REPORT OF THE
VIRGINIA DEPARTMENT OF TRANSPORTATION

IMPACT THE PROHIBITION OF WATER TRANSPORT OF WASTE MAY HAVE ON HIGHWAY SAFETY DUE TO IMPACTS OF TRUCK TRAFFIC

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

SENATE DOCUMENT NO. 22

COMMONWEALTH OF VIRGINIA
RICHMOND
2000

COMMONWEALTH of VIRGINIA

DEPARTMENT OF TRANSPORTATION
1401 EAST BROAD STREET
RICHMOND, 23219-1939

CHARLES D. NOTTINGHAM
COMMISSIONER

November 29, 1999

The Honorable James S. Gilmore, III
Members, Virginia General Assembly

Dear Governor and General Assembly Members:

Pursuant to House Bill 2556 and Senate Bill 1308 of the 1999 General Assembly Session, I am enclosing a study on the impact to highway safety resulting from the prohibition of water transport of waste in the Commonwealth of Virginia. The Department's report on the subject concludes that a prohibition of barge traffic will not have a major impact on the ability of Virginia's highways to safely accommodate the additional truck traffic.

Thank you for the opportunity to conduct this study. As always, let me know if you have any questions.

Sincerely,

Chas. D. Nottingham

Charles D. Nottingham

Enclosure

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PREFACE

The Virginia Department of Transportation (VDOT) was asked by the 1999 General Assembly, through House Bill 2556 and Senate Bill 1308, to study the impact to highway safety resulting from the prohibition of the water transport of wastes.

In conducting this study, the Department assessed all available traffic statistics to determine the additional impact increased truck volumes would have on highway safety within the Commonwealth should the proposed legislation be approved. To support this effort, VDOT communicated directly or in writing with the following relative to this mutual concern.

Mr. Dennis Treacy	Director, Department of Environmental Quality
Mr. Robert B. Dix, Jr.	Chairman, COG, Environment and Public Works Director Committee
Mr. Tom Smith	Chairman, Northern Virginia Waste Management Board
Mr. Rob Arner	Solid Waste Program Manager Northern Virginia Planning District Commission

SUMMARY

The 1999 General Assembly adopted several bills dealing with the regulation of solid waste. As a result of this action House Bill 2556 and Senate Bill 1308 directed the Virginia Department of Transportation (VDOT) to conduct an analysis of any impact to highway safety resulting from the prohibition of the water transport of waste.

House Bill 2556 and Senate Bill 1308, as enacted, prohibits the commercial transport of various types of solid and medical waste now being shipped on the waters of the Commonwealth by ships, barges, or other vessels.

The purpose of this study was to assess all traffic statistics to determine the additional impact truck traffic will have on the Commonwealth's highways due to the prohibition of water transport of waste. Virginia has approximately 76,800 total centerline miles of highways.

Truck traffic volumes have increased by 76.68% from 1986 to 1996 on the Interstate System while also increasing by 50.74% over the same time period on the Primary System. However, truck accidents have decreased over the same period by 37.70% on the Interstate System. The Primary System has also experienced a reduction in truck accidents by 53.96% for the same period. (See the attached tables for additional information)

Various estimates suggest each vessel trip would require approximately 120 to 300 tractor-trailer truck roundtrips to replace its carrying capacity depending on size. The three barge trips initially planned per week could increase truck trips by 100 per week in the near future when the only New York City landfill will be closed in 2001. These loads could be transported to any of the five major landfills accepting waste in Virginia.

The Virginia Department of Transportation has a history of not collecting data or monitoring the movement of any commercial cargo transported over the highways of the Commonwealth. However, there are State Agencies that do have an assigned mission to monitor the movement of such cargos, such as the State Police, State Corporation Commission and, in this case, the Department of Environmental Quality.

Based on a review of traffic statistics, we feel a prohibition of barge traffic, which would increase the volume of trash trucks would not have a major impact on the ability of Virginia's highways to safely accommodate the additional traffic. This increased traffic, from a safety standpoint is no different than the sudden traffic created from several large commercial carriers building new terminals within the state and operating over the various roadways.

CRASH FACTS
1986-1996

A review of the Interstate System within the Commonwealth as shown in Table 1 presents truck crashes for the years 1986-1996. The average vehicle miles traveled in thousands of miles have increased from 1,560,211 in 1986 to 2,758,591 in 1996. This is an increase of 76.68%. Very few new additional interstate miles were added during this period. Crashes and the resulting aftermath seem to continue on an up and down path from 1986 to 1996. However, while this remains unsteady, the crash rate for Interstate truck crashes has decreased by 37.70% from 130 accidents per 100 million vehicle miles of travel in 1986 to 81 accidents per 100 million vehicle miles of travel in 1996. Trucks are being driven an increasing number of miles each year and the number of accidents is not increasing proportionately.

Truck crashes on the Primary System are revealed in Table 2. Again, the accident data is presented for the years 1986-1996. Average truck vehicle miles in thousands totaled 1,119,453 in 1986 with a crash rate of 341 accidents per 100 million vehicle miles of travel. In 1996, 1,687,471 average vehicle miles in thousands resulted in a crash rate of 157 accidents per 100 million vehicle miles of travel. These figures produce a total truck travel increase of 50.74% on the Primary System with a 53.96% decrease in the crash rate.

Table 3 depicts the accident data for all vehicles on the Interstate System for the years 1986-1996. During this period the vehicle miles traveled increased by 65.36% from 12,001,621 in 1986 to 19,845,981 in 1996. The various accident data fields indicate an overall increase in the number of accidents and also the severity. However, the crash rate has decreased by 14.81% from 81 accidents per 100 million vehicle miles of travel in 1986 to 69 accidents per 100 million vehicle miles of travel in 1996. Because of the large increase in travel the crash rate continues to fall.

Table 4 shows the accident data for all vehicles operating on the Primary System from 1986 through 1996. The vehicle travel has increased by 38.00% while the crash rate has decreased 35.41% from 209 accidents per 100 million vehicle miles of travel in 1986 to 135 accidents per 100 million vehicle miles of travel in 1996. During this period fatality and property damage figures show an overall decrease while injury accidents and injuries increased somewhat over 1986.

Table 5 data shows the same downward trend for all vehicles on the Secondary System from 1986 through 1996. The vehicle miles of travel increased by 43.76% while the crash rate decreased by 35.81% from 391 accidents per 100 million vehicle miles of travel to 251 accidents per 100 million vehicle miles of travel.

Conclusion

Based on the statistics shown above, we do not believe that this increase in truck traffic will create any additional safety risk for the traveling public. Hazards from increased truck traffic should be no different than what would be expected from several large commercial carriers building new terminals within the state and operating over the various roadways.

In summation, the crash rates for all systems depicted in the tables have decreased over the eleven-year study period although the number of miles traveled has increased. This trend should continue.

TABLE 1
INTERSTATE SYSTEM
Truck Crashes
Years 1986 - 1996

YEAR	AVMT (THOUSANDS)	LENGTH IN MI.	FAT CRASH	PERSONS KILLED	INJ CRASH	PERSONS INJURED	PD CRASH	TOT CRASH	CRASH RATE
1986	1,560,211	1,052	28	30	688	990	1,313	2,029	130
1987	1,686,717	1,052	23	25	749	1,126	1,430	2,202	131
1988	1,832,902	1,058	33	41	626	895	1,351	2,010	110
1989	1,949,070	1,061	27	30	764	1,214	1,398	2,189	112
1990	2,002,832	1,061	33	40	645	972	1,224	1,902	95
1991	2,087,662	1,061	21	24	545	834	1,020	1,586	76
1992	2,262,371	1,061	33	37	592	926	1,118	1,743	42
1993	2,401,147	1,105	31	53	682	1,511	1,119	1,832	76
1994	2,511,132	1,105	41	67	837	1,769	1,429	2,307	92
1995	2,624,231	1,105	30	61	825	1,836	1,298	2,153	82
1996	2,758,591	1,105	34	35	853	1,261	1,353	2,240	81
% INCREASE/ DECREASE 1986-1996	+76.68%								-37.70%

TABLE 2
PRIMARY SYSTEM
Truck Crashes
Years 1986 - 1996

YEAR	AVMT (THOUSANDS)	LENGTH IN MI.	FAT CRASH	PERSONS KILLED	INJ CRASH	PERSONS INJURED	PD CRASH	TOT CRASH	CRASH RATE
1986	1,119,453	7,863	81	101	1,422	2,079	2,912	3,815	341
1987	1,202,478	7,883	72	87	1,347	1,986	2,379	3,798	316
1988	1,273,831	7,904	65	77	1,466	2,186	2,387	3,918	308
1989	1,332,765	7,918	61	72	1,495	2,152	2,252	3,788	284
1990	1,348,363	7,915	73	89	1,284	1,889	1,936	3,293	244
1991	1,379,335	7,915	64	83	1,026	1,528	1,497	2,587	188
1992	1,470,731	7,915	56	71	1,004	1,486	1,361	2,421	165
1993	1,580,100	7,965	45	53	1,216	1,516	1,392	2,498	158
1994	1,517,153	7,968	63	67	1,205	1,769	1,606	2,874	189
1995	1,596,935	7,974	55	61	1,211	1,836	1,594	2,860	179
1996	1,687,471	7,982	59	70	1,094	1,625	1,499	2,652	157
% INCREASE/ DECREASE 1986-1996	+50.74%								-53.96%

TABLE 3
INTERSTATE SYSTEM
Crash Summary by Year
(All Vehicles)
Years 1986 - 1996

YEAR	AVMT (THOUSANDS)	LENGTH IN MI.	FAT CRASH	PERSONS KILLED	INJ CRASH	PERSONS INJURED	PD CRASH	TOT CRASH	CRASH RATE
1986	12,001,621	1,052	83	94	3,598	5,598	5,942	9,722	81
1987	12,875,701	1,052	81	91	3,878	5,875	6,759	10,718	83
1988	13,885,620	1,058	117	136	3,771	5,700	6,711	10,599	76
1989	14,654,665	1,061	103	114	4,402	6,827	7,533	12,038	82
1990	14,946,510	1,061	111	131	4,114	6,349	6,914	11,139	75
1991	15,464,166	1,061	83	88	3,925	6,118	6,425	10,434	67
1992	16,635,079	1,061	84	95	4,241	6,563	6,609	10,934	65
1993	17,526,620	1,105	115	126	4,751	7,351	6,778	11,644	66
1994	18,329,433	1,105	126	152	5,012	7,762	7,446	12,584	69
1995	19,154,974	1,105	125	133	5,092	7,708	7,484	12,701	66
1996	19,845,981	1,105	112	121	5,393	8,152	8,211	13,716	69
% INCREASE/ DECREASE 1986-1996	+65.36%								-14.81%

TABLE 4
PRIMARY SYSTEM
Crash Summary by Year
(All Vehicles)
Years 1986 - 1996

YEAR	AVMT (THOUSANDS)	LENGTH IN MI.	FAT CRASH	PERSONS KILLED	INJ CRASH	PERSONS INJURED	PD CRASH	TOT CRASH	CRASH RATE
1986	17,222,359	7,863	457	538	14,735	22,919	20,798	35,990	209
1987	18,219,366	7,883	406	468	14,971	23,421	22,368	37,745	207
1988	19,012,402	7,904	427	484	14,930	23,215	22,315	37,695	198
1989	19,599,481	7,918	412	458	14,895	23,118	21,593	36,100	188
1990	19,541,496	7,915	388	457	14,085	21,843	19,924	34,397	176
1991	19,704,789	7,915	385	447	12,635	19,595	17,151	30,171	153
1992	20,714,528	7,915	318	361	13,652	21,550	16,175	30,145	145
1993	21,945,828	7,965	301	344	13,774	21,745	15,330	29,405	133
1994	21,987,719	7,968	329	369	14,783	23,290	16,278	31,390	143
1995	23,143,989	7,974	348	386	14,838	23,228	16,320	31,506	136
1996	23,767,200	7,982	323	360	14,816	22,976	16,972	32,111	135
% INCREASE/ DECREASE 1986-1996	+38.00%								-35.41%

TABLE 5
SECONDARY SYSTEM
Crash Summary by Year
(All Vehicles)
Years 1986 - 1996

YEAR	AVMT (THOUSANDS)	LENGTH IN MI.	FAT CRASH	PERSONS KILLED	INJ CRASH	PERSONS INJURED	PD CRASH	TOT CRASH	CRASH RATE
1986	8,093,190	45,020	266	282	12,345	17,837	18,995	31,606	391
1987	8,288,449	45,204	229	249	12,320	17,657	19,682	32,231	389
1988	8,369,840	45,323	246	256	12,420	17,574	20,250	32,916	393
1989	8,564,064	45,581	233	252	12,486	17,751	20,253	32,972	385
1990	8,710,429	45,828	275	297	11,870	16,910	18,140	30,285	348
1991	No Data	45,828	215	239	10,616	15,390	15,661	26,492	No Data
1992	No Data	45,828	210	224	11,222	16,478	15,120	26,552	No Data
1993	No Data	46,039	218	230	11,452	16,837	14,033	25,703	No Data
1994	11,013,777	46,222	218	240	11,894	17,332	14,857	26,979	245
1995	11,253,000	46,347	227	248	12,245	17,841	15,171	27,643	245
1996	11,635,000	46,486	219	231	12,455	18,117	16,541	29,215	251
% INCREASE/ DECREASE 1986-1996	+43.76%								-35.81%

APPENDIX A

VIRGINIA ACTS OF ASSEMBLY - 1999

CHAPTER 583

An Act to amend the Code of Virginia by adding in Article 7.1 of Chapter 14 of Title 10.1 a section numbered 10.1-1454.2, relating to water transport of wastes.

[S 1308]

Approved March 27, 1999

Be it enacted by the General Assembly of Virginia:

2. That the Code of Virginia is amended by adding in Article 7.1 of Chapter 14 of Title 10.1 a section numbered 10.1-1454.2 as follows:

§10.1-1454.2. Transportation of waste upon waters; prohibitions.

The provisions of §10.1-1454.1 will not in all circumstances provide sufficient protection of health, safety and welfare or of the Commonwealth's atmosphere, lands, and waters. Therefore, the commercial transport of hazardous or nonhazardous solid waste (except scrap metal, dredged material and source-separated recyclables) or regulated medical waste by ship, barge or other vessel upon the navigable waters of the Commonwealth is prohibited on the Rappahannock, James and York Rivers, to the fullest extent consistent with limitations posed by the Constitution of the United States, as is necessary to protect health, safety and welfare and the Commonwealth's atmosphere, lands and waters from pollution, impairment or destruction.

2. That the Virginia Department of Transportation, in conjunction with other appropriate agencies, shall conduct an analysis of the impact any prohibition imposed pursuant to §10.1-1454.2 may have on highway safety due to impacts on truck traffic. The Department shall report its findings to the Governor and the General Assembly by January 1, 2000.

APPENDIX B

VIRGINIA ACTS OF ASSEMBLY - 1999

CHAPTER 612

An Act to amend the Code of Virginia by adding in Article 7.1 of Chapter 14 of Title 10.1 a section numbered 10.1-1454.2, relating to water transport of wastes.

[H 2556]

Approved March 27, 1999

Be it enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding in Article 7.1 of Chapter 14 of Title 10.1 a section numbered 10.1-1454.2 as follows:

§10.1-1454.2. Transportation of waste upon waters; prohibitions.

The provisions of §10.1-1454.1 will not in all circumstances provide sufficient protection of health, safety and welfare or of the Commonwealth's atmosphere, lands and waters. Therefore, the commercial transport of hazardous or nonhazardous solid waste (except scrap metal, dredged material and source-separated recyclables) or regulated medical waste by ship, barge or other vessel upon the navigable waters of the Commonwealth is prohibited on the Rappahannock, James and York Rivers, to the fullest extent consistent with limitations posed by the Constitution of the United States, as is necessary to protect health, safety and welfare and the Commonwealth's atmosphere, lands and waters from pollution, impairment or destruction.

2. That the Virginia Department of Transportation, in conjunction with other appropriate agencies, shall conduct an analysis of the impact any prohibition imposed pursuant to §10.1-1454.2 may have on highway safety due to impacts on truck traffic. The Department shall report its findings to the Governor and the General Assembly by January 1, 2000.