CLEAN WATERSHEDS NEEDS SURVEY 2008

Regional and EPA Program Area Needs

This document supplements the Clean Watersheds Needs Survey (CWNS) 2008 Report to Congress by summarizing documented needs data by various major watershed basins and EPA program areas. EPA and the States have made a concerted effort to gather information on a watershed basis consistent with the basin planning or watershed management concept. This document highlights CWNS 2008 needs documented within the following regional and EPA Program areas:

- CWNS 2008 Area Needs versus CWNS 2004 Needs . . . page 2
- Needs by Watershed. . . . . page 3
- Coastal versus Inland Needs . . . . . .page 18
- EPA's Targeted Watersheds Grant Program . . . . . .page 23
- EPA's National Estuary Program . . . . . .page 28
- Gulf of Mexico Drainage Basin . . . . . .page 36
- Chesapeake Bay Drainage Basin . . . . . .page 42
- Great Lakes Drainage Basin . . . . . .page 47
- Columbia River Basin . . . . . .page 53
- Border 2012 Area . . . . . .page 59

Documented needs in the CWNS 2008 Report to Congress include the unfunded capital costs of projects as of January 1, 2008 that:

- Address a water quality or a water quality-related public health problem existing as of January 1, 2008, or expected to occur within the next 20 years
- Meet the seven CWNS documentation criteria

Documentation criteria and needs categories are described in Chapter 1 of the Report to Congress. Documentation criteria ensured the legitimacy of needs and the accuracy of cost and technical information in the Report to Congress. To meet the criteria, a description and location of a water quality or water related public health problem, as well as site-specific pollution abatement measures with detailed cost information was required. Needs that did not meet these documentation criteria are classified as Unofficial Cost Estimates.

Needs in this document include all documented needs in the Report to Congress. This includes both the Official Needs in the Report's main body and the Other Documented Needs in the Report's Appendix B.

CWNS 2008 Regional and EPA Program Area Needs versus CWNS 2004 Needs

Highlights

Areas with the largest percent increases since 2004: The Columbia River Basin ($2.5 billion; 52 percent); The Chesapeake Bay Drainage Basin ($8.0 billion; 33 percent); and EPA's National Estuary Program ($17.3 billion; 22 percent)

Tables & Maps: Figure 1 shows the regional and EPA program area needs reported in 2008 compared to the needs documented in 2004

Discussion

Figure 1 compares the 2008 Regional and EPA Program Area needs with that of the CWNS 2004. As in 2004, the 2008 CWNS results show the Gulf of Mexico as having the highest needs ($106.6 billion) of all the regional and EPA program areas. With the exception of the needs related to the Great Lakes, which decreased by $0.6 billion (3 percent) and the Border 2012 Program which remained at $3.7 billion, each program reported an increase in needs since the 2004 CWNS.

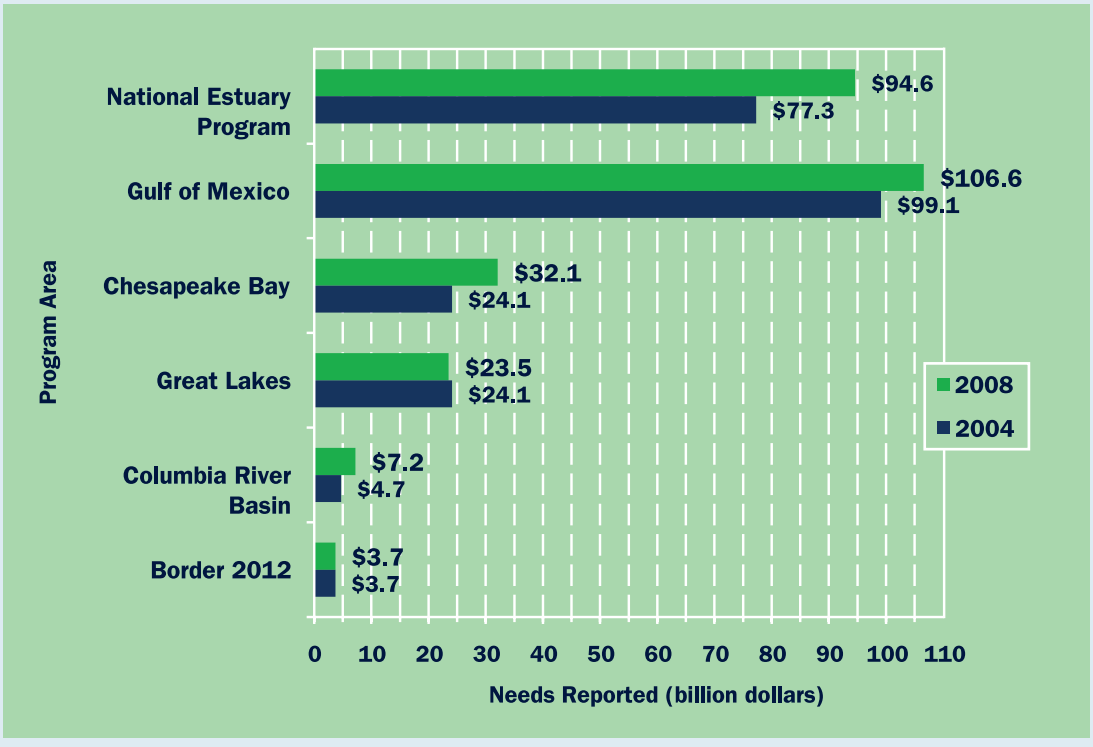


Figure 1. Total documented CWNS 2008 Regional and EPA Program Area needs compared to that of CWNS 2004 (January 2008 dollars in billions).

Needs by Watershed[1]

Highlights

Documented needs compared to percentage of national watersheds: 90 percent of the needs were reported from 36 percent of the Nation's watersheds

Needs per capita: 45 percent of watersheds documented needs exceeding $1,000/person; 17 percent of watersheds reported $501–$1,000/person; 38 percent of watersheds documented needs less than $500/person

Tables & Maps: Figure 2 shows the documented needs in the CWNS 2008 according to watershed boundaries at the subregion level for the continental United States; Figure 3 illustrates the documented needs per capita; Figure 4 shows the proportion of the U.S. population served by advanced treatment or served by facilities that do not discharge to surface waters; and Table 1 summarizes the CWNS 2008 assessment of total needs by watershed region, subregion, and basin

Discussion

Figure 2 shows the documented needs in the CWNS 2008 according to watershed boundaries at the subregion level for the continental United States. The CWNS 2008 results indicate that most of the needs reported are in a small number of watersheds: 90 percent of the documented needs are in 36 percent of the Nation's watersheds. As expected, these needs are geographically distributed in patterns similar to the State patterns described in the Report to Congress.

The ratio of documented needs to population (i.e., needs per capita) accounts for differences in population. Within the continental United States, 45 percent of the watersheds shown in Figure 3 have documented per capita needs exceeding $1,000/person, while 17 percent have documented per capita needs ranging from $500/person to 1,000/person. The remaining watersheds (38 percent) have documented per capita needs of less than $500/person.

Watershed

A geographic area in which water, sediments and dissolved materials drain to a common outlet, typically a point on a larger stream, a lake, an underlying aquifer, an estuary or an ocean. A watershed is sometimes referred to as the "drainage basin" of the receiving waterbody.

The number of people served by advanced treatment increased from 7.8 million people in 1972 to 113.0 million people in 2008. Figure 4 shows the proportion of the U.S. population served by advanced treatment or served by facilities that do not discharge to surface waters. The Great Lakes region, the South Central region, Florida, and portions of the Southwest have the highest proportion of their population served by treatment facilities that provide advanced treatment or by facilities that do not discharge to surface waters.

[1] Watersheds are identified by Hydrologic Unit Codes (HUCs), a grouping of numbers ranging from two to sixteen digits long.

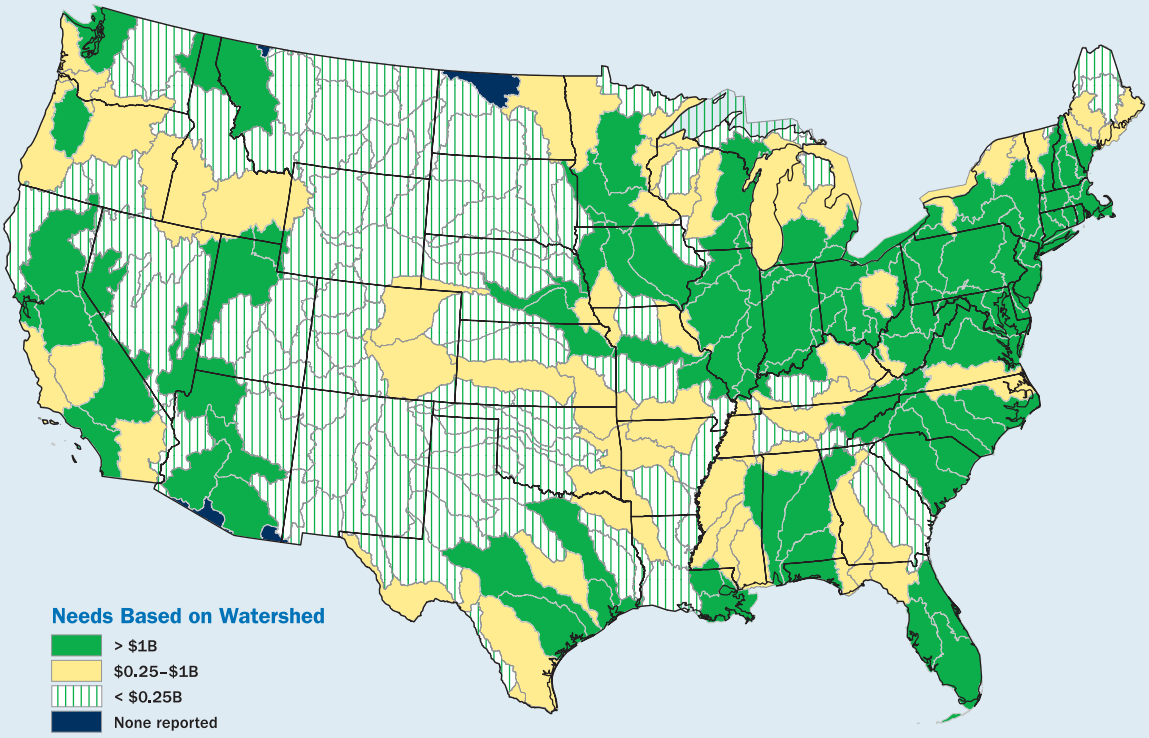


Figure 2. Geographic distribution of total documented needs by 4-digit watershed (January 2008 dollars in billions).

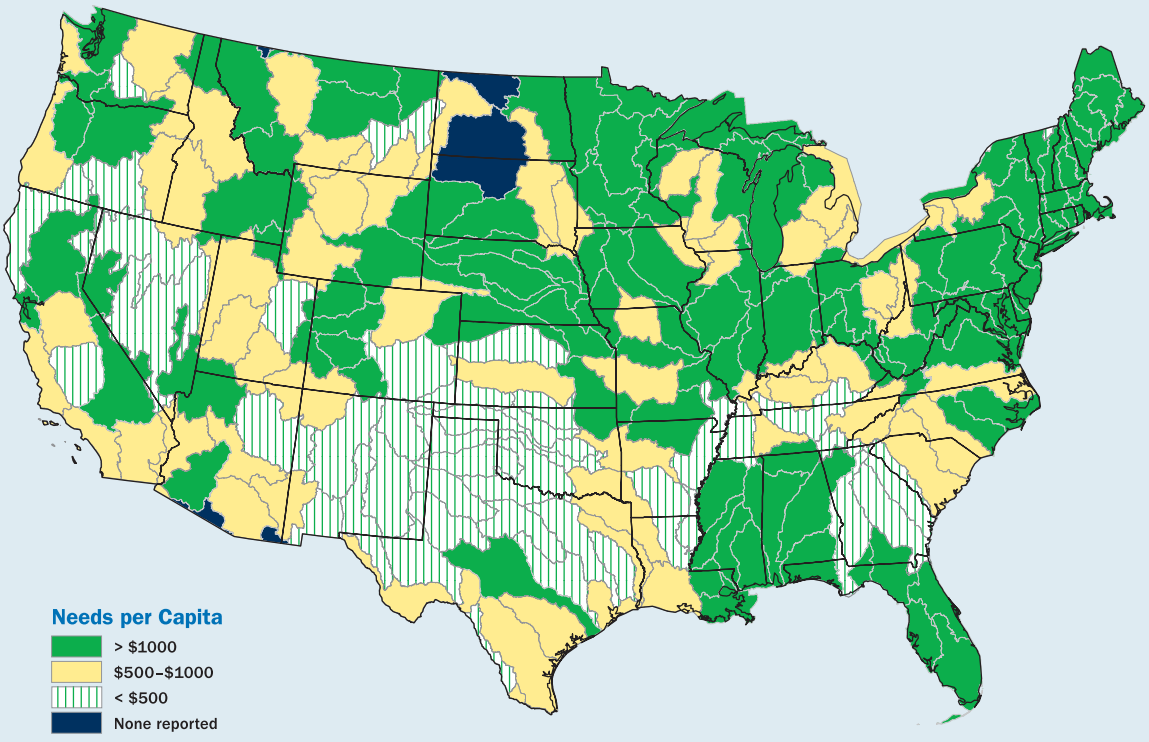


Figure 3. Geographic distribution of total documented needs on a per capita basis by 4-digit watershed (January 2008 dollars).

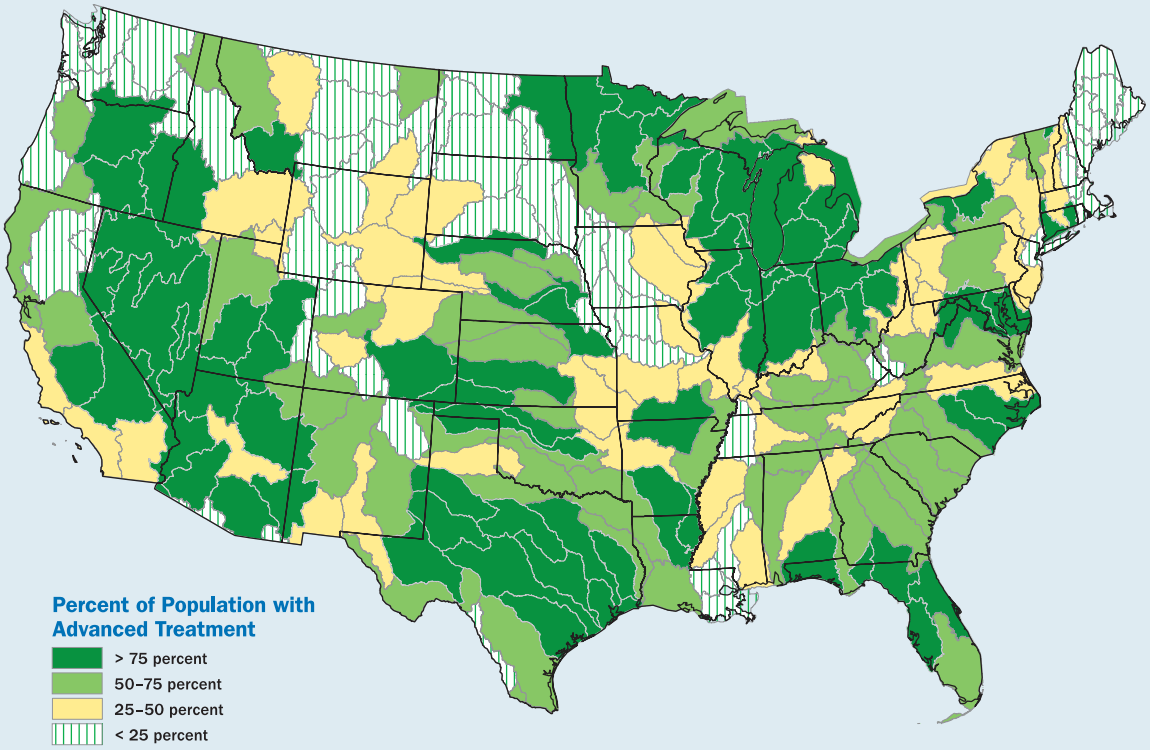


Figure 4. Geographic distribution of the proportion of the population receiving advanced treatment including facilities that do not discharge to surface waters by 4-digit watershed (January 2008).

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions)

Arkansas-White-Red Rivers Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Arkansas-Keystone	Arkansas-Keystone	21
Lower Arkansas	Lower Arkansas-Fourche La Fave	144
	Robert S. Kerr Reservoir	666
Lower Canadian	Lower Canadian	51
	Middle Canadian	7
Lower Cimarron	Lower Cimarron	51
Middle Arkansas	Middle Arkansas	508
Neosho-Verdigris	Neosho	200
	Verdigris	532
North Canadian	Lower Beaver	
	Lower North Canadian	71
	Upper Beaver	18
Red–Washita	Red-Lake Texoma	70
	Red-Pease	29
	Washita	8
Red Headwaters	Prairie Dog Town Fork Red	1
	Salt Fork Red	1
Red-Sulphur	Big Cypress-Sulphur	47
	Red-Little	92
	Red-Saline	244
Upper Arkansas	Upper Arkansas	337
Upper Canadian	Upper Canadian	1
Upper Cimarron	Upper Cimarron	20
Upper White	Upper White	593
Arkansas-White-Red Rivers Region	**Sum**	**3,714**

California Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Central California Coastal	Central California Coastal	891
Klamath-Northern California Coastal	Klamath	60
	Northern California Coastal	78
North Lahontan	North Lahontan	3
Northern Mojave-Mono Lake	Northern Mojave	1,465
Sacramento	Lower Sacramento	4,601

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

California Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
	Upper Sacramento	8
San Francisco Bay	San Francisco Bay	6,532
San Joaquin	San Joaquin	1,089
Southern California Coastal	Laguna-San Diego Coastal	2,202
	Santa Ana	2,992
	Ventura-San Gabriel Coastal	8,218
Southern Mojave-Salton Sea	Salton Sea	94
	Southern Mojave	157
Tulare-Buena Vista Lakes	Tulare-Buena Vista Lakes	703
California Region	**Sum**	**29,091**

Great Basin Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Bear	Lower Bear	1,378
	Upper Bear	4
Black Rock Desert-Humboldt	Black Rock Desert	1
	Humboldt	5
Central Lahontan	Carson	73
	Truckee	1,866
	Walker	11
Central Nevada Desert Basins	Central Nevada Desert Basins	1
Escalante Desert-Sevier Lake	Escalante Desert-Sevier Lake	76
Great Salt Lake	Great Salt Lake	142
	Jordan	844
	Weber	225
Great Basin Region	**Sum**	**4,628**

Great Lakes Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Eastern Lake Erie-Lake Erie	Eastern Lake Erie	1,343
	Lake Erie	66
Northeastern Lake Michigan-Lake Michigan	Lake Michigan	56
	Northeastern Lake Michigan	512

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Great Lakes Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Northeastern Lake Ontario-Lake Ontario-St. Lawrence	Lake Ontario	9
	Northeastern Lake Ontario	143
	St. Lawrence	361
Northwestern Lake Huron	Northwestern Lake Huron	133
Northwestern Lake Michigan	Fox	879
	Northwestern Lake Michigan	226
Southeastern Lake Michigan	Southeastern Lake Michigan	1,749
Southeastern Lake Ontario	Oswego	1,038
	Southeastern Lake Ontario	256
Southern Lake Erie	Southern Lake Erie	4,251
Southern Lake Superior-Lake Superior	Lake Superior	8
	Southcentral Lake Superior	118
	Southeastern Lake Superior	37
Southwestern Lake Huron-Lake Huron	Lake Huron	2
	Saginaw	455
	Southwestern Lake Huron	142
Southwestern Lake Michigan	Southwestern Lake Michigan	4,585
Southwestern Lake Ontario	Southwestern Lake Ontario	278
St. Clair-Detroit	St. Clair-Detroit	4,124
Western Lake Erie	Western Lake Erie	2,065
Western Lake Superior	Western Lake Superior	160
	Southwestern Lake Superior	37
	St. Louis	440
Great Lakes Region	**Sum**	**23,470**

Hawaii Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Hawaii	Hawaii	120
Kauai	Kauai	81
Maui	Maui	239
Molokai	Molokai	
Oahu	Oahu	1,320
Hawaii Region	**Sum**	**1,760**

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Lower Colorado River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Little Colorado	Little Colorado	41
Lower Colorado	Bill Williams	14
	Lower Colorado	161
Lower Colorado-Lake Mead	Lower Colorado-Lake Mead	2,417
Lower Gila	Lower Gila	145
	Lower Gila-Agua Fria	2,098
Middle Gila	Middle Gila	463
	San Pedro-Willcox	15
	Santa Cruz	836
Salt	Salt	1,135
	Verde	333
Upper Gila	Upper Gila	20
Lower Colorado River Region	**Sum**	**7,679**

Lower Mississippi River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Boeuf-Tensas	Boeuf-Tensas	6
Louisiana Coastal	Atchafalaya-Vermilion	92
	Calcasieu-Mermentau	131
Lower Mississippi	Central Louisiana Coastal	1,161
	Lake Pontchartrain	207
	Lower Mississippi-New Orleans	1,341
Lower Mississippi-Big Black	Big Black-Homochitto	478
	Lower Mississippi-Natchez	30
Lower Mississippi-St. Francis	Lower Arkansas	7
	Lower Mississippi-Helena	
	Lower White	26
	St. Francis	71
Lower Mississippi-Yazoo	Lower Mississippi-Greenville	1
	Yazoo	578
Lower Mississippi-Hatchie	Hatchie-Obion	265
	Lower Mississippi-Memphis	245
Lower Mississippi-Lake Maurepas	Lake Maurepas	437

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Lower Mississippi River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
	Lower Grand	21
	Lower Mississippi-Baton Rouge	1,144
Lower Red - Ouachita	Lower Ouachita	88
	Lower Red	65
	Upper Ouachita	21
Lower Mississippi River Region	**Sum**	**6,417**

Mid-Atlantic Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Delaware	Lower Delaware	9,546
	New Jersey Coastal	3,272
	Upper Delaware	5,121
Lower Chesapeake	James	2,514
	Lower Chesapeake	1,166
Lower Hudson-Long Island	Long Island	24,571
	Lower Hudson	27,117
Potomac	Potomac	10,818
Richelieu	Richelieu	503
Susquehanna	Lower Susquehanna	4,213
	Upper Susquehanna	2,875
	West Branch Susquehanna	1,904
Upper Chesapeake	Upper Chesapeake	8,862
Upper Hudson	Upper Hudson	2,925
Mid-Atlantic Region	**Sum**	**105,407**

Missouri River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Big Horn	Big Horn	56
Chariton-Grand	Chariton	37
	Grand	30
Cheyenne	Belle Fourche	21
	Cheyenne	35
Elkhorn	Elkhorn	193

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Missouri River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Gasconade-Osage	Gasconade	32
	Osage	175
James	James	15
Kansas	Big Blue	331
	Kansas	1,327
Loup	Loup	86
Lower Missouri	Lower Missouri	1,220
	Lower Missouri-Blackwater	1,606
Lower Yellowstone	Lower Yellowstone	16
Milk	Milk	31
Missouri Headwaters	Missouri Headwaters	150
Missouri-Big Sioux	Big Sioux	115
	Lewis And Clark Lake	59
Missouri-Little Missouri	Little Missouri	1
Missouri-Little Sioux	Missouri-Little Sioux	1,623
Missouri-Marias	Marias	23
	Upper Missouri	62
Missouri-Musselshell	Fort Peck Lake	13
	Musselshell	3
Missouri-Nishnabotna	Missouri-Nishnabotna	689
Missouri-Oahe	Grand-Moreau	1
Missouri-Poplar	Missouri-Poplar	10
Missouri-White	Fort Randall Reservoir	1
	White	12
Niobrara	Niobrara	60
North Platte	North Platte	191
Platte	Lower Platte	1,761
	Middle Platte	146
Powder-Tongue	Powder	27
	Tongue	22
Republican	Republican	201
Smoky Hill	Smoky Hill	66

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Missouri River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
South Platte	South Platte	859
Upper Yellowstone	Upper Yellowstone	83
Missouri River Region	**Sum**	**11,390**

New England Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Androscoggin	Androscoggin	280
Connecticut	Lower Connecticut	3,616
	Upper Connecticut	185
Connecticut Coastal	Connecticut Coastal	2,268
Kennebec	Kennebec	385
Maine Coastal	Maine Coastal	491
Massachusetts-Rhode Island Coastal	Mass.-Rhode Island Coastal	6,056
Merrimack	Merrimack	1,943
Penobscot	Penobscot	219
Saco	Saco	1,250
St. Francois	St. Francois	3
St. John	St. John	141
New England Region	**Sum**	**16,837**

Ohio River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Allegheny	Allegheny	1,886
Big Sandy-Guyandotte	Big Sandy	267
	Guyandotte	149
Cumberland	Lower Cumberland	456
	Upper Cumberland	72
Great Miami	Great Miami	1,786
Green	Green	227
Kanawha	Kanawha	1,085
Kentucky-Licking	Kentucky	341
	Licking	100
Lower Ohio	Lower Ohio	213

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Ohio River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
	Lower Ohio-Salt	1,175
Middle Ohio	Middle Ohio-Little Miami	3,565
	Middle Ohio-Raccoon	815
Monongahela	Monongahela	2,127
Muskingum	Muskingum	495
Scioto	Scioto	3,218
Upper Ohio	Upper Ohio-Beaver	1,962
	Upper Ohio-Little Kanawha	416
Wabash	Patoka-White	4,151
	Wabash	1,268
Ohio River Region	**Sum**	**25,774**

Pacific Northwest Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Kootenai-Pend Oreille-Spokane	Kootenai	7
	Pend Oreille	335
	Spokane	719
Lower Columbia	Lower Columbia	917
Lower Snake	Clearwater	23
	Lower Snake	36
	Salmon	11
Middle Columbia	Deschutes	374
	John Day	3
	Middle Columbia	81
Middle Snake	Middle Snake-Boise	545
	Middle Snake-Powder	14
Oregon Closed basins	Oregon Closed Basins	
Oregon-Washington Coastal	Northern Oregon Coastal	30
	Southern Oregon Coastal	177
	Washington Coastal	123
Puget Sound	Puget Sound	4,243
Upper Columbia	Upper Columbia	35
Upper Snake	Snake Headwaters	10

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Pacific Northwest Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
	Upper Snake	437
Willamette	Willamette	3,585
Yakima	Yakima	3
Pacific Northwest Region	**Sum**	**11,708**

Puerto Rico and Virgin Islands Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Puerto Rico	Puerto Rico	4,720
Puerto Rico and Virgin Islands Region	**Sum**	**4,720**

Rio Grande Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Lower Pecos	Lower Pecos	30
Lower Rio Grande	Lower Rio Grande	307
Rio Grande closed basins	Rio Grande Closed Basins	2
Rio Grande headwaters	Rio Grande Headwaters	22
Rio Grande-Amistad	Rio Grande-Fort Quitman	365
Rio Grande-Elephant Butte	Rio Grande-Elephant Butte	49
	Upper Rio Grande	10
Rio Grande-Falcon	Rio Grande-Falcon	138
Rio Grande-Mimbres	Mimbres	2
	Rio Grande-Caballo	8
Upper Pecos	Upper Pecos	19
Rio Grande Region	**Sum**	**952**

Souris-Red-Rainy Rivers Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Rainy	Rainy	116
Red	Lower Red	129
	Upper Red	274
Souris-Red-Rainy Rivers Region	**Sum**	**519**

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

South Atlantic-Gulf Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Alabama	Alabama	872
	Coosa-Tallapoosa	861
Altamaha-St. Marys	Altamaha	33
	St. Marys-Satilla	183
Apalachicola	Apalachicola	324
Cape Fear	Cape Fear	2,056
Choctawhatchee-Escambia	Choctawhatchee	327
	Escambia	118
	Florida Panhandle Coastal	1,314
Chowan-Roanoke	Albemarle-Chowan	344
	Roanoke	352
Edisto-Santee	Edisto	214
	Santee	1,457
Mobile-Tombigbee	Black Warrior-Tombigbee	1,487
	Mobile Bay-Tombigbee	434
Neuse-Pamlico	Neuse	1,399
	Pamlico	465
Ochlockonee	Ochlockonee	473
Ogeechee-Savannah	Ogeechee	3
	Savannah	55
Pascagoula	Pascagoula	787
Peace-Tampa Bay	Peace	1,162
	Tampa Bay	4,160
Pearl	Pearl	898
Pee Dee	Lower Pee Dee	364
	Upper Pee Dee	831
Southern Florida	Kissimmee	966
	Southern Florida	16,079
St. Johns	East Florida Coastal	1,663
	St. Johns	4,962
Suwannee	Aucilla-Waccasassa	193
	Suwannee	542
South Atlantic-Gulf Region	**Sum**	**45,377**

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Tennessee River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Lower Tennessee	Lower Tennessee	143
Middle Tennessee-Elk	Middle Tennessee-Elk	745
Middle Tennessee-Hiwassee	Middle Tennessee-Hiwassee	63
Upper Tennessee	French Broad-Holston	515
	Upper Tennessee	530
Tennessee River Region	**Sum**	**1,996**

Texas-Gulf Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Brazos headwaters	Brazos Headwaters	50
Central Texas Coastal	Central Texas Coastal	54
	Guadalupe	113
	Lavaca	2
	San Antonio	870
Galveston Bay-San Jacinto	Galveston Bay-Sabine Lake	827
	San Jacinto	3,239
Lower Brazos	Little	318
	Lower Brazos	115
Lower Colorado-San Bernard Coastal	Lower Colorado	979
	Middle Colorado-Concho	9
	Middle Colorado-Llano	399
	San Bernard Coastal	6
Middle Brazos	Middle Brazos-Bosque	81
	Middle Brazos-Clear Fork	32
Neches	Neches	138
Nueces-Southwestern Texas Coastal	Nueces	79
	Southwestern Texas Coastal	593
Sabine	Sabine	156
Trinity	Lower Trinity	32
	Upper Trinity	2,607
Upper Colorado	Upper Colorado	15
Texas-Gulf Region	**Sum**	**10,716**

Table 1. Total documented needs reported by watershed region (January 2008 dollars in billions) *(continued)*

Upper Colorado River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Colorado Headwaters	Colorado Headwaters	237
Great Divide-Upper Green	Great Divide Closed Basin	1
	Upper Green	39
Gunnison	Gunnison	55
Lower Green	Lower Green	22
San Juan	Lower San Juan	3
	Upper San Juan	59
Upper Colorado-Dirty Devil	Upper Colorado-Dirty Devil	9
Upper Colorado-Dolores	Upper Colorado-Dolores	15
White-Yampa	White-Yampa	21
Upper Colorado River Region	**Sum**	**460**

Upper Mississippi River Region		
Subregion (4-digit watershed)	**Basin (6-digit watershed)**	**Total (2008 dollars, millions)**
Chippewa	Chippewa	155
Des Moines	Des Moines	1,967
Lower Illinois	Lower Illinois	1,898
Minnesota	Minnesota	1,262
Mississippi Headwaters	Mississippi Headwaters	314
	Upper Mississippi-Crow-Rum	2,799
Rock	Rock	1,354
St. Croix	St. Croix	314
Upper Illinois	Upper Illinois	14,205
Upper Mississippi-Black-Root	Upper Mississippi-Black-Root	510
Upper Mississippi-Iowa-Skunk-Wapsipinicon	Iowa	890
	Upper Miss.-Skunk-Wapsipinicon	753
Upper Mississippi-Kaskaskia-Meramec	Kaskaskia	272
	Upper Mississippi-Meramec	4,157
Upper Mississippi-Maquoketa-Plum	Upper Mississippi-Maquoketa-Plum	202
Upper Mississippi-Salt	Upper Mississippi-Salt	426
Wisconsin	Wisconsin	289
Upper Mississippi River Region	**Sum**	**31,768**

Coastal versus Inland Needs

Highlights

Total needs: Coastal, $192.7 billion; Inland, $152.1 billion

Percentage of total CWNS 2008 needs: Coastal, 56 percent; Inland, 44 percent

Changes in needs from 2004: Coastal, increased by $52.4 billion (37 percent); Inland, increased by $15.8 billion (12 percent)

Categories with the largest percent increases since 2004 (Coastal): Stormwater Management (Category VI) ($20.2 billion; 273 percent); Advanced Wastewater Treatment (Category II) ($8.2 billion; 50 percent); and New Collector Sewers (Category IV-A) ($3.0 billion; 35 percent)

Categories with the largest percent increases since 2004 (Inland): Stormwater Management (Category VI) ($11.5 billion; 362 percent); Advanced Wastewater Treatment (Category II) ($8.2 billion; 67 percent); and Recycled Water Distribution (Category X) ($0.5 billion; 53 percent)

Tables & Maps: Figure 5 maps the coastal watersheds; Figure 6 shows the total documented needs for coastal and inland watersheds; Figure 7 displays population receiving treatment from coastal and inland watersheds, based on the quality of effluent treatment; Figure 8 compares the differences between the CWNS 2008 coastal and inland needs with those reported in 2004; and Table 2 documents the total coastal and inland needs by category

Coastal Watersheds

Although coastal areas are economically and ecologically productive and diverse, they face increasing pressure to produce a high-quality environment for commerce, industry, tourism, and development. Land in coastal watersheds is the most developed in the Nation. It now supports more than 53 percent (163 million) of the population and is expected to increase by more than 7 percent (12 million) by 2015 (W&PE, 2003). As the coastal population continues to grow, it becomes increasingly important to assess, document, and manage the needs of coastal watersheds.

The *National Coastal Condition Report III* (NCCR III), the third in a series of assessments, describes environmental conditions in coastal areas based on data from over 2,000 sites. The report presents summaries of data from monitoring, assessment, and advisory programs to create a benchmark of coastal conditions from which future progress can be measured. Indicators were calculated for water quality, sediment quality, benthic index, coastal quality, and fish tissue contamination. The CWNS 2008 provides data with a level of detail similar to that of the NCCR III. Therefore, those indicators can be used in conjunction with CWNS 2008 data to prioritize projects or track progress as needs are addressed.

Discussion

Figure 5 shows needs for coastal watersheds[2]. Although coastal watersheds make up only 13 percent of the land area in the continental United States[3], the $192.7 billion in coastal needs account for about 56 percent of total National needs. Coastal watersheds account for most of the needs in Wastewater Treatment (Categories I and II), Sewer Replacement/ Rehabilitation (Category III-B), Stormwater Management (Category VI), Nonpoint Source Pollution (NPS) Control (Category VII), Recycled Water Distribution (Category X), and Decentralized Wastewater Treatment Systems (Category XII); while Inland watersheds account for most of the needs in Infiltration/ Inflow Correction (Category III-A), Collector Sewers (Category IV-A), Interceptor Sewers (Category IV-B), and Combined Sewer Overflow Correction (Category V) (Figure 6). The average coastal and inland needs per capita are $1,700 and $1,400, respectively.

[2] Coastal watersheds are defined by the National Oceanic and Atmospheric Administration (NOAA) using 8-digit watershed HUCs.
[3] Approximately 252 million acres of the 2.4 billion acres of land area in the continental United States.

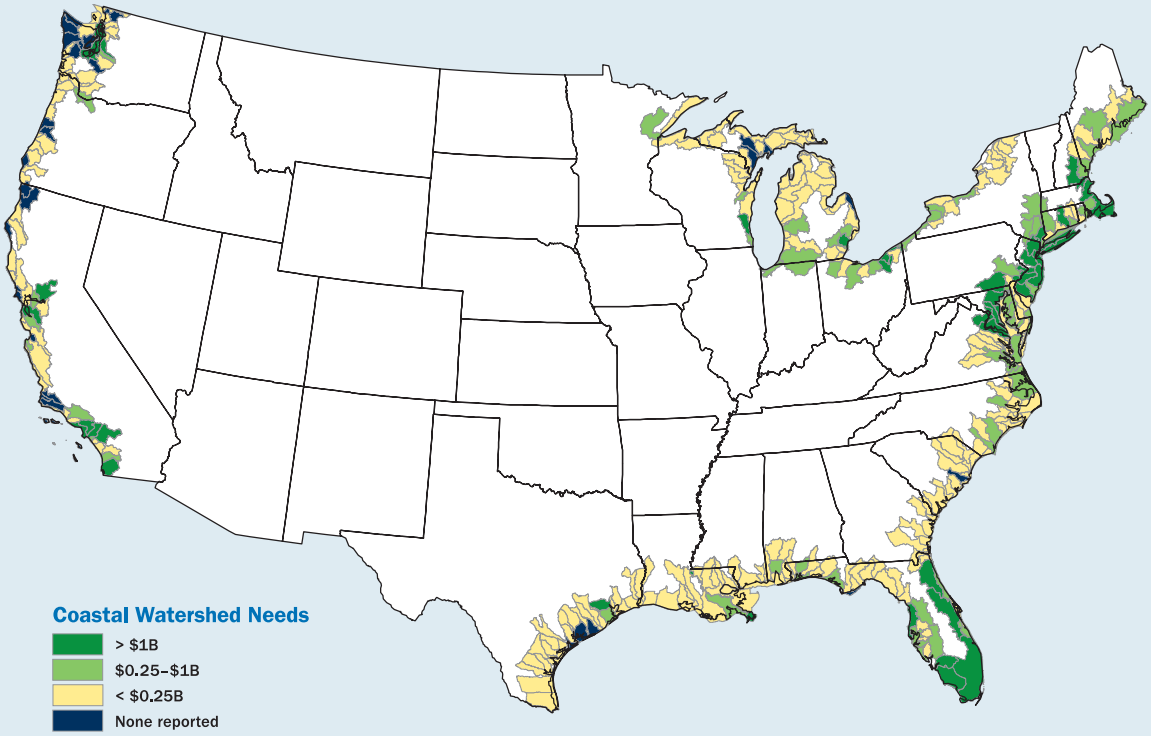
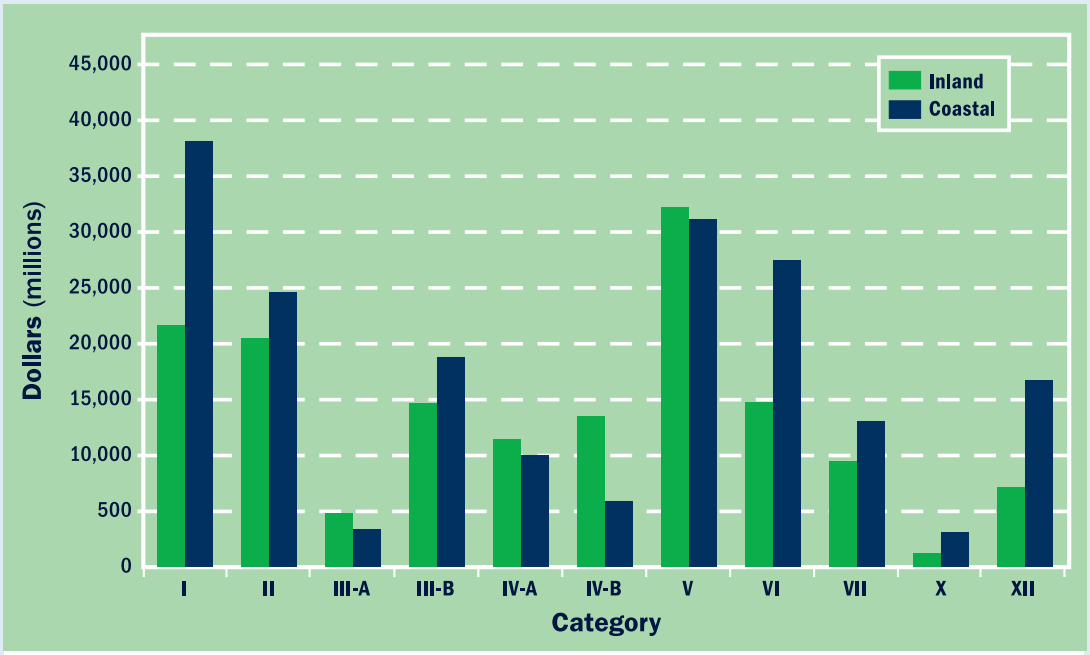


Figure 5. Watersheds in United States classified as coastal by NOAA (January 2008 dollars in billions).



Categories:
Secondary wastewater treatment (I)
Advanced wastewater treatment (II)
Infiltration/inflow correction (III-A)
Sewer replacement/rehabilitation (III-B)
Collector sewers (IV-A)
Interceptor sewers (IV-B)
Combined sewer overflow correction (V)
Stormwater management (VI)
Nonpoint source pollution control (VII)
Recycled water distribution (X)
Decentralized wastewater treatment systems (XII)

Figure 6. Total documented needs in coastal and inland watersheds.

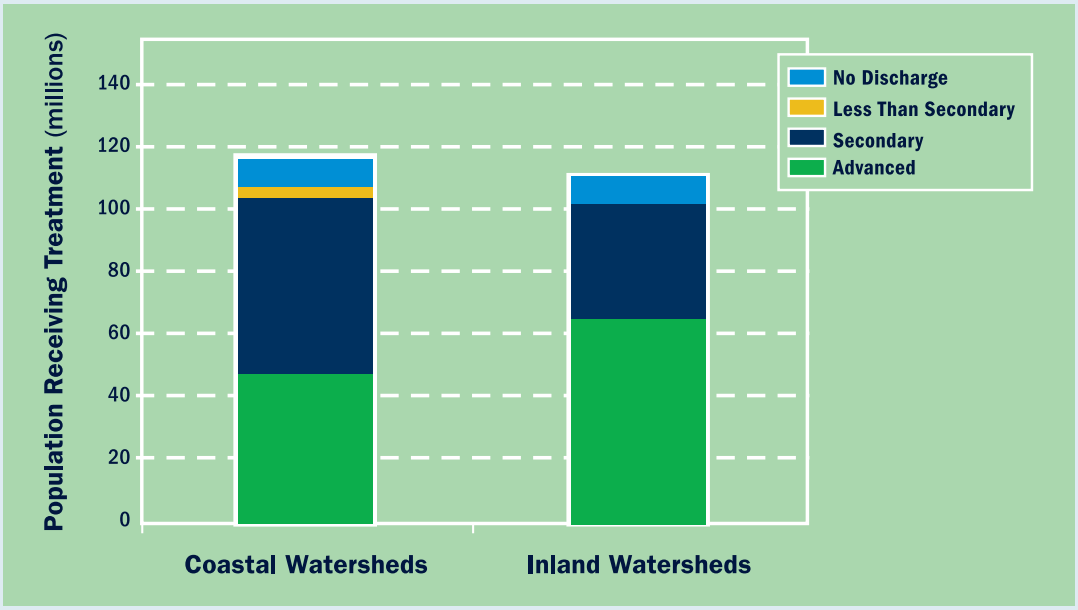
Table 2. Total documented needs reported within coastal and inland watersheds (January 2008 dollars in billions)

Needs Category		Coastal Needs		Inland Needs	
		$B	Percent	$B	Percent
Publicly Owned Wastewater Treatment and Conveyance Systems and Stormwater Management Programs					
I	Secondary wastewater treatment	38.2	20%	21.7	14%
II	Advanced wastewater treatment	24.8	13%	20.6	14%
III-A	Infiltration/inflow correction	3.3	2%	4.9	3%
III-B	Sewer replacement/rehabilitation	18.8	10%	14.8	10%
IV-A	New collector sewers	10.0	5%	11.4	7%
IV-B	New interceptor sewers	5.9	3%	13.5	9%
V	Combined sewer overflow correction	31.2	16%	32.3	21%
VI	Stormwater management programs	27.6	14%	14.7	10%
X	Recycled water distribution	3.0	2%	1.4	1%
XII	Decentralized wastewater treatment systems	16.7	9%	7.2	5%
	Total Categories I–VI, X, and XII	**179.1**	**94%**	**142.5**	**94%**
Nonpoint Source Pollution Control					
VII-A	Agriculture (cropland)	0.9	0.5%	0.7	0.5%
VII-B	Agriculture (animals)	0.2	0%	0.8	0.6%
VII-C	Silviculture	<0.1	0%	0.2	0%
VII-E	Ground water protection	2.0	1%	2.0	1%
VII-F	Marinas	<0.1	0%	<0.1	0%
VII-G	Resource extraction	<0.1	0%	0.4	0.3%
VII-H	Brownfields	1.3	0.7%	0.7	0.5%
VII-I	Storage tanks	2.3	1%	0.7	0.5%
VII-J	Sanitary landfills	0.8	0.4%	0.4	0.3%
VII-K	Hydromodification	5.4	3%	3.9	3%
VII-M	Other estuary management activities	<0.1	0%	<0.1	0%
	Total Category VII	**13.2**	**6%**	**9.6**	**6%**
	Grand Total	**192.7**		**152.1**	

Notes:

- Costs for operation and maintenance are not included.
- For the 2008 CWNS, Urban Water (Category VII-D) is reported under Stormwater Management (Category VI), Decentralized Sewage Treatment was reported under Decentralized Wastewater Treatment Systems (Category XII); and a new subcategory, Green Infrastructure (VI-C) was added to Wastewater Management (Category VI).
- Needs estimates presented in this table might vary slightly from those presented elsewhere because of rounding.

Figure 7 displays the number of people receiving each of the four levels of wastewater treatment, distinguished according to location in either coastal or inland watersheds. Less-than-secondary treatment is more prevalent in coastal watersheds (3 percent of the total coastal population of 116.6 million receiving treatment) than in inland watersheds (0.1 percent of the total inland population of 109.9 million receiving treatment). The reason for the difference is that the Clean Water Act (CWA) section 301(h) program grants waivers from the act's secondary treatment requirements to facilities whose discharge to marine waters will not adversely affect the environment.



Notes:

- No discharge refers to facilities that do not discharge effluent to surface waters (e.g., spray irrigation, ground water recharge).

Figure 7. Population receiving various forms of wastewater treatment.

Figure 8 illustrates the relationship between the CWNS 04 and the CWNS 08 coastal and inland needs. While both areas reported an increase in needs, coastal needs increased significantly ($52.4 billion dollars, 37 percent) since 2004.

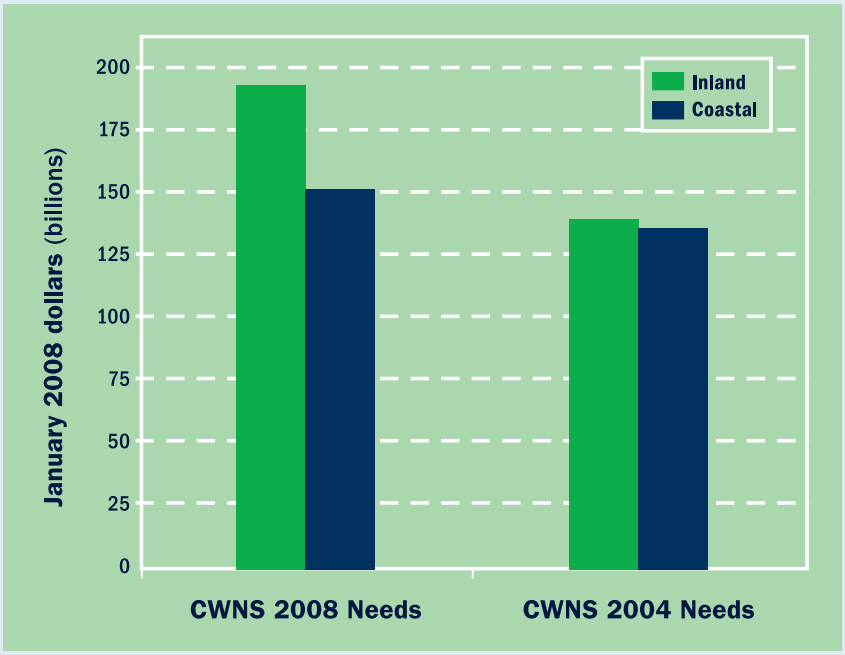


Figure 8. Total documented CWNS 2008 Coastal and Inland needs compared to that of CWNS 2004 (January 2008 dollars in billions).

Needs Related to EPA's Targeted Watersheds Grant Program

Highlights

Total needs: $11.0 billion

Percentage of total CWNS 2008 needs: 3 percent

Tables & Maps: Figure 9 maps the geographic distribution of the total documented needs by targeted 8-digit watershed; and Table 3 presents the total documented needs within the Targeted Watershed Grants Program; Table 4 presents the total documented needs reported by targeted 8-digit watershed; Table 5 presents the total documented needs for all categories within the targeted watersheds; and Table 6 presents the total documented needs for all categories within the targeted watersheds

Discussion

The total CWNS 2008 needs reported for projects in the targeted watersheds during 2007 and 2008 are $11.0 billion, or 3 percent of the national need (Table 3). Figure 9 displays the geographic distribution of the total documented needs by targeted watershed.

The largest total needs occur in the Saw Mill River and the Connecticut River watersheds, which have $5.3 billion and $3.5 billion in needs, respectively (Table 4). Honey Creek, Lake Champlain, Elizabeth River, and the Santa Cruz River watersheds have needs ranging from $0.3 billion to $0.8 billion. The remaining watersheds account for $0.2 billion in needs. Table 5 and Table 6 present the total documented needs for all categories and watersheds.

EPA's Targeted Watersheds Grant Program

Established in 2003, the Targeted Watersheds Grant Program is a competitive grant program designed to encourage successful community-based approaches and management techniques to protect and restore the Nation's waters. The watershed organizations receiving grants exhibit strong partnerships with a wide variety of support, creative socioeconomic approaches to water restoration and protection, and explicit monitoring and environmentally based performance measures. To date, EPA has awarded nearly $50 million in grants to 61 watershed organizations across the country. It is important to note that the project requirements for funding under this grant program are different from those for inclusion as a CWNS need. In fact, some CWNS costs are specifically excluded from being funded through this grant program.

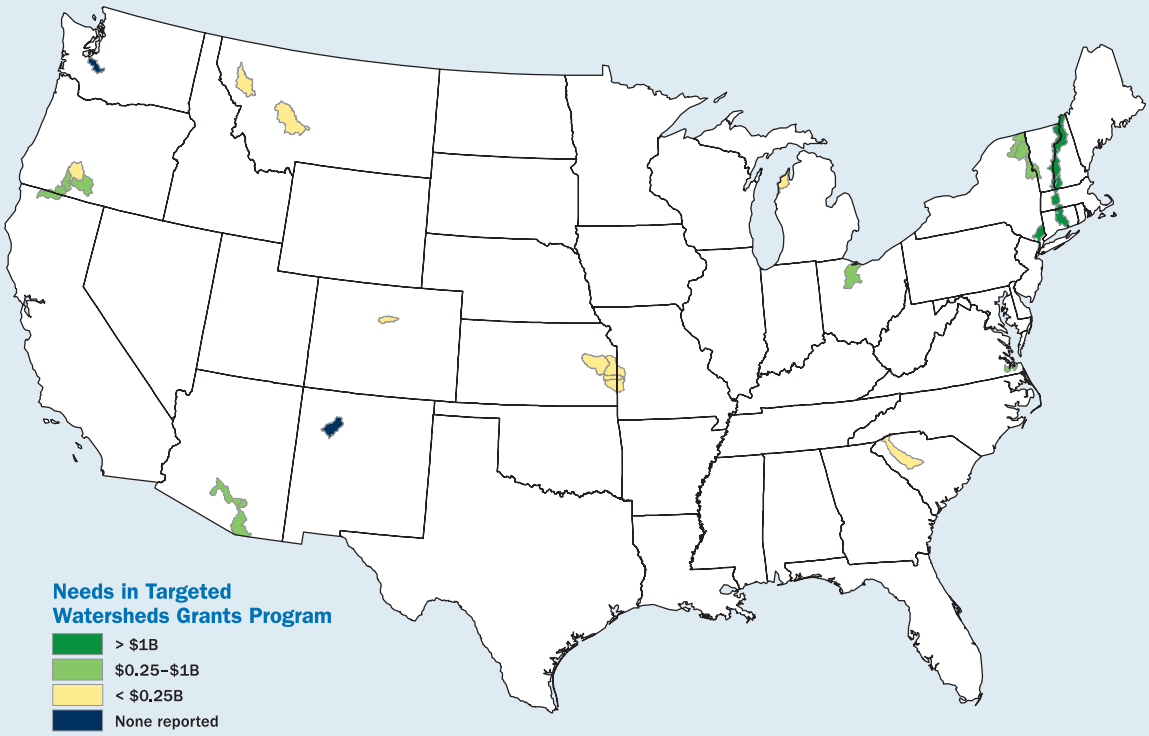


Figure 9. Geographic distribution of the total documented needs by targeted 8-digit watershed (January 2008 dollars in billions).

Table 3. Total documented needs for projects within the Targeted Watershed Grants Program during 2007 and 2008 (January 2008 dollars in billions)

Needs Category		Total Needs	
		$B	Percent
Publicly Owned Wastewater Treatment and Conveyance Systems and Stormwater Management Programs			
I	Secondary wastewater treatment	1.2	11%
II	Advanced wastewater treatment	1.2	11%
III-A	Infiltration/inflow correction	0.5	5%
III-B	Sewer replacement/rehabilitation	1.3	11%
IV-A	New collector sewers	0.4	4%
IV-B	New interceptor sewers	0.5	5%
V	Combined sewer overflow correction	5.1	46%
VI	Stormwater management programs	0.3	3%
X	Recycled water distribution	–	–
XII	Decentralized wastewater treatment systems	0.1	1%
	Total Categories I–VI, X, and XII	10.3	94%
Nonpoint Source Pollution Control			
VII-A	Agriculture (cropland)	<0.1	0.1%
VII-B	Agriculture (animals)	<0.1	0.1%
VII-C	Silviculture	<0.1	0.3%
VII-E	Ground water protection	<0.1	0.4%
VII-F	Marinas	0	0%
VII-G	Resource extraction	0	0%
VII-H	Brownfields	0.2	2%
VII-I	Storage tanks	<0.1	0.2%
VII-J	Sanitary landfills	<0.1	0.3%
VII-K	Hydromodification	<0.1	0.4%
VII-M	Other estuary management activities	–	–
	Total Category VII	0.4	4%
	Grand Total	11.0	

Notes:

- Costs for operation and maintenance are not included.
- For the 2008 CWNS, Urban Water (Category VII-D) is reported under Stormwater Management (Category VI), Decentralized Sewage Treatment was reported under Decentralized Wastewater Treatment Systems (Category XII); and a new subcategory, Green Infrastructure (VI-C) was added to Wastewater Management (Category VI).
- Needs estimates presented in this table might vary slightly from those presented elsewhere because of rounding.

Table 4. Total documented needs reported by targeted 8-digit watershed (January 2008 dollars in billions)

Watershed	Total Needs	Watershed	Total Needs
Betsie River, Platte (MI)	<0.1	Mission Creek (MT)	<0.1
Clear Creek (CO)	<0.1	Nisqually River (WA)	
Connecticut River (CO)	3.5	Saluda–Reedy Rivers (SC)	<0.1
Elizabeth River (VA)	0.5	Santa Cruz River (AZ, Mexico)	0.8
Honey Creek (OH)	0.3	Saw Mill River (NY)	5.3
Lake Champlain (NY,VT)	0.4	Torreon Wash (NM)	
Lake Helena (MT)	<0.1	Upper Klamath (OR)	<0.1
Marais des Cygnes Basin (KS,MO)	<0.1		

Table 5. CWNS 2008 total needs within the Targeted Watersheds Grant Program (January 2008 dollars in millions)

		Category of Need												
Targeted Watersheds	State(s)	Total	I	II	III-A	III-B	IV-A	IV-B	V	Total VI	Total VII	X	XII	Total I-V
Betsie River, Platte	MI	33	1				1			2	29			2
Clear Creek	CO	30	7	3		3	5			12	0			18
Connecticut River	CO	3,498	390	550	467	316	71	49	1,509	6	84		56	3,352
Elizabeth River	VA	526	11		24	412	64	15						526
Honey Creek	OH	259	5	1	3	1	19	11	160				59	200
Lake Champlain	NY, VT	357	35	29	11	15	70	9	81	43	57		7	250
Lake Helena	MT	25	9		3	3	4	4		2				23
Marais des Cygnes Basin	KS, MO	27	5	10	1	0	3	6			1		1	25
Mission Creek	MT	10	6	1	2	1								10
Nisqually River	WA													
Saluda-Reedy Rivers	SC	31	13	13		2	2	1						31
Santa Cruz River	AZ, Mexico	832	54	283		57	49	380			9			823
Saw Mill River	NY	5,305	647	282	23	441	135	45	3,321	224	185		2	4,894
Torreon Wash	NM													
Upper Klamath	OR	19									19			
	Total	10,952	1,183	1,172	534	1,251	423	520	5,071	289	384		125	10,154

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Secondary wastewater treatment (I)
Advanced wastewater treatment (II)
Infiltration/inflow correction (III-A)
Sewer replacement/rehabilitation (III-B)
Collector sewers (IV-A)
Interceptor sewers (IV-B)
Combined sewer overflow correction (V)
Stormwater management (VI)
Nonpoint source pollution control (VII)
Recycled water distribution (X)
Decentralized wastewater treatment systems (XII)

Table 6. CWNS 2008 nonpoint source needs within the Targeted Watersheds Grant Program (January 2008 dollars in millions)

		Category of Need											
Estuary Program	State(s)	VII-A	VII-B	VII-C	VII-E	VII-F	VII-G	VII-H	VII-I	VII-J	VII-K	VII-M	Total VII
Betsie River, Platte	MI	2	2						14		10		28
Clear Creek	CO						0						0
Connecticut River	CO				7	0		69		1	7		84
Elizabeth River	VA												
Honey Creek	OH												
Lake Champlain	NY, VT	1	4	31	9					5	7		57
Lake Helena	MT												
Marais des Cygnes Basin	KS, MO	1											1
Mission Creek	MT												
Nisqually River	WA												
Saluda-Reedy Rivers	SC												
Santa Cruz River	AZ, Mexico		0					2	4	3			9
Saw Mill River	NY	7			24			123		28	3		185
Torreon Wash	NM												
Upper Klamath	OR										19		19
	Total	11	6	31	40	0	0	194	18	37	46	0	383

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Agriculture (cropland) (VII-A)
Agriculture (animals) (VII-B)
Silviculture (VII-C)
Ground water protection (VII-E)
Marinas (VII-F)
Resource extraction (VII-G
Brownfields (VII-H)
Storage tanks (VII-I)
Sanitary landfills (VII-J)
Hydromodification (VII-K)
Other estuary management activities (VII-M)

Needs Related to EPA's National Estuary Program

Highlights

Total needs: $94.6 billion

Percentage of total CWNS 2008 needs: 27 percent

Changes in needs from 2004: Increased by $17.3 billion (22 percent)

Categories with the largest percent increases since 2004: Advanced Wastewater Treatment (Category II) ($5.6 billion; 78 percent); Secondary Wastewater Treatment (Category I) ($13.2 billion; 56 percent); and Sewer Replacement/Rehabilitation (Category III-B) ($3.3 billion; 45 percent)

Tables & Maps: Table 7 shows the total documented needs for facilities in the 28 designated National Estuary Programs (NEPs); Figure 10 and Table 8 present the geographic distribution of the total documented needs by estuary; Table 9 and Table 10 present the total documented needs for all categories and NEPs

Discussion

As shown in Table 7, the total documented needs for facilities in the 28 designated NEPs as of January 1, 2008, are $94.6 billion, or 27 percent of the National need. (Note that the Chesapeake Bay is not designated under the National Estuary Program, and therefore its needs are not included here.) The land area related to these estuaries is 4 percent of the total land area of the Nation.

Figure 10 and Table 8 present the geographic distribution of the total documented needs by NEP. The largest total needs occur in the New York–New Jersey Harbor Estuary, which has $40.9 billion in needs. The San Francisco Estuary and the Long Island Sound have $10.7 billion and $4.8 billion in total needs, respectively. Ten other estuaries (Tampa Bay, Galveston Bay, Albemarle–Pamlico Sounds, Indian River Lagoon, Lower Columbia River Estuary, Massachusetts Bays, Charlotte Harbor, Puget Sound, Delaware Estuary, and Santa Monica Bay) have between $1.5 billion and $7.6 billion in needs. The remaining 14 estuaries account for $5.9 billion in needs. Table 9 and Table 10 present the total documented needs for all categories and NEPs.

The National Estuary Program

Estuaries and the land surrounding them are places of transition from land to sea and from fresh water to salt water. Although influenced by the tides, estuaries are protected from the full force of ocean waves, winds and storms by the reefs, barrier islands or fingers of land, mud or sand that define an estuary's seaward boundary. The tidal, sheltered waters of estuaries support unique communities of plants and animals that are specially adapted for life at the margin of the sea. Estuarine environments are among the most productive on earth, creating more organic matter each year than comparably sized areas of forest, grassland, or agricultural land. Many different habitat types are present in and around estuaries. They include shallow open waters, freshwater and salt marshes, sandy beaches, mud and sand flats, rocky shores, oyster reefs, mangrove forests, river deltas, tidal pools, sea grass and kelp beds, and wooded swamps. The mission of EPA's National Estuary Program (NEP) is to restore and protect America's nationally significant estuaries.

Congress established the NEP in 1987 to improve the quality of estuaries of National importance through the protection of public water supplies and the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife. The program promotes recreational activities, in and on the water, and utilizes additional control of point and nonpoint sources of pollution beyond existing pollution controls. Each designated estuary program establishes a Comprehensive Conservation and Management Plan (CCMP) and convenes a management conference to develop a plan for coordinating the implementation of the CCMP among Federal, State, and local agencies. The goal of the CCMP is to institutionalize the recommendations made in the plan by identifying the "implementers" and providing a framework for coordinating their efforts. The implementers may include existing agencies and organizations or new entities, as recommended in the CCMP.

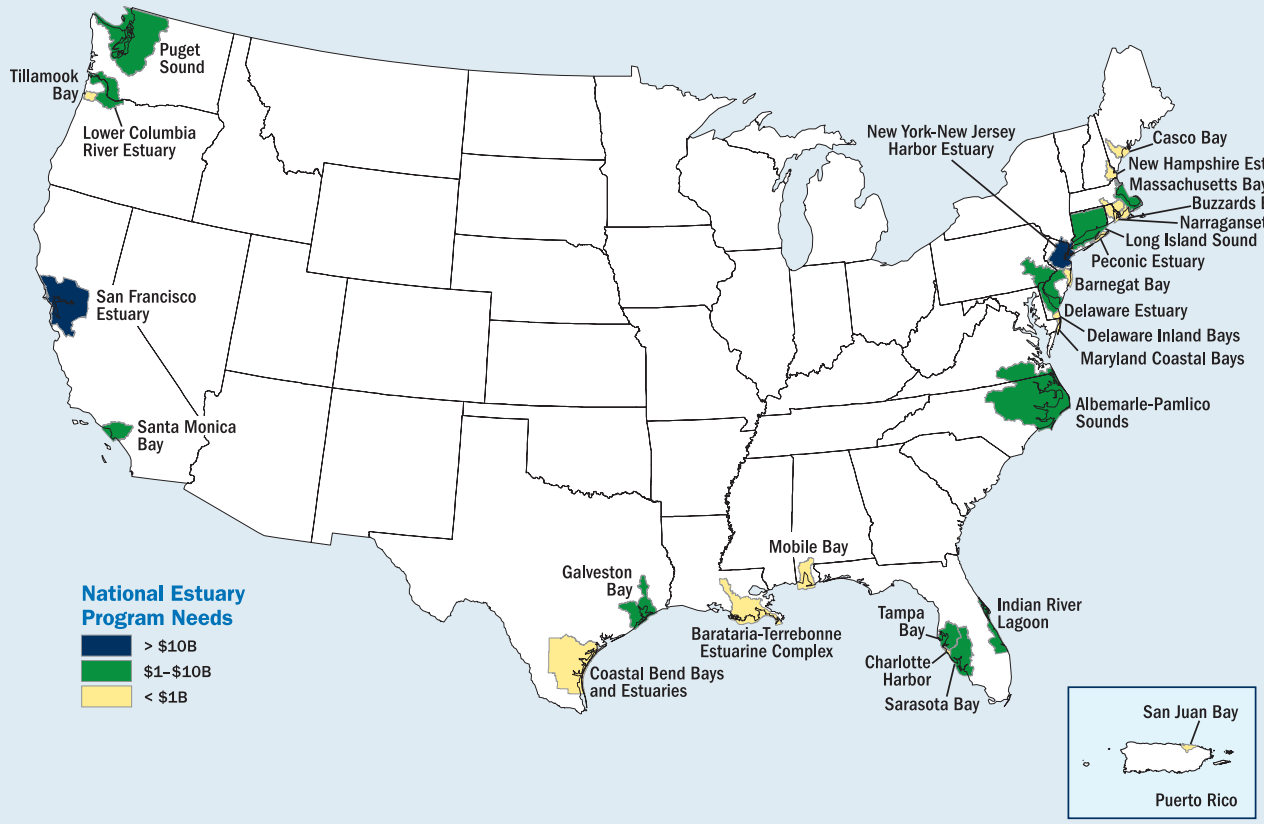


Figure 10. Geographic distribution of the total documented needs by National Estuary Program (January 2008 dollars in billions).

Table 7. Total documented needs reported within National Estuary Program boundaries (January 2008 dollars in billions)

Needs Category		Total Needs	
		$B	Percent
Publicly Owned Wastewater Treatment and Conveyance Systems and Stormwater Management Programs			
I	Secondary wastewater treatment	27.7	29%
II	Advanced wastewater treatment	12.0	13%
III-A	Infiltration/inflow correction	1.3	1%
III-B	Sewer replacement/rehabilitation	8.7	9%
IV-A	New collector sewers	4.4	5%
IV-B	New interceptor sewers	3.5	4%
V	Combined sewer overflow correction	19.0	20%
VI	Stormwater management programs	4.7	5%
X	Recycled water distribution	1.8	2%
XII	Decentralized wastewater treatment systems	5.8	6%
	Total Categories I–VI, X, and XII	**88.9**	**94%**
Nonpoint Source Pollution Control			
VII-A	Agriculture (cropland)	0.1	0%
VII-B	Agriculture (animals)	<0.1	0%
VII-C	Silviculture	–	–
VII-E	Ground water protection	0.9	0.9%
VII-F	Marinas	<0.1	0%
VII-G	Resource extraction	<0.1	0%
VII-H	Brownfields	1.3	1%
VII-I	Storage tanks	<0.1	0%
VII-J	Sanitary landfills	0.7	0.7%
VII-K	Hydromodification	2.6	3%
VII-M	Other estuary management activities	0.1	0%
	Total Category VII	**5.7**	**6%**
	Grand Total	**94.6**	

Notes:

- Costs for operation and maintenance are not included.
- For the 2008 CWNS, Urban Water (Category VII-D) is reported under Stormwater Management (Category VI), Decentralized Sewage Treatment was reported under Decentralized Wastewater Treatment Systems (Category XII); and a new subcategory, Green Infrastructure (VI-C) was added to Wastewater Management (Category VI).
- Needs estimates presented in this table might vary slightly from those presented elsewhere because of rounding.

Table 8. Total documented needs reported by designated estuaries under the National Estuary Program (January 2008 dollars in billions)

Estuary	Total Needs	Estuary	Total Needs
Albemarle–Pamlico Sounds (VA, NC)	2.1	Massachusetts Bays (MA)	2.9
Barataria–Terrebonne Estuarine Complex (LA)	0.4	Mobile Bay (AL)	0.4
Barnegat Bay (NJ)	0.4	Narragansett Bay (MA, RI)	0.8
Buzzards Bay (MA)	0.5	New Hampshire Estuaries (NH)	0.3
Casco Bay (ME)	0.5	New York–New Jersey Harbor Estuary (NJ, NY)	40.9
Charlotte Harbor (FL)	2.8	Peconic Estuary (NY)	0.4
Coastal Bend Bays and Estuaries (TX)	0.4	Puget Sound (WA)	4.2
Delaware Estuary (DE, MD, NJ, PA)	5.4	San Francisco Estuary (CA)	10.7
Delaware Inland Bays (DE)	0.1	San Juan Bay (PR)	0.2
Galveston Bay (TX)	1.7	Santa Monica Bay (CA)	7.6
Indian River Lagoon (FL)	2.2	Sarasota Bay (FL)	0.9
Long Island Sound (CT, NY)	4.8	Tampa Bay (FL)	1.5
Lower Columbia River Estuary (OR, WA)	2.3	Tillamook Bay (OR)	<0.1
Maryland Coastal Bays (MD)	<0.1		

Table 9. CWNS 2008 total needs within the National Estuary Program (January 2008 dollars in millions)

		Category of Need												
Estuary Program	State(s)	Total	I	II	III-A	III-B	IV-A	IV-B	V	Total VI	Total VII	X	XII	Total I-V
Albemarle-Pamlico Sounds	VA, NC	2,111	51	418	156	301	333	739		27	24	62	0	1,998
Barataria-Terrebonne Estuarine Complex	LA	357	336	1		9	8	1			2			355
Barnegat Bay	NJ	448	45	16	14	46	62	1		0	18	11	235	184
Buzzards Bay	MA	484	90	3			322		58				11	473
Casco Bay	ME	474	68		0	4	73		91	2	2		234	236
Charlotte Harbor	FL	2,849		364	7	30	29	44		136	60	46	2,133	474
Coastal Bend Bays & Estuaries	TX	368	105	43	55	42	24	64			33	2		333
Delaware Estuary	DE, MD, NJ, PA	5,376	350	124	61	284	216	60	3,063	4	674	33	507	4,158
Delaware Inland Bays	DE	123	4	52		12	54	1						123
Galveston Bay	TX	1,671	337	261	22	366	315	277		16	12	65		1,578
Indian River Lagoon	FL	2,213		317		27	9	11		501	748	40	560	364
Long Island Sound	CT, NY	4,775	734	568	549	53	160	235	1,528	5	655		288	3,827
Lower Columbia River Estuary	OR, WA	2,340	865	286	5	255	268	147	427	87	0			2,253
Maryland Coastal Bays	MD	43	23	6		2	9			0	3			40
Massachusetts Bays	MA	2,869	156	703	3	188	258		1,331	3	19	0	208	2,639
Mobile Bay	AL	362	71	52	12	126	86	15						362
Morro Bay	CA													
Narragansett Bay	MA, RI	833	90	390	11	15	234		36	0			57	776
New Hampshire Estuaries	NH	264	111	30	8	25	2	15	50	23				241

Table 9. CWNS 2008 total needs within the National Estuary Program (January 2008 dollars in millions) *(continued)*

		Category of Need												
Estuary Program	State(s)	Total	I	II	III-A	III-B	IV-A	IV-B	V	Total VI	Total VII	X	XII	Total I-V
New York-New Jersey Harbor Estuary	NJ, NY	40,928	14,983	5,140	231	3,682	581	170	11,570	895	2,976	21	679	36,357
Peconic Estuary	NY	423	5	2		0		1		10	405			8
Puget Sound	WA	4,238	1,354	352	81	617	727	98	560	323		126		3,789
San Francisco Estuary	CA	10,707	4,628	1,756		1,901	294	646	233	10		1,239		9,458
San Juan Bay	PR	231	16		48		77	90						231
Santa Monica Bay	CA	7,585	3,260	611		336		791		2,579		8		4,998
Sarasota Bay	FL	860		64	17	97	223	2		53		6	398	403
Tampa Bay	FL	1,530		457	18	264	15	84		54	26	153	459	838
Tillamook Bay	OR	24	24								0			24
	Total	**94,486**	**27,706**	**12,016**	**1,298**	**8,682**	**4,379**	**3,492**	**18,947**	**4,728**	**5,657**	**1,812**	**5,769**	**76,520**

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Secondary wastewater treatment (I)
Advanced wastewater treatment (II)
Infiltration/inflow correction (III-A)
Sewer replacement/rehabilitation (III-B)
Collector sewers (IV-A)
Interceptor sewers (IV-B)
Combined sewer overflow correction (V)
Stormwater management (VI)
Nonpoint source pollution control (VII)
Recycled water distribution (X)
Decentralized wastewater treatment systems (XII)

Table 10. CWNS 2008 nonpoint source needs within the National Estuary Program (January 2008 dollars in millions)

		Category of Need											
Estuary Program	State(s)	VII-A	VII-B	VII-C	VII-E	VII-F	VII-G	VII-H	VII-I	VII-J	VII-K	VII-M	Total VII
Albemarle-Pamlico Sounds	VA, NC		0			0					24		24
Barataria-Terrebonne Estuarine Complex	LA										2		2
Barnegat Bay	NJ	1			5	0		2		3	3	4	18
Buzzards Bay	MA												
Casco Bay	ME		2										2
Charlotte Harbor	FL										60		60
Coastal Bend Bays & Estuaries	TX										1	32	33
Delaware Estuary	DE, MD, NJ, PA	33	3		85		32	268	0	231	21		673
Delaware Inland Bays	DE												
Galveston Bay	TX				1						4	8	13
Indian River Lagoon	FL	20									728		748
Long Island Sound	CT, NY				100	2		356		177	20		655
Lower Columbia River Estuary	OR, WA		0								0		0
Maryland Coastal Bays MD	MD									3			3
Massachusetts Bays	MA											19	19
Mobile Bay	AL												
Morro Bay	CA												
Narragansett Bay	MA, RI												
New Hampshire Estuaries	NH												

Table 10. CWNS 2008 nonpoint source needs within the National Estuary Program (January 2008 dollars in millions) *(continued)*

		Category of Need											
Estuary Program	State(s)	VII-A	VII-B	VII-C	VII-E	VII-F	VII-G	VII-H	VII-I	VII-J	VII-K	VII-M	Total VII
New York-New Jersey Harbor Estuary	NJ, NY	22	0		333		0	651	3	302	1,662	2	2,975
Peconic Estuary	NY	0			330				1	13	60	1	405
Puget Sound	WA												
San Francisco Estuary	CA												
San Juan Bay	PR												
Santa Monica Bay	CA												
Sarasota Bay	FL												
Tampa Bay	FL										18	8	26
Tillamook Bay	OR											0	0
	Total	76	5		854	2	32	1,277	4	729	2,603	74	5,656

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Agriculture (cropland) (VII-A)
Agriculture (animals) (VII-B)
Silviculture (VII-C)
Ground water protection (VII-E)
Marinas (VII-F)
Resource extraction (VII-G
Brownfields (VII-H)
Storage tanks (VII-I)
Sanitary landfills (VII-J)
Hydromodification (VII-K)
Other estuary management activities (VII-M)

Needs Related to the Gulf of Mexico Drainage Basin

Highlights

Total needs: $106.6 billion

Percentage of total CWNS 2008 needs: 31 percent

Changes in needs from 2004: Increased by $7.5 billion (8 percent)

Categories with the largest percent increases since 2004: Advanced Wastewater Treatment (Category II) ($2.5 billion; 38 percent); Sewer Replacement/Rehabilitation (Category III-B) ($3.4 billion; 37 percent); Secondary Wastewater Treatment (Category I) ($4.0 billion; 33 percent); and Stormwater Management (Category VI) ($1.7 billion; 33 percent)

Tables & Maps: Figure 11 and Table 11 show the total documented needs for facilities in the Gulf of Mexico Drainage Basin; Table 12 and Table 13 show the total documented needs by watershed and by State; Table 14 and Table 15 present the total documented needs for all major river basins, by category, within the Gulf of Mexico Drainage Basin

Discussion

The total documented needs for facilities in the Gulf of Mexico Drainage Basin as of January 1, 2008, are $106.6 billion, or 31 percent of the National need (Figure 11 and Table 11). The land area related to these needs is 56 percent of the total land area of the Nation.

Gulf of Mexico Drainage Basin

The Gulf of Mexico Drainage Basin is the largest watershed in the United States, encompassing all or part of 33 States. A hypoxic zone (oxygen deficiency) forms annually on the Gulf of Mexico's Texas–Louisiana continental shelf and is virtually devoid of marine life. It is a result of excess nutrients delivered from the Mississippi River in combination with seasonal layering of Gulf waters. These nutrients are from a many sources in the watershed including: fertilizers applied to agricultural fields, golf courses, and suburban lawns; deposition of nitrogen from the atmosphere; erosion of soil containing nutrients; and sewage treatment plant discharges. The hypoxia in the Mississippi River Basin has been growing significantly over the years and is now estimated to encompass about 7,000 square miles, twice the size it was in 1993.

EPA formed the Gulf of Mexico Program in 1988 as a nonregulatory, inclusive partnership to provide a broad geographic focus on the major environmental issues in the Gulf. It has identified six priorities for action: water quality for healthy beaches and shellfish beds, habitat conservation and restoration, ecosystems integration and assessment, nutrient reduction and nutrient impacts, coastal community resiliency, and environmental education.

Table 12 and Table 13 show the total documented needs by watershed and by State, respectively. The largest total needs occur in the Upper Mississippi River Basin and the Ohio River Basin, with $31.8 billion and $25.8 billion in needs, respectively. The Texas–Gulf, the Missouri River Basin, and the South Atlantic–Gulf Basin, have total needs ranging from $10.7 billion to $14.0 billion. These five river basins account for 88 percent of the total needs in the Gulf of Mexico drainage basin. Table 14 and Table 15 present the total documented needs for all major river basins, by category, within the Gulf of Mexico Drainage Basin.

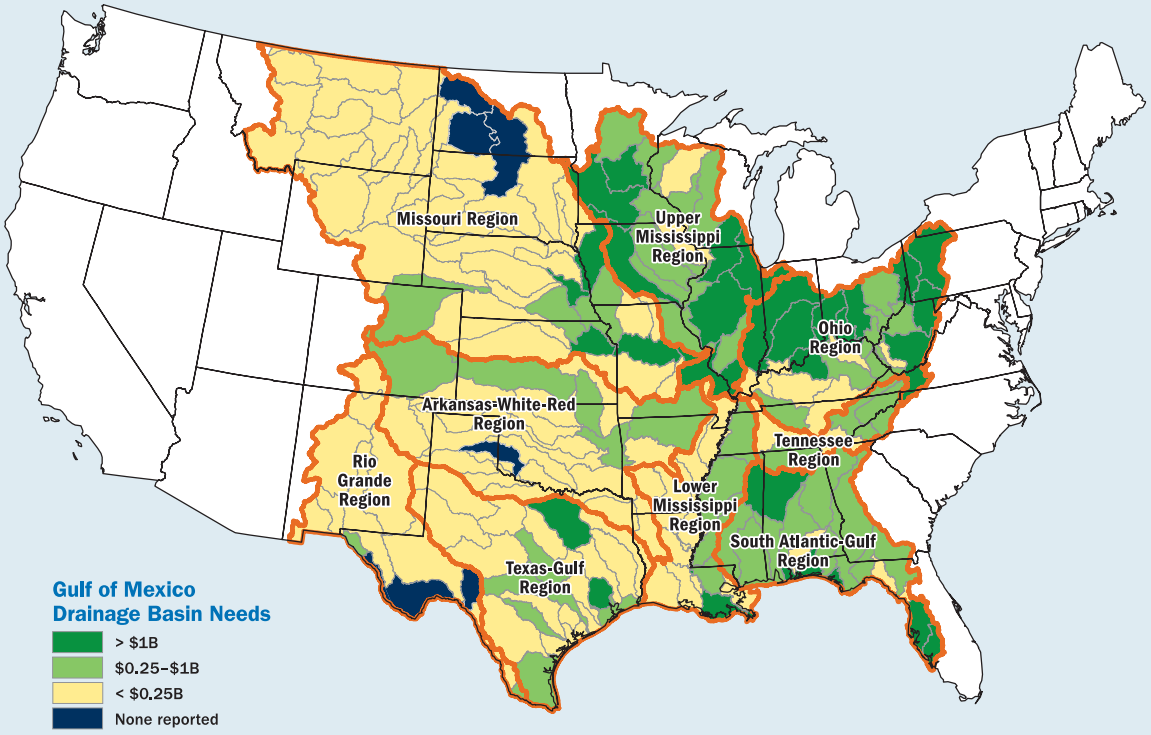


Figure 11. Gulf of Mexico drainage basin needs (January 2008 dollars in billions).

Table 11. Total documented needs reported within the Gulf of Mexico drainage basin (January 2008 dollars in billions)

Needs Category		Total Needs	
		$B	Percent
Publicly Owned Wastewater Treatment and Conveyance Systems and Stormwater Management Programs			
I	Secondary wastewater treatment	16.2	15%
II	Advanced wastewater treatment	9.0	8%
III-A	Infiltration/inflow correction	5.0	5%
III-B	Sewer replacement/rehabilitation	12.6	12%
IV-A	New collector sewers	6.6	6%
IV-B	New interceptor sewers	8.5	8%
V	Combined sewer overflow correction	27.1	25%
VI	Stormwater management programs	7.1	6%
X	Recycled water distribution	0.7	1%
XII	Decentralized wastewater treatment systems	7.0	7%
	Total Categories I–VI, X, and XII	**99.8**	**93%**
Nonpoint Source Pollution Control			
VII-A	Agriculture (cropland)	0.2	0.3%
VII-B	Agriculture (animals)	0.7	1%
VII-C	Silviculture	<0.1	0%
VII-E	Ground water protection	1.4	1%
VII-F	Marinas	<0.1	0%
VII-G	Resource extraction	0.2	0.3%
VII-H	Brownfields	0.6	1%
VII-I	Storage tanks	<0.1	0%
VII-J	Sanitary landfills	0.2	0.2%
VII-K	Hydromodification	3.3	3%
VII-M	Other estuary management activities	0.1	0%
	Total Category VII	**6.8**	**7%**
	Grand Total	**106.6**	

Notes:

- Costs for operation and maintenance are not included.
- For the 2008 CWNS, Urban Water (Category VII-D) is reported under Stormwater Management (Category VI), Decentralized Sewage Treatment was reported under Decentralized Wastewater Treatment Systems (Category XII); and a new subcategory, Green Infrastructure (VI-C) was added to Wastewater Management (Category VI).
- Needs estimates presented in this table might vary slightly from those presented elsewhere because of rounding.

Table 12. Total documented needs reported by watershed within the Gulf of Mexico drainage basin (January 2008 dollars in billions)

Watershed	Total Needs	Watershed	Total Needs
Arkansas-White-Red Rivers	3.7	South Atlantic-Gulf	14.0
Lower Mississippi River	6.4	Tennessee River	2.0
Missouri River	11.4	Texas-Gulf	10.7
Ohio River	25.8	Upper Mississippi River	31.8
Rio Grande	1.0		

Table 13. Total documented needs reported by State within the Gulf of Mexico drainage basin (January 2008 dollars in billions).

State	Total Needs	State	Total Needs
Alabama	4.4	North Carolina	0.3
Arkansas	0.9	North Dakota	–
Colorado	1.1	Nebraska	4.6
Florida	8.1	New Mexico	0.1
Georgia	0.1	New York	0.1
Iowa	3.7	Ohio	9.7
Illinois	17.3	Oklahoma	1.3
Indiana	6.1	Pennsylvania	4.4
Kansas	3.2	South Dakota	0.1
Kentucky	2.1	Tennessee	1.4
Louisiana	4.9	Texas	11.7
Maryland	<0.1	Virginia	0.5
Minnesota	5.1	Wisconsin	1.8
Missouri	6.5	West Virginia	3.3
Mississippi	3.3	Wyoming	0.3
Montana	0.4		

Table 14. CWNS 2008 total needs within the Gulf of Mexico drainage area (January 2008 dollars in millions)

	Category of Need												
Watershed Name	Total	I	II	III-A	III-B	IV-A	IV-B	V	Total VI	Total VII	X	XII	Total I-V
Arkansas-White-Red Rivers	3,712	706	618	95	675	295	456		339	413	4	111	2,845
Lower Mississippi River	6,418	1,367	205	1,154	918	493	240		246	1,716	22	57	4,377
Missouri River	11,391	2,258	1,332	842	822	206	1,451	2,191	439	1,739	6	105	9,102
Ohio River	25,772	2,214	726	1,001	3,149	2,362	1,745	11,787	995	226	8	1,559	22,984
Rio Grande	951	246	181	4	110	166	198	1	20	24	1		906
South Atlantic-Gulf	13,952	633	2,372	353	2,193	1,164	904	1	503	1,155	390	4,284	7,620
Tennessee River	1,996	506	136	202	347	485	237	1	18	60		4	1,914
Texas-Gulf	10,716	2,289	1,148	320	1,197	655	1,527		3,126	149	305		7,136
Upper Mississippi River	31,767	5,985	2,290	1,042	3,226	770	1,766	13,089	1,394	1,293		912	28,168
Total	**106,675**	**16,204**	**9,008**	**5,013**	**12,637**	**6,596**	**8,524**	**27,070**	**7,080**	**6,775**	**736**	**7,032**	**85,052**

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Secondary wastewater treatment (I)
Advanced wastewater treatment (II)
Infiltration/inflow correction (III-A)
Sewer replacement/rehabilitation (III-B)
Collector sewers (IV-A)
Interceptor sewers (IV-B)
Combined sewer overflow correction (V)
Stormwater management (VI)
Nonpoint source pollution control (VII)
Recycled water distribution (X)
Decentralized wastewater treatment systems (XII)

Table 15. CWNS 2008 nonpoint source needs within the Gulf of Mexico drainage area (January 2008 dollars in millions)

	Category of Need											
Watershed Name	VII-A	VII-B	VII-C	VII-E	VII-F	VII-G	VII-H	VII-I	VII-J	VII-K	VII-M	Total VII
Arkansas-White-Red Rivers	18	373	0			19		1		1		412
Lower Mississippi River	66	83	13			8				1,545		1,715
Missouri River	37	28	0	1,355		1	1	9	130	178		1,739
Ohio River	15	3	0	1	1	153			6	45		224
Rio Grande				1		13			11			25
South Atlantic-Gulf	15	171	8	14	2		15			922	8	1,155
Tennessee River	0	4	0		1					55		60
Texas-Gulf	2			3		52		1	17	32	42	149
Upper Mississippi River	99	24	2				540	4	58	566		1,293
Total	**252**	**686**	**23**	**1,374**	**4**	**246**	**556**	**15**	**222**	**3,344**	**50**	**6,772**

Notes:
- Blank fields indicate “no data”.
- Zero indicates “<0.5”.

Categories:
Agriculture (cropland) (VII-A)
Agriculture (animals) (VII-B)
Silviculture (VII-C)
Ground water protection (VII-E)
Marinas (VII-F)
Resource extraction (VII-G
Brownfields (VII-H)
Storage tanks (VII-I)
Sanitary landfills (VII-J)
Hydromodification (VII-K)
Other estuary management activities (VII-M)

Needs Related to the Chesapeake Bay Drainage Basin

Highlights

Total needs: $32.1 billion

Percentage of total CWNS 2008 needs: 9 percent

Changes in needs from 2004: Increased by $8.0 billion (33 percent)

Categories with the largest percent increases since 2004: Stormwater Management (Category VI) ($9.4 billion; 1,988 percent); Secondary Wastewater Treatment (Category I) ($0.9 billion; 44 percent); and Combined Sewer Overflow Correction (Category V) ($1.0 billion; 27 percent)

Tables & Maps: Figure 12 and Table 16 show the total needs reported for facilities in the Chesapeake Bay Drainage Basin; Table 17 and Table 18 display the total documented needs by watershed and by State; Table 19 and Table 20 present the total documented needs for all categories and watersheds

Discussion

The total reported for facilities in the Chesapeake Bay Drainage Basin as of January 1, 2008, are $32.1 billion, or 9 percent of the National need (Figure 12 and Table 16). The land area related to these needs is 2 percent of the total land area of the Nation.

Table 17 and Table 18 display the total documented needs by watershed and by State, respectively. The largest total needs occur in the Potomac watershed, which has $10.8 billion in needs. The James, Upper Susquehanna, Lower Susquehanna, and Upper Chesapeake watersheds have needs ranging from $2.5 billion to $8.6 billion. Approximately 9 percent of the needs are in the remaining watersheds. Table 19 and Table 20 present the total documented needs for all categories and watersheds.

Chesapeake Bay Drainage Basin

The Chesapeake Bay Program is the unique regional partnership that has been facilitating the restoration of the Chesapeake Bay since the signing of the historic Chesapeake Bay Agreement of 1983 and the Chesapeake 2000 Agreement. A primary goal of the program is to reduce nitrogen, phosphorus and sediment loads to support living resources throughout the bay's ecosystem.

In May 2009, President Obama issued the ***Chesapeake Bay Protection and Restoration Executive Order*** declaring the Chesapeake Bay a "national treasure". The executive order calls for a "renewed commitment" to restoring, protecting, and improving the bay as well as its resources.

As a result, the Federal Leadership Committee (Committee) was established to develop and oversee the implementation of restoration strategies and programs for the bay. The Committee, chaired by the EPA, involves the collaboration of several Federal Agencies including, but not limited to, the Department of Agriculture, the Department of Commerce, and the Department of Transportation. Working together, the Committee is developing actionable plans to protect and sustain the Chesapeake Bay.

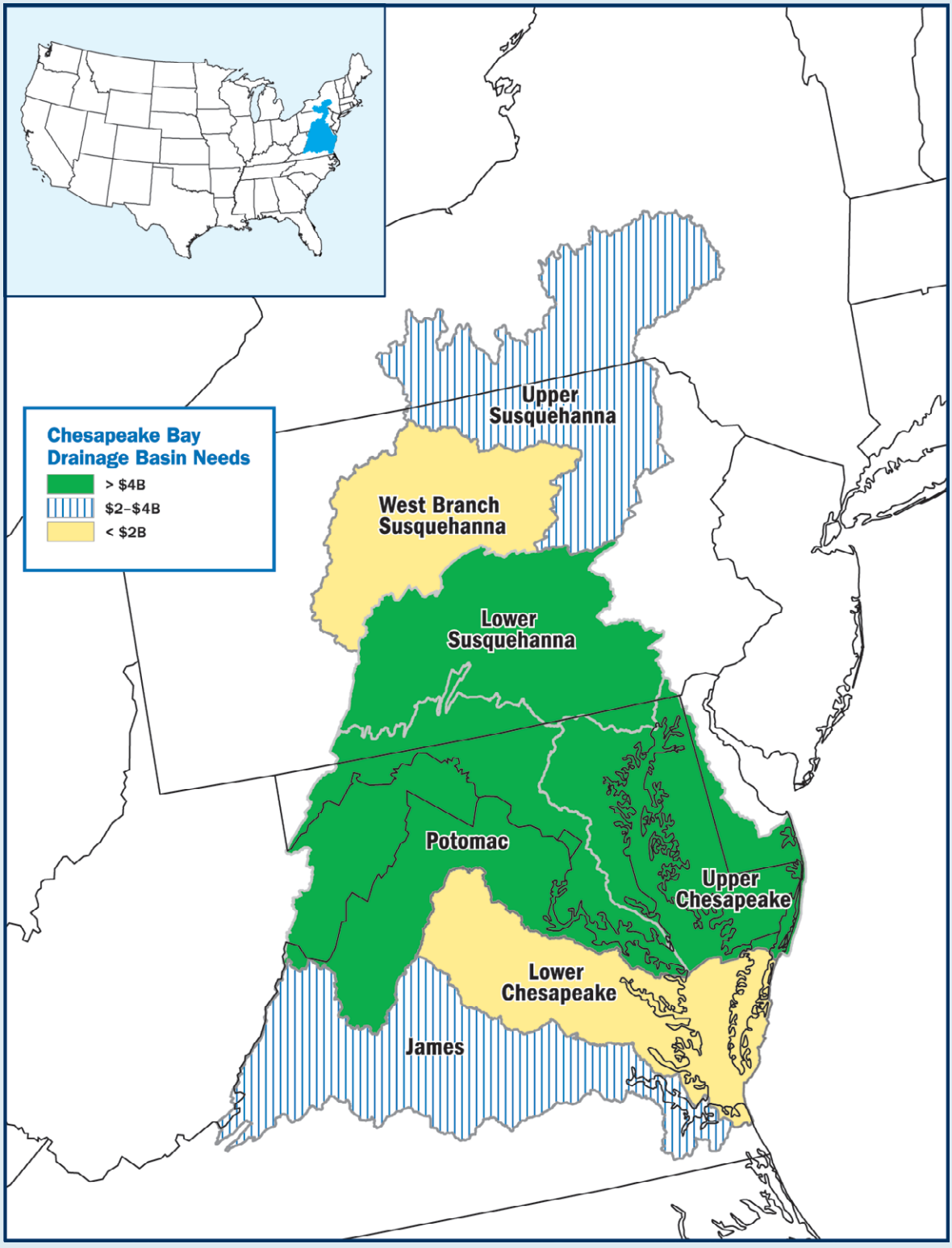


Figure 12. Chesapeake Bay drainage basin needs (January 2008 dollars in billions)

Table 16. Total documented needs reported within the Chesapeake Bay drainage basin (January 2008 dollars in billions)

Needs Category		Total Needs	
		$B	Percent
Publicly Owned Wastewater Treatment and Conveyance Systems and Stormwater Management Programs			
I	Secondary wastewater treatment	2.9	9%
II	Advanced wastewater treatment	4.5	14%
III-A	Infiltration/inflow correction	0.4	1%
III-B	Sewer replacement/rehabilitation	2.3	7%
IV-A	New collector sewers	1.0	3%
IV-B	New interceptor sewers	0.7	2%
V	Combined sewer overflow correction	4.8	15%
VI	Stormwater management programs	9.9	30%
X	Recycled water distribution	<0.1	0%
XII	Decentralized wastewater treatment systems	4.9	15%
	Total Categories I–VI, X, and XII	**31.4**	**96%**
Nonpoint Source Pollution Control			
VII-A	Agriculture (cropland)	0.1	0.3%
VII-B	Agriculture (animals)	0.2	1%
VII-C	Silviculture	–	–
VII-E	Ground water protection	<0.1	0%
VII-F	Marinas	<0.1	0%
VII-G	Resource extraction	0.2	0.4%
VII-H	Brownfields	–	–
VII-I	Storage tanks	<0.1	0%
VII-J	Sanitary landfills	0.02	0%
VII-K	Hydromodification	0.3	1%
VII-M	Other estuary management activities	–	–
	Total Category VII	**0.8**	**3%**
	Grand Total	**32.2**	

Notes:

- Costs for operation and maintenance are not included.
- For the 2008 CWNS, Urban Water (Category VII-D) is reported under Stormwater Management (Category VI), Decentralized Sewage Treatment was reported under Decentralized Wastewater Treatment Systems (Category XII); and a new subcategory, Green Infrastructure (VI-C) was added to Wastewater Management (Category VI).
- Needs estimates presented in this table might vary slightly from those presented elsewhere because of rounding.

Table 17. Total documented needs reported by watershed within the Chesapeake Bay drainage basin (January 2008 dollars in billions)

Watershed	Total Needs	Watershed	Total Needs
James	2.5	Upper Chesapeake	8.6
Lower Chesapeake	1.1	Upper Susquehanna	2.9
Lower Susquehanna	4.2	West Branch Susquehanna	1.9
Potomac	10.8		

Table 18. Total documented needs reported by State within the Chesapeake Bay drainage basin (January 2008 dollars in billions)

State	Total Needs	State	Total Needs
District of Columbia	2.5	Pennsylvania	9.0
Delaware	<0.1	Virginia	5.9
Maryland	13.7	West Virginia	0.5
New York	0.4		

Table 19. CWNS 2008 total needs within the Chesapeake Bay drainage area (January 2008 dollars in millions

	Category of Need												
Watershed Name	Total	I	II	III-A	III-B	IV-A	IV-B	V	Total VI	Total VII	X	XII	Total I-V
James	2,514	215	593	51	728	219	103	605					2,514
Lower Chesapeake	1,137	325	360	91	193	105	63						1,137
Lower Susquehanna	4,213	90	204	3	93	192	20	912	2,649	50			1,514
Potomac	10,817	1,464	2,104	104	554	125	275	2,053	1,747	158		2,233	6,679
Upper Chesapeake	8,605	618	1,056	124	622	127	181	308	2,539	337	2	2,691	3,036
Upper Susquehanna	2,875	146	98	8	73	156	16	722	1,605	51		0	1,219
West Branch Susquehanna	1,905	25	49	5	37	90	10	238	1,298	153			454
Total	**32,066**	**2,883**	**4,464**	**386**	**2,300**	**1,014**	**668**	**4,838**	**9,838**	**749**	**2**	**4,924**	**16,553**

Notes:
- Blank fields indicate “no data”.
- Zero indicates “<0.5”.

Categories:
Secondary wastewater treatment (I)
Advanced wastewater treatment (II)
Infiltration/inflow correction (III-A)
Sewer replacement/rehabilitation (III-B)
Collector sewers (IV-A)
Interceptor sewers (IV-B)
Combined sewer overflow correction (V)
Stormwater management (VI)
Nonpoint source pollution control (VII)
Recycled water distribution (X)
Decentralized wastewater treatment systems (XII)

Table 20. CWNS 2008 nonpoint source needs within the Chesapeake Bay drainage area (January 2008 dollars in millions)

	Category of Need											
Watershed Name	VII-A	VII-B	VII-C	VII-E	VII-F	VII-G	VII-H	VII-I	VII-J	VII-K	VII-M	Total VII
James												
Lower Chesapeake												
Lower Susquehanna	14	6				16			1	14		51
Potomac	33	75				2		0	9	39		158
Upper Chesapeake	48	102			0				6	181		337
Upper Susquehanna	7	16		7		6		1		14		51
West Branch Susquehanna	5	7				122				18		152
Total	**107**	**206**		**7**	**0**	**146**		**1**	**16**	**266**		**749**

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Agriculture (cropland) (VII-A)
Agriculture (animals) (VII-B)
Silviculture (VII-C)
Ground water protection (VII-E)
Marinas (VII-F)
Resource extraction (VII-G)
Brownfields (VII-H)
Storage tanks (VII-I)
Sanitary landfills (VII-J)
Hydromodification (VII-K)
Other estuary management activities (VII-M)

Needs Related to the Great Lakes Drainage Basin

Highlights

Total needs: $23.5 billion

Percentage of total CWNS 2008 needs: 7 percent

Changes in needs from 2004: Decreased by $0.6 billion (2 percent)

Categories with the largest percent increases since 2004: Stormwater Management (Category VI) ($0.6 billion; 181 percent); Advanced Wastewater Treatment (Category II) ($0.2 billion; 48 percent); and Sewer Replacement/Rehabilitation (Category III-B) ($0.8 billion; 36 percent)

Tables & Maps: Figure 13 and Table 21 show the total needs reported for facilities in the Great Lakes Drainage Basin; Table 22 and Table 23 present the total documented needs by watershed and State; Table 24 and Table 25 present the total documented needs for all categories and watersheds

Discussion

The total reported for facilities in the Great Lakes Drainage Basin as of January 1, 2008, are $23.5 billion, or 7 percent of the National need (Figure 13 and Table 21). The land area related to these needs is 4 percent of the total land area of the Nation.

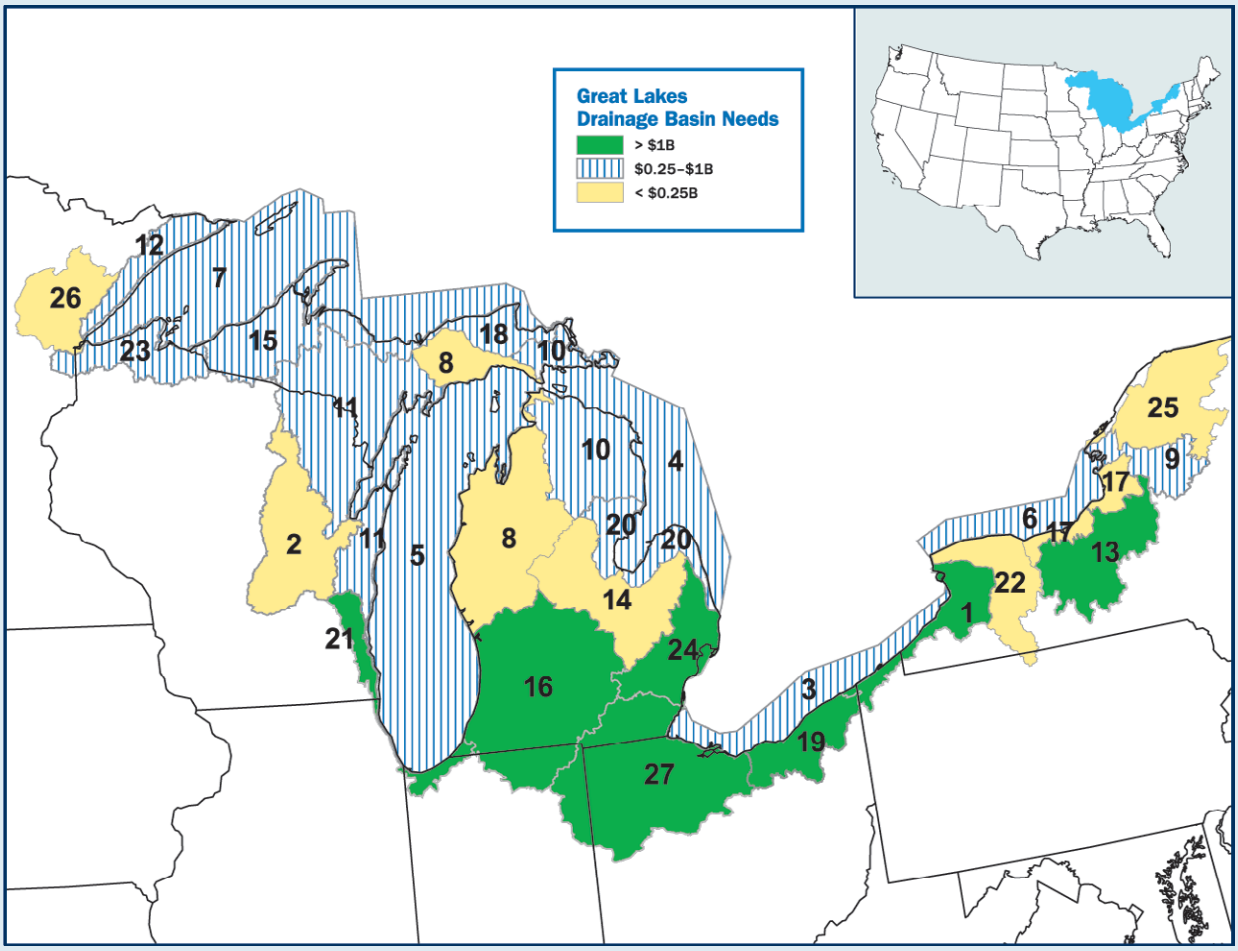
Table 22 and Table 23 present the total documented needs by watershed and State, respectively. Over half (56 percent) of the total needs occur in the St. Clair-Detroit, Southern Lake Erie and Southwestern Lake Michigan watersheds, which have needs of $4.1 billion to $4.9 billion, respectively. The Eastern Lake Erie, Southeastern Lake Michigan, and Western Lake Erie watersheds have needs ranging from $1.3 billion to $2.1 billion. The remaining 21 watersheds account for $9.0 billion (38 percent) of the total need in the Great Lakes Drainage Basin. Table 24 and Table 25 present the total documented needs for all categories and watersheds.

EPA's Great Lakes Program

The Great Lakes—Superior, Michigan, Huron, Erie and Ontario—make up the nation's largest fresh surface water ecosystem. The Great Lakes Interagency Task Force (IATF), chaired and coordinated by EPA, was created in May of 2004 under a presidential executive order to implement federal efforts to protect and restore the Great Lakes.

The IATF focuses on environmental outcomes like cleaner water and sustainable fisheries, and target measurable results. To date, the IATF has set the framework for a shared commitment to protecting and restoring the Great Lakes by establishing several strategies, initiatives, and implementation plans to sustain the lakes now and into the future (***http://www.glrc.us/***).

In 2009, President Barack Obama made restoring the Great Lakes a national priority when he signed the Great Lakes Restoration Funding Initiative into law. The initiative, which includes and unprecedented $475 million in funding, focuses on addressing the most significant problems in the region, including invasive aquatic species, non-point source pollution, and contaminated sediment.



Watersheds:

Eastern Lake Erie (1)
Fox (2)
Lake Erie (3)
Lake Huron (4)
Lake Michigan (5)
Lake Ontario (6)
Lake Superior (7)
Northeastern Lake Michigan (8)
Northeastern Lake Ontario (9)
Northwestern Lake Huron (10)
Northwestern Lake Michigan (11)
Northwestern Lake Superior (12)
Oswego (13)
Saginaw (14)
Southcentral Lake Superior (15)
Southeastern Lake Michigan (16)
Southeastern Lake Ontario (17)
Southeastern Lake Superior (18)
Southern Lake Erie (19)
Southwestern Lake Huron (20)
Southwestern Lake Michigan (21)
Southwestern Lake Ontario (22)
Southwestern Lake Superior (23)
St. Clair-Detroit (24)
St. Lawrence (25)
St. Louis (26)
Western Lake Erie (27)

Figure 13. Great Lakes drainage area needs (January 2008 dollars in billions).

Table 21. Total documented needs reported within the Great Lakes drainage basin (January 2008 dollars in billions)

Needs Category		Total Needs	
		$B	Percent
Publicly Owned Wastewater Treatment and Conveyance Systems and Stormwater Management Programs			
I	Secondary wastewater treatment	3.1	13%
II	Advanced wastewater treatment	0.7	3%
III-A	Infiltration/inflow correction	0.5	3%
III-B	Sewer replacement/rehabilitation	2.9	12%
IV-A	New collector sewers	0.7	3%
IV-B	New interceptor sewers	0.6	3%
V	Combined sewer overflow correction	9.4	40%
VI	Stormwater management programs	1.0	4%
X	Recycled water distribution	–	–
XII	Decentralized wastewater treatment systems	0.7	3%
	Total Categories I–VI, X, and XII	**19.7**	**83%**
Nonpoint Source Pollution Control			
VII-A	Agriculture (cropland)	0.1	0.4%
VII-B	Agriculture (animals)	<0.1	0.2%
VII-C	Silviculture	<0.1	0.3%
VII-E	Ground water protection	<0.1	0.2%
VII-F	Marinas	–	–
VII-G	Resource extraction	<0.1	0%
VII-H	Brownfields	<0.1	0.1%
VII-I	Storage tanks	3.0	13%
VII-J	Sanitary landfills	<0.1	0.2%
VII-K	Hydromodification	0.5	2%
VII-M	Other estuary management activities	–	–
	Total Category VII	**3.9**	**17%**
	Grand Total	**23.6**	

Notes:

- Costs for operation and maintenance are not included.
- For the 2008 CWNS, Urban Water (Category VII-D) is reported under Stormwater Management (Category VI), Decentralized Sewage Treatment was reported under Decentralized Wastewater Treatment Systems (Category XII); and a new subcategory, Green Infrastructure (VI-C) was added to Wastewater Management (Category VI).
- Needs estimates presented in this table might vary slightly from those presented elsewhere because of rounding.

Table 22. Total documented needs reported by watershed within the Great Lakes drainage basin (January 2008 dollars in billions)

Watershed	Total Needs	Watershed	Total Needs
Eastern Lake Erie	1.3	Southcentral Lake Superior	0.1
Fox	0.9	Southeastern Lake Michigan	1.8
Lake Erie	<0.1	Southeastern Lake Ontario	0.2
Lake Huron	<0.1	Southeastern Lake Superior	0.3
Lake Michigan	0.1	Southern Lake Erie	4.2
Lake Ontario	<0.1	Southwestern Lake Huron	0.1
Lake Superior	<0.1	Southwestern Lake Michigan	4.9
Northeastern Lake Michigan	0.5	Southwestern Lake Ontario	0.3
Northeastern Lake Ontario	0.1	Southwestern Lake Superior	<0.1
Northwestern Lake Huron	0.1	St. Clair-Detroit	4.1
Northwestern Lake Michigan	0.2	St. Lawrence	0.4
Northwestern Lake Superior	0.1	St. Louis	0.4
Oswego	1.0	Western Lake Erie	2.1
Saginaw	0.5		

Table 23. Total documented needs reported by State within the Great Lakes drainage basin (January 2008 dollars in billions)

State	Total Needs	State	Total Needs
Illinois	0.2	New York	3.1
Indiana	1.6	Ohio	5.8
Michigan	7.0	Pennsylvania	0.3
Minnesota	0.5	Wisconsin	4.8

Table 24. CWNS 2008 total needs within the Great Lakes drainage area (January 2008 dollars in millions)

	Category of Need												
Watershed Name	Total	I	II	III-A	III-B	IV-A	IV-B	V	Total VI	Total VII	X	XII	Total I-V
Eastern Lake Erie	1,343	156	11	20	118	85	34	829	32	58		0	1,253
Fox	878	165	320	31	124	31	37		167	3			708
Lake Erie	67	25			18	19	2					3	64
Lake Huron	1	1	0										1
Lake Michigan	56	12			3		41						56
Lake Ontario	8				4	2	1			1			7
Lake Superior	8	3		0	3	2							8
Northeastern Lake Michigan	512	16			0	3		49	20	424			68
Northeastern Lake Ontario	142	19			3	31	1	87	1	0		0	141
Northwestern Lake Huron	133	1				2	1	8	7	114			12
Northwestern Lake Michigan	226	44	14	15	39	14	6		39	55			132
Northwestern Lake Superior	160			77	18				65	0			95
Oswego	1,037	150	96	42	87	70	25	449	16	102		0	919
Saginaw	456	2		5			14		0	435			21
Southcentral Lake Superior	118	3			3		1	20	3	88			27
Southeastern Lake Michigan	1,751	118		3	45	21	10	714	13	815		12	911
Southeastern Lake Ontario	256	41			16	30	3	146	3	17			236
Southeastern Lake Superior	37									37			
Southern Lake Erie	4,251	313	137	76	144	114	27	3,169	7			264	3,980
Southwestern Lake Huron	142	12		3						127			15
Southwestern Lake Michigan	4,584	1,003	42	154	1,413	37	301	1,208	208	217		1	4,158
Southwestern Lake Ontario	278	39		4	18	44	6	131	4	32		0	242
Southwestern Lake Superior	36	4	3	4	13	11	0		1				35
St. Clair-Detroit	4,124	710	23	32	683	34	58	1,151	271	1,162			2,691
St. Lawrence	361	23		0	12	17	2	188	1	118			242
St. Louis	440	49	22	2	57	1		63	117	3		126	194
Western Lake Erie	2,065	191	13	71	79	86	67	1,189	4	74		291	1,696
Total	23,470	3,100	681	539	2,900	654	637	9,401	979	3,882		697	17,912

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Secondary wastewater treatment (I)
Advanced wastewater treatment (II)
Infiltration/inflow correction (III-A)
Sewer replacement/rehabilitation (III-B)
Collector sewers (IV-A)
Interceptor sewers (IV-B)
Combined sewer overflow correction (V)
Stormwater management (VI)
Nonpoint source pollution control (VII)
Recycled water distribution (X)
Decentralized wastewater treatment systems (XII)

Table 25. CWNS 2008 nonpoint source needs within the Great Lakes drainage area (January 2008 dollars in millions)

	Category of Need											
Watershed Name	VII-A	VII-B	VII-C	VII-E	VII-F	VII-G	VII-H	VII-I	VII-J	VII-K	VII-M	Total VII
Eastern Lake Erie	4	2		3			5	0		43		57
Fox	0	2		0					1			3
Lake Erie												
Lake Huron												
Lake Michigan												
Lake Ontario	0			1								1
Lake Superior												
Northeastern Lake Michigan	30	3	0	0		0		318		72		423
Northeastern Lake Ontario	0											0
Northwestern Lake Huron	1	3	1			1		89		21		116
Northwestern Lake Michigan	0	6	0			0		48		1		55
Northwestern Lake Superior							0	0		0		0
Oswego	5	10	17	19			4	0	31	14		100
Saginaw	40	1						392		2		435
Southcentral Lake Superior						1		83		4		88
Southeastern Lake Michigan	15	5	0					768		26		814
Southeastern Lake Ontario	1	0		6					6	3		16
Southeastern Lake Superior								36		1		37
Southern Lake Erie												
Southwestern Lake Huron	1	2						112		12		127
Southwestern Lake Michigan	0	0					12			204		216
Southwestern Lake Ontario	2	4		22						4		32
Southwestern Lake Superior												
St. Clair-Detroit	4	6						1,060	15	77		1,162
St. Lawrence		1	60					1		55		117
St. Louis										3		3
Western Lake Erie	2	1						70		1		74
Total	**105**	**46**	**78**	**51**		**2**	**21**	**2,977**	**53**	**543**		**3,876**

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Agriculture (cropland) (VII-A)
Agriculture (animals) (VII-B)
Silviculture (VII-C)
Ground water protection (VII-E)
Marinas (VII-F)
Resource extraction (VII-G)
Brownfields (VII-H)
Storage tanks (VII-I)
Sanitary landfills (VII-J)
Hydromodification (VII-K)
Other estuary management activities (VII-M)

Needs Related to the Columbia River Basin

Highlights

Total needs: $7.2 billion

Percentage of total CWNS 2008 needs: 2 percent

Changes in needs from 2004: Increased by $2.5 billion (52 percent)

Categories with the largest percent increases since 2004: New Collector Sewers (Category IV-A) ($0.5 billion; 406 percent); Nonpoint Source Pollution Control (Category VII) ($1.0 billion; 406 percent); and Stormwater Management (Category VI) ($0.3 billion; 238 percent)

Tables & Maps: Figure 14 and Table 26 show the total documented needs for facilities in the Columbia River Basin; Table 27 and Table 28 present the total documented needs by watershed and by State; Table 29 and Table 30 present the total documented needs for all categories and watersheds

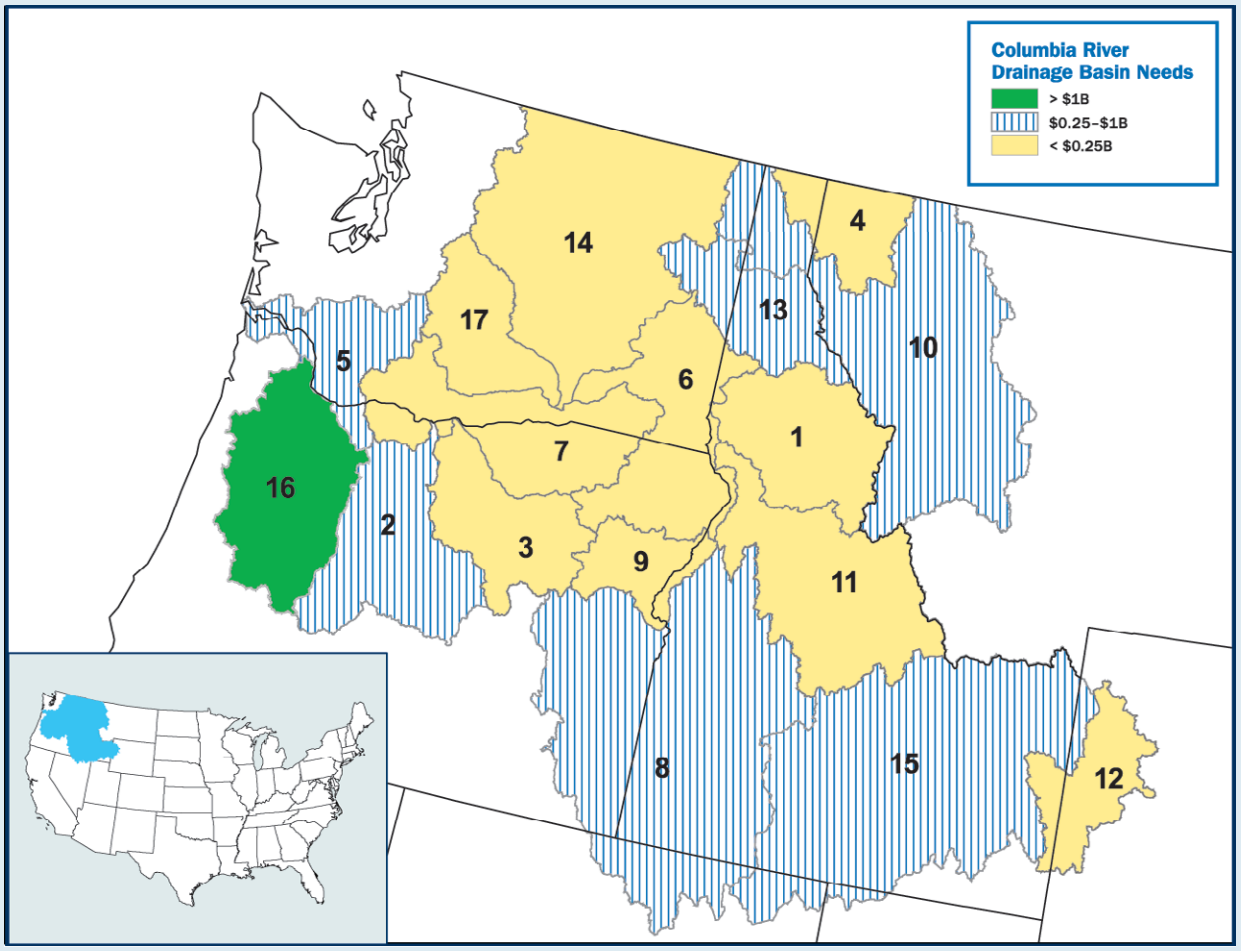
Discussion

The total documented needs for facilities in the Columbia River Basin as of January 1, 2008, are $7.2 billion, or 2 percent of the National need (Figure 14 and Table 26). The land area related to these needs is 7 percent of the total land area of the Nation.

Table 27 and Table 28 present the total documented needs by watershed and by State, respectively. Almost two-thirds (62 percent) of the total needs occur in the Lower Columbia and Willamette watersheds, which have needs of $0.9 billion and $3.6 billion respectively. The remaining 15 watersheds account for $2.7 billion (38 percent) of the total needs reported for the Columbia River Basin. Table 29 and Table 30 present the total documented needs across all categories and watersheds.

Columbia River Basin

The Columbia River is the fourth-largest river in North America ranked by flow. The dominant water system in the Pacific Northwest, it drains 219,000 square miles in seven western States (Idaho, Montana, Nevada, Oregon, Utah, Washington and Wyoming) as well as 39,500 square miles in British Columbia. The Columbia River Basin became a regional priority within EPA's strategic planning process in 2002 to give greater focus to resolving many water quality issues. Conventional and toxic pollutants significantly affect the once-abundant salmon fisheries and the people who depend on those fish for cultural and economic reasons.



Watersheds:

Clearwater (1)
Deschutes (2)
John Day (3)
Kootenai (4)
Lower Columbia (5)
Lower Snake (6)
Middle Columbia (7)
Middle Snake-Boise (8)
Middle Snake-Powder (9)
Pend Oreille (10)
Salmon (11)
Snake Headwaters (12)
Spokane (13)
Upper Columbia (14)
Upper Snake (15)
Willamette (16)
Yakima (17)

Figure 14. Columbia River drainage basin needs (January 2008 dollars in billions).

Table 26. Total documented needs reported within the Columbia River basin (January 2008 dollars in billions)

Needs Category		Total Needs	
		$B	Percent
Publicly Owned Wastewater Treatment and Conveyance Systems and Stormwater Management Programs			
I	Secondary wastewater treatment	2.2	31%
II	Advanced wastewater treatment	1.3	18%
III-A	Infiltration/inflow correction	0.1	1%
III-B	Sewer replacement/rehabilitation	0.6	9%
IV-A	New collector sewers	0.6	9%
IV-B	New interceptor sewers	0.3	5%
V	Combined sewer overflow correction	0.5	6%
VI	Stormwater management programs	0.3	5%
X	Recycled water distribution	<0.1	0.3%
XII	Decentralized wastewater treatment systems	–	–
	Total Categories I–VI, X, and XII	**6.1**	**83%**
Nonpoint Source Pollution Control			
VII-A	Agriculture (cropland)	<0.1	0.5%
VII-B	Agriculture (animals)	<0.1	0.3%
VII-C	Silviculture	<0.1	0%
VII-E	Ground water protection	<0.1	0.1%
VII-F	Marinas	<0.1	0%
VII-G	Resource extraction	<0.1	0%
VII-H	Brownfields	–	–
VII-I	Storage tanks	<0.1	0%
VII-J	Sanitary landfills	–	
VII-K	Hydromodification	1.1	15%
VII-M	Other estuary management activities	–	–
	Total Category VII	**1.2**	**16%**
	Grand Total	**7.2**	

Notes:

- Costs for operation and maintenance are not included.
- For the 2008 CWNS, Urban Water (Category VII-D) is reported under Stormwater Management (Category VI), Decentralized Sewage Treatment was reported under Decentralized Wastewater Treatment Systems (Category XII); and a new subcategory, Green Infrastructure (VI-C) was added to Wastewater Management (Category VI).
- Needs estimates presented in this table might vary slightly from those presented elsewhere because of rounding.

Table 27. Total documented needs reported by watershed within the Columbia River basin (January 2008 dollars in billions)

Watershed	Total Needs	Watershed	Total Needs
Clearwater	<0.1	Pend Oreille	0.3
Deschutes	0.4	Salmon	<0.1
John Day	<0.1	Snake Headwaters	<0.1
Kootenai	<0.1	Spokane	0.7
Lower Columbia	0.9	Upper Columbia	<0.1
Lower Snake	<0.1	Upper Snake	0.4
Middle Columbia	<0.1	Willamette	3.6
Middle Snake-Boise	0.5	Yakima	<0.1
Middle Snake-Powder	<0.1		

Table 28. Total documented needs reported byState within the Columbia River basin (January 2008 dollars in billions)

State	Total Needs	State	Total Needs
Idaho	1.4	Utah	–
Montana	0.2	Washington	0.9
Nevada	–	Wyoming	<0.1
Oregon	4.6		

Table 29. CWNS 2008 total documented needs within the Columbia River basin (January 2008 dollars in millions)

	Category of Need												
Watershed Name	Total	I	II	III-A	III-B	IV-A	IV-B	V	Total VI	Total VII	X	XII	Total I-V
Clearwater	22	17		0	0				0	6			17
Deschutes	375	54			8	4	69		225	15			135
John Day	3	2				1							3
Kootenai	7	4		0	0	3			0				7
Lower Columbia	917	251		0	85	126	28	427		0			917
Lower Snake	35	10	5	2	13				2	3			30
Middle Columbia	81	47	10		8	7				9			72
Middle Snake-Boise	545	245	234	3	8	24	9		4	18	0		523
Middle Snake-Powder	13	11		0	0					2			11
Pend Oreille	336	129	76	18	21	45	41		5	1			330
Salmon	10	10			0	0			0	0			10
Snake Headwaters	10	4			0	3	1			2			8
Spokane	719	55	428	16	76	91	3	24	6	6	14		693
Upper Columbia	36	16	9		3	6	1		1				35
Upper Snake	437	100	123	1	40	87	56		3	27			407
Willamette	3,587	1,251	403	57	358	246	119		96	1,052	5		2,434
Yakima	3	2			0		1						3
Total	**7,136**	**2,208**	**1,288**	**97**	**620**	**643**	**328**	**451**	**342**	**1,140**	**19**		**5,635**

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Secondary wastewater treatment (I)
Advanced wastewater treatment (II)
Infiltration/inflow correction (III-A)
Sewer replacement/rehabilitation (III-B)
Collector sewers (IV-A)
Interceptor sewers (IV-B)
Combined sewer overflow correction (V)
Stormwater management (VI)
Nonpoint source pollution control (VII)
Recycled water distribution (X)
Decentralized wastewater treatment systems (XII)

Table 30. CWNS 2008 nonpoint source documented needs within the Columbia River basin (January 2008 dollars in millions)

	Category of Need											
Watershed Name	VII-A	VII-B	VII-C	VII-E	VII-F	VII-G	VII-H	VII-I	VII-J	VII-K	VII-M	Total VII
Clearwater	2	1	1	0		0				2		6
Deschutes	8			5						2		15
John Day												
Kootenai												
Lower Columbia		0								0		0
Lower Snake	1	1	0							1		3
Middle Columbia	8									1		9
Middle Snake-Boise	8	8	0	0		0				2		18
Middle Snake-Powder	2	0								0		2
Pend Oreille	0	0	0		0	0				0		0
Salmon	0	0	0			0				0		0
Snake Headwaters	0	0						2	0	0		2
Spokane	0	1	0			0				4		5
Upper Columbia												
Upper Snake	9	13	0	0		0				5		27
Willamette	0			0						1,051		1,051
Yakima												
Total	38	24	1	5	0	0		2	0	1,068		1,138

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Agriculture (cropland) (VII-A)
Agriculture (animals) (VII-B)
Silviculture (VII-C)
Ground water protection (VII-E)
Marinas (VII-F)
Resource extraction (VII-G)
Brownfields (VII-H)
Storage tanks (VII-I)
Sanitary landfills (VII-J)
Hydromodification (VII-K)
Other estuary management activities (VII-M)

Needs Related to the Border 2012 Area

Highlights

Total needs: $3.7 billion

Percentage of total CWNS 2008 needs: 1 percent

Changes in needs from 2004: No change in the total needs reported

Categories with the largest percent increases since 2004: New Interceptor Sewers (Category IV-B) ($0.3 billion; 87 percent); Secondary Wastewater Treatment (Category I) ($0.2 billion; 49 percent); and Sewer Replacement/Rehabilitation (Category III-B) ($0.3 billion; 21 percent)

Tables & Maps: Figure 15 illustrates the Border 2012 region; Table 31 shows the total documented needs for U.S. facilities in the Border 2012; Table 32 displays the total documented needs by State; Table 33 and Table 34 present the total documented needs for all categories and States

Discussion

The total documented needs for U.S. facilities in the Border 2012 area as of January 1, 2008, are $3.7 billion, or 1 percent of the National need (Table 31). The land area related to these needs is 3 percent of the total land area of the Nation. Approximately $0.1 billion of the $3.7 billion are associated with small communities (population fewer than 10,000). Table 32 displays the total documented needs by State.

California, Texas, Arizona and New Mexico's total needs are $2.1 billion, $1.0 billion, $0.6 billion and $2.0 million, respectively. Table 33 and Table 34 present the total documented needs for all categories and States.

Border 2012 Program

The U.S.–Mexico Border Water Infrastructure Program was established to protect the environment and public health in the U.S.-Mexico border region, defined as the area within 100 kilometers of the border. Figure 15 shows the U.S. portion of this area. The program's mission is to protect the environment and public health in the U.S.–Mexico border region, consistent with the principles of sustainable development. The water quality objectives of the program are to increase the number of homes connected to potable water supply, increase the number of homes connected to wastewater collection and treatment systems, and reduce the discharge of pollutants to local waterways. Specifically, Mexico's National Water Commission (CNA) and the EPA have provided funding and technical assistance for the planning, design, and construction of drinking water and wastewater infrastructure projects. The International Boundary and Water Commission (IBWC) has also provided assistance and coordination in developing drinking water and wastewater infrastructure in the U.S.-Mexico border region.

Figure 15. Border 2012 region (includes all facilities within 100 km of the U.S.–Mexico border).

Table 31. Total documented needs within the Border 2012 area (January 2008 dollars in billions)

Needs Category		Total Needs	
		$B	Percent
Publicly Owned Wastewater Treatment and Conveyance Systems and Stormwater Management Programs			
I	Secondary wastewater treatment	0.6	17%
II	Advanced wastewater treatment	0.3	8%
III-A	Infiltration/inflow correction	<0.1	0.5%
III-B	Sewer replacement/rehabilitation	1.9	51%
IV-A	New collector sewers	0.2	5.7%
IV-B	New interceptor sewers	0.6	15%
V	Combined sewer overflow correction	<0.1	0.1%
VI	Stormwater management programs	<0.1	0.3%
X	Recycled water distribution	<0.1	0.2
XII	Decentralized wastewater treatment systems	–	–
	Total Categories I–VI, X, and XII	**3.6**	**98%**
Nonpoint Source Pollution Control			
VII-A	Agriculture (cropland)	–	–
VII-B	Agriculture (animals)	<0.1	0.1%
VII-C	Silviculture	–	–
VII-E	Ground water protection	<0.1	0.1%
VII-I	Storage tanks	<0.1	0.2%
VII-J	Sanitary landfills	<0.1	0.6%
VII-K	Hydromodification	<0.1	0.2%
VII-M	Other estuary management activities	–	–
	Total Category VII	**0.1**	**2%**
	Grand Total	**3.7**	

Notes:

- Costs for operation and maintenance are not included.
- For the 2008 CWNS, Urban Water (Category VII-D) is reported under Stormwater Management (Category VI), Decentralized Sewage Treatment was reported under Decentralized Wastewater Treatment Systems (Category XII); and a new subcategory, Green Infrastructure (VI-C) was added to Wastewater Management (Category VI).
- Needs estimates presented in this table might vary slightly from those presented elsewhere because of rounding.

Table 32. Total documented needs reported by State within the Border 2012 area (January 2008 dollars in billions)

State	Total Needs	State	Total Needs
Arizona	0.6	New Mexico	<0.1
California	2.1	Texas	1.0

Table 33. Total documented needs within the Border 2012 Program area (January 2008 dollars in billions)

	Category of Need												
State	Total	I	II	III-A	III-B	IV-A	IV-B	V	Total VI	Total VII	X	XII	Total I-V
Arizona	591	41	89	0	62	34	337		9	15	4		563
California	2,082	293	29	16	1,741	1					2		2,080
New Mexico	5	1			2	1		0			1		4
Texas	981	304	160	2	85	176	225			29			952
Total	3,659	639	278	18	1,890	212	562	0	9	44	7		3,599

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Secondary wastewater treatment (I)
Advanced wastewater treatment (II)
Infiltration/inflow correction (III-A)
Sewer replacement/rehabilitation (III-B)
Collector sewers (IV-A)
Interceptor sewers (IV-B)
Combined sewer overflow correction (V)
Stormwater management (VI)
Nonpoint source pollution control (VII)
Recycled water distribution (X)
Decentralized wastewater treatment systems (XII)

Table 34. Total nonpoint source documented needs within the Border 2012 Program area (January 2008 dollars in billions)

	Category of Need											
State	VII-A	VII-B	VII-C	VII-E	VII-F	VII-G	VII-H	VII-I	VII-J	VII-K	VII-M	Total VII
Arizona		0					3	4	8			15
California												
New Mexico												
Texas				1		13			11	4		29
Total	0		1		13	3	4	19	4		44	

Notes:
- Blank fields indicate "no data".
- Zero indicates "<0.5".

Categories:
Agriculture (cropland) (VII-A)
Agriculture (animals) (VII-B)
Silviculture (VII-C)
Ground water protection (VII-E)
Marinas (VII-F)
Resource extraction (VII-G)
Brownfields (VII-H)
Storage tanks (VII-I)
Sanitary landfills (VII-J)
Hydromodification (VII-K)
Other estuary management activities (VII-M)