

Wastewater Release

Wastewater Treatment

In addition to water withdrawals, public-supply deliveries, and consumptive use, the term “water use” also includes wastewater releases and return flow. Because quality as well as quantity considerations are increasingly important in water management, more information is needed concerning the location of wastewater-treatment facilities and the quantities of treated wastewater released from the facilities and returned to the hydrologic system.

The wastewater treatment category includes information on facilities engaged primarily in the collection, treatment, and disposal of wastewater conveyed through a sewer system. Return of treated water generally is to surface waters. Treatment facilities are separated into two categories in this report: publicly owned (municipal) treatment works and “other.” Publicly-owned treatment works are publicly owned or receive some form of public funding, and receive and treat wastewater from various users such as domestic, commercial, and industrial. Other wastewater facilities are privately owned and include commercial and industrial facilities that treat their own wastewater. Information on the quantities of water treated and released from publicly-owned treatment facilities and returned directly to the hydrologic system, or released for beneficial reuse (reclaimed wastewater), are given in this report, along with the number of public and other

wastewater-treatment facilities.

The release information usually is obtained from wastewater-treatment facility operators, utility departments, or from discharge permit files maintained by State or Federal agencies. Return flows to surface water usually are regulated by State or Federal agencies. The number of wastewater-treatment facilities typically is available from permit files at State or Federal agencies. The reliability of the data varies by State depending on available information.

About 16,400 publicly-owned treatment facilities released some 41,000 Mgal/d of treated wastewater nationwide during 1995. (See tables 29, 30.) Nationally, an average of from 1 million to 2 million gallons of treated wastewater per public-treatment facility was returned daily to streams or other surface-water bodies. In addition, over 2 percent (983 Mgal/d) of the treated wastewater that was released was reclaimed for beneficial uses such as irrigation of golf courses and public parks. The largest return flows occurred in regions (figure 31) and States (figure 32) that have large populations and large public-supply withdrawals. Illinois and Ohio, which have large public-supply withdrawals, reported the largest releases of treated wastewater. Florida, California, and Arizona reported large uses of reclaimed wastewater.



Figure 31. Wastewater treatment return flow by water-resources region, 1995.

Table 29. Wastewater treatment water releases by water-resources region, 1995

[Figures may not add to totals because of independent rounding.
Mgal/d = million gallons per day]

REGION	NUMBER OF FACILITIES		PUBLIC RELEASES	
	Public	Other	Return flow, in Mgal/d	Reclaimed wastewater, in Mgal/d
New England	488	490	1,670	0
Mid-Atlantic	1,066	1,543	5,260	71
South Atlantic-Gulf	1,798	3,154	4,520	298
Great Lakes	1,152	1,537	5,030	0
Ohio	2,144	5,002	5,310	.1
Tennessee	224	301	645	.1
Upper Mississippi	1,950	1,480	6,330	0
Lower Mississippi	598	1,041	1,850	0
Souris-Red-Rainy	251	41	61	0
Missouri Basin	2,103	1,555	1,360	12
Arkansas-White-Red	1,047	1,133	868	26
Texas-Gulf	1,106	2,686	2,030	71
Rio Grande	116	127	165	10
Upper Colorado	193	90	62	1.8
Lower Colorado	179	344	500	217
Great Basin	101	73	287	59
Pacific Northwest	636	1,850	1,390	0
California	1,040	827	3,250	211
Alaska	127	108	61	0
Hawaii	32	171	137	6.2
Caribbean	78	0	189	0
Total	16,428	23,700	41,000	983

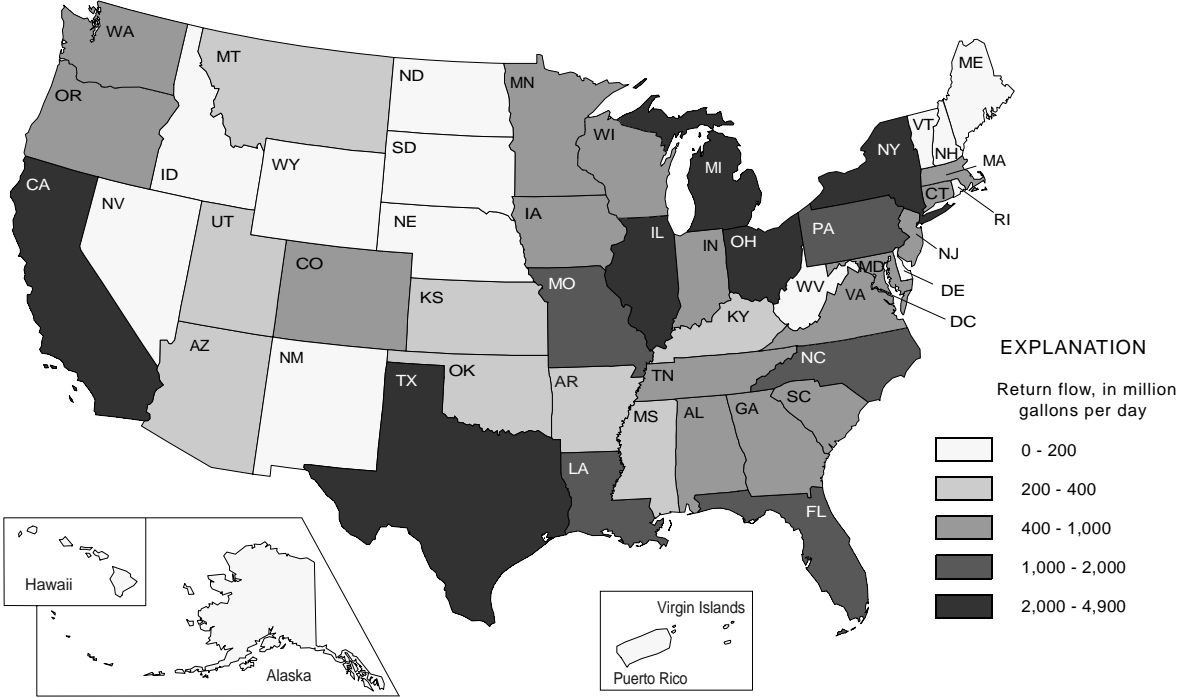


Figure 32. Wastewater treatment return flow by State, 1995.

Table 30. Wastewater treatment water releases by State, 1995

[Figures may not add to totals because of independent rounding.
Mgal/d = million gallons per day]

STATE	NUMBER OF FACILITIES		PUBLIC RELEASES	
	Public	Other	Return flow, in Mgal/d	Reclaimed wastewater, in Mgal/d
	Alabama	255	0	474
Alaska	126	107	61	0
Arizona	150	300	359	209
Arkansas	313	442	241	0
California	1,049	857	3,250	216
Colorado	393	179	422	11
Connecticut	94	47	411	0
Delaware	15	48	103	0
D.C.	1	6	309	0
Florida	387	228	1,540	271
Georgia	501	370	777	4.0
Hawaii	32	171	137	6.2
Idaho	76	6	99	0
Illinois	532	610	4,850	0
Indiana	407	422	762	0
Iowa	754	475	522	0
Kansas	442	343	217	7.4
Kentucky	223	1,465	341	0
Louisiana	153	159	1,450	0
Maine	71	0	115	0
Maryland	161	870	422	70
Massachusetts	86	443	867	0
Michigan	295	698	2,540	0
Minnesota	436	0	516	0
Mississippi	307	1,575	307	0
Missouri	1,164	1,284	1,030	0
Montana	228	118	202	0
Nebraska	290	285	181	1.0
Nevada	68	67	179	24
New Hampshire	79	0	89	0
New Jersey	209	467	915	0
New Mexico	46	59	99	5.6
New York	596	0	2,760	0
North Carolina	307	1,348	1,330	1.5
North Dakota	277	99	45	0
Ohio	1,236	2,510	4,690	0
Oklahoma	332	159	312	0
Oregon	189	23	483	0
Pennsylvania	289	140	1,340	.6
Rhode Island	115	0	182	0
South Carolina	274	481	404	22
South Dakota	207	0	64	0
Tennessee	251	0	739	.1
Texas	1,308	3,113	2,180	96
Utah	50	10	236	39
Vermont	95	0	42	0
Virginia	67	1	561	0
Washington	329	1,791	736	0
West Virginia	594	1,342	199	0
Wisconsin	411	231	653	0
Wyoming	79	203	50	0
Puerto Rico	70	0	185	0
Virgin Islands	8	0	4.1	0
Total	16,428	23,700	41,000	983