

Cape Cod Household Hazardous Waste Report for 2005

Collections funded in part by Barnstable County

prepared by

Barnstable County

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Cape Cod Household Hazardous Waste Report for 2005

This report compiles the results of household hazardous waste collections held in 2005 in Cape Cod's 15 towns. It is hoped that this information will be helpful in refining collection programs, increasing their cost-effectiveness and monitoring trends in each town and regionally.

The report includes seven tables. The first table describes the amount of waste collected. The second and third tables indicate the number of households served in each town and the participation rate based on both 1990 and 2000 Census data on year-round households in each town. The fourth and fifth tables detail the total cost per town for waste disposal and provide a cost breakdown per household served. The sixth and seventh tables indicate the number of cars served at each event and the resulting cost per car.

Since 1998, Cape Cod towns have held 186 collection events, with most since 2000 being multiple events with joint participation from different towns. This means that year-to-year comparisons of household hazardous waste collection events are difficult, and can be somewhat misleading, particularly given that many towns now hold joint/multiple collections. As such, it is important to look at trends in the information.

Overall, towns are holding more collections, costs remain under control, and towns continue to divert a significant amount of waste that might otherwise be disposed at either SEMASS, the regional waste-to-energy incinerator in Rochester, Massachusetts, or into septic systems and sewage treatment plants.

Average cost for waste disposal is a good indicator of trends. It reflects the hazardous waste disposal company's cost of providing services to Cape towns, a factor that is influenced by better bidding and prices in the national waste disposal market.

With these points in mind, some conclusions can be drawn from the 2005 data:

- **Regional participation rates remained strong.** Twelve towns again achieved 5% or greater involvement by their year-round households in 2005. This is the third year of this level of participation.
- **Costs continued to remain low: The average cost per household Capewide was \$24.** In addition, in the seven years covered in the report, cost per household has steadily decreased. Per-participant costs have remained under \$30 for the seven years in this report, despite increasing the number of events held. And, waste disposal cost figures since 2000 have included additional expenses incurred by towns such as advertising or paying for a police traffic detail.
- **All Cape towns held at least one collection event.** Reciprocal collections, where towns join together in sub-regional groups so that residents can participate in multiple collections, remains strong on Cape Cod. Partnerships have developed between Harwich, Brewster, and Chatham, and the Upper Cape towns of Bourne, Falmouth, Mashpee, and Sandwich held multiple reciprocal events since 2000. Barnstable continues to partner with Yarmouth, and the Outer Cape communities of Provincetown, Truro, and Wellfleet continue to work together. 2005 was also the first year that Eastham and Orleans partnered, allowing residents in both towns to attend two events.

The Cape Cod Commission began to compile data on one-day events in 1992. In the seven years covered in this report, 1999 through 2005, Cape towns collected 266,499 gallons of household hazardous waste, or an average of 38,071 gallons per year.

However, this figure represents only a part of the Cape's household hazardous waste management picture. Towns continue to manage other wastes year-round at recycling centers and transfer stations. This report does not include paint or related materials swapped or collected for disposal at paint sheds, or used oil, oil filters, antifreeze, and fluorescent light bulbs collected and disposed of through ongoing municipally-run programs.

The Cape Cod Commission, in cooperation with the Cape Cod Cooperative Extension, also continued the effort to distribute a supply of digital thermometers provided by SEMASS at household hazardous waste collections. The intent is to give participants an incentive to properly dispose of mercury-containing fever thermometers. Educational materials distributed before collection events also advised people to bring in other mercury-containing devices (boat bilge pump switches, gauges, etc.) for proper disposal. Information from Cape Cod Extension indicates that approximately 100.52 pounds of mercury, including elemental mercury, thermometers, thermostats, switches, and blood pressure cuffs, were collected in 2005 by Cape towns, businesses, and other organizations.

The Cape Cod Commission staff welcomes comments on this report.

TABLE 1

Household Hazardous Waste Collections, 1999 - 2005
Cape Cod, Massachusetts

See also Table 1a for more waste data

Barnstable
Bourne
Brewster
Chatham
Dennis
Eastham
Falmouth
Harwich
Mashpee
Orleans
Provincetown
Sandwich
Truro
Wellfleet
Yarmouth

Gallons of Waste Collected				
1999	2000	2001	2002	2003
7,975 <small>Footnote 1</small>	7,230 <small>Footnote 7</small>	5,600 <small>Footnote 10</small>	-	18,865 <small>Footnote 11</small>
3,285 <small>Footnote 1</small>	11,880 <small>Footnote 5 & 6</small>	13,105 <small>Footnotes 5 & 8</small>	3,390 / 2,270 <small>Footnote 5</small>	2,635 / 2,225 <small>Footnote 5</small>
1,020	1,580	1,760 <small>Footnote 4</small>	See Harwich	See Harwich
925 <small>Footnote 1</small>	1,030	1,350 <small>Footnote 4</small>	See Harwich	See Harwich
No data / 2,065 <small>Footnote 1</small>	No data / 2,580	1,935 / 2,345	2,155 / 2,015	2,175 / 2,530
1,525 <small>Footnote 1</small>	1,235 <small>Footnote 7</small>	800	1,445	1,585
2,100 / 2,360 <small>Footnote 1</small>	11,880 <small>Footnotes 5 & 6</small>	See Bourne	4,135 <small>Footnote 5</small>	3,580 <small>Footnote 5</small>
770 <small>Footnote 4</small>	715 <small>Footnote 4</small>	770 <small>Footnote 4</small>	3,410 <small>Footnote 4</small>	6,701 <small>Footnote 4</small>
1,245 <small>Footnote 1</small>	<small>Footnotes 5 & 6</small>	See Bourne	2,195 / 2,045 <small>Footnote 5</small>	1,280 / 2,055 <small>Footnote 5</small>
970	1,105 <small>Footnote 7</small>	935	1,305	1,570
876 <small>Footnote 1</small>	-	3,755 <small>Footnote 9</small>	1,145 <small>Footnote 9</small>	755 <small>Footnote 9</small>
No data	<small>Footnotes 5 & 6</small>	See Bourne	2,025 <small>Footnote 5</small>	2,100 <small>Footnote 5</small>
725	920	See Provincetown	825 <small>Footnote 9</small>	935 <small>Footnote 9</small>
815 <small>Footnote 3</small>	695 <small>Footnote 3</small>	See Provincetown	705 <small>Footnote 9</small>	1,445 <small>Footnote 9</small>
3,255 / 1,760	2,340 / 1,430	2,980	1,560	920 <small>Footnote 11</small>

Total Waste

30,901	32,740	35,335	30,625	51,356
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(Footnote 2)

Notes

Compiled by the Cape Cod Cooperative Extension from town data.

Amount of waste collected includes packing materials.

Numbers in the same column separated by a slash (/) indicate information for more than one collection.

Waste data include or exclude Air Station Cape Cod as noted.

Numbered Footnotes

1. In 1999, Barnstable, Bourne, Chatham, Dennis, Eastham, Falmouth, Mashpee, and Provincetown collected 9,705 pounds of non-liquid waste in addition to the gallons shown in this Table.
2. In 2000, all the Cape towns collected 1,295 gallons of waste at their transfer stations in addition to the gallons shown in this Table.
3. In 1999 and 2000, entries for Wellfleet indicate collection events where waste was combined with Truro because these towns shared a single collection site. Additional numbered footnotes for Table 1 are included in this report.

Additional Numbered Footnotes

4. The figures shown for *Waste Collected* for Harwich in 1999 to 2005 represent the sum total of all collection events for those years. Harwich data from 2001 to 2005 include waste taken from Brewster and Chatham residents.
5. The figures shown for *Waste Collected* for Bourne, Falmouth, Mashpee, and Sandwich for 2000 to 2005 represent the total of each town's multiple collection events.
6. In 2000, the towns of Bourne, Falmouth, Mashpee, and Sandwich, with the Coast Guard Air Station, collected approximately 11,880 gallons of waste from multiple events.
7. In 2000, the towns of Barnstable, Eastham, and Orleans collected a drum of household batteries, zinc phosphide, and 425 pounds of coal tar with asbestos in addition to the gallons shown in Table 1.
8. In 2001, the towns of Bourne, Falmouth, Mashpee, and Sandwich, with the Coast Guard Air Station, collected approximately 13,105 gallons and 200 pounds of waste from multiple events.
9. Each year between 2001 and 2005, the towns of Provincetown, Truro, and Wellfleet held reciprocal events. Waste amount shown in 2001 is combined and shown as an entry for Provincetown. Waste amounts shown in 2002 to 2005 represent the sum total of each town's collection events.
10. In 2001, Barnstable collected 72 automobile and dry cell batteries in addition to the gallons shown in Table 1.
11. In 2003, Barnstable and Yarmouth held multiple collections at Barnstable's transfer station. Yarmouth also hosted a collection in June. Waste amounts shown in Table 1 represent the total of each town's collection events.

Household Hazardous Waste Collections, 1999 - 2005
Cape Cod, Massachusetts

	Gallons of Waste Collected	
	2004	2005
Barnstable	10,165	10,700
Bourne	2,100	2,937
Brewster	See Harwich	See Harwich
Chatham	See Harwich	See Harwich
Dennis	2,250 / 1,825	2,585 / 1,950
Eastham	1,455	1,565
Falmouth	6,645	3,005
Harwich	7,735	7,110
Mashpee	1,840	3,910
Orleans	1,620	2,345
Provincetown	1,235	960
Sandwich	4,425	2,305
Truro	810	1,385
Wellfleet	1,415	1,265
Yarmouth	See Barnstable	See Barnstable
Total Waste	43,520	42,022

Notes

Compiled by the Cape Cod Cooperative Extension from town data.

Amount of waste collected includes packing materials.

Numbers in the same column separated by a slash (/) indicate information for more than one collection.

Waste data include or exclude Air Station Cape Cod as noted.

In 2004, all towns except Dennis, Eastham, and Orleans held multiple events in conjunction with more than one town. Data is shown according to the town that hosted the event.

Additional footnotes for Table 1a are included in this report.

TABLE 2 Households Served

**Household Hazardous Waste Collections, 1999 - 2005
Cape Cod, Massachusetts**

		Households Served						
		1999	2000	2001	2002	2003	2004	2005
Barnstable		854 (e)	716 (e)	991 (e)	-	1,311	1,149	1,458
Bourne		301	300	342	382	332	266	303
Brewster		147	250 (e)	318	137	254	361	264
Chatham		102	152	200	191	231	323	298
Dennis		256 (e) / 240	262 / 233	375 (e) / 310	362 (e) / 316	319 / 398	393 / 302	369 / 337
Eastham		105	169	84	189	198	222	213
Falmouth		259 / 243	700	547	755	666	983	816
Harwich		593 (e)	234	366	341	289	420	364
Mashpee		132	164	201	350	206	191	158
Orleans		106	125	164	136	164	193	358
Provincetown		77 (e)	-	151	168	117	131	133
Sandwich		210 (e)	315	315	424	458	643	391
Truro		49 (e)	93	132	118	130	87	145
Wellfleet		83 / 85 (e)	68 / 43	102	104	182	185	164
Yarmouth		486 / 287	290 / 292 (e)	387 / 148	270	110 / 204	198	See Barnstable
Totals		4,275	4,406	5,133	4,243	5,669	6,047	5,771

Notes

Compiled by the Cape Cod Cooperative Extension from town data.

Numbers separated by a slash (/) indicate households served at more than one collection event.

Participation does not include Air Station Cape Cod.

In 1999 and 2000, Truro and Wellfleet held joint collection events.

Provincetown, Truro, and Wellfleet held joint collections in 2001 to 2005, open to residents from any of the three towns. Each town hosted one event.

Figures for Harwich in 1999 - 2005 and Brewster and Chatham in 2002 - 2005 show combined participation for multiple events.

Figures for Bourne, Falmouth, Mashpee, and Sandwich in 2000 - 2005 show participation of residents in each town at multiple events.

Figures for Barnstable and Yarmouth in 2004 and 2005 show combined participation at multiple events in Barnstable.

(e)=Estimated data

TABLE 3 Participation Rate

**Household Hazardous Waste Collections, 1999 - 2005
Cape Cod, Massachusetts**

	Households 1990	Households Estimated 2000	Households 2000 Census
Barnstable	16,601	19,195	19,626
Bourne	5,898	7,050	7,439
Brewster	3,383	4,082	4,124
Chatham	3,023	3,436	3,160
Dennis	6,194	6,695	7,504
Eastham	1,908	2,202	2,396
Falmouth	11,274	13,221	13,859
Harwich	4,505	5,314	5,471
Mashpee	3,158	3,993	5,256
Orleans	2,722	3,084	3,087
Provincetown	1,941	2,108	1,837
Sandwich	5,557	7,003	7,335
Truro	699	816	907
Wellfleet	1,129	1,274	1,301
Yarmouth	9,594	10,544	11,520
Totals	77,586	90,017	94,822

Participation Rate						
1999	2000 (uses Est.)	2001	2002	2003	2004	2005
4%	4%	5%	-	7%	6%	8%
4%	4%	5%	5%	4%	4%	4%
4%	6%	8%	3%	6%	9%	6%
3%	4%	6%	6%	7%	10%	9%
4% / 4%	4% / 4%	5% / 4%	5% / 4%	10%	9%	9%
5%	8%	4%	8%	8%	9%	9%
2% / 2%	5%	4%	5%	5%	7%	6%
Footnote	4%	7%	6%	5%	8%	7%
3%	4%	4%	7%	4%	4%	3%
3%	4%	5%	4%	5%	6%	12%
4%	-	8%	9%	6%	7%	7%
3%	4%	4%	6%	6%	9%	5%
6%	11%	15%	13%	14%	10%	16%
7% / 8%	5% / 3%	8%	8%	14%	14%	13%
5% / 3%	3% / 3%	3% / 1%	2%	3%	2%	See Barnstable

Average Participation Rate

5%	5%	5%	4%	6%	6%	6%
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Notes

Population data source: US Census

Compiled by the Cape Cod Cooperative Extension from town data.

Data do not include participation from Air Station Cape Cod.

Data from events in 1999 have been compared to households from 1990 Census, as shown.

Data from 2000 events have been compared to the estimated 2000 households, as shown. Estimate is based on 1999 population projections and population per household.

Data from events in 2001 and beyond have been compared to the actual 2000 Census data, as shown.

For Bourne, Falmouth, Mashpee, and Sandwich in 2000 - 2005, participation shown is for multiple events.

For Harwich in 1999, the range of participation at six events was 1 to 5%. Combined, overall participation for all six events was 13%.

For Harwich in 2000 - 2005, the participation rate shown is for multiple events.

For Brewster and Chatham in 2002 - 2005, the participation rate shown is for multiple events.

For Provincetown, Truro, and Wellfleet in 2001 - 2005, rate shown is for multiple events.

For Barnstable and Yarmouth in 2003 - 2005, participation is for multiple events.

TABLE 4 Total Cost

**Household Hazardous Waste Collections, 1999 - 2005
Cape Cod, Massachusetts**

	Total Cost						
	1999	2000	2001	2002	2003	2004	2005
Barnstable	\$25,645	\$26,750	\$20,900	-	\$33,401	\$31,817	\$35,443
Bourne	\$11,930	\$6,133	\$9,034	\$10,576	\$9,036	\$6,981	\$8,757
Brewster	\$3,450	\$4,957	\$6,590	\$2,774	\$7,508	\$8,869	\$5,878
Chatham	\$3,670	\$3,105	\$5,583	\$4,022	\$6,862	\$7,794	\$6,584
Dennis	\$6,385 / \$6,635	\$7,446 / \$8,021	\$7,915 / \$7,239	\$8,175 / \$6,385	\$8,775 / \$9,438	\$8,505 / \$7,045	\$9,200 / \$6,950
Eastham	\$5,245	\$5,931	\$2,623	\$5,520	\$5,785	\$5,270	\$5,182
Falmouth	\$6,500 / \$7,500	\$14,186	\$15,207	\$20,623	\$17,621	\$25,238	\$15,892
Harwich	\$6,255	\$5,775	\$6,140	\$7,073	\$8,116	\$10,213	\$7,918
Mashpee	\$4,895	\$3,331	\$5,600	\$9,518	\$5,422	\$4,833	\$4,205
Orleans	\$3,290	\$5,490	\$4,505	\$5,555	\$5,725	\$6,130	\$8,823
Provincetown	\$3,265	-	\$4,677	\$4,878	\$3,204	\$4,371	\$4,194
Sandwich	\$7,047	\$6,410	\$8,632	\$11,634	\$12,199	\$16,646	\$10,235
Truro	\$1,255	\$1,300	\$4,824	\$3,404	\$3,560	\$3,525	\$4,053
Wellfleet	\$2,845 / \$1,255	\$1,395 / \$1,300	\$4,229	\$3,063	\$4,983	\$6,204	\$4,903
Yarmouth	\$11,220 / \$6,675	\$9,854 / \$6,778	\$10,836 / \$5,328	\$9,720	\$3,658 / \$5,199	\$5,615	See Barnstable
Totals	\$124,962	\$118,162	\$129,862	\$112,920	\$150,519	\$159,056	\$138,217

Notes

Compiled by the Cape Cod Cooperative Extension from town data. Some figures have been rounded to the nearest whole dollar.

The cost data in this report have not been adjusted to reflect supplemental funding provided by the County of Barnstable to cooperative collection events in 2001 - 2005.

Figures shown for Harwich in 1999 - 2005 are the combined waste disposal cost for multiple events.

Figures shown for Brewster and Chatham in 2002 - 2005 show the combined waste disposal cost for multiple events.

Figures shown for Barnstable and Yarmouth in 2003 - 2005 show the combined waste disposal cost for multiple events.

Figures for 2000 - 2005 may include additional costs incurred by towns for things such as advertising, police traffic details, or provision of containers for general trash.

TABLE 5 Cost per Household Served

**Household Hazardous Waste Collections, 1999 - 2005
Cape Cod, Massachusetts**

		Cost per Household Served						
		1999	2000	2001	2002	2003	2004	2005
Barnstable		\$30	\$37	\$21	-	\$25	\$28	\$24
Bourne		\$40	\$20	\$27	\$28	\$27	\$26	\$29
Brewster		\$23	\$20	\$21	\$20	\$30	\$25	\$22
Chatham		\$36	\$20	\$28	\$21	\$30	\$24	\$22
Dennis		\$25 / \$28	\$28 / \$34	\$21 / \$23	\$23 / \$22	\$27 / \$24	\$22 / \$23	\$25 / \$21
Eastham		\$50	\$35	\$31	\$29	\$29	\$24	\$24
Falmouth		\$25 / \$31	\$20	\$28	\$27	\$26	\$26	\$19
Harwich		\$25	\$25	\$17	\$21	\$28	\$24	\$22
Mashpee		\$37	\$20	\$28	\$27	\$26	\$25	\$27
Orleans		\$31	\$44	\$27	\$41	\$35	\$32	\$25
Provincetown		\$42	-	\$31	\$29	\$27	\$33	\$32
Sandwich		\$34	\$20	\$27	\$27	\$27	\$26	\$26
Truro		\$26	\$14	\$37	\$29	\$27	\$41	\$28
Wellfleet		\$34 / \$15	\$21 / \$30	\$41	\$29	\$27	\$34	\$30
Yarmouth		\$23 / \$23	\$34 / \$23	\$28 / \$36	\$36	\$33 / \$25	\$28	See Barnstable

Average Cost per Household Served On Cape Cod

\$29	\$27	\$25	\$27	\$27	\$26	\$24
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Notes

Compiled by the Cape Cod Cooperative Extension from town data.

Unless otherwise noted, figures show the individual cost to each town even if that town hosted or participated in multiple and joint events.

Cost per household in 2000 - 2005 may include expenses incurred by towns for things such as advertising, police traffic details, or provision of containers for trash.

Figures have not been adjusted to reflect supplemental funding from Barnstable County.

TABLE 6

Cars Served

**Household Hazardous Waste Collections, 1999 - 2005
Cape Cod, Massachusetts**

	Cars Served						
	1999	2000	2001	2002	2003	2004	2005
Barnstable	700 (e)	587 (e)	793	-	1,050	936	1,002
Bourne	269	243	277	254	285	202	213
Brewster	141	200 (e)	274	117	202	261	206
Chatham	80 (e)	148	194	136	175	229	226
Dennis	210 / 187(e)	215 / 233	300 (e) / 310	309 / 306	308 / 355	362 / 259	312 / 289
Eastham	102	162	72	172	152	143	138
Falmouth	219 / 210	582	339	483	498	713	452
Harwich	208	227	349	292	251	328	293
Mashpee	120	136	164	208	91	149	116
Orleans	106	117	152	126	147	153	224
Provincetown	63	-	106	116	85	84	95
Sandwich	172	348	255	309	425	708	438
Truro	40	74	107	83	81	82	90
Wellfleet	75 / 70	62 / 35	84	89	138	146	128
Yarmouth	411 / 270	270 / 239	310 / 120	238	99 / 149	153	See Barnstable
Totals	3,653	3,878	4,206	3,238	4,491	4,908	4,222

Notes

Compiled by the Cape Cod Cooperative Extension from town data.

Unless otherwise noted, all figures show individual participation of residents from the town indicated, even if that town hosted or participated in multiple events.

(e) = Estimated data

TABLE 7 Cost per Car Served

**Household Hazardous Waste Collections, 1999 - 2005
Cape Cod, Massachusetts**

	Cost per Car						
	1999	2000	2001	2002	2003	2004	2005
Barnstable	\$37	\$46	\$26	-	\$32	\$34	\$35
Bourne	\$44	\$25	\$32	\$42	\$32	\$35	\$41
Brewster	\$24	\$25	\$24	\$24	\$37	\$34	\$29
Chatham	\$46	\$21	\$29	\$30	\$39	\$34	\$29
Dennis	\$30 / \$35	\$35 / \$34	\$26 / \$23	\$26 / \$21	\$28 / \$27	\$23 / \$27	\$29 / \$24
Eastham	\$51	\$37	\$36	\$32	\$38	\$37	\$38
Falmouth	\$30 / \$36	\$24	\$45	\$43	\$35	\$35	\$35
Harwich	\$30	\$25	\$18	\$24	\$32	\$31	\$27
Mashpee	\$41	\$24	\$34	\$46	\$60	\$32	\$36
Orleans	\$31	\$47	\$30	\$44	\$39	\$40	\$39
Provincetown	\$52	-	\$44	\$42	\$38	\$52	\$44
Sandwich	\$41	\$18	\$34	\$38	\$29	\$24	\$23
Truro	\$31	\$18	\$45	\$41	\$44	\$43	\$45
Wellfleet	\$38 / \$18	\$23 / \$37	\$50	\$34	\$36	\$42	\$38
Yarmouth	\$27 / \$25	\$36 / \$28	\$35 / \$44	\$41	\$37 / \$35	\$37	See Barnstable

Cost per Car Served

\$34	\$30	\$31	\$35	\$34	\$32	\$33
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Notes

Compiled by the Cape Cod Cooperative Extension from town data.

Unless otherwise noted, figures show the individual cost to each town even if that town hosted or participated in multiple and joint events.

Cost per car in 2000 - 2005 may include expenses incurred by towns for things such as advertising, police traffic details, or provision of containers for general trash.

Figures also exclude supplemental funding from Barnstable County.