

Interstate Movement of Municipal Solid Waste

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Since the late 1980s, states have been concerned about the amount of solid waste they received from out-of-state sources for disposal. Some states attempted to pass legislation that would regulate these interstate waste receipts. However, federal courts have declared that any restrictions were unconstitutional. At the same time, Congress has considered, but not passed, numerous bills that would have provided states with the authority to control interstate waste shipments.

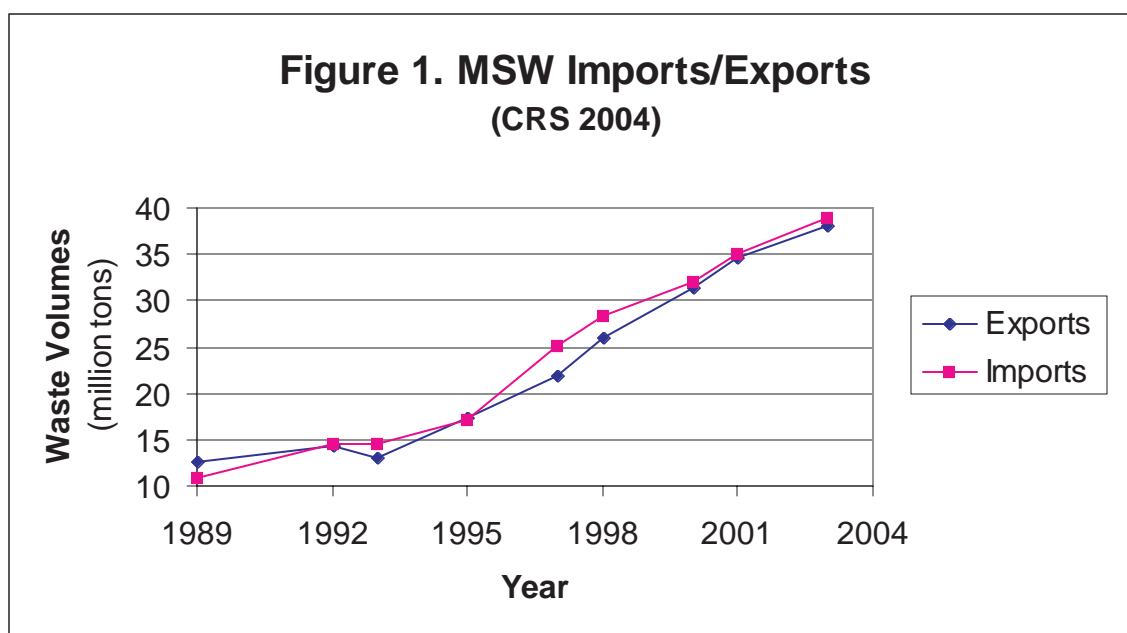
Because of the continuing congressional interest in interstate waste shipments, Congress in 1990 requested that the Congressional Research Service (CRS) determine the amount of municipal solid waste (MSW) moving interstate. CRS has updated its interstate report 8 times, most recently on September 9, 2004. This report summarizes the information collected by CRS on the movement of MSW interstate and provides data from select states that reported more data on interstate MSW flows than reported in the CRS report.



NATIONAL TRENDS

Figure 1 (below) shows the growth in MSW exports and imports based on the CRS data. The import and export data follow similar trends; however, the data are not equal because of the way states collect data. According to the first CRS report, about 12.6 million tons of MSW were exported in 1989 and 10.8 million tons were imported. The amount of MSW exported and imported by states has more than tripled over the last 14 years. Exports between 1989 and 2003 rose by 25.5 million tons, a 200 percent increase, and imports rose by 28.2 million tons, a 260 percent increase.

Table 1 (page 3) provides MSW exports and imports by state and the percent of a state's MSW exports or imports based on the state's generation rate (i.e., imports or exports divided by generation). On average, less than 10 percent of the MSW generated in the United States was either exported or imported to another state for disposal in 2003.



STATE TRENDS

Figure 2 (page 4) and Table 2 (page 5) show the extensive and intricate web of interstate MSW movements in 2003 between states and internationally. The CRS data identified 207 waste interactions, where an interaction is the movement of MSW between two states or countries as an import or export. This represents 2 more interactions than in 2001 and 72 more interactions than in 2000.

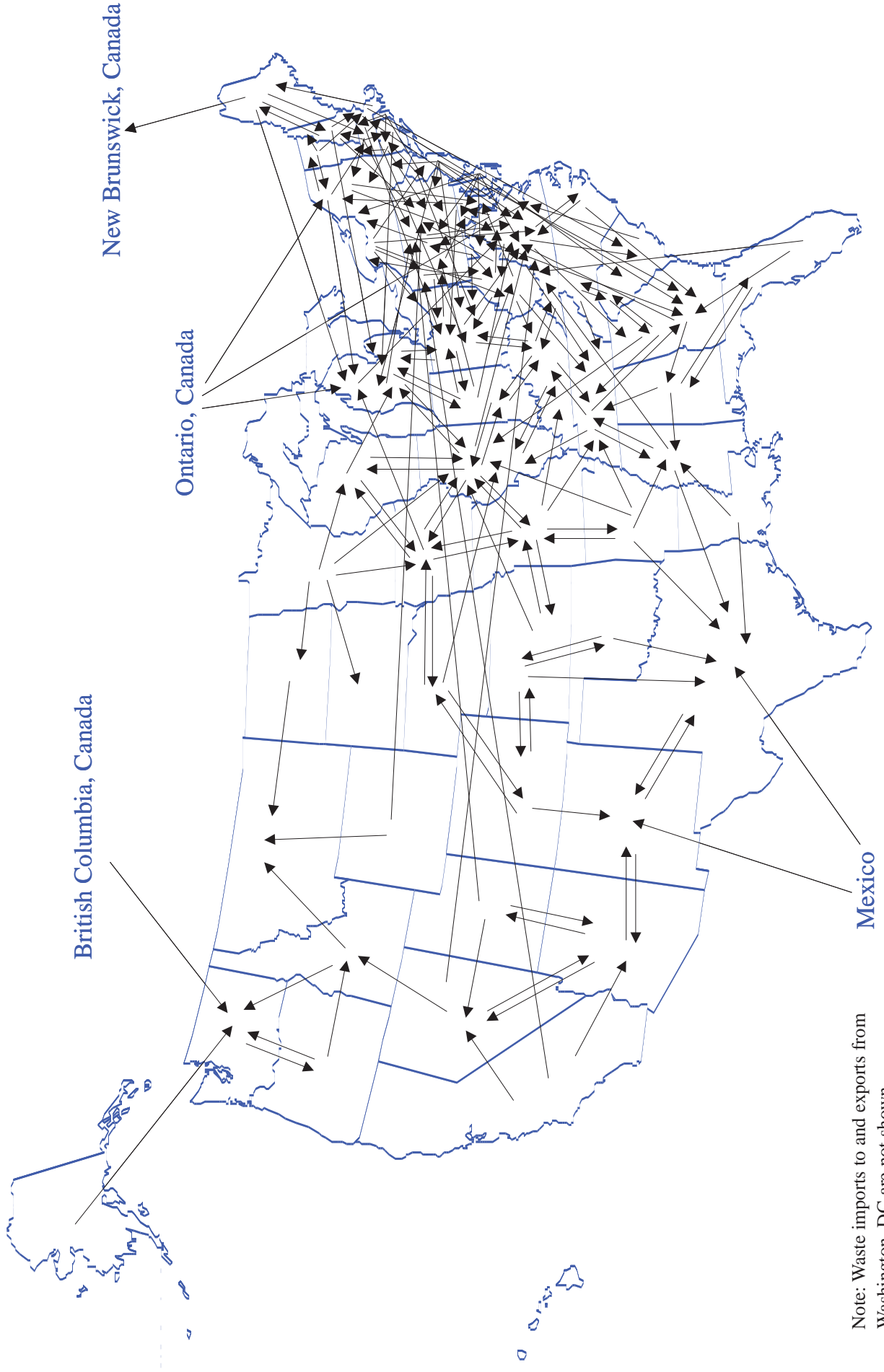
Of the 207 waste interactions, 139 (67%) were between neighboring states. Furthermore, 112 (54%) of the 207 interactions were paired interactions, where MSW moved as both an import and export between the same two states. Similar trends were reported in previous CRS studies on interstate waste movements.

Table 1. Municipal Solid Waste Imports and Exports by State

<i>State</i>	<i>MSW Generated¹ (10⁶ tons/yr)</i>	<i>MSW Imports² (10⁶ tons)</i>	<i>Percent Imports of Generation</i>	<i>MSW Exports² (10⁶ tons)</i>	<i>Percent Exports of Generation</i>	<i>Net⁴ (Imports-Exports)</i>
AL	4.81	0.415	8.6	0.095	2.0	0.321
AK	0.75	0.000	0.0	0.025	3.3	-0.025
AZ	5.7	0.380	6.7	>0.001	>0.1	0.372
AR	3.6	0.015	0.4	0.114	3.2	0.099
CA	72	0.044	>0.1	0.798	1.1	-0.754
CO	7.7	>0.001	>0.1	>0.001	>0.1	0.000
CT	3.2	0.052	1.6	0.634	19.8	-0.583
DE	0.851	0.000	0.0	0.122	14.3	-0.122
DC	0.63	>0.001	0.2	1.176	186.7	-1.176
FL	25.8	>0.001	>0.1	0.677	2.6	-0.677
GA	10.7	1.445	13.5	0.600	5.6	0.845
HI	1.5	0.000	0.0	0.000	0.0	0.000
ID	1.1*	0.019	1.7	0.044	4.0	-0.025
IL	16	1.881	11.8	2.097	13.1	-0.217
IN	6.8	0.918	13.5	0.945	13.9	-0.028
IA	2.6	0.276	10.6	0.272	10.5	0.004
KS	2.8	0.698	24.9	0.371	13.3	0.327
KY	4	0.599	15.0	0.329	8.2	0.270
LA	3.9	0.000	0.0	0.249	6.4	-0.249
ME	1.8	0.220	12.2	0.050	2.8	0.170
MD	4.5	0.203	4.5	1.941	43.1	-1.739
MA	8	0.180	2.3	1.239	15.5	-1.060
MI	15.3	4.503	29.4	0.223	1.5	4.280
MN	5.8	0.000	0.0	0.611	10.5	-0.611
MS	2.9	0.580	20.0	0.113	3.9	0.467
MO	6.3	0.207	3.3	2.335	37.1	-2.128
MT	1.8	0.031	1.7	0.000	0.0	0.031
NE	2	0.094	4.7	0.011	0.6	0.083
NV	2.8	0.422	15.1	0.003	0.1	0.419
NH	1.3	0.402	30.9	0.065	5.0	0.337
NJ	9.3	1.671	18.0	5.803	62.4	-4.132
NM	3.3	0.537	16.3	>0.001	>0.1	0.537
NY	36.3	0.311	0.9	8.248	22.7	-7.936
NC	12	0.133	1.1	0.971	8.1	-0.838
ND	0.54	0.101	18.7	0.010	1.9	0.091
OH	13.8	2.541	18.4	1.102	8.0	1.439
OK	2.8	0.334	11.9	0.099	3.5	0.235
OR	4.6	1.425	31.0	0.019	0.4	1.406
PA	10.9	9.156	84.0	0.559	5.1	8.597
RI	0.481	0.006	1.2	0.117	24.3	-0.112
SC	4.4	1.227	27.9	0.185	4.2	1.042
SD	0.51	>0.001	>0.1	0.000	0.0	>0.001
TN	8.9	0.578	6.5	0.432	4.9	0.146
TX	43.7	0.251	0.6	0.511	1.2	-0.260
UT	2.4	>0.001	>0.1	0.002	>0.1	-0.001
VT	0.598	0.061	10.2	0.126	21.1	-0.065
VA	10.3	5.489	53.3	0.241	2.3	5.249
WA	7.3	0.112	1.5	1.002	13.7	-0.890
WV	1.8	0.276	15.3	0.365	20.3	-0.088
WI	4.6	1.210	26.3	0.214	4.7	0.996
WY	0.568	0.000	0.0	0.001	0.2	-0.001
Total/ Average	406.038	39.004	9.6	38.068 ³	9.4	

1. Waste News (8/18/03) * includes C&D waste.
2. Congressional Research Service (9/9/04).
3. Includes 2.922 million tons from Ontario, Canada.
4. Values may not add up because of rounding.

Figure 2. Interstate Waste Movements 2003



Note: Waste imports to and exports from Washington, DC are not shown.

Table 2. 2003 Interstate Municipal Solid Waste Interactions

<i>Exports To:</i>	<i>State/Country</i>	<i>Imports From:</i>
FL, MS, TN	AL	FL, GA
WA	AK	
NV, NM, UT	AZ	CA, NV, NM, UT
IL, MS, MO, TN, TX	AR	MO
WA	BC	
AZ, NV, PA	CA	
KS, NE, NM	CO	KS, NE
MA, MI, NY, OH, PA	CT	MA, NJ, NY, RI
MD, NY, PA, SC, VA	DE	
MD, PA, VA	DC	MD
AL, GA, VA	FL	AL
AL, IL, SC, TN, VA	GA	FL, NJ, NY, NC, RI, SC, TN, VA
	HI	
MT, WA	ID	NV, OR
IN, IA, KY, MI, MO, VA, WI	IL	AR, GA, IN, IA, KS, KY, MO, MI, MN, NE, TN, WI
IL, KY, MI, OH, PA, VA	IN	IL, KY, MI, OH
IL, MI, MO, NE, WI	IA	IL, MN, MO, NE, WI
CO, IL, MO, OK, TX	KS	CO, MO, OK
IL, IN, OH, TN, VA	KY	IL, IN, MO, OH, TN, VA, WV
MS, TX	LA	
MA, MI, NH, NB	ME	MA, NH
DC, NY, OH, PA, VA, WV	MD	DE, DC, NJ, NY, PA, VA, WV
CT, ME, NH, NY, OH, PA, RI, SC, VA	MA	CT, ME, NH, NY, RI, VT
NM, TX	Mexico	
IL, IN, OH, PA, VA	MI	CT, IL, IN, IA, ME, NH, NJ, NY, OH, ON, WI
IL, IA, ND, SD, WI	MN	
TN, TX, VA	MS	AL, AR, LA, TN
AR, IL, IA, KS, KY, TN	MO	AR, IL, IA, KS
	MT	ID, ND, WY
CO, IL, IA	NE	CO, IA
AZ, ID, VA	NV	AZ, CA, UT
	NB	ME
ME, MA, MI, PA	NH	ME, MA, VT
CT, GA, MD, MI, NY, OH, PA, VA, WV	NJ	NY
AZ, TX	NM	AZ, CO, Mexico, TX
CT, GA, MD, MA, MI, NJ, OH, PA, VT, VA, WV	NY	CT, DE, MD, MA, NJ, ON, PA, VT, WV
GA, SC, TN, VA	NC	SC, VA
MT	ND	MN
IN, KY, MI, PA, VA, WV	OH	CT, IN, KY, MD, MA, MI, NJ, NY, PA, WV
KS, TX	OK	KS
MI, NY, VA	ON	
ID, WA	OR	WA
MD, NY, OH, VA, WV	PA	CA, CT, DE, DC, IN, MD, MA, MI, NH, NJ, NY, OH, RI, VA, UT, WV, WY
CT, GA, MA, PA	RI	MA
GA, NC, VA	SC	DE, GA, MA, NC, VA
	SD	MN
GA, IL, KY, MS, VA	TN	AL, AR, GA, KY, MS, MO, NC, VA, WV
NM	TX	AR, KS, LA, Mexico, MS, NM, OK
AZ, NV, PA	UT	AZ
MA, NH, NY	VT	NY
GA, KY, MD, NC, PA, SC, TN, WV	VA	DE, DC, FL, IN, GA, IL, KY, MD, MA, MI, MS, NV, NJ, NY, NC, OH, ON, PA, SC, TN, WV
OR	WA	AK, BC, ID, OR
KY, MD, NY, OH, PA, TN, VA	WV	MD, NJ, NY, OH, PA, VA
IL, IA, MI	WI	IL, IA, MN
MT, PA	WY	

- ▶ Twenty-one states (Arkansas, Connecticut, Delaware, Florida, Georgia, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia, and Wisconsin) had exports that were less than 0.75 million tons, but greater than 0.10 million tons.

- ▶ Fifteen states (Alabama, Alaska, Arizona, Colorado, Idaho, Maine, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma, Oregon, Utah, and Wyoming) exported less than 100,000 tons.

- ▶ Three states (Hawaii, Montana, and South Dakota) did not export MSW for disposal in another state.

Only the District of Columbia and New Jersey exported more than 50 percent of the MSW it generated. This high export rate in the District of Columbia (187%) is probably attributable to the lack of disposal capacity within its jurisdiction and waste being shipped through District transfer stations. Maryland and Missouri had the next highest export rate at 43 percent and 37 percent respectively. All other states had export rates of less than 30 percent of their generation rates. The majority of the exporting states (31 states) exported less than or equal to 10 percent of the MSW that they generated including the states of Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Kentucky, Louisiana, Maine, Michigan, Mississippi, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Utah, Virginia, Wisconsin, and Wyoming.

Imports

In 1989, 14 states imported MSW for disposal and by 2003, 44 states imported MSW for disposal. The largest importer of MSW was Pennsylvania (9.156 million tons) followed by Virginia (5.489 million tons) and Michigan (4.503 million tons). Based on year 2003 data presented in Table 1 and Figure 4 (page 8), imports were:

- ▶ Ten states imported more than 1 million tons of MSW including Georgia, Illinois, Michigan, New Jersey, Ohio, Oregon, Pennsylvania, South Carolina, Virginia, and Wisconsin. In 1989, only Illinois, Indiana, Ohio, and Pennsylvania imported more than 1.0 million tons of MSW.

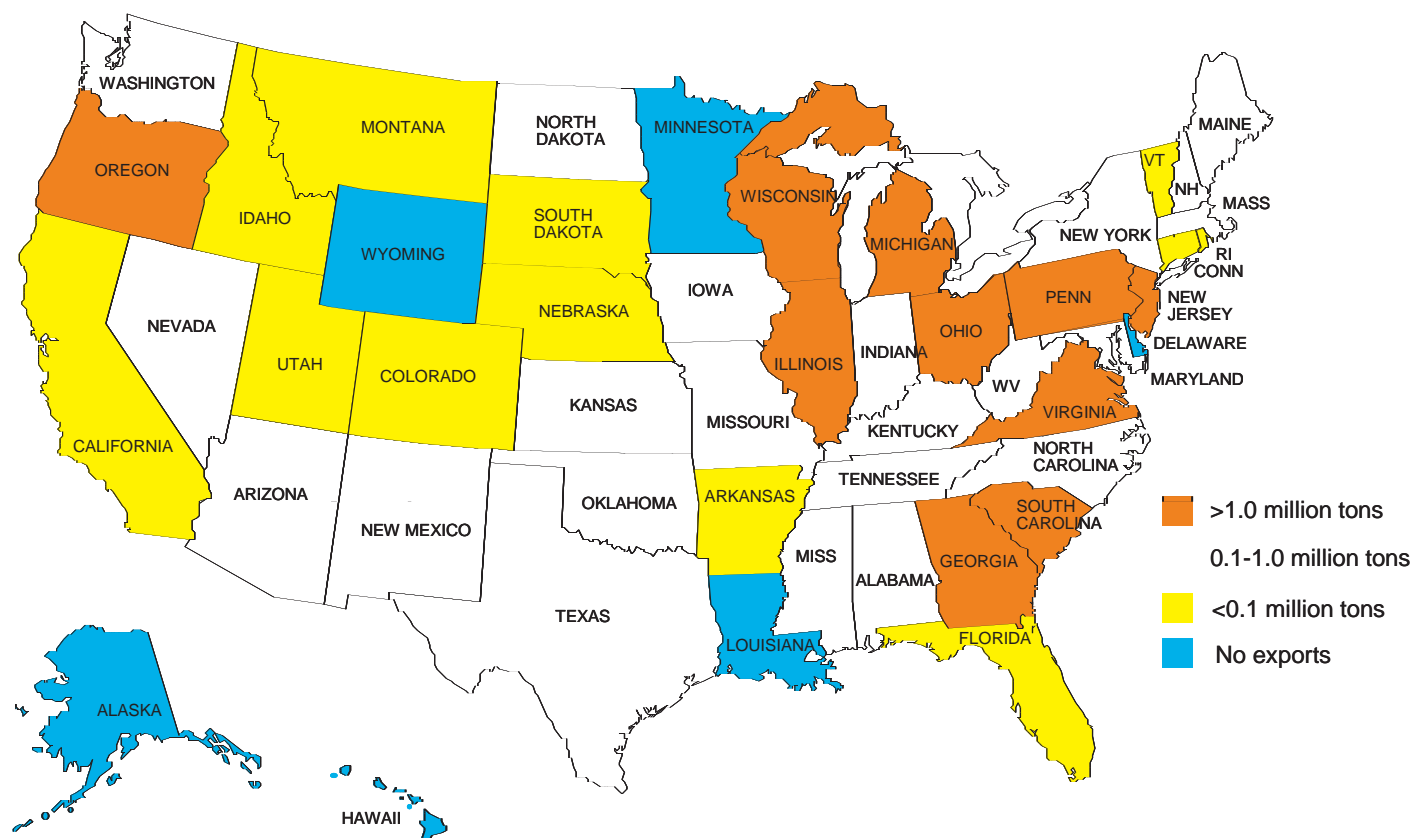
- ▶ Twenty-two states (Alabama, Arizona, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Mississippi, Missouri, Nevada, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Tennessee, Texas, Washington, and West Virginia) imported less than 1.0 million tons, but greater than 0.1 million tons.

- ▶ Twelve states (Arkansas, California, Colorado, Connecticut, Florida, Idaho, Montana, Nebraska, Rhode Island, South Dakota, Utah, and Vermont) and the District of Columbia imported less than 100,000 tons of MSW.

- ▶ Six states (Alaska, Delaware, Hawaii, Louisiana, Minnesota, and Wyoming) did not import MSW for disposal.

Pennsylvania, with the highest volumes of imports, also had the largest amount of imported waste compared to waste generated. Pennsylvania's imports were almost as large as the waste it generated (84%) in 2003. Eight states had import rates of at least 20 percent when compared to generation rates including Kansas (24.9%), Michigan (29.4%), Mississippi (20.0%), New Hampshire (30.9%), Oregon (31.0%), South Carolina (27.9%), Virginia (53.3%), and Wisconsin (26.3%). Twenty-one states (Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Idaho, Maryland, Massachusetts, Missouri, Montana, Nebraska, New York,

Figure 4. MSW Imports in 2003



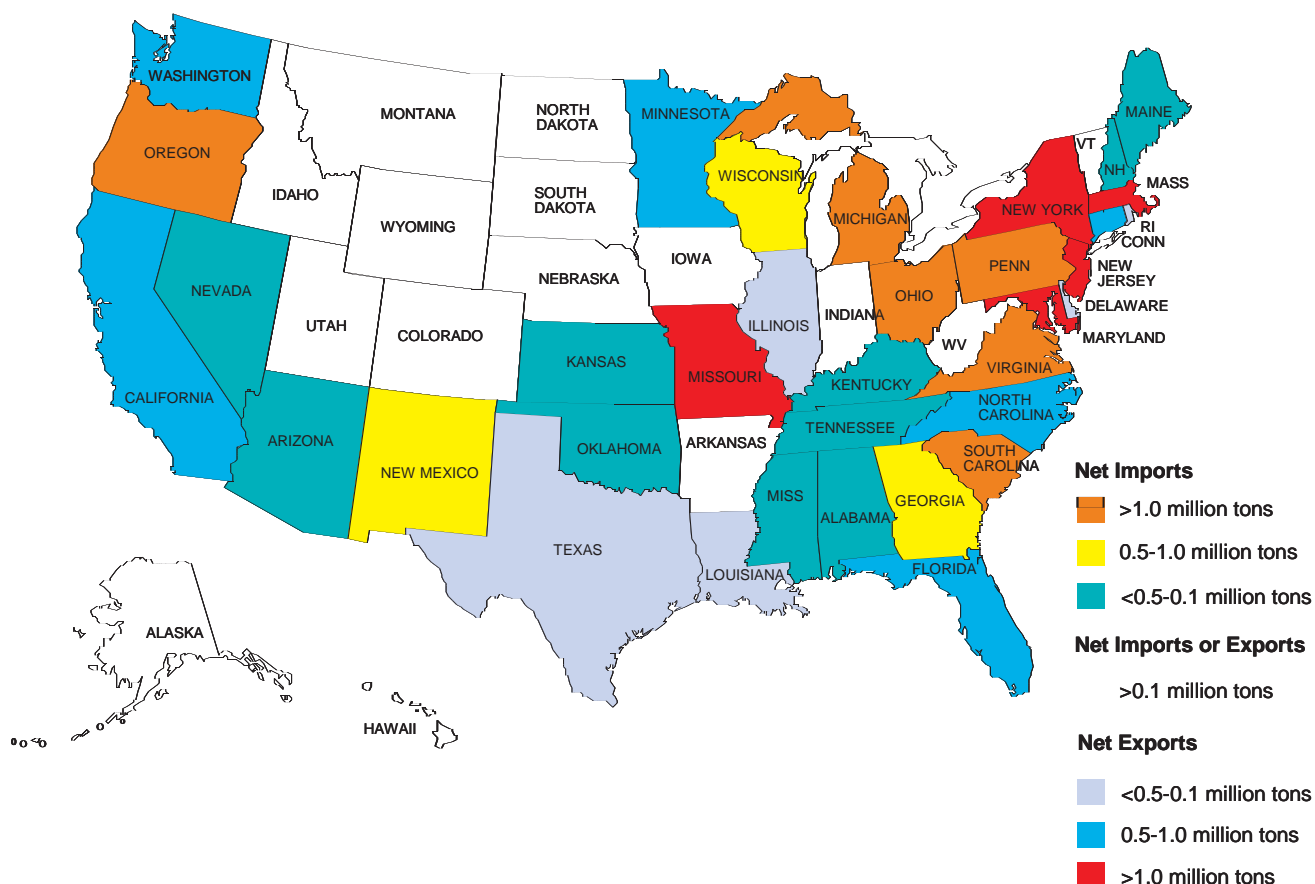
North Carolina, Rhode Island, South Dakota, Tennessee, Texas, Utah, and Washington) and the District of Columbia imported less than 10 percent of the waste they generated.

Net Imports and Exports

Table 1 and Figure 5 (page 9) contain data on the net volumes of imports and exports (i.e., import volumes minus export volumes) of MSW by state for the year 2003. The data showed:

- ▶ Six states had net imports greater than 1 million tons. Pennsylvania was the largest net importer at 8.597 million tons followed by Virginia (5.249 million tons), Michigan (4.280 million tons), Ohio (1.439 million tons), Oregon (1.406 million tons), and South Carolina (1.042 million tons).
- ▶ Three states (Georgia, New Mexico, and Wisconsin) had net imports greater than 500,000 tons, but less than 1 million tons.
- ▶ Six states (California, Connecticut, Florida, Minnesota, North Carolina, and Washington) had net exports greater than 500,000 tons, but less than 1 million tons.
- ▶ Five states, the District of Columbia, and Ontario, Canada, had net exports greater than 1 million tons. New York was the largest net exporter at 7.936 million tons, followed by New Jersey (4.132 million tons), Ontario (2.922 million tons), Missouri (2.128 million tons), Maryland (1.739 million tons), District of Columbia (1.176 million tons), and Massachusetts (1.060 million tons).

Figure 5. Net Imports and Exports in 2003



As shown in Figure 5, the majority of states had net imports or exports that were less than 500,000 tons. In fact, 15 states had net imports or exports that were less than 100,000 tons including Alaska, Arkansas, Colorado, Hawaii, Idaho, Indiana, Iowa, Montana, Nebraska, North Dakota, South Dakota, Utah, Vermont, West Virginia, and Wyoming.

CONCLUSION

In similar trends to the last decade, the latest data show that almost all states import or export MSW with the majority of the shipments occurring between neighboring states. These waste movements represent routine partnerships among states and municipalities that are based on economic, social, environmental, and political factors. Based on the available data, the amount of MSW moving interstate is expected to increase in future.



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