



Financial Needs for Wastewater and Water Infrastructure in Indiana

January 2003



A report of the
Indiana Advisory Commission on Intergovernmental Relations
342 North Senate Avenue
Indianapolis, IN 46204-1708

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Executive Summary

Financial needs for wastewater and water infrastructure in Indiana is an assessment of the financial needs for water-related infrastructure in the state of Indiana. State and local officials require information about financial needs for drinking water and wastewater infrastructure to comply with federal and state mandates, to determine strategies for infrastructure management and maintenance, and to meet goals for environmental quality and level of service. Most but not all of the needs identified in this report are for compliance with clean water and drinking regulations.

The Indiana Advisory Commission on Intergovernmental Relations (IACIR) sponsored the study with support from the Indiana Association of Cities and Towns (IACT), the State Budget Office, the American Council of Engineering Companies (ACEC) of Indiana, and Indiana Constructors, Inc. The Center for Urban Policy and the Environment in the School of Public and Environmental Affairs (SPEA) at Indiana University–Purdue University Indianapolis (IUPUI), which serves as staff to the IACIR, completed the analysis.

Needs are the costs of investments required for capital projects to rehabilitate or improve infrastructure to meet current service or regulatory requirements or objectives. Needs are estimated for: (1) correction of combined sewer overflows; (2) wastewater conveyance and treatment; (3) remediation of failing on-site septic systems; (4) stormwater conveyance and management; and (5) drinking water production, treatment, and distribution facilities. The needs estimates are presented for the state as a whole and by county, and reflect the needs of hundreds of municipalities and thousands of operators of wastewater, stormwater, and drinking water systems. The estimates are based on self-reports, surveys, engineering models, and other data depending on the infrastructure category. A range of estimates is presented to account for uncertainty associated with assumptions that were required to overcome lack of facility-specific data.

▪ Billions More Needed for Water Related Infrastructure

Statewide needs for wastewater and drinking water infrastructure for the period 2000 – 2020 are at least \$12.4 to \$13.9 billion (Table ES1). This estimate is 35 to 53 percent higher than previous U.S. Environmental Protection Agency (USEPA) estimates of \$9.1 billion that included only estimates for wastewater and drinking water facilities and did not include estimates for septic systems and stormwater controls. This study confirms analyses by the Congressional Budget Office, the American Water Works Association, and other organizations that show current USEPA estimates are too low. While higher than previous estimates, the current needs estimate of \$12.4 to \$13.9 billion is an underestimate of actual needs because it does not include needs for all types of water-related infrastructure, operations and maintenance, potential new regulations, more stringent interpretation of existing regulations, or potential cost overruns.

Table ES1. Working Estimates of Wastewater and Water Infrastructure Capital Needs in Indiana

	Combined Sewer Overflow Needs (CWNS)	Wastewater Needs (CWNS & Survey)	Septic System Needs	Stormwater Needs	Drinking Water Needs (DWNS)	Sum of Wastewater and Water Infrastructure Needs
Low estimate	\$ 5,468,400,000	\$ 3,272,000,000	\$ 1,535,700,000	\$ 447,000,000	\$ 1,691,400,000	\$ 12,414,500,000
High estimate	\$ 5,468,400,000	\$ 3,843,600,000	\$ 2,350,500,000	\$ 545,400,000	\$ 1,691,400,000	\$ 13,899,300,000

USEPA has estimated that an infrastructure gap will develop unless the municipalities increase investments in clean water and drinking water by a real rate of growth of 3 percent per year.

In Indiana, evidence indicates that wastewater and drinking water needs will not be met by current levels of investment by state and local governments. Indiana governments spent only \$3.1 billion (in 2000 dollars), or about \$253 million annually, on wastewater, drinking water, and stormwater infrastructure in the 12 years between January 1990 and March 2002. To meet the needs identified in this study, Indiana governments would have to invest between \$620 million and \$695 million annually over the next 20 years.

A portion of water-related capital expenditures in Indiana has been financed by the Indiana State Revolving Fund (SRF) Loan Programs. SRF loan programs have provided \$1.1 billion in loans since 1991. As of May 2002, the wastewater SRF loan program had closed 182 loans with a cumulative value of \$932.8 million. The drinking water SRF loan program made its first loan in 1998 and, as of September 2000, had closed 38 loans for \$113.9 million.

- **Combined Sewer Overflows Corrections Account for Most Needs: \$5.5 Billion**

In Indiana, 106 municipalities in 61 counties must control sewer-laden discharges to rivers, streams, or lakes from combined sewer overflows (CSOs). A USEPA estimate of \$5.5 billion for CSO corrections from the Clean Watershed Needs Survey is reported as this study's working estimate of needs because no reliable data are available for adjusting it (Table ES1). These investments are necessary to comply with existing federal and state regulations and may be low because they are based on an assumption that control of 85 percent of the volume of wet weather flow in combined sewers will be sufficient to comply with environmental regulations. If larger volumes of flow eventually must be controlled to achieve standards, then costs could rise exponentially.

- **Wastewater Conveyance and Treatment Needs Range from \$3.3 to \$3.8 Billion**

In Indiana, IDEM regulates discharges from more than 430 local wastewater treatment systems. The estimates in Table ES1 are based on the USEPA Clean Watershed Needs Survey but have been supplemented with a new survey of operators of wastewater systems and extrapolations. The range of needs reflects different assumptions about the level of needs for systems for which no data are available. These estimates may be low because they do not reflect all investments that may be required to achieve water quality standards but, because the new survey asked about all needs, may include some needs for new growth and not just needs required to comply with regulations.

- **Remediation of Failing Septic Systems Needs Range from \$1.5 to \$2.3 Billion**

Based on 1990 data from the U.S. Bureau of the Census, the number of households with septic systems, other on-site treatment systems, or no wastewater treatment is believed to be greater than 703,000, or approximately 31 percent of all households in Indiana. The needs estimates is based on a survey of local public health officials who were asked to report the number of systems in the counties, the number or percent of systems that they believed were failing based on state regulatory definitions, and the range of costs for remediation of failing systems. Average values were used to estimate needs for counties that did not participate in the survey. The range of needs in Table ES1 reflects different assumptions about the types and costs of remediation for individual systems.

- **Stormwater Management Needs Are Approximately \$500 Million**

In 1987 amendments to the Clean Water Act, Congress mandated USEPA to regulate stormwater discharges from municipal separate sewer systems. IDEM now is implementing new programs to regulate stormwater discharges in many Indiana municipalities through new initiatives known as Phase II or Rule 13 regulations. Because regulatory requirements are new, most jurisdictions do not have stormwater management programs in place and cannot report estimates of costs for stormwater programs. The estimates of needs for stormwater infrastructure in Table ES1 are based on the following factors: the number of developed acres of land in each county, the per-acre cost for stormwater management associated with different levels of service, assumptions about the proportion of annual local stormwater costs likely to be associated with capital projects, and assumptions about the level of service that will be required to meet water quality objectives.

- **Drinking Water Distribution and Treatment Needs Are \$1.7 Billion**

In its 1999 Drinking Water Needs Survey, USEPA estimated needs for drinking water systems in Indiana based on extrapolation of average needs from a national sample of systems that included site-specific estimates for 117 of the 4,457 systems in Indiana. USEPA based these estimates on surveys of all large and medium community systems and on national samples of small and non-community systems. Because data for updating the USEPA estimates are not available, the USEPA estimate of \$1.7 billion for drinking water needs is presented in Table ES1 for both the high and low estimate. This estimate is low because it includes only needs that are eligible for the SRF loan program and does not include needs for private wells.

- **All 92 Counties in Indiana Have Significant Needs**

Needs range from lows of \$8.2 million and \$8.4 million in Warren and Switzerland counties, respectively, to highs of \$2.4 billion and \$1.3 billion, respectively, in Marion and Lake counties (see Table ES2). Depending on assumptions, 51 to 62 counties have needs greater than \$50 million, and 26 to 31 have needs greater than \$100 million. Estimates by infrastructure category by county are available within the body of this report. These estimates of needs are the sum of needs for municipalities and other public and nonprofit units with county boundaries and are not solely the needs for county governments.

- **An Ongoing Effort Is Needed to Continually Refine Estimates**

The working estimates of needs in Table ES1 and Table ES2 update previous USEPA estimates and provide a more complete assessment of the order of magnitude of needs faced by the state. Although these estimates are more complete than those derived from earlier studies, they nevertheless still may be low estimates of actual needs. The estimates reflect a number of assumptions about conditions in counties and municipalities that did not participate in the surveys and for which no site-specific data are available. Ongoing data collection at the local level could improve the estimates. For example, better estimates for remediation of septic systems could be developed if inventories of systems were maintained and periodic surveys of the conditions of systems were undertaken. Detailed case studies of approaches that local jurisdictions are using to manage wastewater and drinking water infrastructure problems also would enable analysts to refine the estimates.

Table ES2: Low and High Working Estimates of Water and Wastewater Infrastructure Needs

County	Low Estimate of Need	High Estimate of Need	County	Low Estimate of Need	High Estimate of Need
Adams	\$ 55,100,000	\$90,200,000	Lawrence	\$46,000,000	\$59,600,000
Allen	630,900,000	835,000,000	Madison	358,000,000	504,200,000
Bartholomew	129,700,000	132,600,000	Marion	2,350,600,000	2,353,300,000
Benton	18,030,000	21,430,000	Marshall	103,900,000	113,300,000
Blackford	89,900,000	90,600,000	Martin	19,400,000	20,900,000
Boone	28,900,000	30,200,000	Miami	31,500,000	34,000,000
Brown	28,900,000	34,800,000	Monroe	99,600,000	105,100,000
Carroll	25,700,000	30,500,000	Montgomery	37,900,000	39,700,000
Cass	126,100,000	133,200,000	Morgan	61,900,000	83,200,000
Clark	205,100,000	216,200,000	Newton	22,200,000	25,300,000
Clay	62,100,000	76,500,000	Noble	105,600,000	112,000,000
Clinton	51,000,000	56,300,000	Ohio	10,300,000	11,600,000
Crawford	13,200,000	18,500,000	Orange	29,900,000	38,700,000
Daviess	74,600,000	96,100,000	Owen	39,105,000	39,305,000
Dearborn	48,900,000	62,200,000	Parke	20,600,000	24,700,000
Decatur	35,400,000	39,500,000	Perry	37,500,000	45,800,000
De Kalb	91,100,000	99,500,000	Pike	15,400,000	19,400,000
Delaware	275,500,000	287,400,000	Porter	187,100,000	227,000,000
Dubois	61,700,000	79,400,000	Posey	62,710,000	72,110,000
Elkhart	365,870,000	432,070,000	Pulaski	15,780,000	16,980,000
Fayette	77,300,000	92,900,000	Putnam	30,100,000	33,400,000
Floyd	63,700,000	65,000,000	Randolph	44,250,000	51,550,000
Fountain	37,400,000	49,500,000	Ripley	43,800,000	50,400,000
Franklin	27,000,000	45,500,000	Rush	59,170,000	137,470,000
Fulton	33,130,000	37,630,000	St. Joseph	609,400,000	620,200,000
Gibson	48,600,000	61,900,000	Scott	10,400,000	26,000,000
Grant	188,800,000	206,700,000	Shelby	84,900,000	117,700,000
Greene	46,300,000	60,200,000	Spencer	53,700,000	65,600,000
Hamilton	188,800,000	211,900,000	Starke	44,400,000	53,700,000
Hancock	76,300,000	84,700,000	Steuben	60,000,000	63,600,000
Harrison	47,600,000	48,800,000	Sullivan	42,300,000	50,500,000
Hendricks	139,700,000	164,600,000	Switzerland	8,400,000	11,000,000
Henry	142,400,000	153,500,000	Tippecanoe	488,500,000	490,400,000
Howard	143,300,000	153,200,000	Tipton	46,400,000	47,000,000
Huntington	70,400,000	91,600,000	Union	9,200,000	9,300,000
Jackson	105,900,000	112,800,000	Vanderburgh	506,200,000	517,500,000
Jasper	55,400,000	58,200,000	Vermillion	31,400,000	36,100,000
Jay	63,130,000	69,030,000	Vigo	173,900,000	244,900,000
Jefferson	83,100,000	88,300,000	Wabash	82,283,750	93,700,000
Jennings	48,300,000	58,000,000	Warren	8,200,000	10,700,000
Johnson	67,000,000	82,700,000	Warrick	75,000,000	94,200,000
Knox	49,700,000	55,400,000	Washington	21,000,000	31,300,000
Kosciusko	116,200,000	139,700,000	Wayne	71,920,000	89,820,000
La Grange	60,600,000	64,100,000	Wells	50,800,000	63,100,000
Lake	1,257,100,000	1,291,100,000	White	111,100,000	116,200,000
La Porte	292,200,000	362,600,000	Whitley	45,700,000	56,000,000