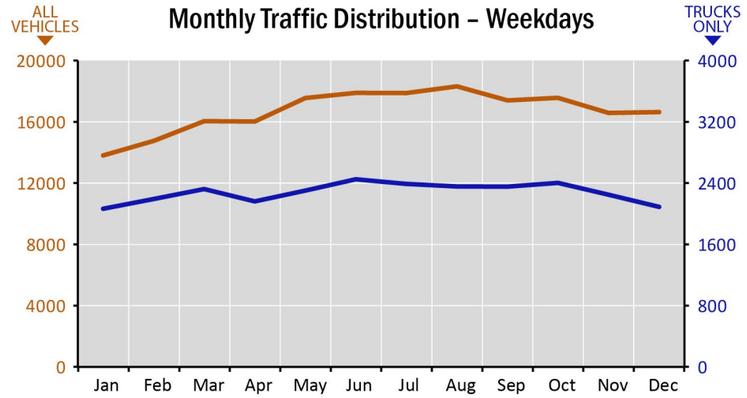
Hourly Traffic Distribution – Weekdays



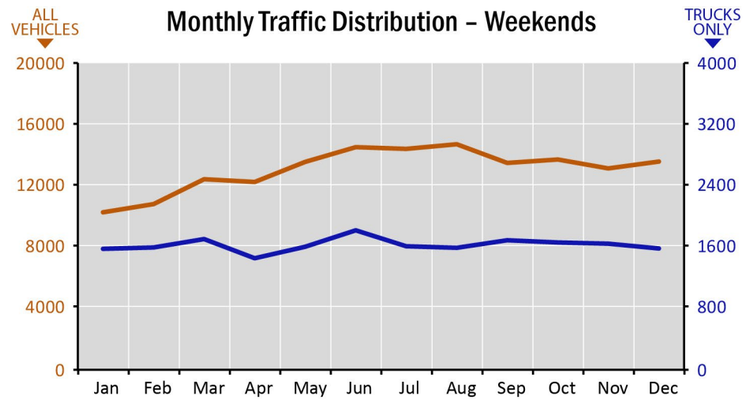
Hourly Traffic Distribution – Weekends



Monthly Traffic Distribution – Weekdays

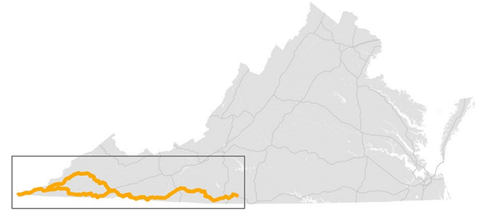


Monthly Traffic Distribution – Weekends

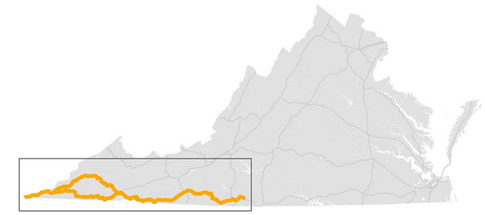


All Vehicles

Trucks



J1 SEGMENT PROFILE

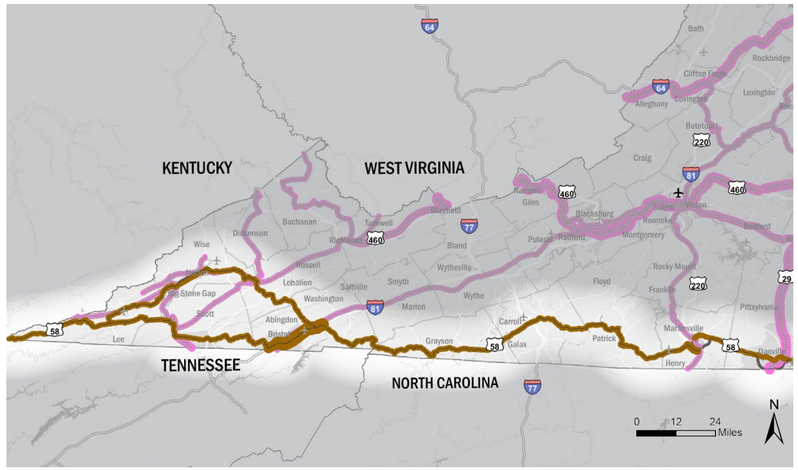


Freight Flows

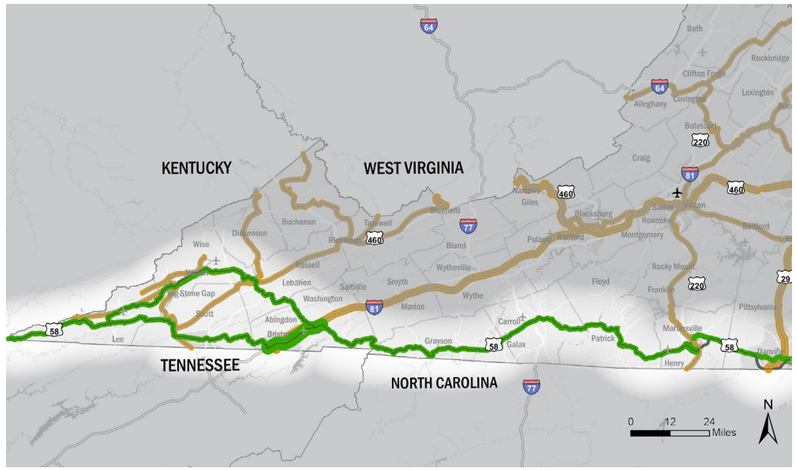
In Lee County, freight movements on Segment J1 rely more heavily on rail, in terms of tonnage, and on truck, in terms of value. In total, 865,000 tons (42 percent) of freight is moved through this section of Segment J1 by truck, compared to 1.2 million tons (58 percent) by rail. By value, however, $486 million (78 percent) of freight travels by truck, while $135 million (22 percent) travels by rail. On average, a ton of freight traveling through this section of Segment J1 by truck is worth $561 while a ton of freight traveling by rail is worth only $114. In 2025, truck freight tonnage and value in this area of Segment J1 are expected to increase while rail freight tonnage is expected to decrease and value is expected to increase. The percentage of freight traveling by truck is expected to increase by tonnage and by value to 50 percent and 81 percent, respectively. The value per ton will likely decrease to $555 on trucks and increase to $135 on rail.

On the portion of US 58 that runs concurrently with I-81 in Segment J1, freight is moved primarily by truck in terms of both tonnage and value. In total, 54 million tons (90 percent) of freight is moved through this section of Segment J1 by truck and six million tons (10 percent) by rail. By value, $106.5 billion (90 percent) of freight travels by truck and $11 billion (10 percent) travels by rail. On average, a ton of freight traveling through this section of Segment J1 by truck and by rail is worth $1,966 and $1,939, respectively. In 2025, truck freight tonnage and value in this area of Segment J1 are expected to increase. The percentage of the freight traveling by truck is expected to remain the same by tonnage and to increase by value to 91 percent. The value per ton will likely increase to $2,209 on trucks and to $1,949 on rail.

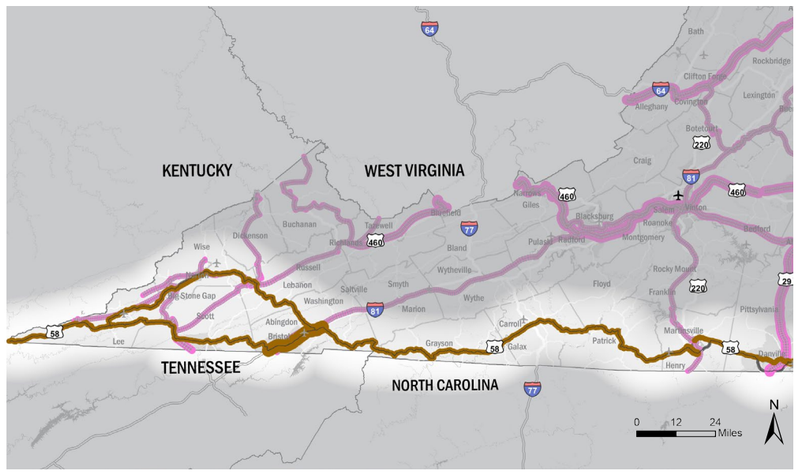
Annual Freight by Tonnage, 2012



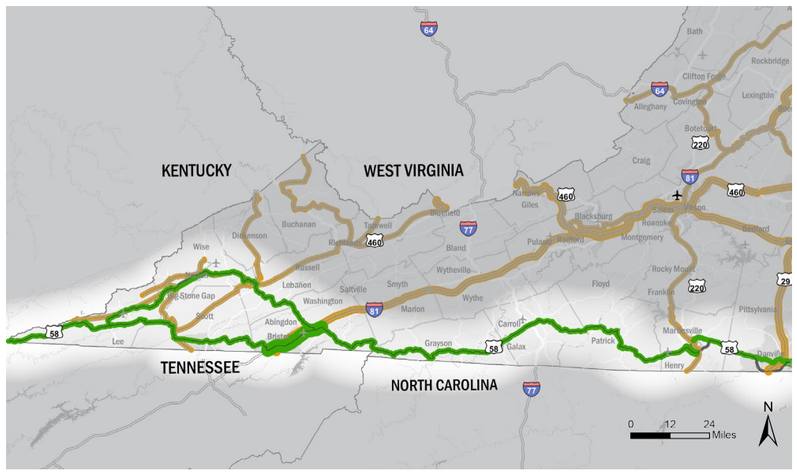
Annual Freight by Value, 2012



Annual Freight by Tonnage, 2025



Annual Freight by Value, 2025



Truck Freight (in tons)
- < 10M
- 10M - 25M
- 25M - 50M
- 50M - 100M
- > 100M
- Primary facility

Rail Freight (in tons)
- < 10M
- 10M - 25M
- 25M - 50M
- 50M - 100M
- > 100M
- Primary facility

Truck Freight
- < $10B
- $10B - $50B
- $50B - $100B
- $100B - $200B
- > $200B
- Primary facility

Rail Freight
- < $10B
- $10B - $50B
- $50B - $100B
- $100B - $200B
- > $200B
- Primary facility

Redundancy and Mode Choice

Passenger trips on Segment J1 of the Southside Corridor have limited travel options, both in terms of travel path and mode choice. US 58 Alternate serves as a parallel route to US 58 in the western section of the segment, but no parallel facility exists elsewhere in the segment. Greyhound offers service from the Bristol Area, although its station is located in Tennessee. Automobile travel to destinations like Danville and Kingsport, Tennessee is cost competitive with the available bus service (based on the 2014 federal standard mileage rate of 56 cents per mile), and is usually much faster as well. Service frequencies are the most severely limiting factor for bus service. District Three Public Transit provides Dial-a-Ride service for the localities of the Mount Rogers Planning District, which includes Bland, Carroll and Grayson Counties, the Towns of Abingdon, Marion, and Wytheville, and the independent City of Galax.

Park-and-Ride

Within Segment J1, commuters can utilize many Park-and-Ride locations. Russell County has the most Park-and-Ride locations, as well the highest number of Park-and-Ride spaces, while Lee County has the highest utilization rate of spaces available in the region. At 79 percent, Lee County has a rate higher than the statewide average for Park-and-Ride utilization, which is 76 percent. Washington County's Park-and-Ride utilization rate matches the statewide average.

Comparable Travel Options

Danville to Bristol

Inter-City Bus	*Train*
1 Trip per Day 13:20 Travel Time $104 Est. Cost	0 Trips per Day 0:00 Travel Time $0 Est. Cost

Auto

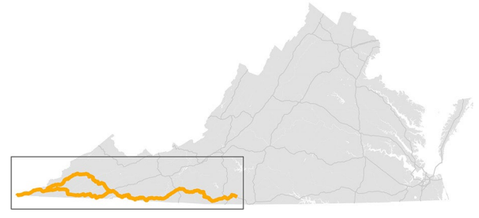
Via Rt. 58 / I-81: 4:16 Travel Time $114 Est. Cost

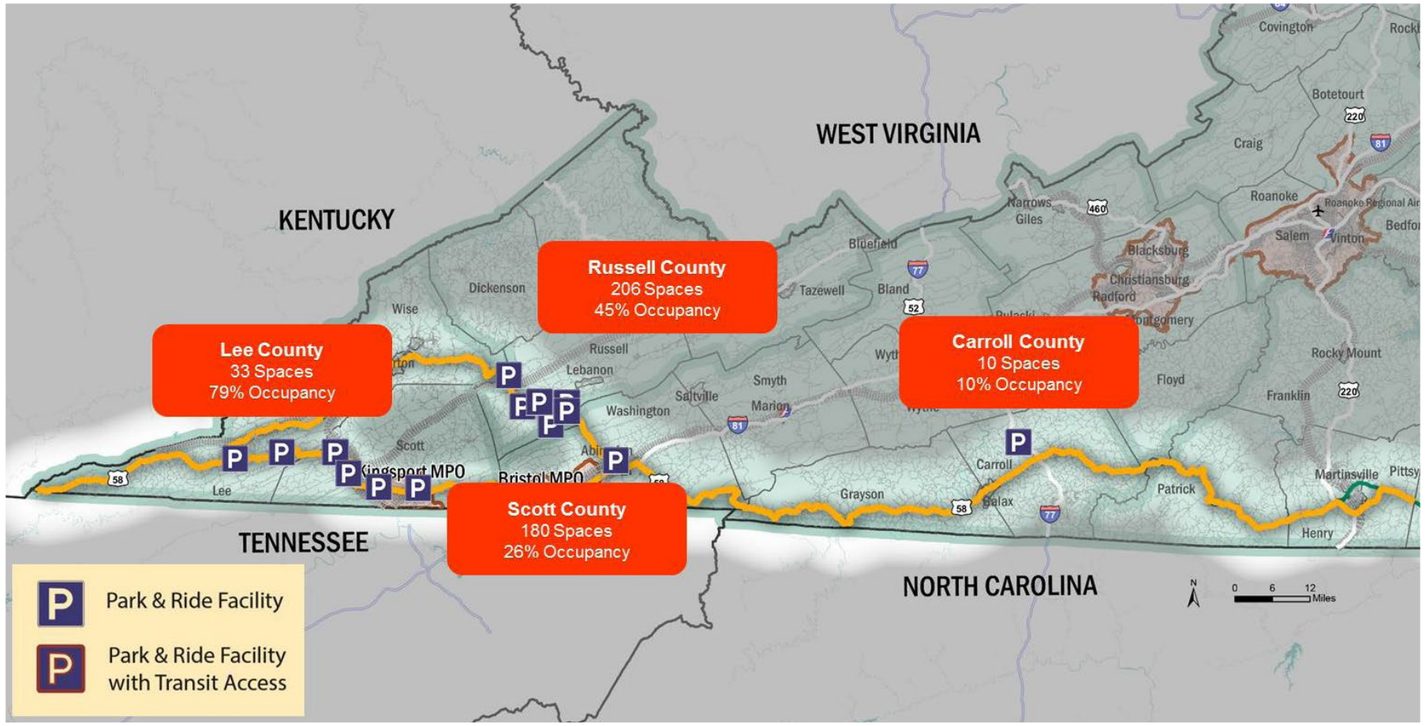
Bristol to Kingsport, TN

Inter-City Bus	*Train*
1 Trips per Day 0:40 Travel Time $14 Est. Cost	0 Trips per Day 0:00 Travel Time $0 Est. Cost

Auto

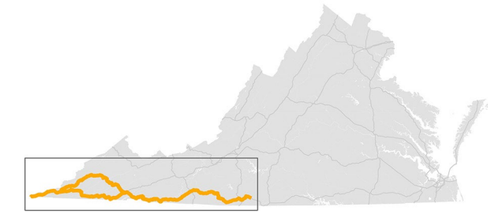
Via Rt. 58: 0:39 Travel Time $13 Est. Cost
Via Rt. 11W: 0:32 Travel Time $13 Est. Cost





Safety

Between 2010 and 2012, 252 severe crashes occurred on Segment J1, concentrated in several areas. In Russell County, along US 58 Alternate (Trail of the Lonesome Pine), over a stretch of approximately 1.8 miles near the intersection with Route 71, there were 17 collisions. Along US 58 Alternate/US 19 (Porterfield Highway) in Washington County, there were 13 incidents over a two-mile stretch near the intersection with Brumley Gap Road. In the Town of Abingdon on Route 75 (Cummings Street), there were 18 crashes over 0.6 miles between Wall Street S and I-81. In Galax, on US 58/ US 221 (East Stuart Drive), 25 crashes took place over 1.9 miles between Country Club Lane and Connor Lane. In Martinsville along US 58 Business (East Church Street), 19 collisions occurred over approximately 0.9 miles between Watt Street and the city line near Cabell Street; of the 19, nine collisions occurred at the intersection with East Watt Street.



Performance Metrics:

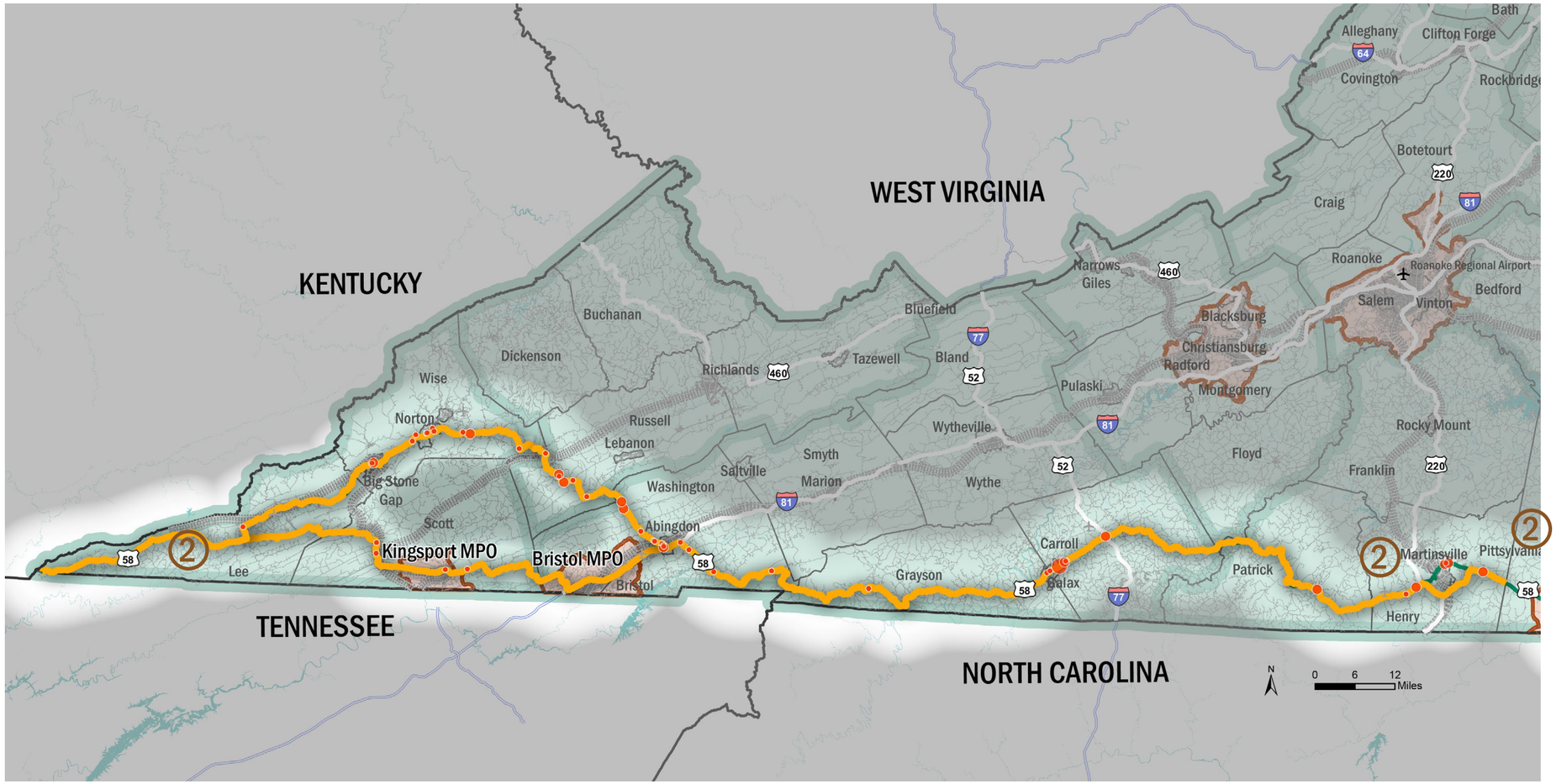
Number of Severe Crashes	252
Severe Crashes/Million VMT	0.2
Number of Railroad Crashes	6

Fatality and Injury Crashes (2010 - 2012)

- < 5
- 5 - 10
- 11 - 15
- 16 - 20
- > 20

Railroad Incidents/Accidents per County (2011-2014)

#



Congestion

Performance Metrics:

Person Hours of Delay per Mile	5
Freight Ton Hours of Delay per Mile	8.8K

Passenger Delays

Passenger congestion along Segment J1 is relatively low on a per-mile basis, with an average delay of just five person-hours per mile. Throughout the segment, passenger congestion is minimal; however, passenger delay exceeds 100 person-hours per mile in a few locations, as follows:

- US 58 near US 58 Business in the Town of Gate City;
- Route 381 at the intersection with US 11 in Bristol;
- Near the intersection of US 11 and US 19 in the Town of Abingdon; and
- US 58 Business at the intersection with US 220 Business in the City of Martinsville.

Peak-period passenger delays account for 31 percent of daily congestion, which is considerably lower than the average for the peak-period share of congestion on CoSS segments.

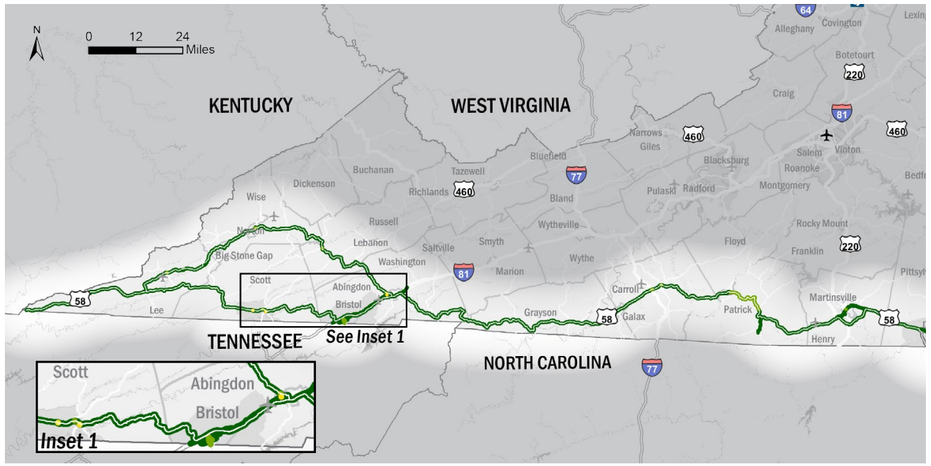
Freight Delays

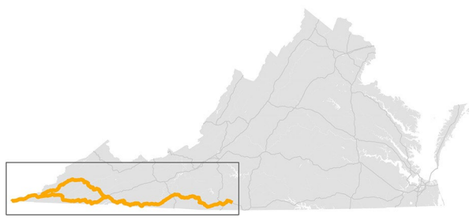
Freight delays along Segment J1 are relatively low on a per-mile basis, with an average delay of around 8,800 ton-hours per mile. The only locations where freight delays exceed 250,000 ton-hours per mile are located in and between the City of Bristol and the Town of Abingdon, where freight volumes are highest because US 58 runs concurrently with I-81. Specific locations with significant freight delay include:

- US 11 between I-81 in Bristol and Route 611 near the Virginia Highlands Airport;
- Near the intersection of US 11 and US 19 in the Town of Abingdon;
- I-81/US 58 at the interchange with Route 140 (exit 14);
- I-81/US 58 at the interchange with US 58 Alternate (exit 17); and
- US 58 at the interchange with I-81 near Abingdon.

Peak-period freight delays account for just 11 percent of daily congestion, which significantly less than the average for the peak-period share of congestion on CoSS segments.

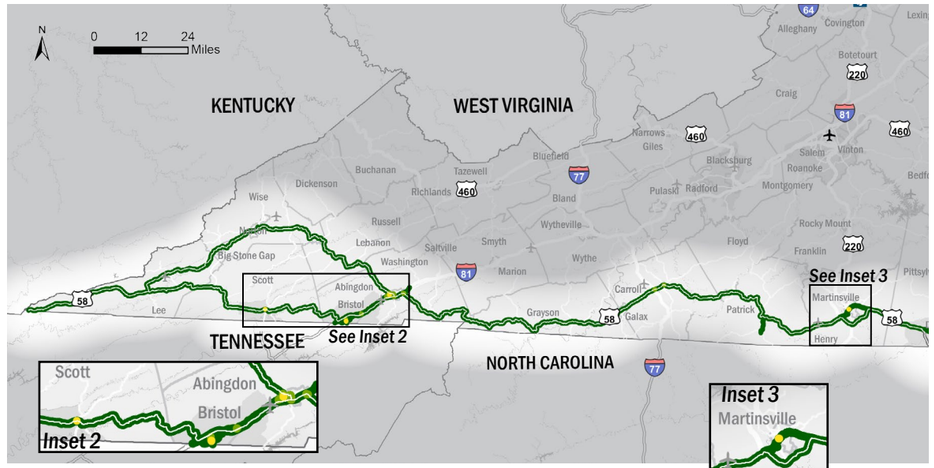
Daily Person Hours of Delay Per Mile





< 50
51 - 100
101 - 250
251 - 500
> 500

Daily Freight Ton Hours of Delay Per Mile



< 100,000
100,001 - 250,000
250,001 - 500,000
500,001 - 1,000,000
> 1,000,000

Reliability

Weekday Peak

Reliability of travel during the peak period on a typical weekday on Segment J1 ranges from 0.00 to 1.44 in terms of reliability index, with an average value of 0.09. The only location in the segment where the peak period reliability index exceeds the statewide threshold is on the US 58 Bypass near the interchange with US 58 in Henry County.

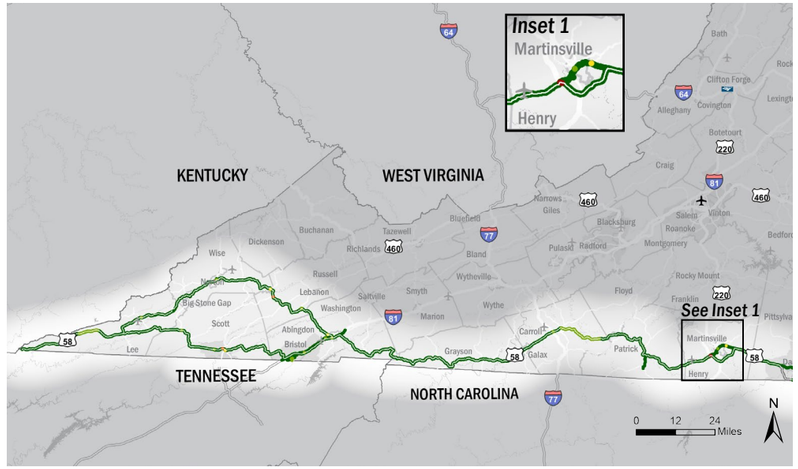
Weekday

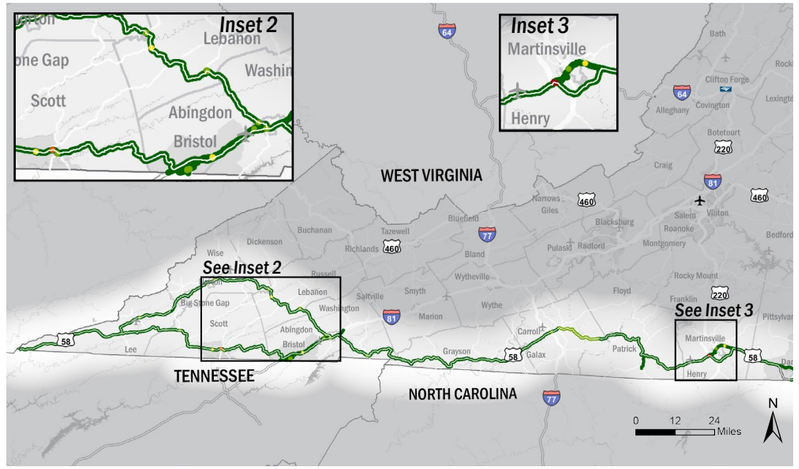
Reliability of travel during a typical weekday ranges from 0.00 to 0.91 in terms of reliability index, with an average value of 0.08. While the average weekday reliability index for this segment is lower than the average for the state, several locations have reliability index values exceeding the statewide threshold, as follows:

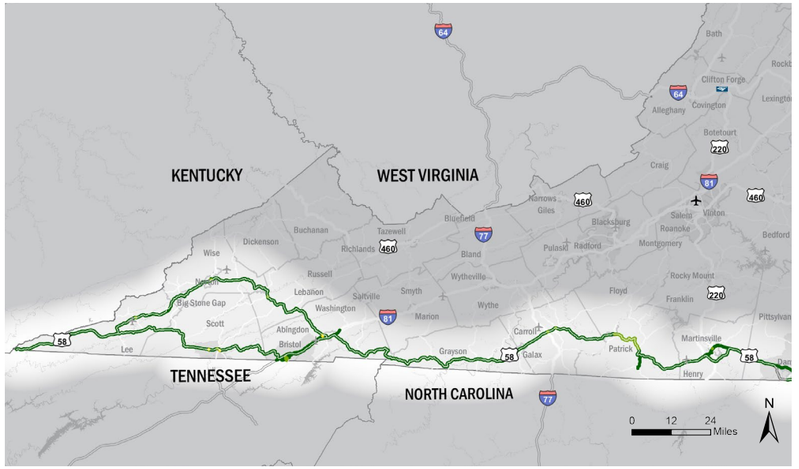
- Both intersections of US 58 with US 58 Business in the Town of Gate City;
- US 11 at Route 659 in the City of Bristol;
- US 58 Alternate at Route 65 in Russell County;
- US 58 Bypass near the interchange with US 58 in Henry County; and
- US 58 Business at Route 57 in Henry County.

Weekend

Reliability of travel during a typical weekend ranges from 0.00 to 0.56 in terms of reliability index, with an average value of 0.07. None of the locations along Segment J1 have reliability index values exceeding the statewide threshold.





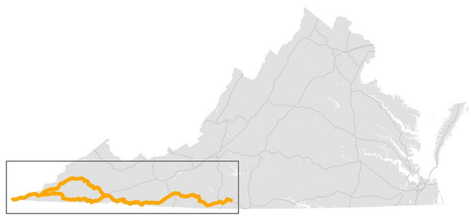


Reliability Index

- < 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- > 0.8
- Primary facility (in white)

Statewide reliability index thresholds have been set for weekday peak, weekday and weekend travel to assess the reliability of travel on each segment on all corridors of statewide significance. A higher reliability index indicates that travel times are more unreliable. The following are the reliability index thresholds:

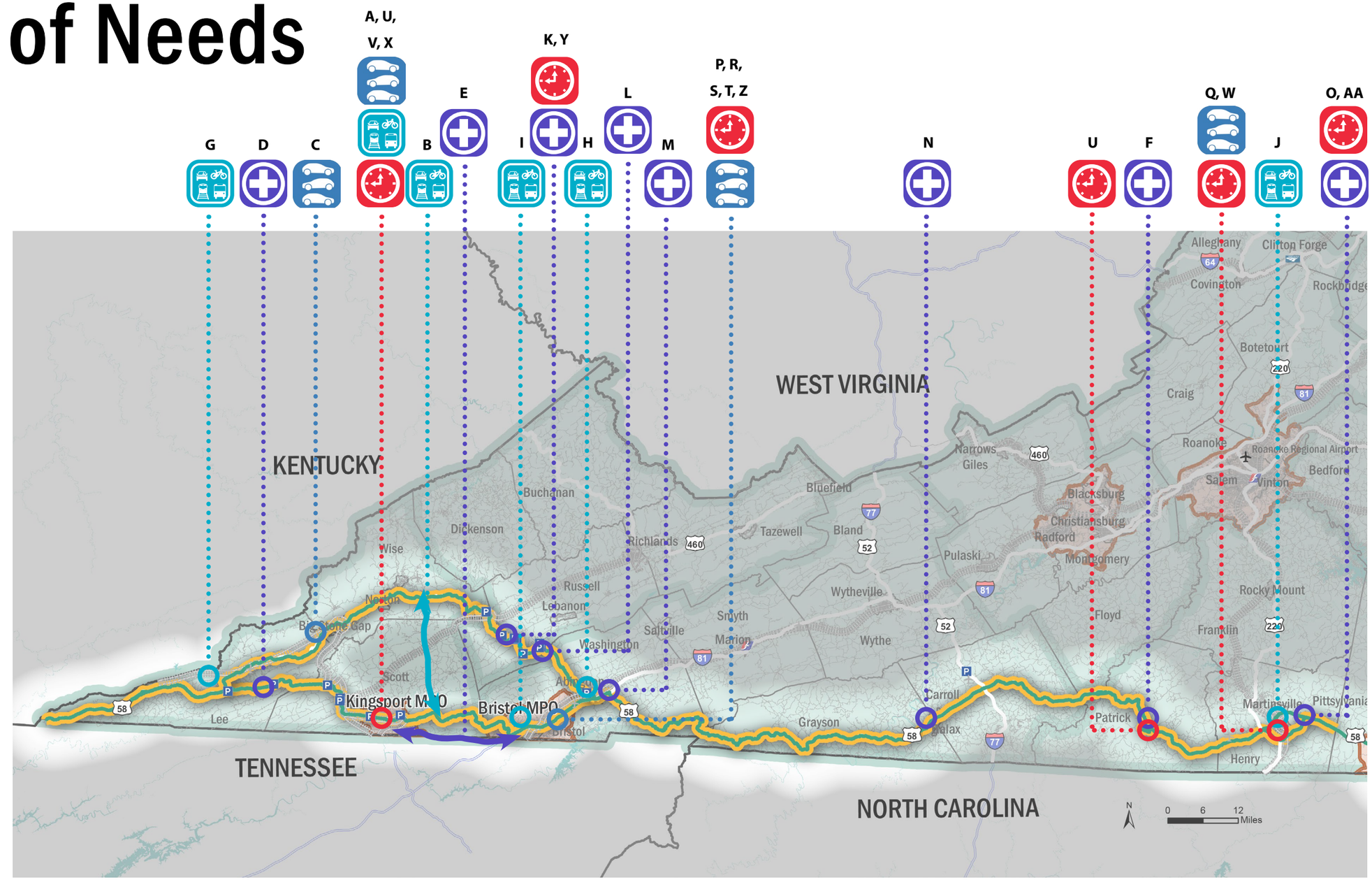
- Weekday Peak - 0.80
- Weekday - 0.40
- Weekend - 0.60



J1 SEGMENT NEEDS

Summary of Needs

Identified locations are approximate. See "Summary of Needs" table on the following page for details.



J1 SEGMENT NEEDS

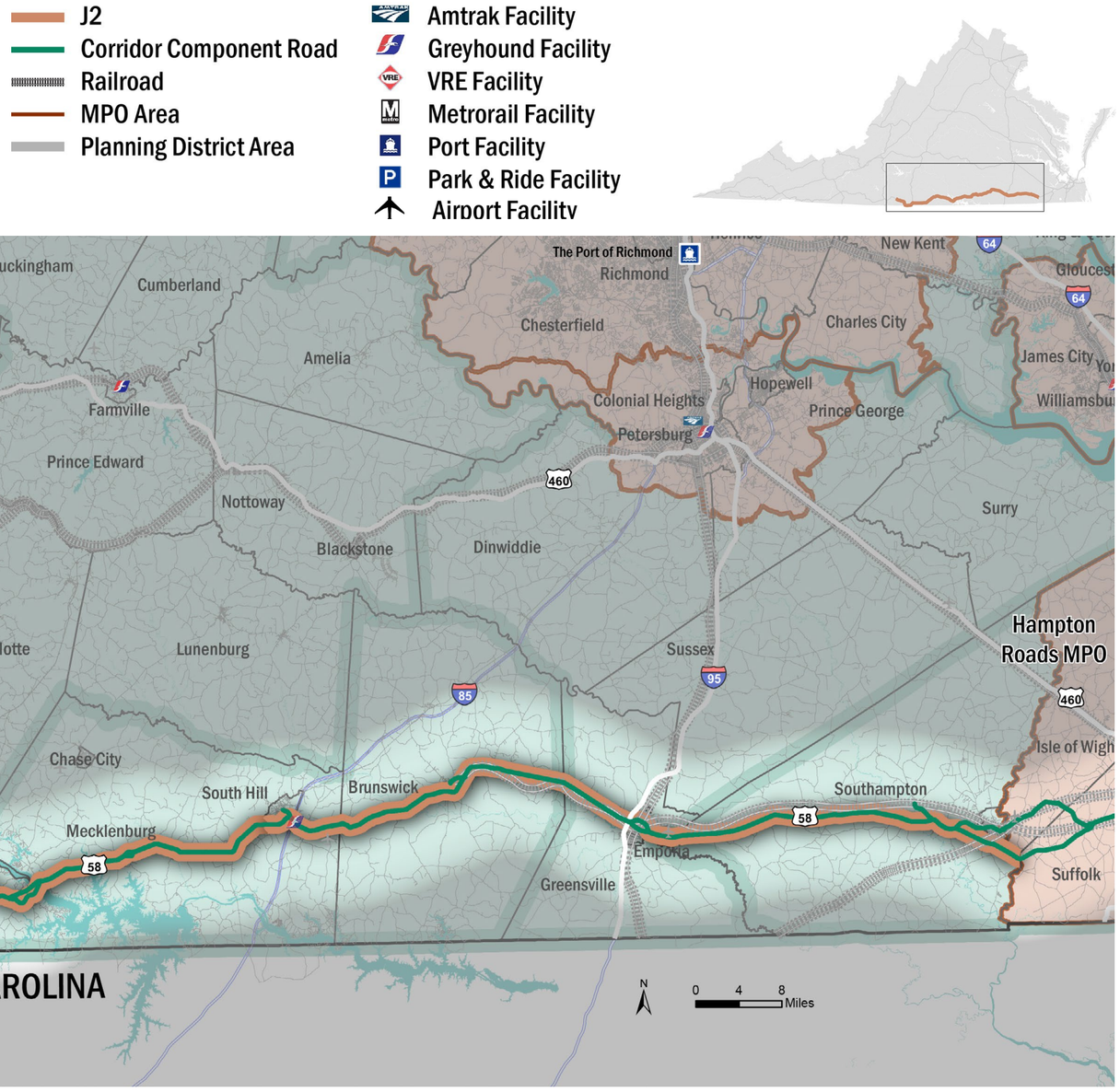
Summary of Needs - J1 Segment

A.	At-grade rail crossing near US 58 and VA 224 near Gate City: No alternative crossing nearby, requires 57 mile detour; Weekday Reliability Index >0.4
B.	Provide north south connections between US 58 and US 58-Business through Wise and into Tennessee
C.	Alt. US 58 in Big Stone Gap: Two 90 degree turns on Main Street cannot be made by large trucks
D.	Inadequate climbing lanes for trucks on US 58 between Duffield and Stickleyville
E.	US 58 between Gate City and Bristol: horizontal and vertical curves with insufficient sight distance
F.	Inadequate climbing lanes for trucks on US 58 between Meadows of Dan and Stuart
G.	Park and Ride lots in Lee County have higher utilization rates than statewide average
H.	Park and Ride lots in Washington County have utilization rates that match the statewide average
I.	No intercity bus or passenger rail service from Bristol to other cities in the corridor
J.	No intercity bus or passenger rail service from Martinsville to other cities in the corridor
K.	US 58-Alt near intersection with VA 71 in Russell County: 19 severe crashes
L.	US 58-Alt/US 19 near Brumley Gap Road in Washington County: 13 severe crashes
M.	US 58-Alt between US 11 and I-81 in Abingdon: 18 severe crashes

Summary of Needs - J1 Segment

N.	US 58 between Country Club Ln and Connor Ln in Galax: 25 severe crashes
O.	US 58-Business between Watt St and Cabell St in Martinsville: 19 severe crashes
P.	Congestion issue on US 11 between I-81 in Bristol and Abingdon
Q.	Congestion issue at US 58 Business (Starling Avenue) and US 220 Business (Memorial Boulevard) in Martinsville
R.	Congestion issue at I-81/US 58 Exit 14 (Old Jonesboro Road)
S.	Congestion issue at I-81/US 58 Exit 17 (US 58-Alt/Cummings Street)
T.	Congestion issue at I-81/US 58 Exit 19 (US 58/US 11)
U.	Congestion issue at US 58/US 23/US 421 and US 58 Business (Kane Street) in Gate City
V.	Reliability issue at US 58/US 23/US 421 and US 58 Business (Daniel Boone Road) in Gate City
W.	Reliability issue at US 58 and US 220 intersection west of Martinsville
X.	Reliability issue at US 58/US 23/US 421 and US 58 Business (Kane Street) in Gate City
Y.	Reliability issue at US 58-Alt and VA Route 65
Z.	Reliability issue at US 11 and Clear Creek Road/Old Airport Road in Bristol
AA.	Reliability issue at US 58 Business and VA Route 57 (Chatham Road) in Martinsville

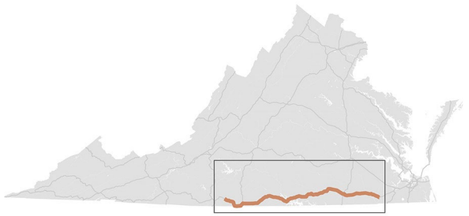
III. Segment J2



Corridor Segment J2 Components

- US 58
- US 58 Business
- US 58 Bypass
- CSX National Gateway Corridor
- Norfolk Southern Heartland Corridor

J2 SEGMENT PROFILE



Segment J2 connects the Danville Area to the Hampton Roads Area, and serves Pittsylvania, Halifax, Mecklenburg, Brunswick, Greensville, and Southampton Counties, as well as the Cities of Danville, Emporia, and Franklin. Segment J2 is primarily defined by US 58, which provides local access to communities in the southern portion of the Commonwealth. US 58 also connects to I-95 (Corridor K) and US 29 (Corridor I) in this segment.

Highway Facilities: In Segment J2, US 58 is a two-lane highway and no parallel facility is available that accommodates inter-city travel along the Tennessee/ North Carolina border. US 58 Business spurs do provide local access to many of the urbanized areas along Segment J2, including Danville, Clarksville, Lawrenceville, and Franklin. US 58 Bypass runs through the City of Emporia and US 58 runs concurrently with US 29 for a short section in the City of Danville.

Transit Services: There are Greyhound bus stations located in the City of Danville, the Town of South Boston and the Town of South Hill.

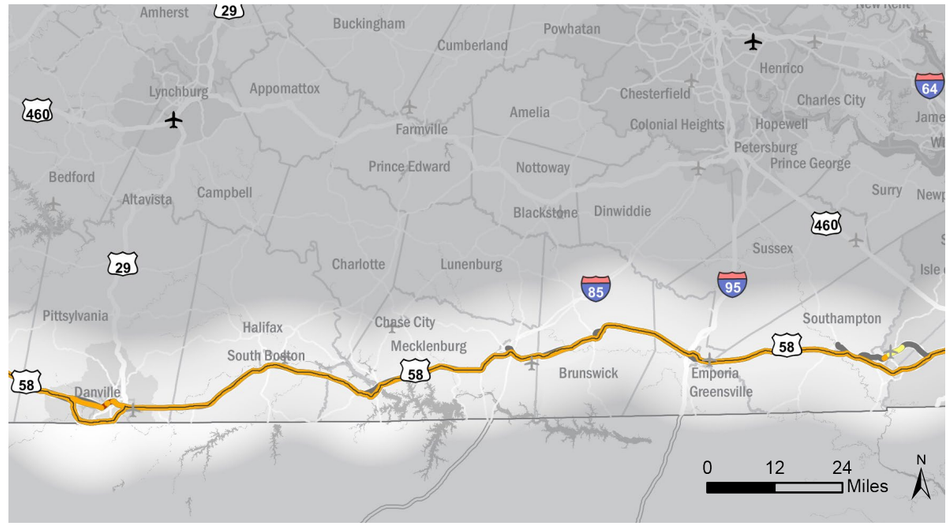
Rail Facilities: Norfolk Southern provides rail lines along the Southside Corridor from Brunswick County east to the Hampton Roads Area and the Port of Virginia facilities located there. CSX also operates a spur of its National Gateway Corridor from Weldon, North Carolina, just south of the Virginia border along I-95 to connect with the Port of Virginia facilities in the Hampton Roads Area. Both the City of Danville and the City of Emporia provide connections to freight rail lines that travel to other destinations north.

Port Facilities: No port facilities are located directly adjacent to Segment J2, but the Southside Corridor does provide connections to the Port of Virginia facilities in the Hampton Roads Area.

Airport Facilities: There are no commercial airports located within this segment.

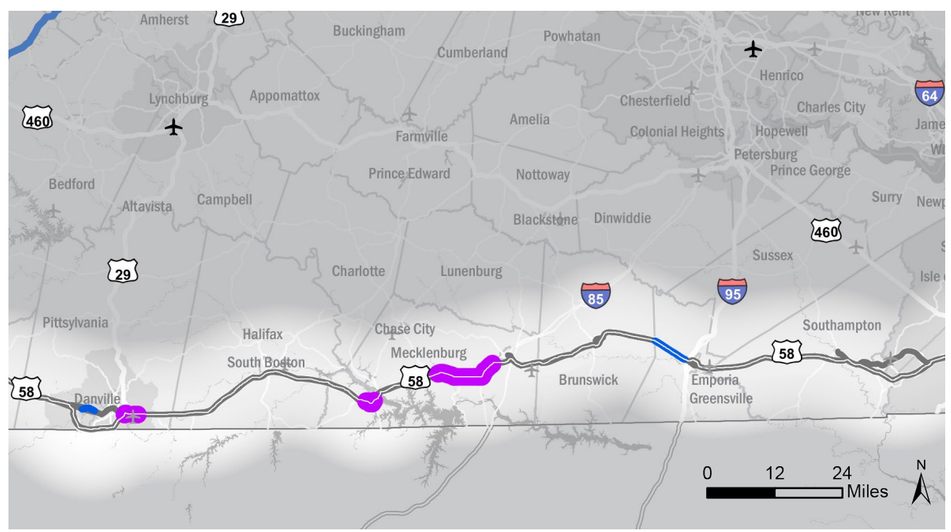
Major planned and future projects include:

- **City of Danville:** Widen westbound US 58 from two to three lanes leading up to the US 29 Bypass interchange.
- **Southampton County:** Improve existing superelevation on eastbound US 58 and add a right-turn lane on eastbound US 58 to southbound Route 609.



Number of Lanes (both directions)

- 2
- 3 - 4
- 5 - 6
- 7 - 8
- 9 - 12
- Primary facility



Future Projects

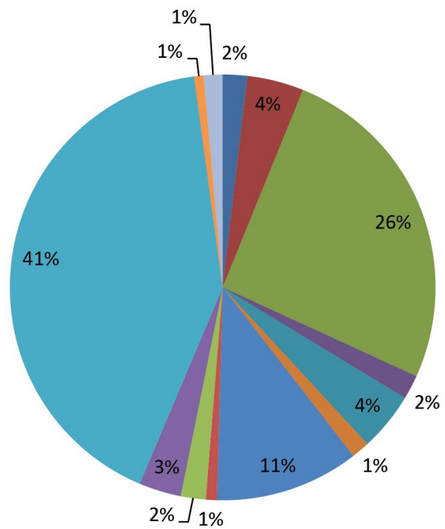
- Reconstruction with added capacity
- Safety improvements
- Primary facility

Travel Demand

Passenger Demand

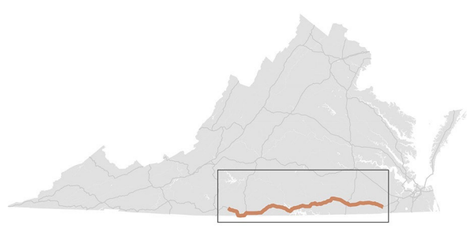
Segment J2 connects the Danville Area in the west, to the Hampton Roads Area in the east. Intercity travel from the Danville Area is fairly dispersed, and is destined for a wide range of locations; however, not many of these destinations are served by Corridor J. The largest market using Segment J2 is represented by the four percent of trips occurring between the Danville and Hampton Roads Areas. The traffic between these two areas accounts for less than 0.1 percent of intercity traffic in the Commonwealth.

Travel from Danville Area to...



(clockwise starting from the top)

- Metropolitan Washington Region
- Hampton Roads Area
- Central Virginia Area
- Fredericksburg Area
- Harrisonburg-Rockingham Area
- Richmond Area
- Tri-Cities Area
- Roanoke Valley Area
- New River Valley Area
- Charlottesville-Albemarle Area
- North Carolina
- Tennessee
- Other



J2 SEGMENT PROFILE

Freight Demand

By truck, Segment J2 carried 21 million tons of freight worth $29 billion in 2012, and is estimated to carry 17 million tons of freight worth $27 billion in 2025. On Corridor J, 45 percent of the truck freight tonnage and 60 percent of the truck freight value passes through Virginia. The major truck freight interstate through patterns are similar to those observed on Corridor B as a result of a concurrency between US Route 58 (Segment J1) and I-81 (Segment B1). In terms of tonnage, the largest truck freight flows on Corridor J are between North Carolina and the Hampton Roads Area, accounting for more than eight percent of the total truck freight tonnage on the corridor. North Carolina and Tennessee are the largest generators and attractors of truck freight tonnage on Corridor J, with 29 percent of the truck freight tonnage originating in these locations and 22 percent destined for these locations. The jurisdictions adjacent to Segment J2 are not major generators or attractors of truck freight on the corridor, with less than three percent of the total freight value originating in Segment J2 and less than two percent of the value destined for the segment.

By rail, Segment J2 carried 25 million tons of freight worth $17 billion in 2012, and is estimated to carry 29 million tons of freight worth $22 billion in 2025. On Corridor J, the majority of rail freight either originates from or is destined for Virginia, with only four percent of the rail freight tonnage and two percent of the total rail freight value passing through the Commonwealth. In terms of tonnage, the dominant flow of rail freight on Corridor I is from West Virginia, Kentucky, and Wise and Buchanan Counties in Virginia to the Port of Virginia marine terminal in Norfolk, accounting for more than 43 percent of the total corridor rail freight tonnage. Tennessee and Georgia are also major attractors of rail freight tonnage along Corridor J, with significant rail freight flows from Wise County and Kentucky. In terms of value, the dominant movement of rail freight on Corridor J is between the states of Illinois and Ohio and the Port of Virginia facilities in the Hampton Roads Area. These flows account for more than 55 percent of the total rail freight value on the corridor. The jurisdictions adjacent to Segment J2 are not major generators or attractors of rail freight on the corridor. Less than three percent of the total corridor rail freight tonnage and value originates along Segment J2 and less than two percent of the total corridor rail freight tonnage and value is destined for this segment.

Truck Freight

Major Origins (by Tonnage)
1. Virginia (27% / 27%)
2. North Carolina (18% / 18%)
3. Tennessee (11% / 10%)
4. Pennsylvania (4% / 5%)
5. Texas (4% / 4%)

Corridor Tonnage Originating in Segment J2: 5% / 5%

Major Origin-Destination Pairs for Freight
City of Norfolk* and North Carolina
City of Virginia Beach and North Carolina
North Carolina and Maryland
City of Chesapeake and North Carolina
Pennsylvania and Tennessee

Percentages represent 2012 / 2025 values.
*Includes freight passing through the Port of Virginia.

Major Destinations (by Tonnage)
1. Virginia (33% / 33%)
2. North Carolina (13% / 14%)
3. Tennessee (9% / 9%)
4. Pennsylvania (5% / 4%)
5. New York (4% / 4%)

Corridor Tonnage Destined for Segment J2: 3% / 3%

Rail Freight

Major Origins (by Tonnage)
1. Virginia (47% / 46%)
2. West Virginia (28% / 25%)
3. Wise County (21% / 19%)
4. Kentucky (8% / 8%)
5. Buchanan County (7% / 6%)

Corridor Tonnage Originating in Segment J2: 2% / 3%

Major Origin-Destination Pairs for Freight
City of Norfolk* and West Virginia
Wise County and City of Norfolk*
Buchanan County and City of Norfolk*
Wise County and Georgia
City of Norfolk* and Kentucky

Percentages represent 2012 / 2025 values.
*Includes freight passing through the Port of Virginia.

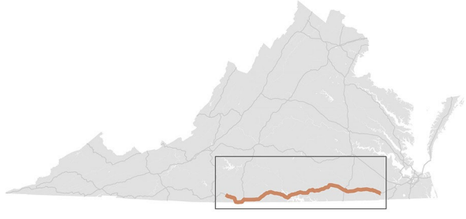
Major Destinations (by Tonnage)
1. Virginia (75% / 74%)
2. City of Norfolk* (62% / 57%)
3. Tennessee (7% / 6%)
4. City of Chesapeake (6% / 9%)
5. Georgia (5% / 5%)

Corridor Tonnage Destined for Segment J2: 1% / 2%

Traffic Conditions

Traffic Volume and AADT

Traffic volumes on Segment J2 are low to moderate compared to other segments of Corridor J. Most sections along US 58 in Segment J2 have average daily traffic volumes ranging from 5,000 to 15,000 vehicles, while a few sections near the City of Danville and in eastern Southampton County have volumes ranging as high as 27,000 vehicles per day. Average daily traffic volumes on almost all sections of J2 are projected to increase by fewer than 2,500 additional vehicles by 2025. The greatest increase in traffic volume by 2025 is projected to occur near the intersection of US 58 and US 1 in Mecklenburg County, with an increase of 6,000 additional vehicles per day.



Traffic Volume 2014 (AADT)

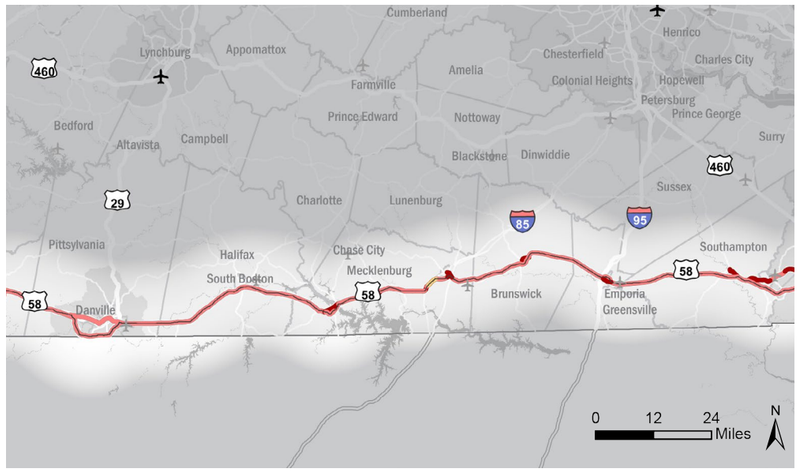
- < 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- > 200,000
- Primary facility

Traffic Volume 2025 (AADT)

- < 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- > 200,000
- Primary facility

Change in Traffic Volume 2014- 2025 (AADT)

- Decreased
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 20,000
- > 20,000
- Primary facility



J2 SEGMENT PROFILE

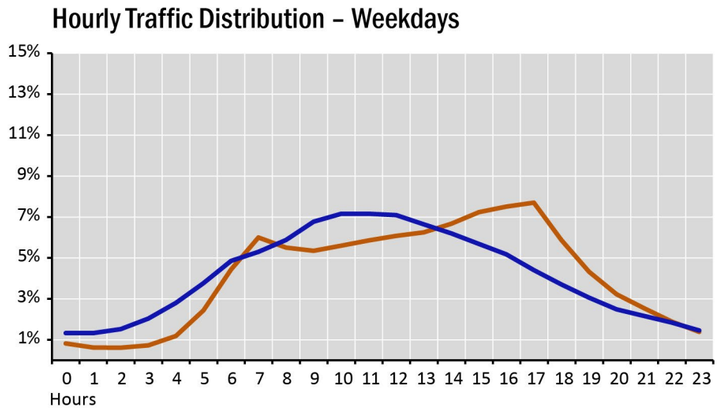
Traffic Distribution

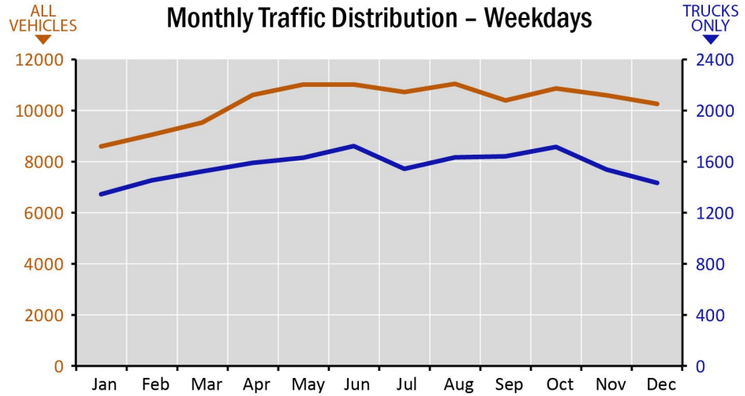
On average, traffic on Segment J2 is distributed throughout the day as shown in the graphs below. Weekday traffic shows distinct morning and evening peak periods. The highest hourly traffic occurs between 5 and 6 p.m. which accounts for 7.7 percent of daily traffic and a less busy morning peak between 7 and 8 a.m. accounting for 6.0 percent of daily traffic. The combined weekday traffic from 7 a.m. to 7 p.m. period accounts for 76 percent of total daily traffic. Peaking patterns for truck traffic are different from commuter traffic with a single peak during the midday period, with the highest hourly flow of 7.2 percent of daily traffic. Weekend traffic patterns are also different from the typical commute patterns, showing a single midday peak (peaking between 3 and 4 p.m. with 7.7 percent of daily traffic). Weekend truck traffic peaks earlier in the day, from 11 a.m. and noon (6.5 percent of daily traffic).

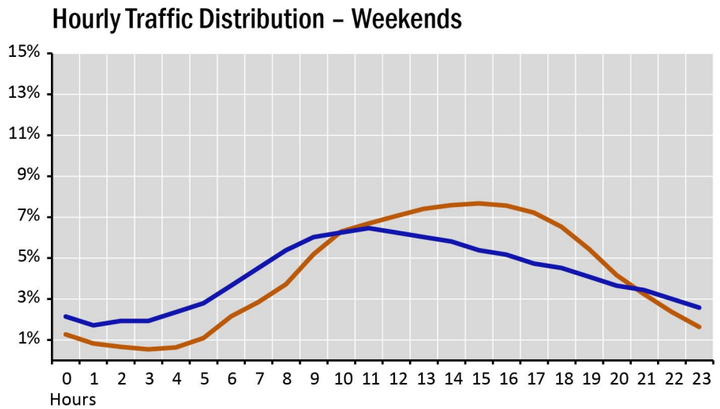
Weekday traffic volumes on Segment J2 vary by as much as 29 percent throughout the year, with the high point in August (around 11,000 vehicles per day) and the low point in January (around 9,000 vehicles per day). Truck volumes also vary throughout the year, with the June high (around 1,700 vehicles per day) 28 percent higher than the January low (around 1,300 vehicles per day). Weekend traffic levels also vary over the course of the year, and the highest levels of weekend traffic (June, around 10,000 vehicles per day) are 46 percent higher than January levels (around 7,000 vehicles per day). Weekend truck traffic is steadier than all vehicle traffic, with the June high 34 percent higher than the January low. Since truck volumes account for a relatively small portion of traffic on Segment J2, traffic conditions are much more responsive to variations in automobile traffic than truck traffic.

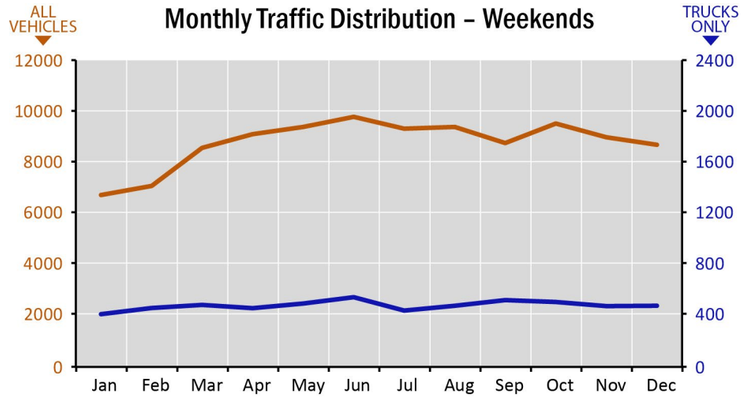
Truck Volumes

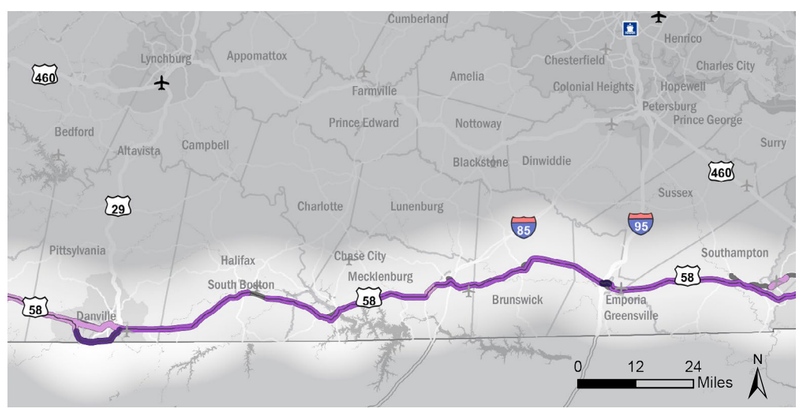
The percent of daily traffic comprised of heavy trucks on Segment J2 is high compared to other segments in Corridor J and varies considerably by location. In most of Segment J2, heavy trucks generally comprise seven to ten percent of total traffic on average throughout Segment J2. Some sections of US 58 Business in Danville and US 58 in Emporia have a much higher proportion - as high as 29 percent - of heavy trucks.

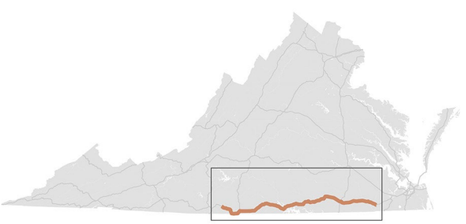












Percent Heavy Trucks

- < 5%
- 5% - 10%
- 10% - 15%
- 15% - 20%
- > 20%
- Primary facility

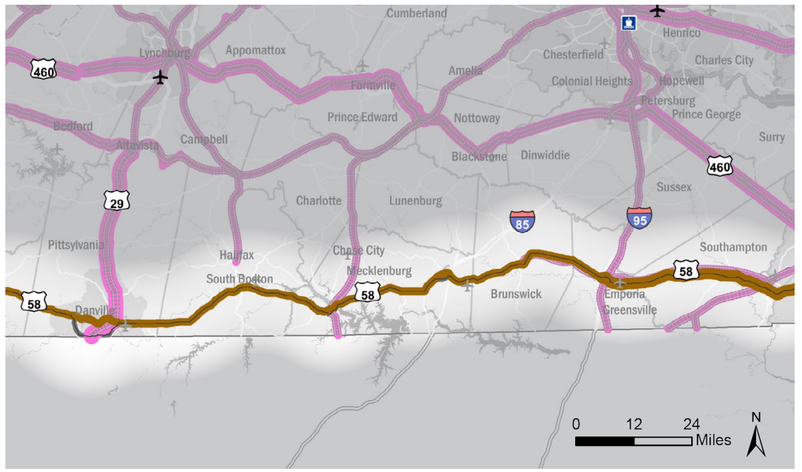
J2 SEGMENT PROFILE

Freight Flows

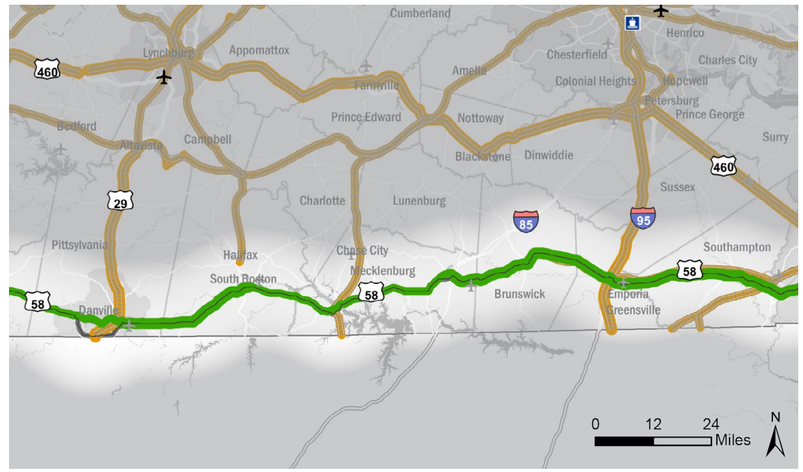
In the City of Danville, freight movements on Segment J2 rely more heavily on rail, in terms of tonnage, and on truck, in terms of value. In total, 21 million tons (46 percent) of freight is moved through this section of Segment J2 by truck, compared to 25 million tons (54 percent) by rail. With regard to value, however, $27 billion (62 percent) of freight travels by truck, compared to $16.5 billion (38 percent) by rail. On average, a ton of freight traveling through this section of Segment J2 by truck is worth $1,284 while a ton of freight traveling by rail is worth $656. In 2025, both rail and truck freight tonnages and total values in this area of Segment J2 are expected to increase. The percentage of freight traveling by truck in terms of tonnage and by value is expected to increase to 49 percent and 63 percent, respectively. The value per ton will likely increase to $1,357 on trucks and $760 on rail.

In Brunswick County, freight on Segment J2 is moved primarily by truck by tonnage and by value, mostly due to a lack of through rail facilities in this area. Almost 100 percent of both freight value and tonnage travels by truck on this portion of Segment J2, including eight million tons worth $15 billion. On average, a ton of freight traveling through this section of Segment J2 by truck is worth $1,879 while a ton of freight traveling by rail is worth $9. In 2025, both rail and truck freight tonnages and total values in this area of Segment J2 are expected to increase. The percentage of freight traveling by truck is expected to remain the same by tonnage and value. The value per ton will likely increase to $2,052 on trucks and $9 on rail.

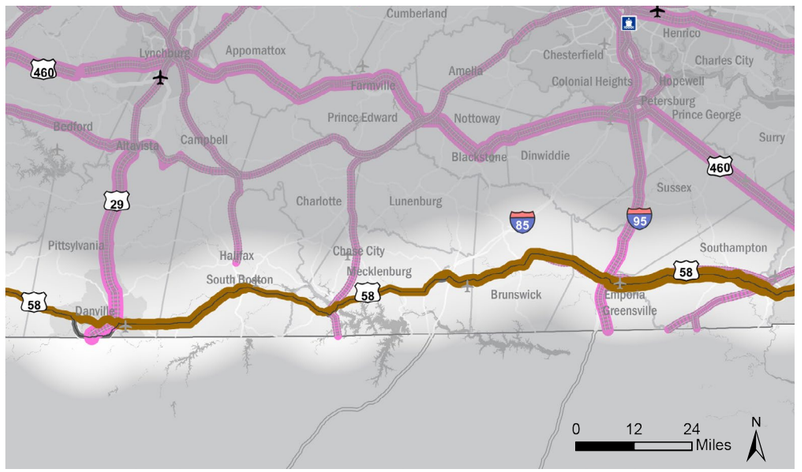
Annual Freight by Tonnage, 2012



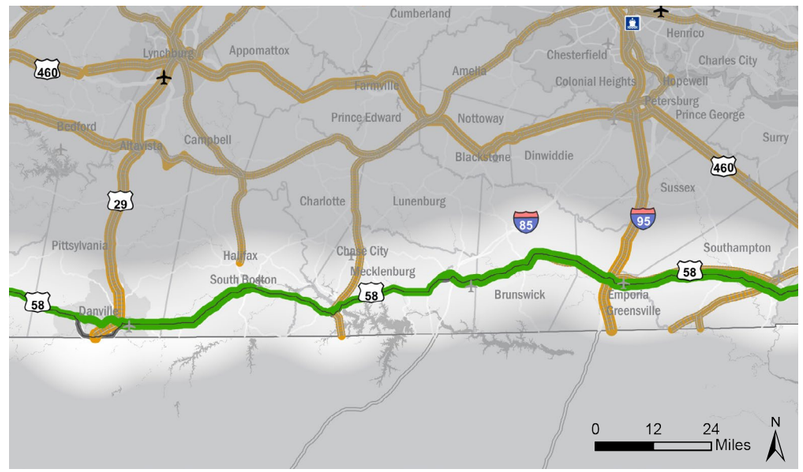
Annual Freight by Value, 2012

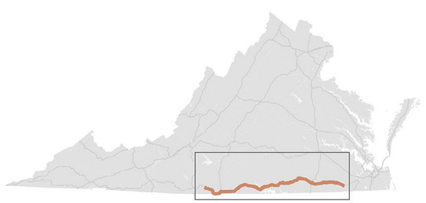


Annual Freight by Tonnage, 2025



Annual Freight by Value, 2025





Truck Freight (in tons)
- < 10M
- 10M - 25M
- 25M - 50M
- 50M - 100M
- > 100M
- Primary facility

Rail Freight (in tons)
- < 10M
- 10M - 25M
- 25M - 50M
- 50M - 100M
- > 100M
- Primary facility

Truck Freight
- < $10B
- $10B - $50B
- $50B - $100B
- $100B - $200B
- > $200B
- Primary facility

Rail Freight
- < $10B
- $10B - $50B
- $50B - $100B
- $100B - $200B
- > $200B
- Primary facility

Redundancy and Mode Choice

Passenger trips on Segment J2 of the Southside Corridor have few travel options, both in terms of travel path and mode choice. There are no highway facilities parallel to US 58 that accommodate inter-city travel in Segment J2. Based on the 2014 federal standard mileage rate of 56 cents per mile, long-distance trips would be more expensive by automobile than by bus. However, Greyhound bus service, which has stations in Danville, South Boston, and South Hill, is limited by the frequency of service and is not as fast as the typical automobile trip.

Park-and-Ride

Within Segment J2, there are no Park-and-Ride facilities. Furthermore, no new Park-and-Ride locations are proposed by VDOT's Park-and-Ride Investment Strategy.

Comparable Travel Options

Hampton Roads (Norfolk) to Emporia

Inter-City Bus	*Train*
0 Trips per Day 0:00 Travel Time $0 Est. Cost	0 Trips per Day 0:00 Travel Time $0 Est. Cost

Auto

Via Rt. 58 / Rt. 13: 1:27 Travel Time $43 Est. Cost

Emporia to Danville

Inter-City Bus	*Train*
0 Trips per Day 0:00 Travel Time $0 Est. Cost	0 Trips per Day 0:00 Travel Time $0 Est. Cost

Auto

Via Rt. 58: 2:10 Travel Time $65 Est. Cost

Hampton Roads (Norfolk) to Danville

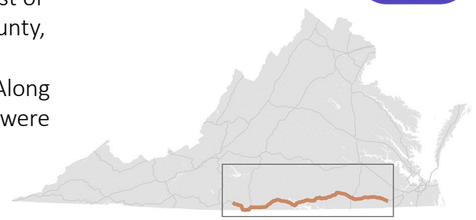
Inter-City Bus	*Train*
1 Trip per Day 9:25 Travel Time $52 Est. Cost	0 Trips per Day 0:00 Travel Time $0 Est. Cost

Auto

Via Rt. 58: 3:27 Travel Time $108 Est. Cost

Safety

Between 2010 and 2012, 81 severe crashes occurred on Segment J2, the lowest number of crashes in the Southside Corridor. Severe crashes occurred in several areas along Segment J2. In Danville, along US 58 Business (Riverside Drive), there were 25 collisions that took place over approximately two miles between Piedmont Drive and Union Street. Of the 25 collisions, seven occurred at the intersection with Barter Street. On US 58 (Boston Road) in Danville, there were eight incidents that took place over approximately 0.3 miles between US 29 and Clover Lane, just west of the Danville Airport. Just east of Danville, along US 58 (South Boston Highway) in Pittsylvania County, south of the Ringgold Golf Club, nine incidents occurred over a stretch 0.8 miles long between Ringgold Road and Vista Drive. Along US 58 (Governor Harrison Parkway) in Brunswick County, there were eight crashes over a 1.9-mile span between Edgerton Lane and Vulcan Quarry Lane.



Performance Metrics:

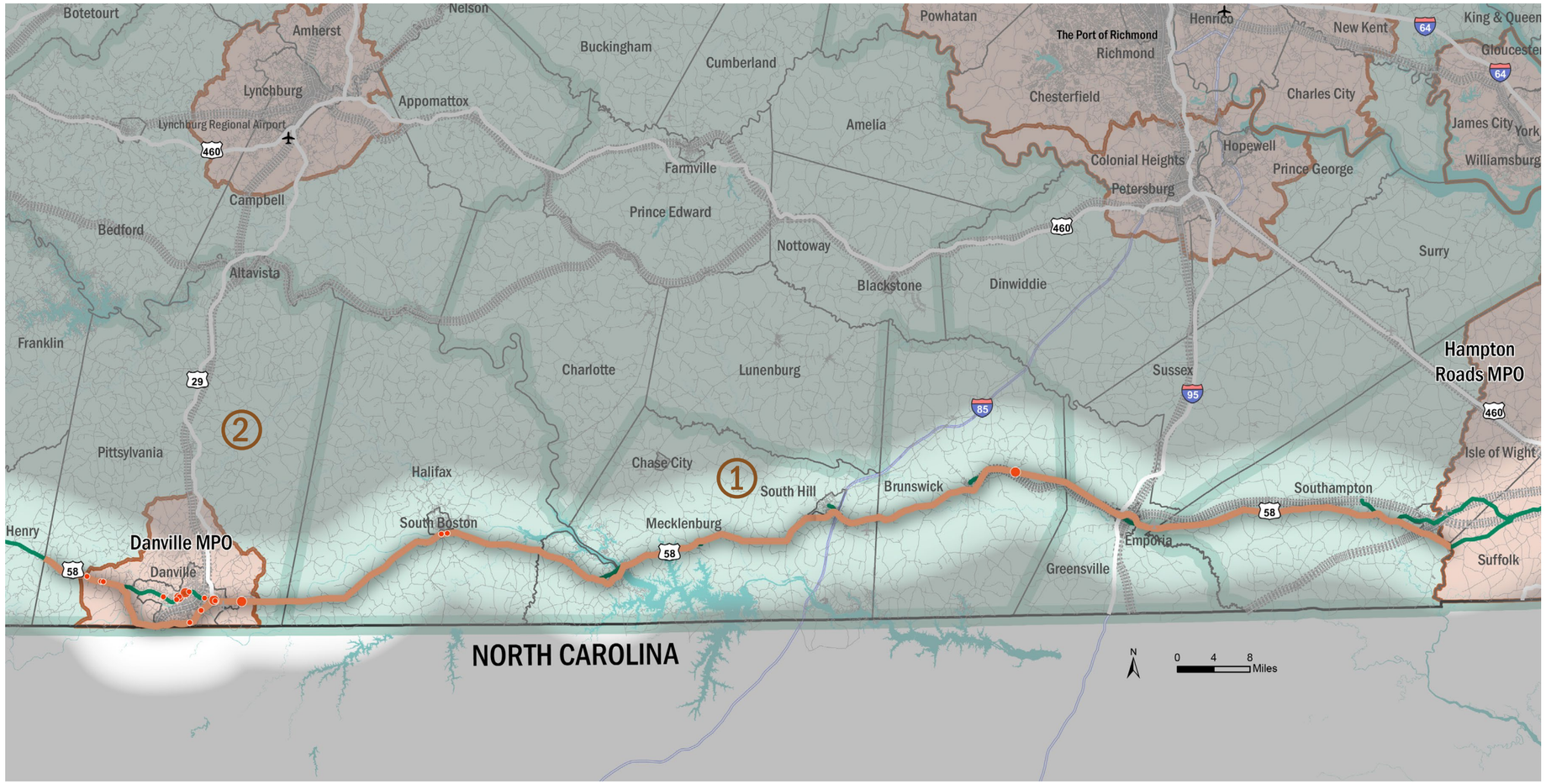
Number of Severe Crashes	81
Severe Crashes/Million VMT	0.2
Number of Railroad Crashes	3

Fatality and Injury Crashes (2010 - 2012)

- < 5
- 5 - 10
- 11 - 15
- 16 - 20
- > 20

Railroad Incidents/Accidents per County (2011-2014)

#



Congestion

Performance Metrics:

Person Hours of Delay per Mile	4
Freight Ton Hours of Delay per Mile	5.5K

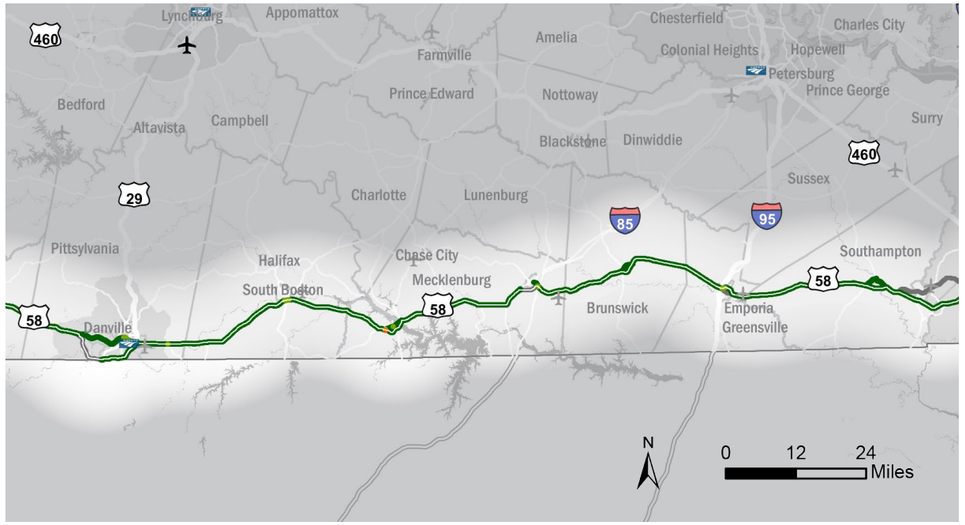
Passenger Delays

Passenger congestion along Segment J2 is relatively low on a per-mile basis, with an average delay of just four person-hours per mile. As such, there are no locations along the segment with delays exceeding 100 person-hours per mile. Peak-period passenger delays account for 46 percent of daily congestion, which is slightly greater than the average for the peak-period share of congestion on CoSS segments.

Freight Delays

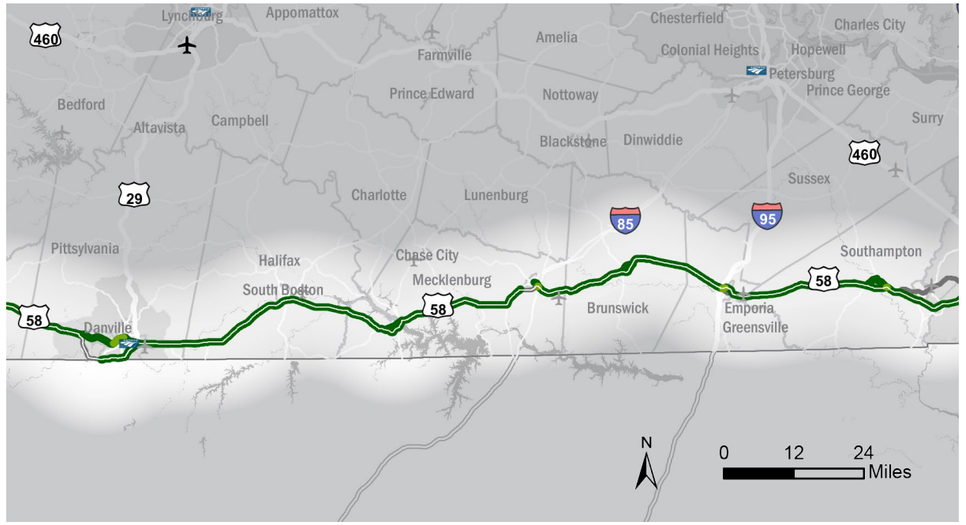
Freight congestion along Segment J2 is the lowest among segments on Corridor J, with an average delay of 5,500 ton-hours per mile. The only location with freight delays exceeding 250,000 ton-hours per mile is on US 58 in City of Emporia between US 301 and the interchange with I-95. About 38 percent of the daily freight delays are experienced in the peak period, which is greater than the average for the peak-period share of congestion on CoSS segments.

Daily Person Hours of Delay Per Mile

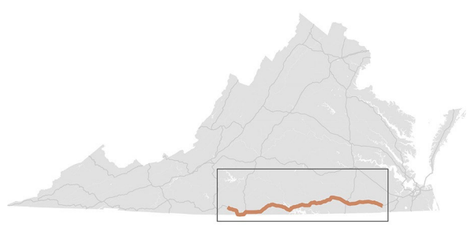


< 50
51 - 100
101 - 250
251 - 500
> 500

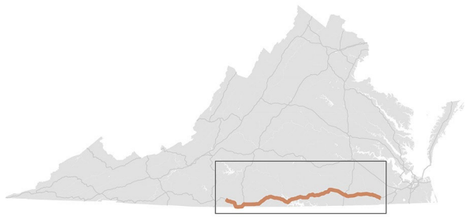
Daily Freight Ton Hours of Delay Per Mile



< 100,000
100,001 - 250,000
250,001 - 500,000
500,001 - 1,000,000
> 1,000,000



Reliability

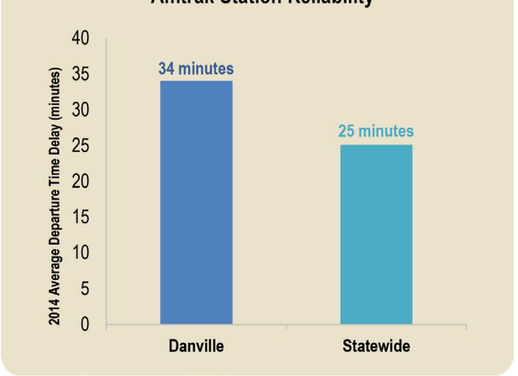


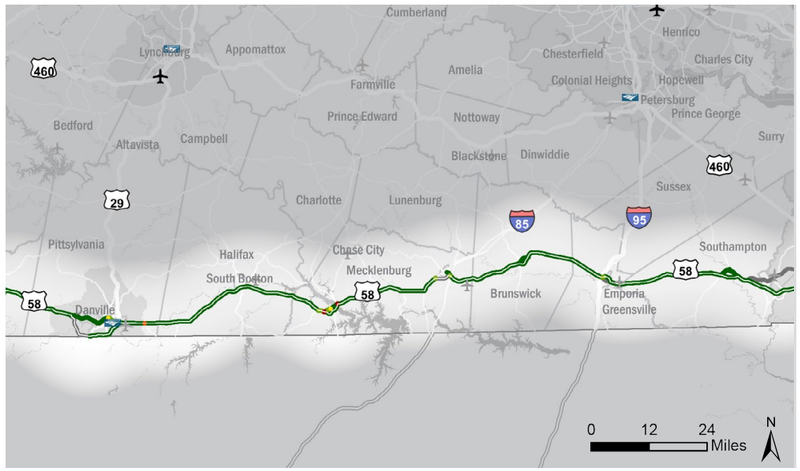
Reliability Index

- < 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- > 0.8
- Primary facility (in white)

Statewide reliability index thresholds have been set for weekday peak, weekday and weekend travel to assess the reliability of travel on each segment on all corridors of statewide significance. A higher reliability index indicates that travel times are more unreliable. The following are the reliability index thresholds:

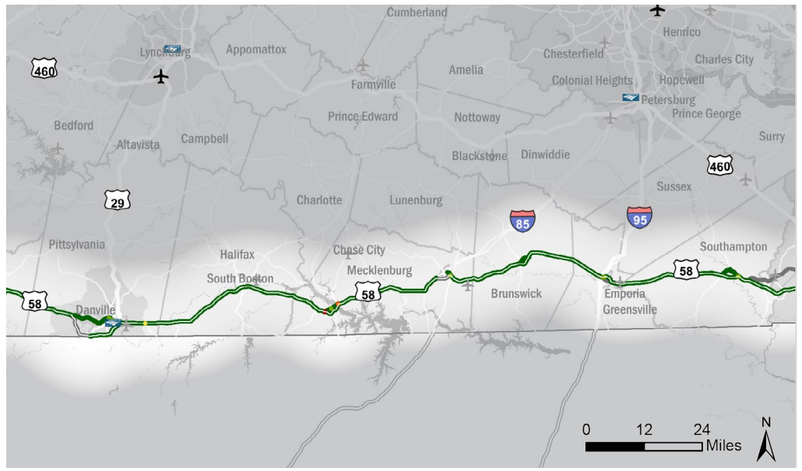
- Weekday Peak - 0.80
- Weekday - 0.40
- Weekend - 0.60





Weekday Peak Reliability

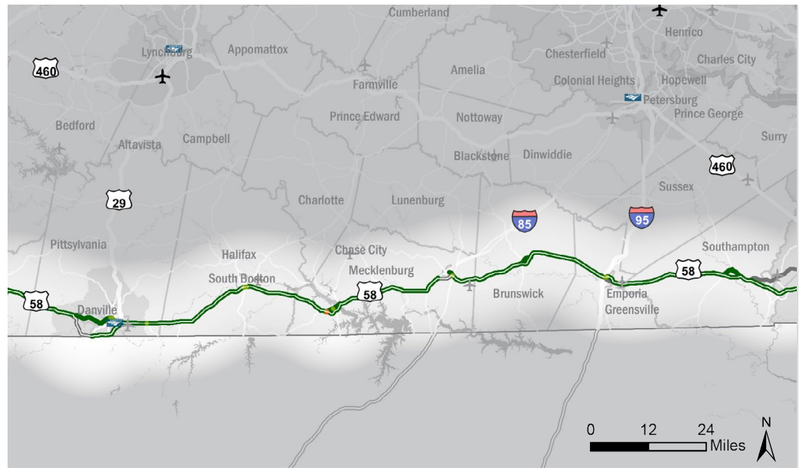
Reliability of travel during the peak period on a typical weekday on Segment J2 ranges from 0.00 to 1.00 in terms of reliability index, with an average value of 0. 10. Only two locations near Clarksville in Mecklenburg County have peak period reliability index values above the statewide threshold: US 58 at US 58 Business west of the Roanoke River and US 58 at US 15 east of the river.



Weekday Reliability

Reliability of travel during a typical weekday ranges from 0.00 to 0.81 in terms of reliability index, with an average value of 0.09. While this segment has a weekday reliability index on average with other CoSS segments statewide, three locations do have reliability index values higher than the statewide threshold as follows:

- US 58 at US 58 Business west of the Roanoke River in the Town of Clarksville;
- US 58 at US 15 east of the Roanoke River in Mecklenburg County; and
- US 58 at the intersection with Routes 62/726 in Pittsylvania County.



Weekend Reliability

Reliability of travel during a typical weekend ranges from 0.00 to 0.68 in terms of reliability index, with an average value of 0.07. The only location with a weekend reliability index above the statewide threshold is located on US 58 at US 58 Business west of the Roanoke River in the Town of Clarksville.

Summary of Needs

Identified locations are approximate. See “Summary of Needs” table on the following page for details.

Redundancy

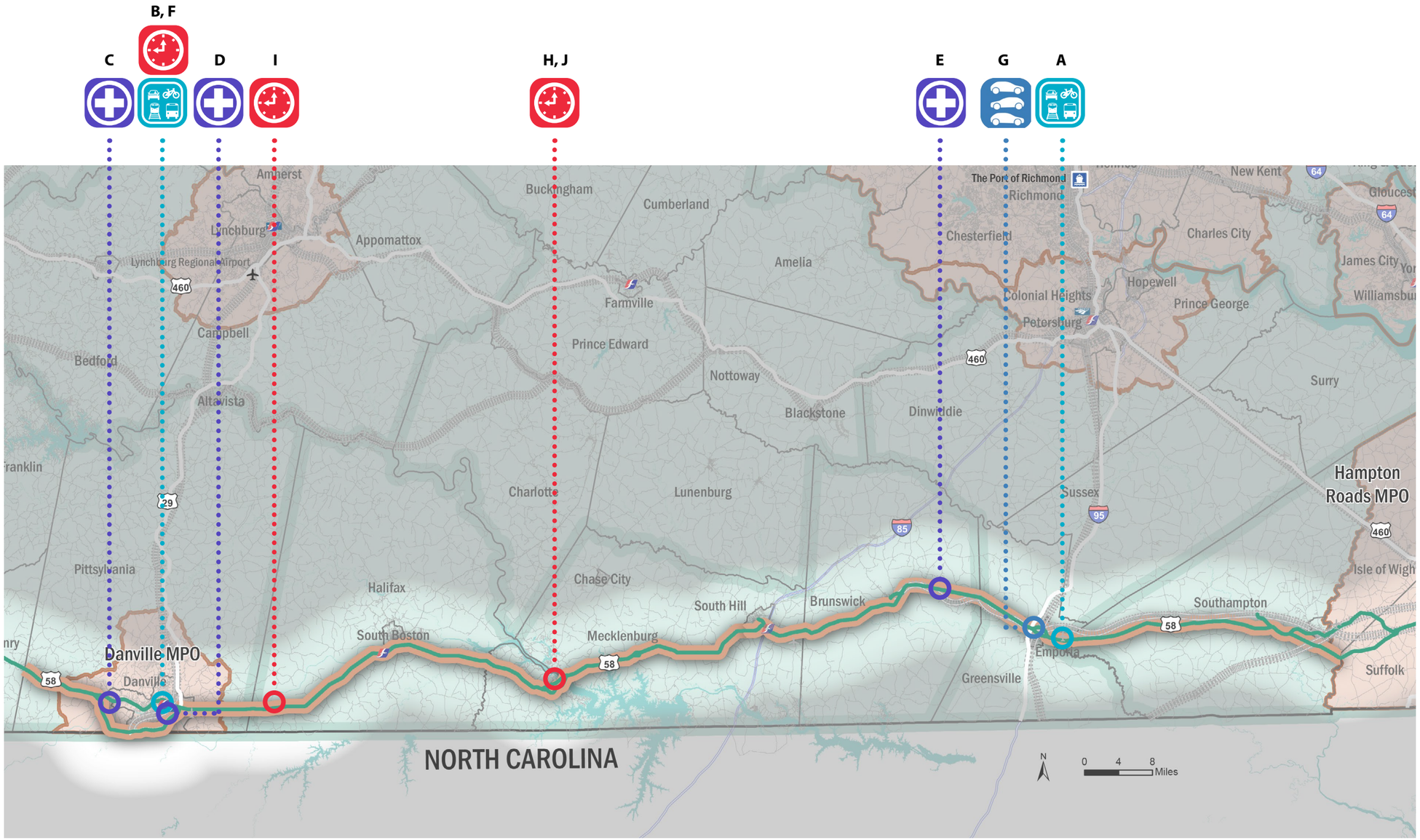
Mode Choice

Safety

Congestion

Bottlenecks

Reliability



J2 SEGMENT NEEDS

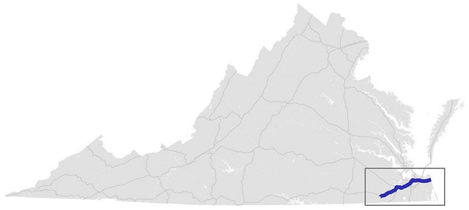
Summary of Needs - J2 Segment

A.		No intercity bus or passenger rail service from Emporia to other cities or towns in the corridor
B.		No direct intercity bus or passenger rail service from Danville to Hampton Roads
C.		US 58-Business between Russ Wholesale Rd and Union St in Danville: 25 severe crashes
D.		US 58 between US 29 and Vista Dr in/near Danville: 17 severe crashes
E.		US 58 between Edgerton Ln and Vulcan Quarry Ln in Brunswick County: 8 severe crashes
F.		Unreliable Amtrak service from Danville station. Average departure delay is 34 minutes totaling over 2,200 person-hours of delay from this segment.
G.		Congestion issue at US 58 and I-95 interchange in Emporia
H.		Reliability issue at US 58 and US 15 in Clarksville
I.		Reliability issue at US 58/US 360 and VA Route 62 (Milton Highway) in Halifax County
J.		Reliability issue at US 58 and US 58 Business (Virginia Avenue) west of Clarksville

IV. Segment J3

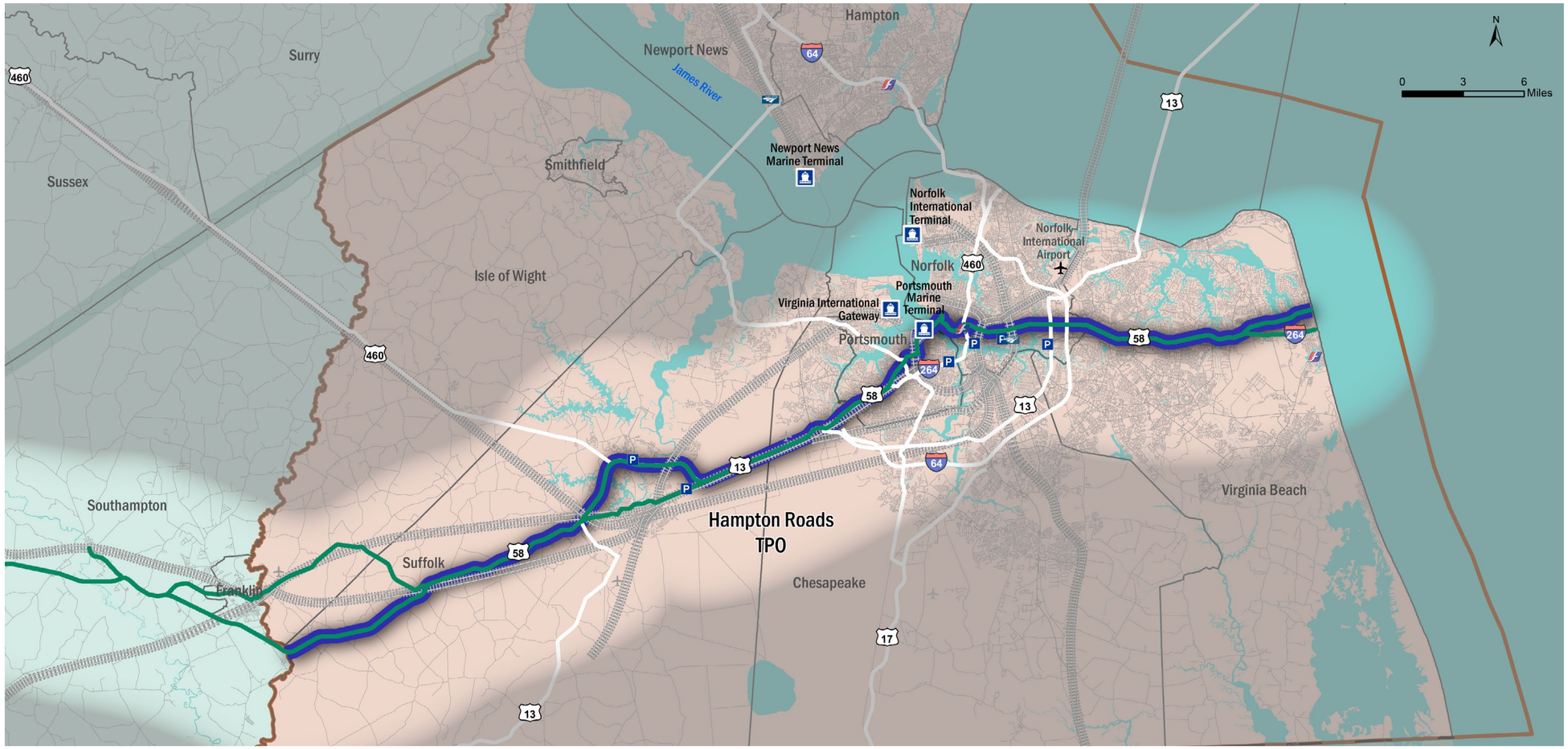
J3
Corridor Component Road
Railroad
MPO Area
Planning District Area

Amtrak Facility
Greyhound Facility
VRE Facility
Metrorail Facility
Port Facility
Park & Ride Facility
Airport Facility

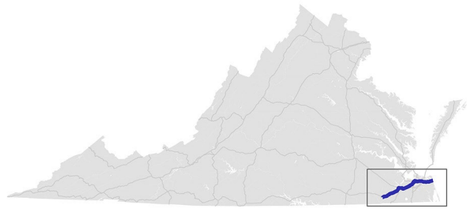


Corridor Segment J3 Components

- US 58
- US 58 Business
- Norfolk International Terminal
- Portsmouth Marine Terminal
- Virginia International Gateway
- CSX National Gateway Corridor
- Norfolk International Airport
- Newport News/ Williamsburg International Airport



J3 SEGMENT PROFILE



Segment J3 is the shortest segment of Corridor K and exists entirely within the area covered by the Hampton Roads TPO. The segment serves Isle of Wight County and the Cities of Suffolk, Chesapeake, Portsmouth, Norfolk, and Virginia Beach, terminating at the Atlantic Ocean. Segment J3 serves as a major local access corridor in the Hampton Roads Area, as well as a link for both passengers and freight to Southside Virginia. This segment connects manufacturing centers in Southside Virginia, as well as coal mines in Southwestern Virginia, to the Port of Virginia facilities in the Hampton Roads Area. Segment J3 also serves as an alternative evacuation route for the Hampton Roads Area.

Highway Facilities: US 58 is primarily a local-access corridor within the Hampton Roads Area, with four lanes through most of its length. There are portions of US 58 that have as many as eight lanes in the eastern portion of the segment. No parallel facilities exist for US 58 along the entire length of Segment J3, though I-264 does serve as a parallel facility in multiple sections of the segment. US 58 provides either direct or indirect access to major highways in the region, including I-64 and its spurs. US 58 Business spurs provide additional local access near Franklin, and in Suffolk and Virginia Beach. In the western half of the segment, US 58 also runs concurrently with US 13 and US 460.

Transit Services: Amtrak has stations in Norfolk and Virginia Beach, serving the Northeast Corridor; however, it does not serve destinations in the Southside Corridor. Greyhound provides bus service from stations in Norfolk, Hampton, and Virginia Beach. Commuter bus service, called the Metro Area Express, is offered by Hampton Roads Transit (HRT). There are multiple Park-and-Ride facilities located near US 58, the largest cluster of which is located in Virginia Beach.

Rail Facilities: CSX's National Gateway Corridor rail lines pass through Segment J3, connecting locations to the west to the Port of Virginia facilities in the Hampton Roads Area. Norfolk Southern also provides rail lines along the Southside Corridor to the Hampton Roads Area and the Port of Virginia facilities located there.

Port Facilities: US 58 provides a direct connection to the Portsmouth Marine Terminals, and indirect connections are available to the other Port of Virginia facilities in the Hampton Roads Area.

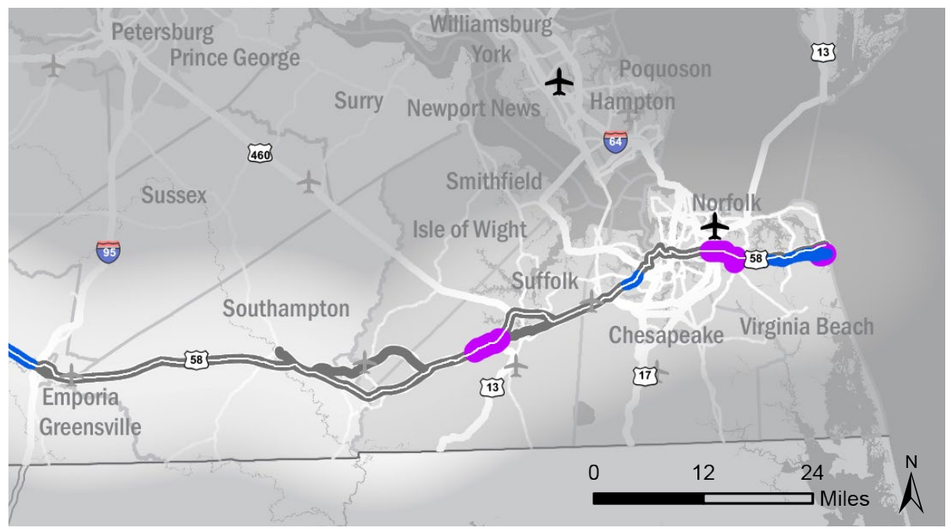
Airport Facilities: Norfolk International Airport and Newport News-Williamsburg International Airport provide commercial service to Segment J3.

Major planned and future projects include:

- **City of Suffolk:** On US 58 from the US 13 Bypass/US 58/Route 32 to 0.7 miles west of Manning Bridge Road plans include construction of an additional travel lane in both directions, traffic signal upgrades, access management improvements, and a bikeway and/or multiuse path.
- **City of Virginia Beach:** Reconstruction with added capacity on Witchduck Road from I-264 to Virginia Beach Boulevard.

Number of Lanes (both directions)

- 2
- 3 - 4
- 5 - 6
- 7 - 8
- 9 - 12
- Primary facility



Future Projects

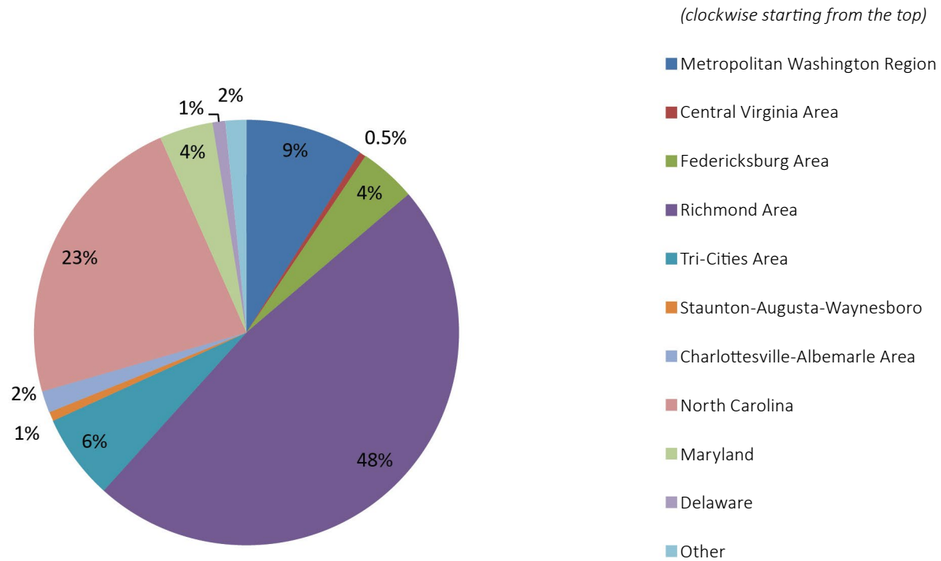
- Reconstruction with added capacity
- Safety improvements
- Primary facility

Travel Demand

Passenger Demand

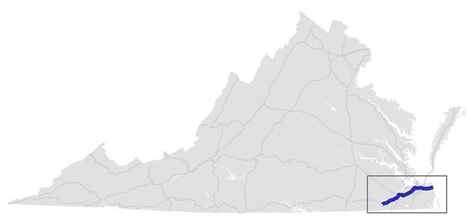
Segment J3 exists entirely within the Hampton Roads Area, and accommodates large amounts of traffic local to the region. Of the intercity traffic originating in this region, six percent is destined for the Tri-Cities Area and a small portion is destined for the Lynchburg Area. These trips are likely to make use of the portion of Segment J3 that runs concurrently with US 460. A very small portion of traffic generated in the Hampton Roads Area is actually destined for locations along Corridor J.

Travel from Hampton Roads Area to...



(clockwise starting from the top)

- Metropolitan Washington Region
- Central Virginia Area
- Fredericksburg Area
- Richmond Area
- Tri-Cities Area
- Staunton-Augusta-Waynesboro
- Charlottesville-Albemarle Area
- North Carolina
- Maryland
- Delaware
- Other



J3 SEGMENT PROFILE

Freight Demand

By truck, Segment J3 carried 22 million tons of freight worth $31 billion in 2012, and is estimated to carry 33 million tons of freight worth $50 billion in 2025. On Corridor J, 45 percent of the truck freight tonnage, and 60 percent of the truck freight value, passes through Virginia. The major truck freight interstate through patterns are similar to those observed on Corridor B as a result of a concurrency between US Route 58 (Segment J1) and I-81 (Segment B1). In terms of tonnage, the largest truck freight flows on Corridor J are between North Carolina and the Hampton Roads Area, accounting for more than eight percent of the total truck freight tonnage on the corridor. North Carolina and Tennessee are the largest generators and attractors of truck freight tonnage on Corridor J, with 29 percent of the truck freight tonnage originating in these locations and 22 percent destined for these locations. Jurisdictions adjacent to Segment J3, particularly in the Hampton Roads Area, generate between nine and ten percent of the total corridor truck freight value, with major truck freight movements from the Carolinas, Georgia, Texas, and California. In terms of truck freight value, a large proportion of the flows originating in the jurisdictions adjacent to Segment J3 are destined for the Carolinas, Florida, and Texas.

By rail, Segment J3 carried 2 million tons of freight worth $1.2 billion in 2012, and is estimated to carry 4 million tons of freight worth $2 billion in 2025. On Corridor J, the majority of rail freight either originates from or is destined for Virginia, with only four percent of the rail freight tonnage and two percent of the total rail freight value passing through the Commonwealth. In terms of tonnage, the dominant flow of rail freight on Corridor I is from West Virginia, Kentucky, and Wise and Buchanan Counties in Virginia to the Port of Virginia marine terminal in Norfolk, accounting for more than 43 percent of the total corridor rail freight tonnage. In terms of value, the dominant movement of rail freight on Corridor J is between Illinois and Ohio and the Port of Virginia facilities in the Hampton Roads Area. These flows account for more than 55 percent of the total rail freight value on the corridor. Some significant rail freight flows on Corridor J also exist between Kentucky, Missouri, and the Port of Virginia facilities in the Hampton Roads Area. There are one-directional movements of low-value rail freight, with 74 percent of rail freight tonnage on Corridor J destined for the jurisdictions adjacent to Segment J3; more than eight percent of rail freight tonnage originates there. In terms of value, there is a more balanced movement of rail freight, with almost 40 percent of rail freight originating along Segment J3 and more than 58 percent destined for this segment.

Truck Freight

Major Origins (by Tonnage)
1. Virginia (27% / 27%)
2. North Carolina (18% / 18%)
3. Tennessee (11% / 10%)
4. Pennsylvania (4% / 5%)
5. Texas (4% / 4%)

Corridor Tonnage Originating in Segment J3: 7% / 9%

Major Origin-Destination Pairs for Freight
City of Norfolk* and North Carolina
City of Virginia Beach and North Carolina
North Carolina and Maryland
City of Chesapeake and North Carolina
Pennsylvania and Tennessee

Percentages represent 2012 / 2025 values.
*Includes freight passing through the Port of Virginia.

Major Destinations (by Tonnage)
1. Virginia (33% / 33%)
2. North Carolina (13% / 14%)
3. Tennessee (9% / 9%)
4. Pennsylvania (5% / 4%)
5. New York (4% / 4%)

Corridor Tonnage Destined for Segment J3: 12% / 13%

Rail Freight

Major Origins (by Tonnage)
1. Virginia (47% / 46%)
2. West Virginia (28% / 25%)
3. Wise County (21% / 19%)
4. Kentucky (8% / 8%)
5. Buchanan County (7% / 6%)

Corridor Tonnage Originating in Segment J3: 7% / 9%

Major Origin-Destination Pairs for Freight
City of Norfolk* and West Virginia
Wise County and City of Norfolk*
Buchanan County and City of Norfolk*
Wise County and Georgia
City of Norfolk* and Kentucky

Percentages represent 2012 / 2025 values.
*Includes freight passing through the Port of Virginia.

Major Destinations (by Tonnage)
1. Virginia (75% / 74%)
2. City of Norfolk* (62% / 57%)
3. Tennessee (7% / 6%)
4. City of Chesapeake (6% / 9%)
5. Georgia (5% / 5%)

Corridor Tonnage Destined for Segment J3: 74% / 73%

Traffic Conditions

Traffic Volume and AADT

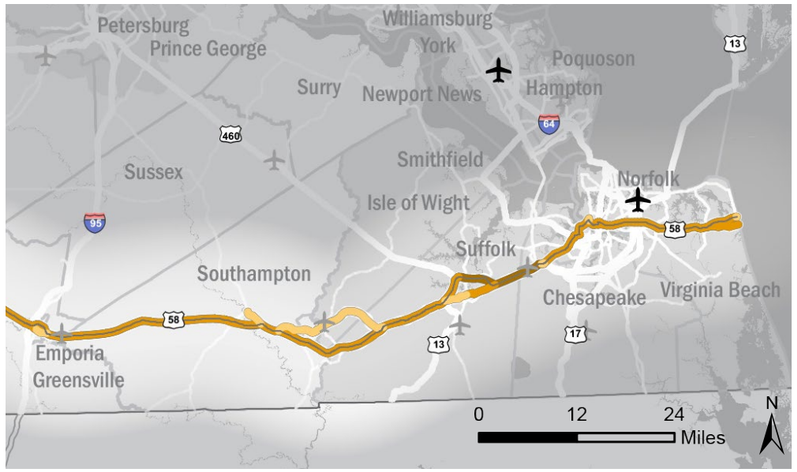
Traffic volumes on Segment J3 are high compared the rest of Corridor J. Traffic volumes vary considerably depending upon the location within Segment J3. On US 58 Business in western Suffolk, traffic volumes are very low for the segment – generally less than 5,000 vehicles per day. The highest traffic volumes occur between Suffolk and Chesapeake where US 13, US 58, and US 460 run concurrently. In this area, daily traffic volumes exceed 68,000 vehicles per day in 2012, and are projected to increase to over 80,000 vehicles per day by 2025. In the City of Virginia Beach, traffic volumes on US 58 range from 27,000 to 47,000 vehicles per day. Traffic volumes throughout most of Segment J3 are projected to increase by 2025, with the largest increase along US 13/US 58 in Suffolk.

Traffic Volume 2014 (AADT)

- < 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- > 200,000
- Primary facility

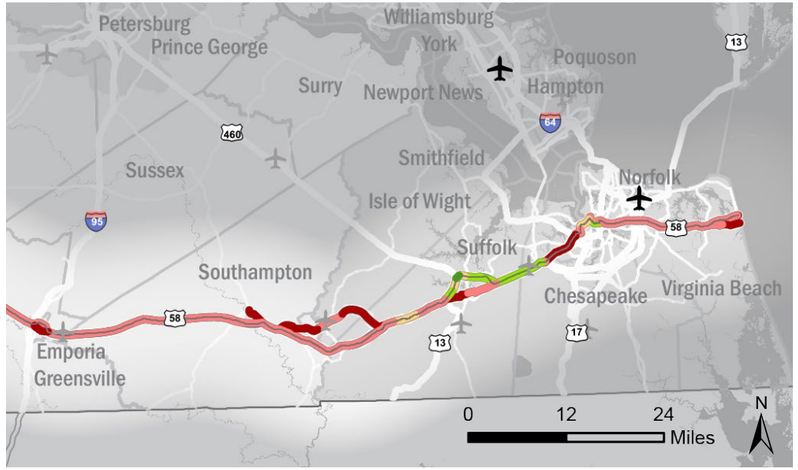
Traffic Volume 2025 (AADT)

- < 10,000
- 10,000 - 50,000
- 50,000 - 100,000
- 100,000 - 200,000
- > 200,000
- Primary facility



Change in Traffic Volume 2014- 2025 (AADT)

- Decreased
- 0 - 5,000
- 5,000 - 10,000
- 10,000 - 20,000
- > 20,000
- Primary facility



J3 SEGMENT PROFILE

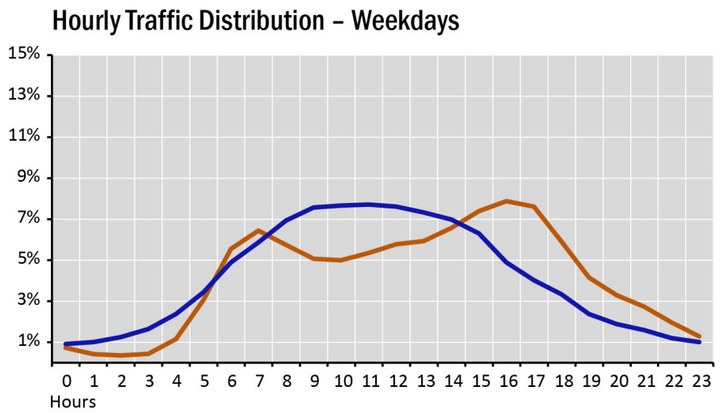
Traffic Distribution

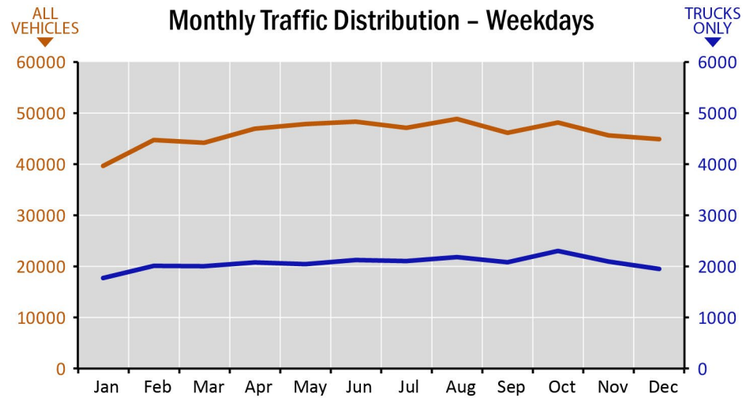
On average, traffic on Segment J3 is distributed throughout the day as shown in the graphs below. Weekday traffic shows two distinct peak periods over the course of the day, with the highest hourly traffic occurring between 4 and 5 p.m. which accounts for 7.9 percent of daily traffic and a less busy morning peak between 7 and 8 a.m. accounting for 6.4 percent of daily traffic. The combined weekday traffic in the two peak periods (from 6 to 10 a.m. and from 3 to 7 p.m.) accounts for 52 percent of total daily traffic. Peaking patterns for truck traffic are different from other traffic with a single midday peak showing the highest hourly flow of 7.7 percent of daily traffic between 11 a.m. and noon. Weekend traffic patterns are also different from the typical commute patterns, showing single peaks for all traffic and truck traffic: all traffic peaks between 2 and 3 p.m. (7.6 percent of daily traffic) and truck traffic peaks between 10 and 11 a.m. (7.8 percent of daily traffic).

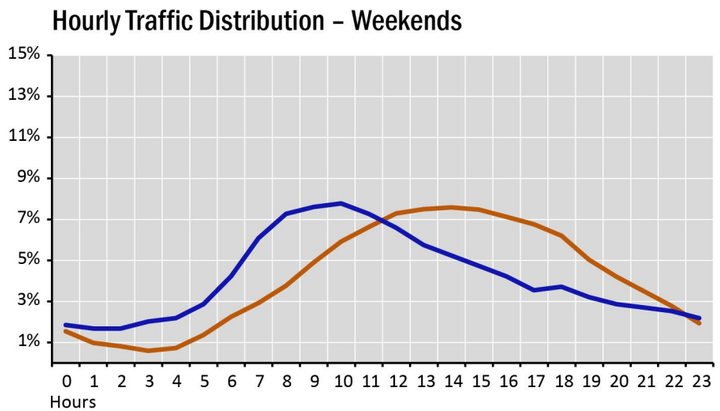
Weekday traffic volumes on Segment J3 vary by as much as 23 percent throughout the year, with the highpoint in August (around 49,000 vehicles per day) and the low point in January (around 40,000 vehicles per day). Truck volumes vary more than passenger volumes, with the October high (around 2,300 vehicles per day) 30 percent higher than the January low (around 1,800 vehicles per day). Weekend traffic levels also vary over the course of the year, and the highest levels of weekend traffic (August, around 36,000 vehicles per day) are 21 percent higher than January levels (around 30,000 vehicles per day). Weekend truck traffic is less steady than all vehicle traffic, with the October high 39 percent higher than the January low. Since truck volumes account for a relatively small portion of traffic on Segment J3, traffic conditions are much more responsive to variations in automobile traffic than truck traffic.

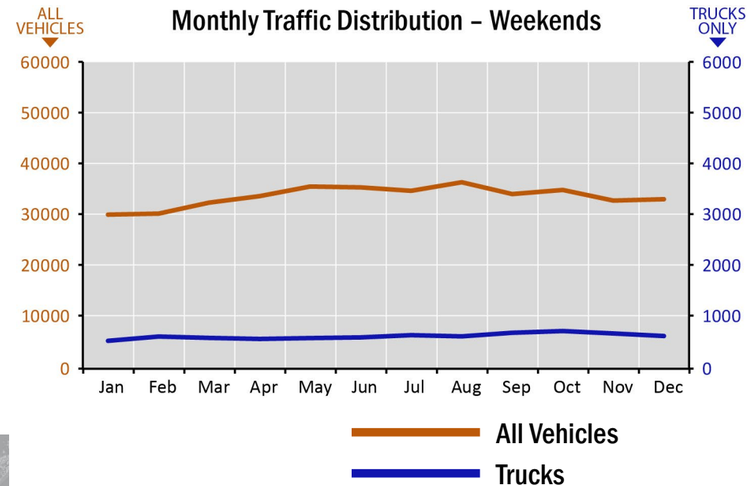
Truck Volumes

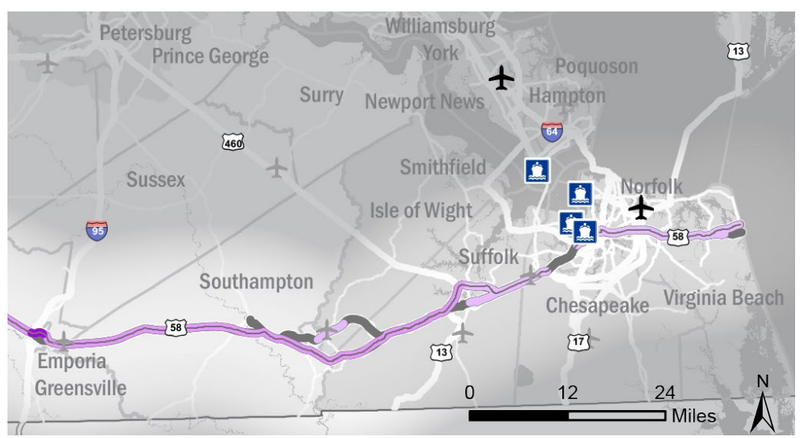
The percent of daily traffic comprised of heavy trucks on Segment J3 is generally low, but does vary by location. Along US 58 in the City of Suffolk west of US 460, heavy trucks comprise seven percent of total traffic. Throughout the rest of Segment J3, heavy trucks comprise less than five percent of total traffic.

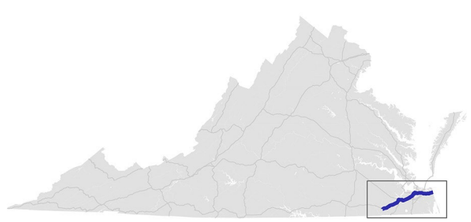










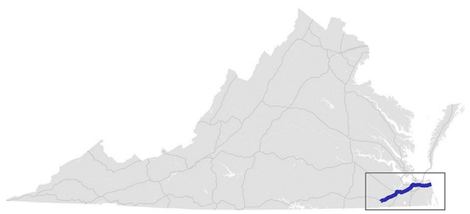


J3 SEGMENT PROFILE

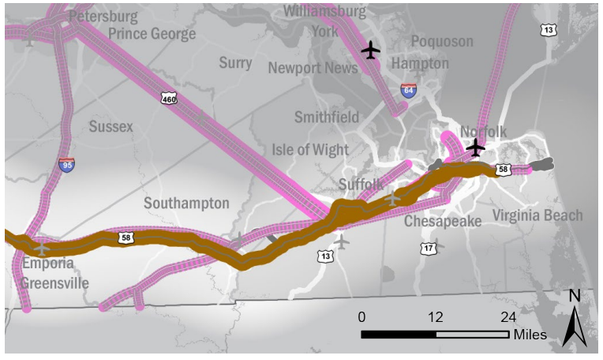
Freight Flows

In the western half of Suffolk, freight on Segment J3 is moved primarily by truck in terms of tonnage and value. In total, 16.5 million tons (95 percent) of freight is moved through this section of Segment J3 by truck, compared to 828,000 tons (five percent) by rail. With regard to value, $28 billion (96 percent) of freight travels by truck, compared to $1.2 billion (four percent) by rail. On average, a ton of freight traveling through this section of Segment J3 by truck is worth $1,707 while a ton of freight traveling by rail is worth $1,394. In 2025, both rail and truck freight tonnages and total values in this area of Segment J3 are expected to increase. The percentage of freight traveling by truck in terms of tonnage and value will likely increase to 96 and 97 percent, respectively. It is anticipated that the freight value per ton on trucks will increase to $1,816 and decrease to $1,291 for rail.

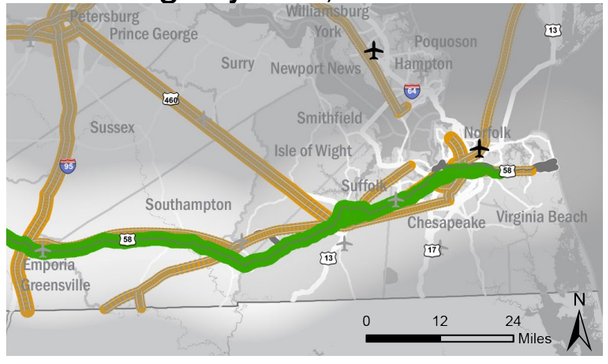
Further east in the City of Suffolk, near the Hampton Roads Executive Airport, freight on Segment J3 is moved primarily by truck in terms of tonnage and value. In total, 22 million tons (90 percent) of freight is moved through this section of Segment J3 by truck, compared to 2 million tons (ten percent) by rail. With regards to value, $31 billion (97 percent) of freight travels by truck, compared to $1 billion (three percent) by rail. On average, a ton of freight traveling through this section of Segment J3 by truck is worth $1,449 while a ton of freight traveling by rail is worth $483. In 2025, both rail and truck freight tonnages and total values in this area of Segment J3 are expected to increase. The percentage of truck freight by tonnage and value will likely remain the same. It is anticipated that the freight value per ton on trucks will increase to $1,523 and decrease to $480 for rail.



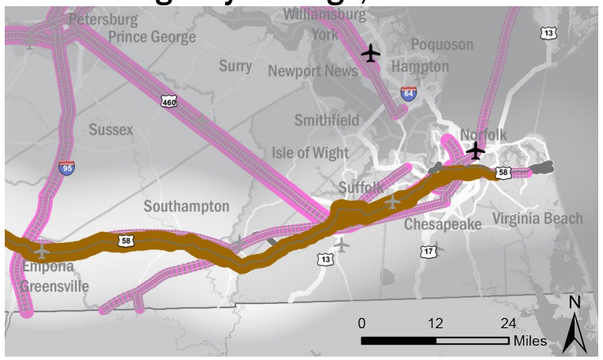
Annual Freight by Tonnage, 2012



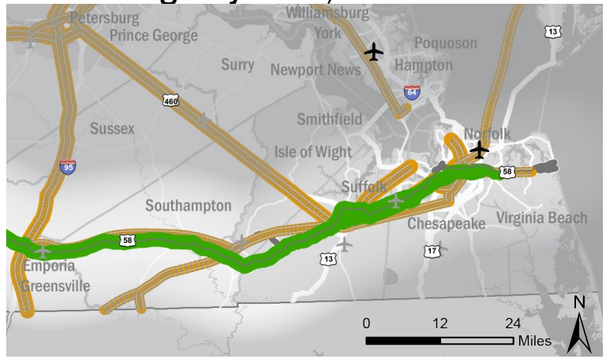
Annual Freight by Value, 2012



Annual Freight by Tonnage, 2025



Annual Freight by Value, 2025



Truck Freight (in tons)

- < 10M
- 10M - 25M
- 25M - 50M
- 50M - 100M
- > 100M
- Primary facility

Rail Freight (in tons)

- < 10M
- 10M - 25M
- 25M - 50M
- 50M - 100M
- > 100M
- Primary facility

Truck Freight

- < $10B
- $10B - $50B
- $50B - $100B
- $100B - $200B
- > $200B
- Primary facility

Rail Freight

- < $10B
- $10B - $50B
- $50B - $100B
- $100B - $200B
- > $200B
- Primary facility

Redundancy and Mode Choice

Passenger trips on Segment J3 of the Southside Corridor have limited travel options, both in terms of travel path and mode choice. There are no parallel highway facilities that accommodate inter-city travel in Segment J3, though I-264 is a parallel option through portions of Chesapeake Portsmouth, Norfolk, and Virginia Beach. US 58 also provides access to other major highway facilities in the Hampton Roads Area, including I-64, I-664, US 13, US 17, and US 460. Based on the 2014 federal standard mileage rate of 56 cents per mile, long-distance trips would be more expensive by automobile than by bus. However, Greyhound bus service, which has stations in Norfolk, Hampton, and Virginia Beach, is limited by the frequency of service and is not as fast as the typical automobile trip. Amtrak does have stations in Newport News, Norfolk and Virginia Beach; however, routes from these stations serve the Northeast Corridor and do not offer connections within Corridor J.

Park-and-Ride

Within Segment J3, commuters can utilize many Park-and-Ride locations, as well as commuter bus service provided by HRT. Park-and-Ride locations are evenly spread throughout the region. Virginia Beach provides the highest number of Park-and-Ride spaces and has the highest utilization rate of spaces available in the region. However, no city within the Segment J3 area has a rate higher than the statewide average for Park-and-Ride utilization, which is 76 percent.

Comparable Travel Options

Hampton Roads (Norfolk) to Emporia

Inter-City Bus	*Train*
0 Trips per Day 0:00 Travel Time $0 Est. Cost	0 Trips per Day 0:00 Travel Time $0 Est. Cost

Auto

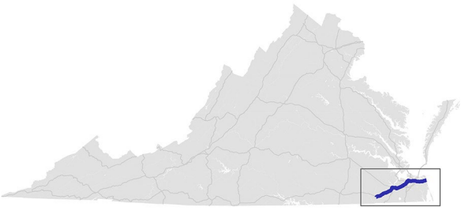
Via Rt. 58 / Rt. 13: 1:27 Travel Time $43 Est. Cost

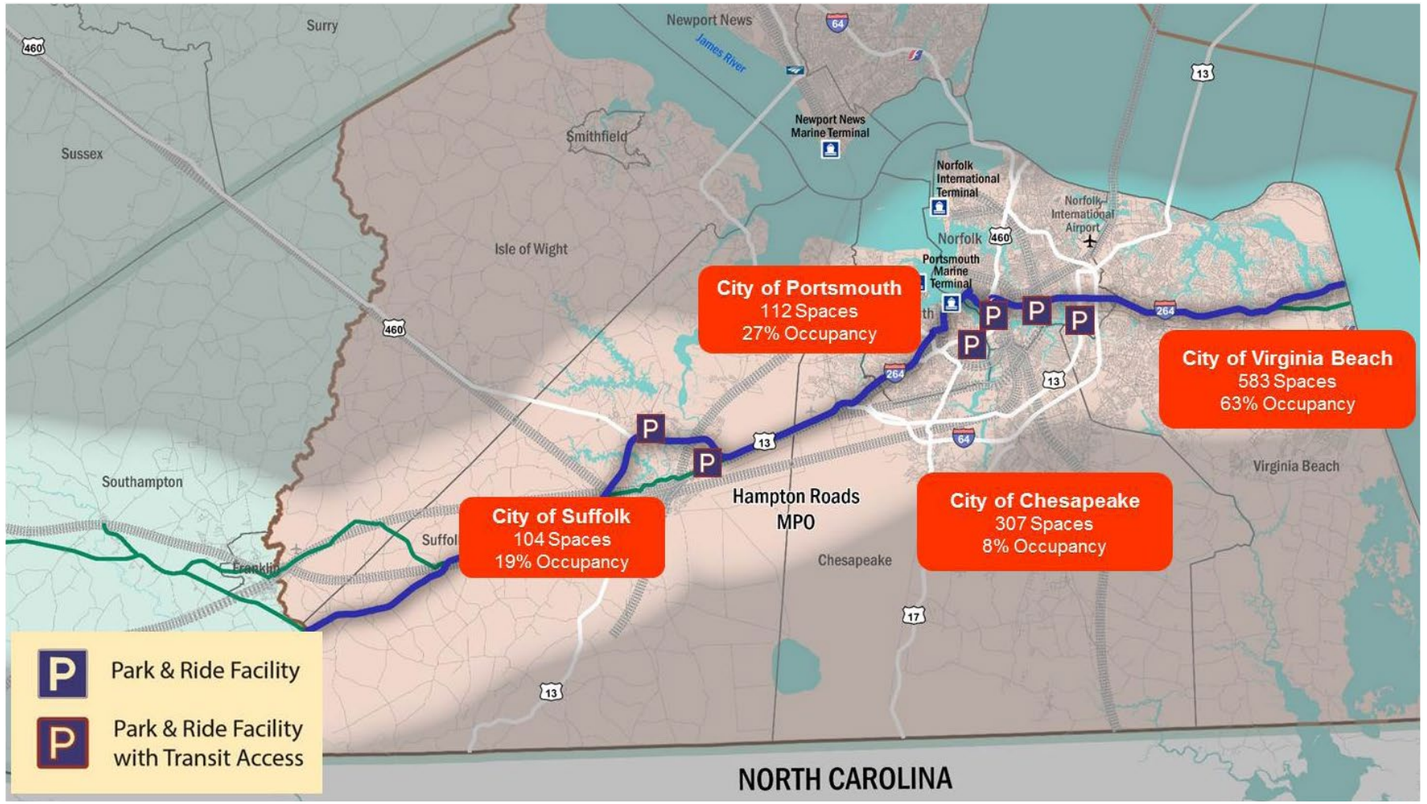
Hampton Roads (Norfolk) to Danville

Inter-City Bus	*Train*
1 Trip per Day 9:25 Travel Time $52 Est. Cost	0 Trips per Day 0:00 Travel Time $0 Est. Cost

Auto

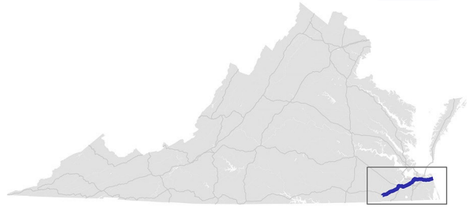
Via Rt. 58: 3:27 Travel Time $108 Est. Cost





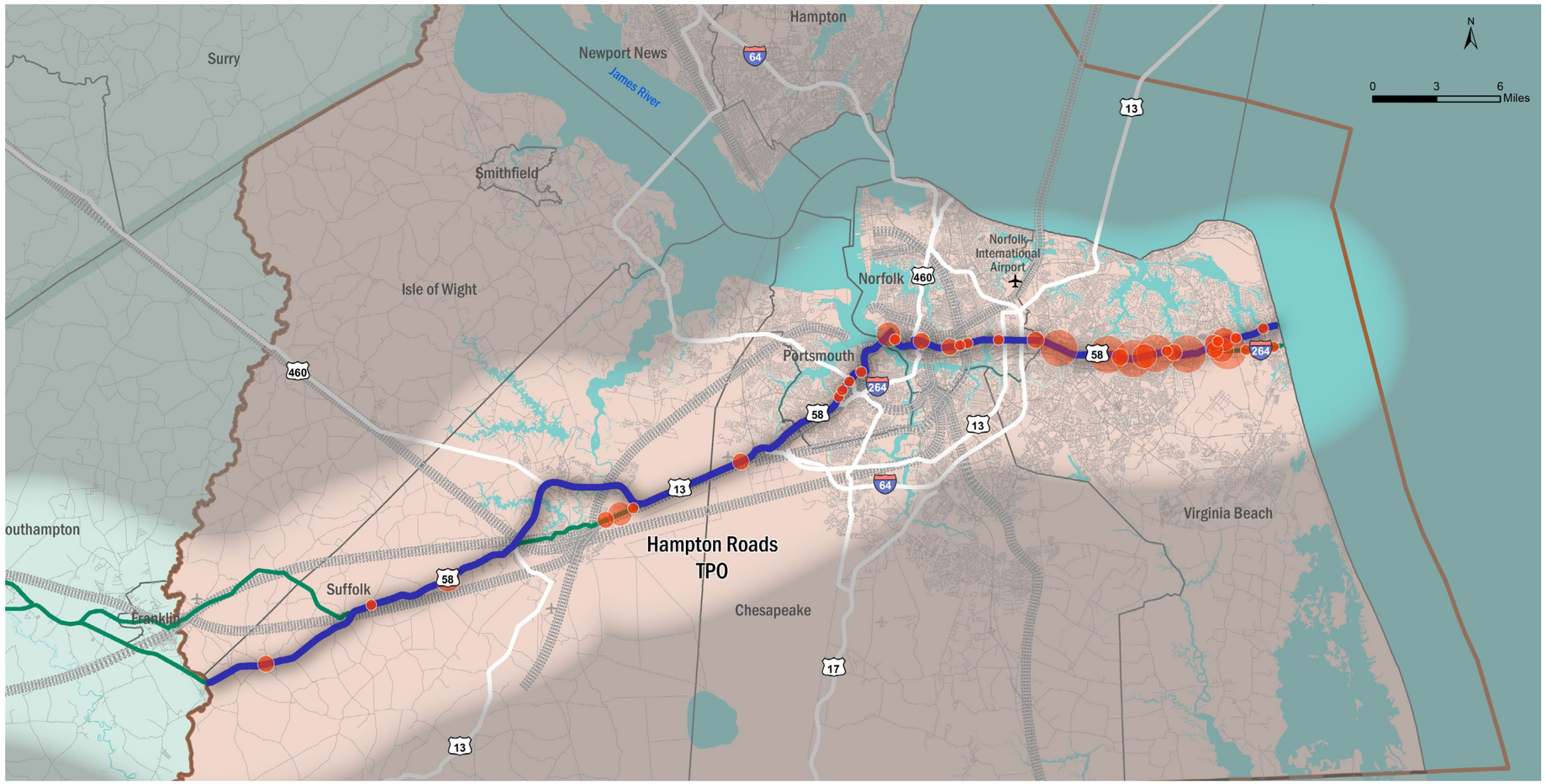
Safety

Between 2010 and 2012, 668 severe crashes occurred on Segment J3, resulting in one of the highest accident rates among CoSS segments statewide. There are multiple areas with high concentrations of severe collisions along Segment J3. In Norfolk, on US 58, at the east end of the Midtown Tunnel, there were 20 crashes over a 0.5-mile distance. In Virginia Beach, there were 53 incidents on US 58 (Virginia Beach Boulevard) over approximately 2.2 miles between Winburne Lane and Southgate Avenue. Also in Virginia Beach, on US 58 (Virginia Beach Boulevard), there were 175 crashes along a stretch approximately 4.9 miles long between Town Center Drive, outside of the Pembroke Mall, and Farmington Road. Along US 58 in Virginia Beach, there were 36 collisions over approximately 0.7 miles between Regency Drive and Hilltop West Shopping Center, where 12 of the 36 collisions took place at the intersection with Regency Drive. Along US 58 Business (Virginia Beach Boulevard) in Virginia Beach, just north of the Oceana Naval Air Station, 61 crashes occurred over a distance of approximately 0.8 miles between Laskin Road and First Colonial Road; a total of 31 of the 61 crashes happened at the intersection with First Colonial Road.



Performance Metrics:

Number of Severe Crashes	587
Severe Crashes/Million VMT	3.5
Number of Railroad Crashes	0



Fatality and Injury Crashes (2010 - 2012)

- < 5
- 5 - 10
- 11 - 15
- 16 - 20
- > 20

Railroad Incidents/Accidents per County (2011-2014)

#

Congestion

Performance Metrics:

Person Hours of Delay per Mile	41
Freight Ton Hours of Delay per Mile	12.1K

Passenger Delays

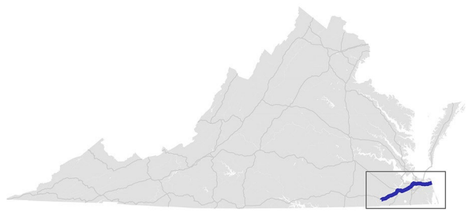
On a per-mile basis, passenger delays along Segment J3 are some of the most severe among CoSS segments, with delays of 41 person-hours per mile. Locations with significant levels of passenger delay include:

- US 58 Business at Route 337 in Suffolk;
- US 58 at both approaches to the Midtown Tunnel in the cities of Norfolk and Portsmouth;
- US 58 (St. Paul's Boulevard) between US 58 (Brambleton Avenue) and US 58 (Virginia Beach Boulevard) in the City of Norfolk; and
- US 58 between I-64 and US 60 in the City of Virginia Beach.

Approximately 48 percent of the daily passenger delays along Segment J3 occur during the peak period, which is above average for the peak-period share of congestion on CoSS segments.

Freight Delays

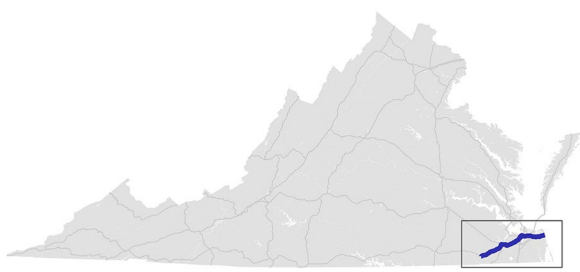
Freight congestion along Segment J3 is moderate with 1.6 million ton-hours of delay daily, averaging to 12,000 ton-hours of delay per mile. However, unlike passenger congestion, there are no locations of significant freight delay along Segment J3. Peak-period freight delays account for 31 percent of daily congestion, which is slightly less than the average for the peak-period share of congestion on CoSS segments.



Daily Person Hours of Delay Per Mile

Daily Freight Ton Hours of Delay Per Mile

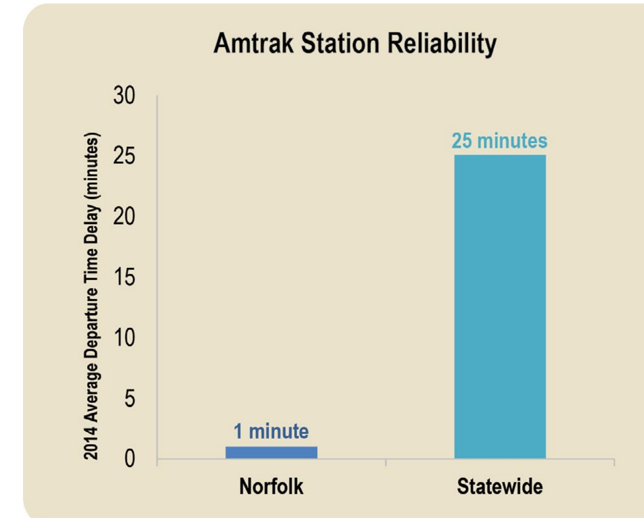
Reliability



Reliability Index
- < 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- > 0.8
- Primary facility (in white)

Statewide reliability index thresholds have been set for weekday peak, weekday and weekend travel to assess the reliability of travel on each segment on all corridors of statewide significance. A higher reliability index indicates that travel times are more unreliable. The following are the reliability index thresholds:

- Weekday Peak - 0.80
- Weekday - 0.40
- Weekend - 0.60



Weekday Peak Reliability

Reliability of travel during the peak period on a typical weekday on Segment J3 ranges from 0.01 to 0.69 in terms of reliability index, with an average value of 0.15. While this segment does have a peak period reliability index much higher than average for the CoSS segments statewide, none of the locations along Segment J3 have reliability index values exceeding the statewide threshold.

Weekday Reliability

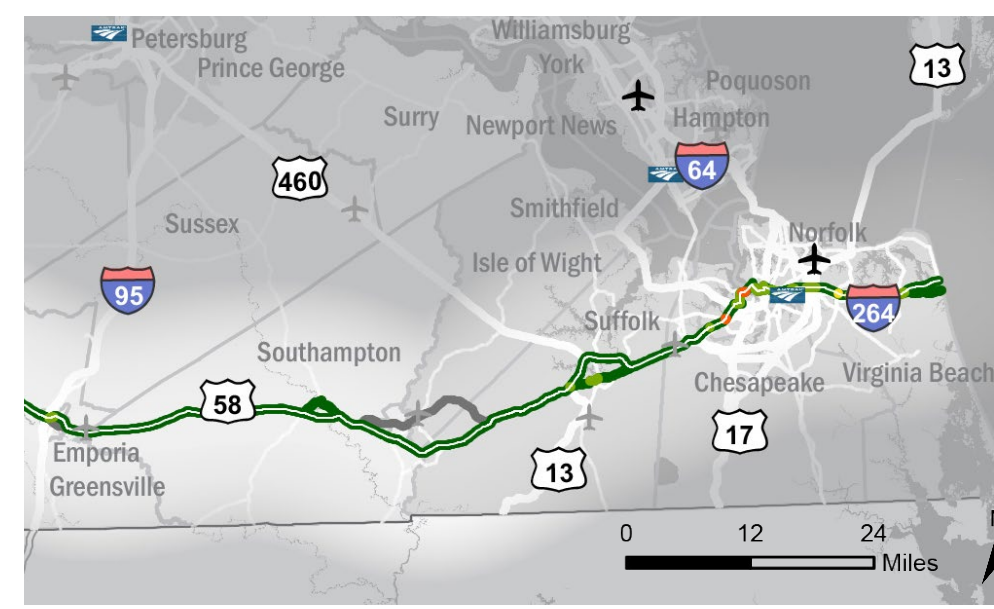
Reliability of travel during a typical weekday ranges from 0.01 to 0.53 in terms of reliability index, with an average value of 0.13. While this segment does have a weekday reliability index much higher than average for the CoSS segments statewide, only a few short sections have reliability index values that exceed the statewide threshold, including:

- US 58 Business at Route 337 in Suffolk;
- US 58 at US 460 Business in the City of Portsmouth;
- US 58 at Route 168 in the City of Norfolk; and
- US 58 at the junction with US 58 Business in the City of Virginia Beach.

Weekend Reliability

Reliability of travel during a typical weekend ranges from 0.00 to 0.78 in terms of reliability index, with an average value of 0.13. While this segment does have a weekend reliability index much higher than average for the CoSS segments statewide, only two locations have reliability index values that exceed the statewide threshold, including:

- US 58 at US 460 Business in the City of Portsmouth; and
- US 58 at the eastern approach to the Midtown Tunnel in the City of Portsmouth.



Summary of Needs

Identified locations are approximate. See “Summary of Needs” table on the following page for details.

Redundancy

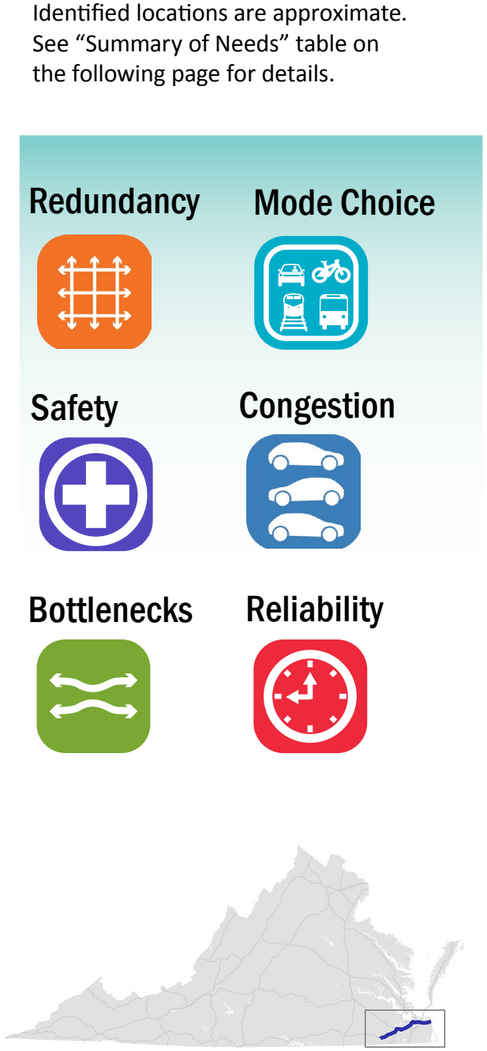
Mode Choice

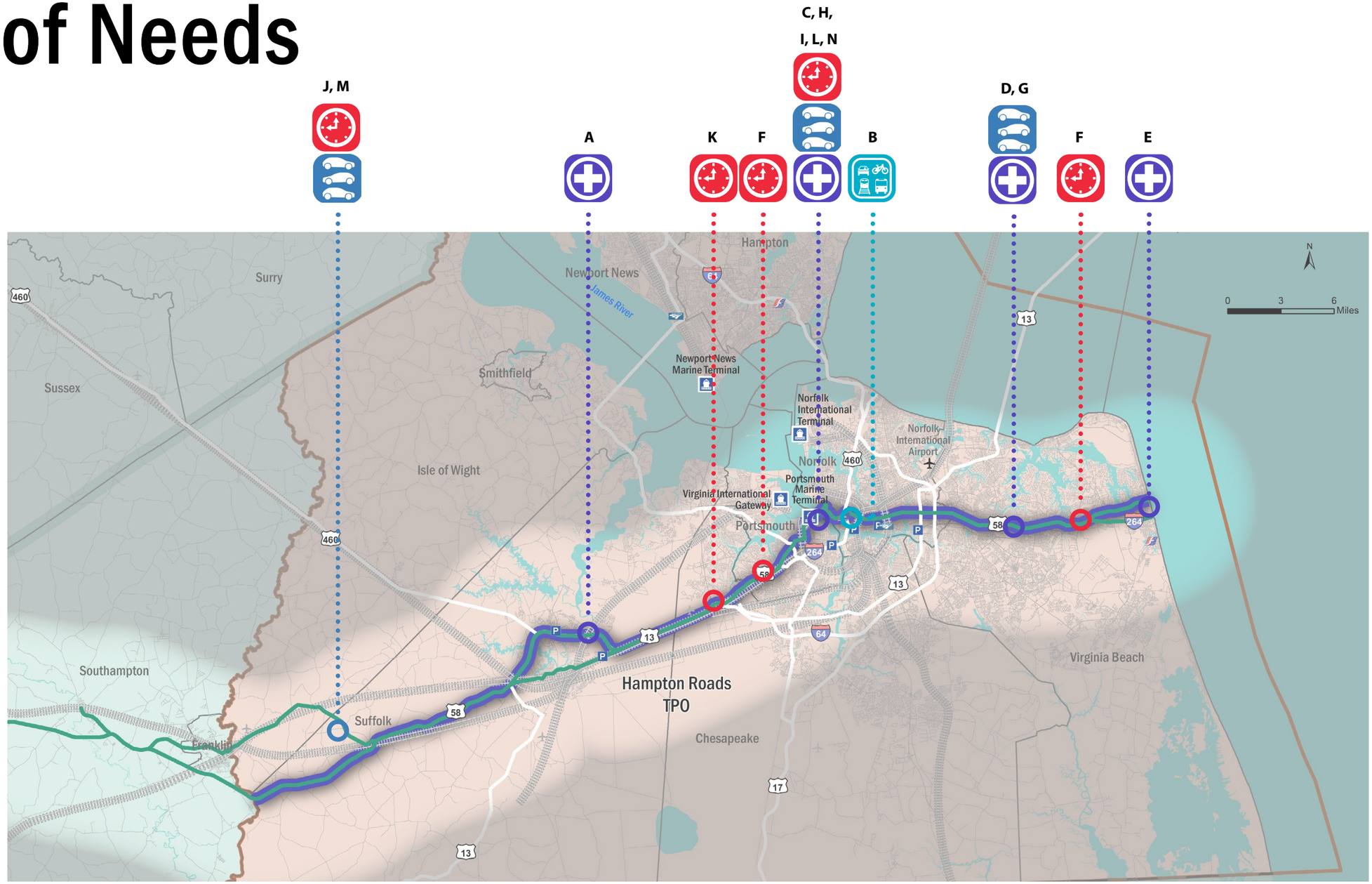
Safety

Congestion

Bottlenecks

Reliability





J3 SEGMENT NEEDS

Summary of Needs - J3 Segment

A.		Safety concerns related to numerous at-grade rail crossings in downtown Suffolk
B.		Passenger rail and bus service does not offer direct connections from Hampton Roads to other cities in the corridor
C.		US 58 near the Midtown Tunnel in Portsmouth/Norfolk: 72 severe crashes
D.		US 58 east of I-64 in Virginia Beach: 282 severe crashes
E.		US 58-Business east of US 58 in Virginia Beach: 94 severe crashes
F.		US 58 at US 460-Alt in Portsmouth: Weekday Reliability Index >0.4, Weekend Reliability Index >0.6
G.		Congestion issue on US 58 (Virginia Beach Boulevard) between Newtown Road and US 60 (Pacific Avenue)
H.		Congestion issue on US 58 near the Midtown Tunnel in Portsmouth and Norfolk

Summary of Needs - J3 Segment

I.		Congestion issue at US 58 and US 460 intersection in downtown Norfolk
J.		Congestion issue at US 460 Business (Portsmouth Boulevard) and US 13 Business (Nansemond Parkway/East Washington Street) in Suffolk
K.		Reliability issue on US 58/US 460 at I-664 intersection in Chesapeake
L.		Reliability issue on US 58 near the Portsmouth Marine Terminals
M.		Reliability issue at US 460 Business (Portsmouth Boulevard) and US 13 Business (Nansemond Parkway/East Washington Street) in Suffolk
N.		Reliability issue at US 58 (Virginia Beach Boulevard) and VA Route 166 (Park Avenue) in Norfolk
O.		Reliability issue at US 58 (Virginia Beach Boulevard) and VA Route 632 (London Bridge Road) in Virginia Beach