

VDOT Virginia Department of Transportation

I-64 Freight Movement Analysis

Summary of Selected Performance Metrics

October 2016 ~~2016~~ **2017**

Base Year Virginia Truck Activity, 2012

- Transearch data provides estimates of truck trips (units), dollar value of cargo, and Virginia VMT, by type of flow

Truck Volume

- 35 million annual unique trips (units)
- 668 billion dollars
- 3.6 billion VMT in the Commonwealth

	Units	\$ USD	Truck VMT in VA
	2012	2012	2012
Inbound VA	5,327,824	61,656	925,210,442
Inbound to VA	3,031,561	31,942	719,264,600
Outbound from VA	8,713,474	123,031	689,334,720
Pass-through	3,332,871	94,522	1,025,204,000
Grand Total	17,384,730	189,149	3,449,389,182

Distribution

- Equal share of trips for all purposes (within, inbound, outbound, pass through)
- Half of value and half of VMT are from pass-through trucks

	% of Total Units	% of Total \$ USD	% of Total Truck VMT in VA
	2012	2012	2012
Inbound VA	25.83%	4.23%	14.62%
Inbound to VA	17.45%	1.58%	20.88%
Outbound from VA	50.17%	64.52%	19.81%
Pass-through	19.35%	29.67%	44.69%
Grand Total	100.00%	100.00%	100.00%

Source: VSP Analysis of Commonwealth of Virginia Transearch Data

Importance of I-64, Value and Units

- Value Moving By Truck**
 - 135 billion dollars of cargo used I-64, representing 20.2% of all freight in VA
 - I-64 moves 34% of all inbound value, and 39% of outbound value
 - 47.7% of all freight value uses I-64
- Units moving by Truck**
 - 7.2 million truck units used I-64, representing 20.3% of all truck units in VA

	Total VA	Uses I-64	I-64 % of Total
Inbound to VA	139.5	47.7	34.2%
Outbound from VA	120.9	47.1	39.0%
Pass-through	345.5	10.4	3.0%
Within VA	61.7	29.4	47.7%
Grand Total	668.0	134.7	20.2%

	Total VA	Uses I-64	I-64 % of Total
Inbound to VA	8.3	1.8	20.3%
Outbound from VA	8.7	1.8	20.3%
Pass-through	9.4	0.4	4.5%
Within VA	8.3	3.1	37.7%
Grand Total	35.2	7.2	20.3%

Importance of I-64, VMT

- Truck VMT**
 - 268.9 million VMT in I-64, representing 7.4% of all truck VMT in VA
 - 859.4 million VMT statewide in trips using I-64, representing 23.6% of all statewide VMT
 - I-64 accounts for 21.6% of all VMT for trips within VA

	All VA VMT	VMT of Trips using I-64	VMT in I-64
Inbound to VA	742.3	271.8	80.6
Outbound from VA	889.3	292.1	62.1
Pass-through	1,975.1	58.3	10.9
Within VA	533.2	267.3	115.2
Grand Total	3,140.0	889.5	268.8

	All VA VMT	VMT of Trips using I-64	VMT in I-64
Inbound to VA	100.0%	36.6%	10.8%
Outbound from VA	100.0%	33.3%	9.0%
Pass-through	100.0%	5.3%	0.7%
Within VA	100.0%	50.1%	21.5%
Grand Total	100.0%	23.6%	7.4%

Comparison I-64, I-81, I-95, I-66

- Value Moving By Truck**
 - I-64 is the most used interstate for shipments with ODs in VA in terms of value
 - For shipments within VA, I-64 moves...
 - 88% more value than I-95
 - 300% more value than I-81
 - 865% more value than I-66
 - For inbound and outbound VA shipments, I-64 moves...
 - 25% more value than I-95
 - 19% more value than I-81
 - 840% more value than I-66

	Total VA	Uses I-64	Uses I-81	Uses I-95	Uses I-66
Inbound to VA	139.0	47.7	41.1	39.2	9.4
Outbound from VA	120.9	47.1	35.5	35.4	5.4
Pass-through	345.8	10.4	223.4	102.0	16.4
Within VA	51.7	29.4	9.9	17.7	3.4
Grand Total	658.0	134.7	312.0	195.3	34.6

Comparison I-64, I-81, I-95, I-66

- Units Moving By Truck**
 - I-64 is the most used interstate for shipments within VA, in terms of value and units
 - For shipments within VA, I-64 moves...
 - 87% more units than I-95
 - 205% more units than I-81

	Total VA	Uses I-64	Uses I-81	Uses I-95	Uses I-66
Inbound to VA	8.83	1.83	2.22	2.34	0.95
Outbound from VA	6.71	1.77	2.20	2.17	0.62
Pass-through	9.37	0.43	5.76	2.60	0.42
Within VA	8.33	3.14	1.53	1.83	0.44
Grand Total	35.24	7.17	11.71	9.00	2.13

I-64 Profile by Direction, 2012

- I-64 total trucks**
 - 7.2 million units (only 5.9% pass-through)
 - \$134.7 billion USD (only 7.7% pass-through)
 - 860 million truck VMT around VA part of trips that used I-64 (only 10.3% pass-through)
 - 269 million truck VMT on I-64 only (only 4.1% pass-through)

	Units	M USD	Truck VMT in VA	Truck VMT in I-64
Inbound to VA	1,454,603	47,754	271,763,343	80,520,879
Outbound from VA	1,119,722	47,190	312,358,475	52,540,330
Pass-through	435,426	19,424	81,207,637	10,259,549
Within VA	3,132,451	114,368	664,329,455	143,320,758
Grand Total	3,146,234	134,691	868,375,492	246,671,076

	% of Total Units	% of Total M USD	% of Total Truck VMT in VA	% of Total Truck VMT in I-64
Inbound to VA	25.0%	35.4%	31.6%	30.0%
Outbound from VA	34.7%	35.5%	37.3%	21.5%
Pass-through	5.5%	7.7%	10.3%	4.1%
Within VA	42.3%	21.6%	21.1%	42.3%
Grand Total	100.0%	100.0%	100.0%	100.0%

Source: WSP analysis of Commonwealth of Virginia Transsearch Data

I-64 Profile - Trip Lengths, 2012

- Looked at three different groups of trip lengths**
 - 69% of units, 57% of value, and 21.9% of I-64 VMT are from trips of 50 miles or less on I-64
 - 23% of units, 25% of value, and 44% of I-64 VMT are from trips of 50 to 100 miles on I-64
 - 8% per cent of trips, 18% of value, and 34% I-64 VMT are from trips of 100 or more miles on I-64

	Units	M USD	Truck VMT in VA	Truck VMT in I-64
0-50mi on I-64	4,851,261	76,401	464,541,671	55,850,103
50-100mi on I-64	1,850,800	54,405	254,405,965	119,189,353
100mi+ on I-64	566,123	23,675	140,428,754	90,825,614
Grand Total	7,168,234	154,881	859,376,392	266,074,970

	% of Total Units	% of Total M USD	% of Total Truck VMT in VA	% of Total Truck VMT in I-64
0-50mi on I-64	69.1%	58.7%	54.1%	21.9%
50-100mi on I-64	23.0%	25.5%	26.6%	44.3%
100mi+ on I-64	7.9%	17.7%	16.3%	33.8%
Grand Total	100.0%	100.0%	100.0%	100.0%

Source: WSP analysis of Commonwealth of Virginia Transsearch Data

I-64 Profile – Leading Commodities, 2012

- Top 20 commodities (STCC-2) by value moving on I-64
 - Warehouse and distribution traffic (secondary) = 12.2% of value
 - Transportation equipment = 10.8% of value
 - Machinery = 13.3% of value

Rank	STCC 2	Commodity Group	M USD	% of Total M USD
1	5010	Secondary Traffic	10,430	12.2%
2	37	Transportation Equipment	14,812	10.8%
3	35	Machinery	13,203	9.2%
4	20	Food	10,787	8.0%
5	28	Chemical Products	10,511	7.8%
6	35	Electrical Equipment	8,455	6.2%
7	13	Metallic Ores	6,194	4.6%
8	29	Refined Petroleum Products	5,074	4.0%
9	1	Agriculture	5,033	4.0%
10	34	Metal Products	3,912	2.9%
11	30	Rubber/Plastics	3,870	2.9%
12	21	Tobacco	3,087	2.3%
13	28	Paper	2,901	2.2%
14	33	Metal	2,773	2.1%
15	25	Furniture	2,517	1.9%
16	23	Apparel	2,208	1.7%
17	39	Misc Mfg Products	1,658	1.2%
18	24	Lumber	1,770	1.3%
19	32	Textiles	1,709	1.3%
20	9	Fish	1,083	1.2%

Source: WSP analysis of Commonwealth of Virginia Transsearch Data

I-64 Profile – Leading Commodities, 2012

- Top 20 commodities (STCC-2) by units moving on I-64
 - Shipping containers = 36.8% of value
 - Nonmetallic minerals = 13.1% of value
 - Secondary traffic = 9.1% of value

Rank	STCC 2	Commodity Group	Units	% of Total Units
1	42	Shipping Containers	2,640,058	36.8%
2	14	Nonmetallic Minerals	840,025	11.8%
3	5010	Secondary Traffic	651,941	9.1%
4	32	Clay, Concrete, Glass	419,104	5.8%
5	29	Refined Petroleum Products	414,533	5.7%
6	1	Agriculture	401,274	5.6%
7	20	Food	322,947	4.5%
8	24	Lumber	238,504	3.3%
9	40	Waste	185,397	2.6%
10	28	Chemical Products	182,680	2.5%
11	29	Paper	132,212	1.8%
12	37	Transportation Equipment	130,071	1.8%
13	35	Machinery	95,441	1.3%
14	30	Rubber/Plastics	72,539	1.0%
15	34	Metal Products	62,222	0.9%
16	33	Metal	48,723	0.7%
17	39	Electrical Equipment	44,954	0.6%
18	25	Furniture	37,595	0.5%
19	23	Apparel	15,422	0.2%
20	22	Textiles	15,011	0.2%

Source: WSP analysis of Commonwealth of Virginia Transsearch Data

I-64 Dependent Commodities, 2012

- Top 20 commodities (STCC-2) dependent on I-64 by value
 - 95.4% of Metallic Ore value in VA moves on I-64
 - 45% of Forest Product value in VA moves on I-64
 - 42.9% of Fish value moves on I-64

Rank	STCC 2	Commodity Group	M USD using I-64	% of all VA M USD
1	10	Metallic Ores	5,184	95.4%
2	8	Forest Products	533	45.0%
3	9	Fish	1,083	42.9%
4	10	Ordinance	759	27.3%
5	35	Machinery	13,205	25.0%
6	31	Leather	802	24.8%
7	39	Misc Mfg Products	1,658	24.1%
8	5010	Secondary Traffic	10,430	23.3%
9	25	Furniture	2,517	20.3%
10	37	Transportation Equipment	14,812	22.4%
11	1	Agriculture	8,033	22.3%
12	32	Clay, Concrete, Glass	1,595	20.2%
13	29	Refined Petroleum Products	5,074	19.2%
14	23	Apparel	2,208	16.1%
15	24	Lumber	1,770	18.5%
16	40	Waste	1,531	18.7%
17	34	Metal Products	3,912	17.5%
18	20	Paper	2,901	17.3%
19	21	Tobacco	3,087	16.2%
20	28	Chemical Products	10,511	15.2%
Total			134,881	20.2%

Source: WSP analysis of Commonwealth of Virginia Transsearch Data

I-64 Dependent Commodities, 2012

- Top 20 commodities (STCC-2) dependent on I-64 by units
 - 42.9% of Fish units in VA move on I-64
 - 42.9% of Forest Product units in VA move on I-64

Rank	STCC 2	Commodity Group	Units using I-64	% of all VA Units
1	9	Fish	10,427	42.9%
2	8	Forest Products	11,070	42.5%
3	19	Ordinance	1,000	29.0%
4	25	Machinery	95,441	25.1%
5	29	Refined Petroleum Products	414,533	24.7%
6	31	Leather	3,242	29.8%
7	5010	Secondary Traffic	651,941	23.0%
8	25	Furniture	37,595	23.0%
9	24	Lumber	238,504	23.0%
10	28	Paper	132,212	23.0%
11	1	Agriculture	401,274	22.1%
12	42	Shipping Containers	2,640,058	21.8%
13	23	Apparel	15,422	21.8%
14	32	Clay, Concrete, Glass	419,104	21.8%
15	39	Misc Mfg Products	14,853	21.1%
16	40	Waste	185,397	20.2%
17	37	Transportation Equipment	110,071	19.8%
18	14	Nonmetallic Minerals	840,025	18.0%
19	34	Metal Products	62,222	18.2%
20	20	Food	322,947	18.6%
Total			7,198,334	20.2%

Source: WSP analysis of Commonwealth of Virginia Transsearch Data

