

2007 Household Hazardous Waste Report

Collections funded in part by Barnstable County

prepared by

Barnstable County

**Cape Cod Commission
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Cape Cod Household Hazardous Waste Report for 2007

This report compiles the results of household hazardous waste collections held in 2007 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 numbered tables (eight in total). 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 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 2001, Cape Cod towns have held 172 collection events, with most since the beginning of the decade 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.

Some conclusions can be drawn from the 2007 data:

- **Regional participation rates remained strong.** Twelve towns again achieved 5% or greater involvement by their year-round households in 2007. This is the fifth year of this level of participation.
- **Costs continued to remain low: The average cost per household Capewide was \$23.** In addition, per-participant costs have remained under \$30 for the seven years in this report, despite the number of events held. And, waste disposal cost figures since 2001 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 2001. Barnstable continues to partner with Yarmouth, and the Outer Cape communities of Provincetown, Truro, and Wellfleet continue to work together. 2007 was the third 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, 2001 through 2007, Cape towns collected 294,469 gallons of household hazardous waste, or an average of 42,067 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 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 for proper disposal. Information from Cape Cod Cooperative Extension indicates that in 2007, approximately 62 pounds of free-flowing mercury, 734 fever thermometers, 157 lab thermometers, 987 float and electronic switches, and 1,098 thermostats were collected by Cape towns, businesses, and other organizations.

The Cape Cod Commission staff welcomes comments on this report.

TABLE 1

Household Hazardous Waste Collections, 2001 - 2007

See also Table 1a for more waste data

Cape Cod, Massachusetts

	Gallons of Waste Collected			
	2001	2002	2003	2005
Barnstable				
	5,600 <i>Endnote 5</i>	-	18,865 <i>Endnote 6</i>	10,700
Bourne	13,105 <i>Endnotes 2 & 3</i>	3,390 / 2,270 <i>Endnote 2</i>	2,635 / 2,225 <i>Endnote 2</i>	2,937
Brewster	1,760 <i>Endnote 1</i>	See Harwich	See Harwich	See Harwich
Chatham	1,350 <i>Endnote 1</i>	See Harwich	See Harwich	See Harwich
Dennis	1,935 / 2,345	2,155 / 2,015	2,175 / 2,530	2,585 / 1,950
Eastham	800	1,445	1,585	1,565
Falmouth	See Bourne	4,135 <i>Endnote 2</i>	3,580 <i>Endnote 2</i>	3,005
Harwich	770 <i>Endnote 1</i>	3,410 <i>Endnote 1</i>	6,701 <i>Endnote 1</i>	7,110
Mashpee	See Bourne	2,195 / 2,045 <i>Endnote 2</i>	1,280 / 2,055 <i>Endnote 2</i>	3,910
Orleans	935	1,305	1,570	2,345
Provincetown	3,755 <i>Endnote 4</i>	1,145 <i>Endnote 4</i>	755 <i>Endnote 4</i>	960
Sandwich	See Bourne	2,025 <i>Endnote 2</i>	2,100 <i>Endnote 2</i>	2,305
Truro	See Provincetown	825 <i>Endnote 4</i>	935 <i>Endnote 4</i>	1,385
Wellfleet	See Provincetown	705 <i>Endnote 4</i>	1,445 <i>Endnote 4</i>	1,265
Yarmouth	2,980	1,560	920 <i>Endnote 6</i>	See Barnstable
Total Waste	35,335	30,625	51,356	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 in 2004 is shown according to the town that hosted the event.

See included *Endnotes* page for an explanation of the notes in Tables 1 and 1a.

TABLE 1a

Waste Collected (in Gallons) (continued)

Household Hazardous Waste Collections, 2001 - 2007
Cape Cod, Massachusetts

	Gallons of Waste Collected	
	2006	2007
Barnstable		
Bourne	9,505	8,880
Brewster	2,830	3,135
Chatham	See Harwich	See Harwich
Dennis	See Harwich	See Harwich
Eastham	2,525 / 1,845	2,211 / 1,880
Falmouth	1,950	1,525
Harwich	3,195	3,380
Mashpee	7,225	17,975
Orleans	2,965	2,290
Provincetown	1,620	1,530
Sandwich	1,225	660
Truro	3,405	1,935
Wellfleet	1,330	925
Yarmouth	880	880
	1,295	1,450
Total Waste	42,955	48,656

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 July 2006 and 2007, Yarmouth hosted a collection in addition to participating in several hosted by Barnstable.
Additional *Endnotes* for Table 1a are included in this report.

Numbered Endnotes For Tables 1 and 1a

Household Hazardous Waste Collections, 2001 - 2007

1. The figures shown for *Waste Collected* for Harwich in 2001 to 2007 represent the sum total of all collection events for those years. Harwich data from 2001 to 2007 include waste taken from Brewster and Chatham residents.
2. The figures shown for *Waste Collected* for Bourne, Falmouth, Mashpee, and Sandwich for 2001 to 2007 represent the total of each town's multiple collection events.
3. 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.
4. Each year between 2001 and 2007, the towns of Provincetown, Truro, and Wellfleet held reciprocal events. Waste amounts shown in 2001 is combined and shown as an entry for Provincetown. Waste amounts shown in 2002 to 2007 represent the sum total of each town's collection events.
5. In 2001, Barnstable collected 72 automobile and dry cell batteries in addition to the gallons shown in Table 1.
6. 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.

TABLE 2 Households Served

**Household Hazardous Waste Collections, 2001 - 2007
Cape Cod, Massachusetts**

	Households Served						
	2001	2002	2003	2004	2005	2006	2007
Barnstable	991 (e)	-	1,311	1,149	1,458	1,067	982
Bourne	342	382	332	266	303	323	292
Brewster	318	137	254	361	264	351	385
Chatham	200	191	231	323	298	385	366
Dennis	375 (e) / 310	362 (e) / 316	319 / 398	393 / 302	369 / 337	374 / 316	425 / 325
Eastham	84	189	198	222	213	312	205
Falmouth	547	755	666	983	816	703	980
Harwich	366	341	289	420	364	365	519
Mashpee	201	350	206	191	158	181	221
Orleans	164	136	164	193	358	225	242
Provincetown	151	168	117	131	133	130	100
Sandwich	315	424	458	643	391	554	389
Truro	132	118	130	87	145	166	154
Wellfleet	102	104	182	185	164	138	134
Yarmouth	387 / 148	270	110 / 204	198	Combined w/Barnstable	298	357
Totals	5,133	4,243	5,669	6,047	5,771	5,888	6,076

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.

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 2001 - 2007 and Brewster and Chatham in 2002 - 2007 show combined participation for multiple events.

Figures for Bourne, Falmouth, Mashpee, and Sandwich in 2001 - 2007 show participation of residents in each town at multiple events.

Figures for Barnstable and Yarmouth in 2003 - 2005 show combined participation at multiple events in Barnstable.

In 2006 and 2007, Yarmouth hosted an event in addition to participating in several events hosted by Barnstable. Figures shown for Yarmouth are for its hosted events.

(e)=Estimated data

TABLE 3 Participation Rate

**Household Hazardous Waste Collections, 2001 - 2007
Cape Cod, Massachusetts**

	Households 2000 Census	Participation Rate							
		2001	2002	2003	2004	2005	2006	2007	
Barnstable	19,626	5%	-	7%	6%	8%	5%	5%	
Bourne	7,439	5%	5%	4%	4%	4%	4%	4%	
Brewster	4,124	8%	3%	6%	9%	6%	9%	9%	
Chatham	3,160	6%	6%	7%	10%	9%	12%	12%	
Dennis	7,504	5% / 4%	5% / 4%	10%	9%	9%	9%	10%	
Eastham	2,396	4%	8%	8%	9%	9%	13%	9%	
Falmouth	13,859	4%	5%	5%	7%	6%	5%	7%	
Harwich	5,471	7%	6%	5%	8%	7%	7%	9%	
Mashpee	5,256	4%	7%	4%	4%	3%	3%	4%	
Orleans	3,087	5%	4%	5%	6%	12%	7%	8%	
Provincetown	1,837	8%	9%	6%	7%	7%	7%	5%	
Sandwich	7,335	4%	6%	6%	9%	5%	8%	5%	
Truro	907	15%	13%	14%	10%	16%	18%	17%	
Wellfleet	1,301	8%	8%	14%	14%	13%	11%	10%	
Yarmouth	11,520	3% / 1%	2%	3%	2%	Combined w/Barnstable	3%	3%	
Totals	94,822								
Average Participation Rate		5%	4%	6%	6%	6%	6%	6%	

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.
 For Bourne, Falmouth, Mashpee, and Sandwich in 2001 - 2007, participation shown is for multiple events.
 For Harwich in 2001 - 2007, the participation rate shown is for multiple events.
 For Brewster and Chatham in 2002 - 2007, the participation rate shown is for multiple events.
 For Provincetown, Truro, and Wellfleet in 2001 - 2007, rate shown is for multiple events.
 For Barnstable and Yarmouth in 2003 - 2005, participation is for multiple events.
 For 2006-2007, Yarmouth hosted one event. Its participation is shown for this event, although Yarmouth residents also participated in events held in Barnstable.

TABLE 4 Total Cost

**Household Hazardous Waste Collections, 2001 - 2007
Cape Cod, Massachusetts**

	Total Cost						
	2001	2002	2003	2004	2005	2006	2007
Barnstable							
Bourne	\$20,900	-	\$33,401	\$31,817	\$35,443	\$22,252	\$26,530
Brewster	\$9,034	\$10,576	\$9,036	\$6,981	\$8,757	\$4,558	\$6,762
Chatham	\$6,590	\$2,774	\$7,508	\$8,869	\$5,878	\$7,579	\$5,461
Dennis	\$5,583	\$4,022	\$6,862	\$7,794	\$6,584	\$8,314	\$5,279
Dennis	\$7,915 / \$7,239	\$8,175 / \$6,385	\$8,775 / \$9,438	\$8,505 / \$7,045	\$9,200 / \$6,950	\$9,845 / \$7,530	\$8,880 / \$7,540
Eastham	\$2,623	\$5,520	\$5,785	\$5,270	\$5,182	\$8,142	\$5,976
Falmouth	\$15,207	\$20,623	\$17,621	\$25,238	\$15,892	\$15,031	\$22,541
Harwich	\$6,140	\$7,073	\$8,116	\$10,213	\$7,918	\$7,882	\$7,463
Mashpee	\$5,600	\$9,518	\$5,422	\$4,833	\$4,205	\$3,592	\$5,260
Orleans	\$4,505	\$5,555	\$5,725	\$6,130	\$8,823	\$5,915	\$7,015
Provincetown	\$4,677	\$4,878	\$3,204	\$4,371	\$4,194	\$3,896	\$2,916
Sandwich	\$8,632	\$11,634	\$12,199	\$16,646	\$10,235	\$10,244	\$9,017
Truro	\$4,824	\$3,404	\$3,560	\$3,525	\$4,053	\$4,935	\$4,261
Wellfleet	\$4,229	\$3,063	\$4,983	\$6,204	\$4,903	\$4,156	\$4,037
Yarmouth	\$10,836 / \$5,328	\$9,720	\$3,658 / \$5,199	\$5,615	Combined w/Barnstable	\$7,176	\$9,812
Totals	\$129,862	\$112,920	\$150,519	\$159,056	\$138,217	\$131,047	\$138,750

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 - 2006.

Figures shown for Harwich in 2001 - 2007 are the combined waste disposal cost for multiple events.

Figures shown for Brewster and Chatham in 2002 - 2007 show the combined waste disposal cost for multiple events.

Figures shown for Barnstable and Yarmouth in 2003 - 2007 show the combined waste disposal cost for multiple events.

Figures for 2001 - 2007 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, 2001 - 2007
Cape Cod, Massachusetts**

	Cost per Household Served						
	2001	2002	2003	2004	2005	2006	2007
Barnstable	\$21	-	\$25	\$28	\$24	\$21	\$27
Bourne	\$27	\$28	\$27	\$26	\$29	\$14	\$23
Brewster	\$21	\$20	\$30	\$25	\$22	\$22	\$14
Chatham	\$28	\$21	\$30	\$24	\$22	\$22	\$14
Dennis	\$21 / \$23	\$23 / \$22	\$27 / \$24	\$22 / \$23	\$25 / \$21	\$26 / \$24	\$21 / \$23
Eastham	\$31	\$29	\$29	\$24	\$24	\$26	\$29
Falmouth	\$28	\$27	\$26	\$26	\$19	\$21	\$23
Harwich	\$17	\$21	\$28	\$24	\$22	\$22	\$14
Mashpee	\$28	\$27	\$26	\$25	\$27	\$20	\$23
Orleans	\$27	\$41	\$35	\$32	\$25	\$26	\$29
Provincetown	\$31	\$29	\$27	\$33	\$32	\$30	\$29
Sandwich	\$27	\$27	\$27	\$26	\$26	\$18	\$23
Truro	\$37	\$29	\$27	\$41	\$28	\$30	\$28
Wellfleet	\$41	\$29	\$27	\$34	\$30	\$30	\$30
Yarmouth	\$28 / \$36	\$36	\$33 / \$25	\$28	Combined w/Barnstable	\$24	\$27

Average Cost per Household Served On Cape Cod

\$25	\$27	\$27	\$26	\$24	\$22	\$23
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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 2001 - 2007 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, 2001 - 2007
Cape Cod, Massachusetts**

	Cars Served						
	2001	2002	2003	2004	2005	2006	2007
Barnstable	793	-	1,050	936	1,002	717	628
Bourne	277	254	285	202	213	206	203
Brewster	274	117	202	261	206	226	256
Chatham	194	136	175	229	226	270	254
Dennis	300 (e) / 310	309 / 306	308 / 355	362 / 259	312 / 289	286 / 265	302 / 267
Eastham	72	172	152	143	138	244	153
Falmouth	339	483	498	713	452	476	468
Harwich	349	292	251	328	293	261	338
Mashpee	164	208	91	149	116	140	150
Orleans	152	126	147	153	224	167	158
Provincetown	106	116	85	84	95	87	70
Sandwich	255	309	425	708	438	422	309
Truro	107	83	81	82	90	106	85
Wellfleet	84	89	138	146	128	104	86
Yarmouth	310 / 120	238	99 / 149	153	Combined w/Barnstable	241	259
Totals	4,206	3,238	4,491	4,908	4,222	4,227	3,986

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, 2001 - 2007
Cape Cod, Massachusetts**

	Cost per Car						
	2001	2002	2003	2004	2005	2006	2007
Barnstable	\$26	-	\$32	\$34	\$35	\$31	\$42
Bourne	\$32	\$42	\$32	\$35	\$41	\$22	\$33
Brewster	\$24	\$24	\$37	\$34	\$29	\$34	\$21
Chatham	\$29	\$30	\$39	\$34	\$29	\$31	\$21
Dennis	\$26 / \$23	\$26 / \$21	\$28 / \$27	\$23 / \$27	\$29 / \$24	\$34 / \$28	\$29 / \$28
Eastham	\$36	\$32	\$38	\$37	\$38	\$33	\$39
Falmouth	\$45	\$43	\$35	\$35	\$35	\$32	\$48
Harwich	\$18	\$24	\$32	\$31	\$27	\$30	\$22
Mashpee	\$34	\$46	\$60	\$32	\$36	\$26	\$35
Orleans	\$30	\$44	\$39	\$40	\$39	\$35	\$44
Provincetown	\$44	\$42	\$38	\$52	\$44	\$45	\$42
Sandwich	\$34	\$38	\$29	\$24	\$23	\$24	\$29
Truro	\$45	\$41	\$44	\$43	\$45	\$47	\$50
Wellfleet	\$50	\$34	\$36	\$42	\$38	\$40	\$47
Yarmouth	\$35 / \$44	\$41	\$37 / \$35	\$37	Combined w/Barnstable	\$30	\$38

Cost per Car Served

\$31	\$35	\$34	\$32	\$33	\$31	\$35
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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 2001 - 2007 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.