

Patoka Lake Watershed Cleanup Totals 2008 - 2019





Thanks to our sponsors and all of our volunteers! We hope you will join us in August.

- 13 cleanup days
- 1,353 volunteers
- 38,000 lbs. of trash
- 29 tires
- 1,400 lbs. of recyclables



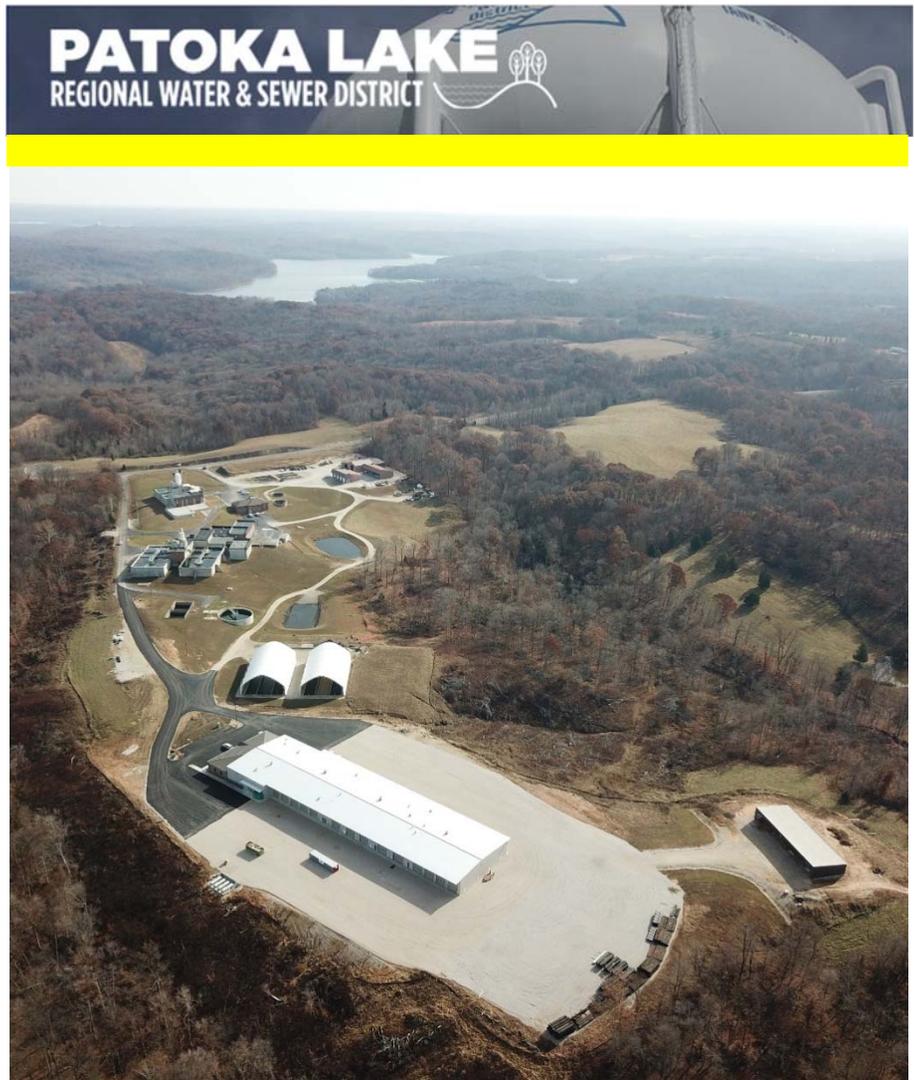
Indiana 811

**Know what's below.
Call before you dig.**

BOARD OF DIRECTORS

- | | |
|----------------|----------------|
| John Wade | Dan Crecelius |
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2647 N State Road 545, Dubois, Indiana 47527, 812-678-8300
www.plrws.net



PATOKA LAKE

Patoka Lake, an 8,800 acre reservoir located in parts of the counties of Crawford, Dubois, and Orange was authorized under the Flood Control Act of 1965. The reservoir was constructed by the U.S. Army Corps of Engineers beginning in July of 1972 and completed in early 1979. It exists as a cooperative management effort between the Corps of Engineers and the Indiana Department of Natural Resources. Patoka Lake is commonly known for its picturesque natural setting, excellent fishing opportunities, and other recreational resources, as well as for its flood control operations and for the regulation of the level of the Patoka River.



POINTS OF CONTACT

Park Manager

U.S. Army Corps of Engineers
4512 N. Cuzco Rd S.
Dubois, Indiana 47527-9661
Phone: (812) 678-3761



Reservoir Manager

Indiana Department of Natural Resources
3084 N. Dillard Road
Birdseye, Indiana 47513
Phone: (812) 685-2464



Perry County

And-Tro Water Authority.....467
Branchville Training Center.....1,550

Pike County

Otwell Water Corporation.....1,026

Spencer County

St. Meinrad Utilities.....216
Town of Santa Claus.....1,000
Gentryville.....600
Santa La Hill.....700
Chrisney.....375
Finch-Newton Water.....700

Warrick County

The Town of Lynnville.....450
The Town of Tennyson.....1,600

Washington County

Posey Township Water Corporation.....1,275

RETAIL:

Water.....5,350
Sewer.....1,100

TOTAL CUSTOMERS.....37,698

CUSTOMER BASE

WHOLESALE:

Crawford County

English Municipal Water Works.....	250
Patoka Water Company.....	325
Grantsburg.....	100

Department of Natural Resources

Dubois County

Dubois Water Utilities.....	3,406
Alfordsville Water.....	200
St. Anthony Water Utility.....	625
Huntingburg Water Utility.....	2,425
Duff Water Corporation.....	325
Ferdinand Municipal Water Utilities.....	969
St. Henry Water Corporation.....	1,200
Town of Dale.....	750
Birdseye Water Utility.....	305
Ireland Utilities.....	1,325
Town of Holland.....	422
Town of Stendal.....	162

Gibson County

Pike-Gibson Water.....	3,250
City of Oakland City.....	1,325

Orange County

Town of Paoli.....	1,750
Orleans Water Utility.....	900
Springs Valley Regional Water District.....	1,275

DISTRICT FORMATION

STATE of INDIANA

STREAM POLLUTION CONTROL BOARD



INDIANAPOLIS 46206

1330 West Michigan Street

VIA CERTIFIED MAIL

CAUSE NO. B-268

IN THE MATTER OF THE PETITION OF THE)
 COUNTY COMMISSIONERS OF CRAWFORD,)
 DUBOIS AND ORANGE COUNTIES, INDIANA,)
 FOR THE ORGANIZATION OF A REGIONAL)
 SEWER DISTRICT TO BE KNOWN AS THE)
 "PATOKA LAKE REGIONAL WATER AND)
 SEWER DISTRICT," PURSUANT TO INDIANA)
 IC 1971, 19-3-1.1)

Resolved: That the Stream Pollution Control Board accept the findings of fact and Recommendations of William C. Vaughn III, Hearing Officer, on the above captioned matter, with the exception that the territory to be included in the district will not include the Town of Birdseye, and that the Board adopt the Findings of Fact and Recommendations, as amended, as its own and that the final Order be issued.

Now therefore, it is ordered by the Stream Pollution Control Board of the State of Indiana:

1. That the petition should be approved.
2. That the District, to be known as "The Patoka Lake Regional Water and Sewer District," be organized as an independent political entity of the State of Indiana.
3. That the purpose of the District shall be the collection and treatment of sewage and the distribution of water.
4. That the District shall include all the territory described in paragraph 4 of the petition and the map attached thereto; with the exception of the Town of Birdseye.
5. That the District be governed by a seven (7) member Board of Trustees.
6. That the Board of Trustees shall provide sufficient bond for all Officers, trustees, or employees who have any power to dispense funds of the District. Said bond, as a minimum, shall be in an amount equal to, plus 10% of, those funds anticipated to be received by the District, divided by 6 which amount shall be determined annually by the Board of Trustees.
7. That six months from the date of its creation, the Patoka Lake Regional Water and Sewer District shall file with the Stream Pollution Control Board, a detailed plan for the construction and operation of the District's facilities pursuant to IC 1971, 19-3-1.1-5(a).

Date this 16th day of April, 1975.

Stream Pollution Control Board
 of the State of Indiana


 Oral H. Hert
 Technical Secretary

CONSTRUCTION

The original facilities, phase I, for water treatment, supply, and wastewater treatment were designed and constructed from 1977 through 1979 at a cost of a little over \$9,000,000. These facilities were intended to meet the immediate initial contractual commitments for wholesale customers and to provide water supply to retail users along the transmission mains. Immediately after completion, plans were started to expand the water treatment plant and add additional water mains. After one project would be completed, the next would start. Today, the District has 2 water treatment plants, 6 booster stations, 12 water storage tanks, and a wastewater treatment plant.

	<u>COMPLETED</u>	<u>WATER</u>	<u>SEWER</u>
Phase I	1979	\$ 9,078,007	\$ 1,700,000
Phase II	1981/1979	3,932,231	874,000
Phase III "C"	1985	2,245,729	
Phase III	1987/1984	16,057,193	970,000
Phase IV	1995	10,967,532	1,305,000
Phase V	1995/2003	13,630,242	9,761,000
Phase V-A	1998	3,075,000	
Phase VI	2002	6,447,200	
Phase VII	2012	13,005,127	
Phase VIII	2016	27,108,000	
WWTP	2017/2018		980,000
WP 1	2019	3,500,000	
OP FAC	2019	5,000,000	
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Total Construction Costs		\$114,046,261	\$15,590,000

PLANNED

Drying Beds	2021	1,500,000
Tank 4 Repl	2022	3,500,000
BS Tank 4	2022	1,000,000

WASTEWATER TREATMENT FACILITIES

The initial sewer system was completed in the fall of 1979 at a cost of about \$3.2 million, the system included a 350,000 gallon per day extended aeration process sewage treatment plant and collection system which provides service to the Newton-Stewart State Recreation Area, the U.S. Army Corps of Engineers operation and maintenance facilities, and the nearby community of Dubois. All of the underwater sewer mains required to serve the lake area were installed prior to the flooding of the reservoir.



In 1984, the plant capacity was expanded to 700,000 gallons per day, an oxidation ditch installed, 2 clarifiers, a sludge holding tank, and a vacuum sludge drying building were added. Sewer mains were extended to a subdivision of 154 lots near the lake, a recreational campground with 700 lots and extensions to connect across the lake to a proposed commercial development (Tillery Hill). Total cost was \$2.2 million.

In 2003, Phase V consisted of a low-pressure sewage collection system including 62 miles of 1¼" to 10" force mains, 11 main lift stations with telemetry to the plant, 640 grinder stations, and an additional 300,000 gallon digester. Total cost was \$9.2 million. The system is a great benefit of small, local unincorporated communities in Dubois County to the south and west of the plant.

In 2017, a \$1 million project was undertaken to improve flows, replace the outdated chlorine treatment for a new state-of-the-art UV treatment, electrical upgrades, and an upgraded generator to run the entire plant.

CAPACITY OVERFLOW

	<u>TYPE</u>	<u>GALLONS</u>	<u>ELEVATION</u>
Water Plant #1 (clear well)	Underground	500,000	700 ft
Water Plant #2 (clear well)	Underground	641,000	700 ft

WATER TANKS

Phase I:

Tank #1 Newton-Stewart	Elevated	500,000	900 ft
Tank #2 Bretzville	Elevated	500,000	770 ft

Phase IIIC:

Tank #3 Water Plant	Elevated	1,000,000	910 ft
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Phase III:

Tank #4 West Paoli	Standpipe	500,000	970 ft
Tank #6 Doolittle Mills	Elevated	200,000	970 ft
Tank #7 Oriole	Standpipe	230,000	970 ft

Phase V:

Tank #8 Holland	Elevated	500,000	800 ft
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Phase VA:

Tank #9 Ferdinand	Elevated	750,000	770 ft
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Phase VI:

Tank #10 Orleans	Elevated	500,000	900 ft
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Phase VII:

Tank #11 Valeene	Elevated	500,000	1,070 ft
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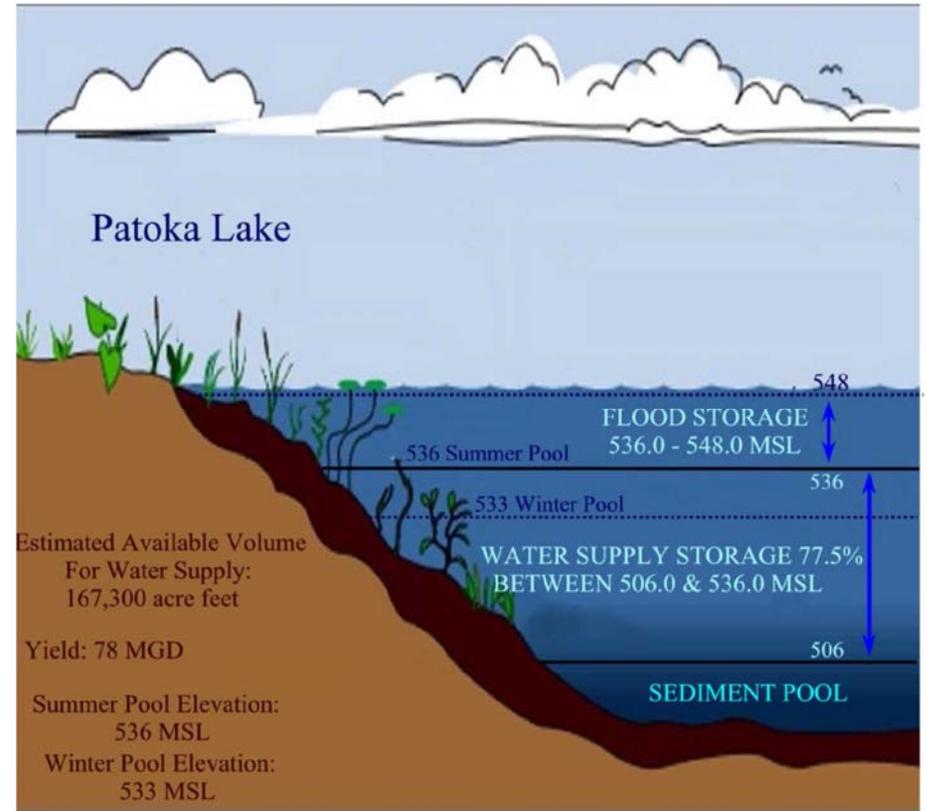
Phase VIII:

Tank #12 Baseline Road	Elevated	1,000,000	910 ft
Tank #13 Arthur Junction	Elevated	750,000	800 ft

**TOTAL STORAGE
CAPACITY: 8,710,000**



RAW WATER SUPPLY FROM PATOKA LAKE



Present contract with the Indiana Department of Natural Resources allows up to a maximum of 20 million gallons per day withdrawal. Supplemental agreement to increase this amount may be had on application and mutual agreement by both parties. Present contract is good for 50 years. Contract was approved March 2009.

INTAKE FACILITIES

The District's intake structure is located on a 70 foot bluff on the west side of the Lick Fork finger of Patoka Lake and is designed to be able to pump 20 million gallons of raw water per day. The structure is equipped with multiple inlet ports, traveling screen devices, pumps, and necessary appurtenances for automation and controls...



Water from the intake structure flows throughout 16 inch and 30 inch transmission mains to the water treatment plants. These mains are also designed to handle a flow of 20 million gallons per day. The water treatment facilities are located approximately 1½ miles west of the intake structure on a 58 acre tract of land.

WATER PLANT 2



The addition of Plant 2 in 1993 increased the raw water pumping, treatment, and distribution pumping capacity to 10 million gallons per day. In 2015, phase VIII increased capacity to 15 million gallons per day.

- (4) 3472 GPM solid contact units
- (8) 868 GPM filter units
- (2) back wash holding tank units
- (3) high service pumps with 3,400 GPM capacity
- 908,000 gallon underground clear well backwash sludge removal
- Ultraviolet Treatment

The UV disinfection process is a non-chemical method for destroying microorganisms by altering their genetic material, and rendering them unable to reproduce.



WATER PLANT 1



Plant 1 has a rated capacity of 3,473 gallons per minute with a net capacity of 5 million gallons per day. The main components of the treatment facility consist of the following units...

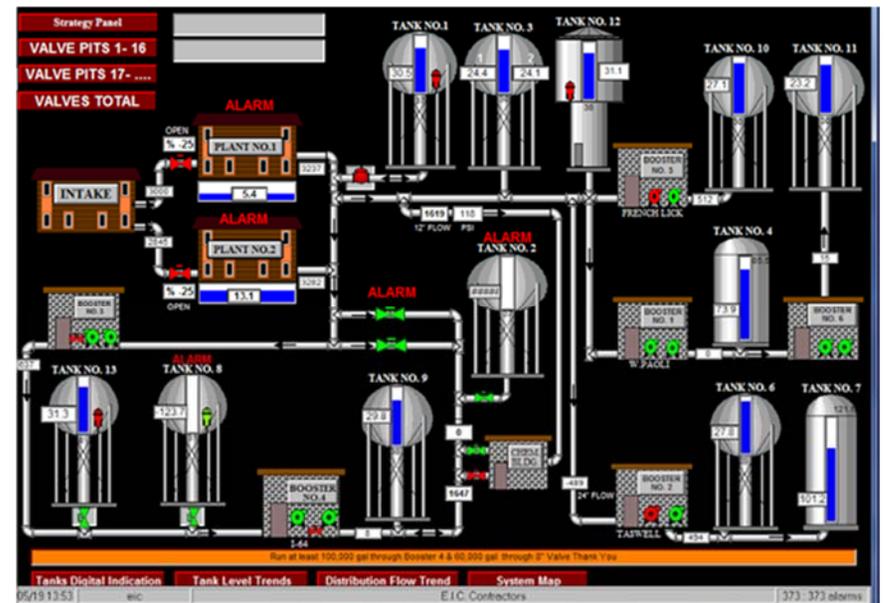
- ❖ (4) 868 GPM solid contact units
- ❖ (8) 434 GPM filters
- ❖ high service pumps
- ❖ chlorination, ammonia and fluoridation equipment
- ❖ controls
- ❖ chemical feed equipment
- ❖ reclaiming backwash facilities, sludge holding ponds, & drying beds
- ❖ 500,000 gallon clear well



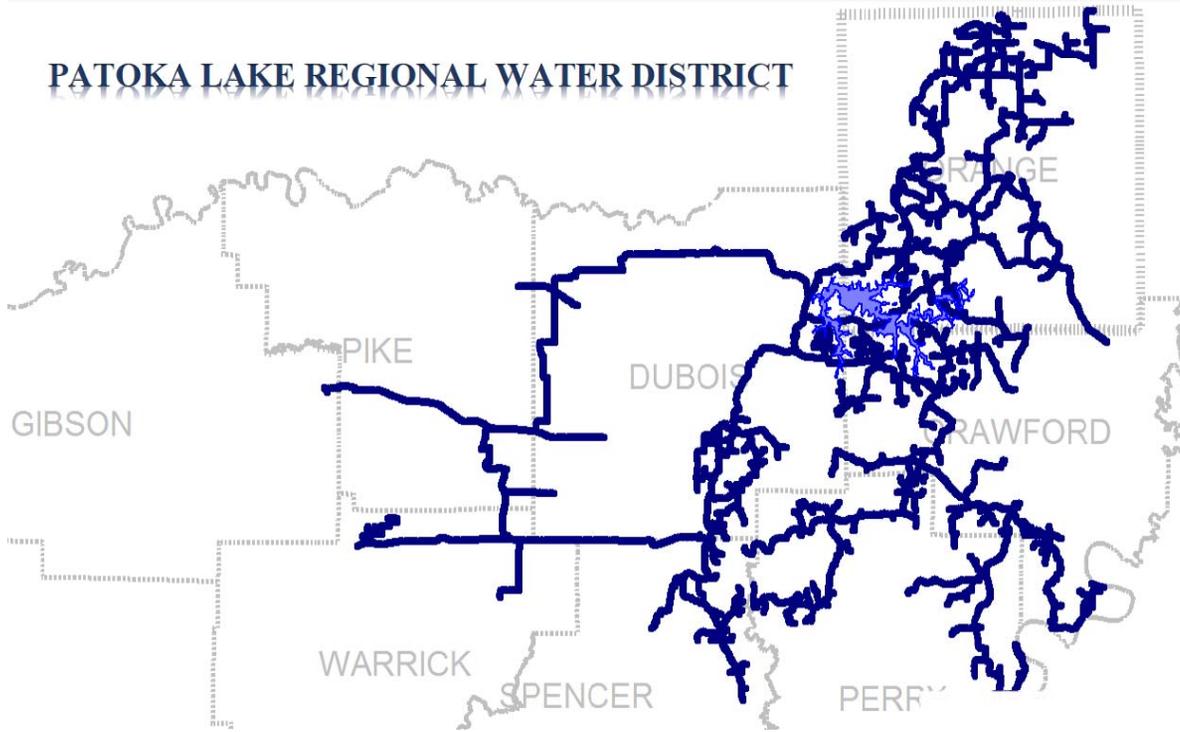
TRANSMISSION AND DISTRIBUTION

The distribution system consists of approximately 850 miles of 2 inch through 30 inch transmission and distribution mains constructed of ductile iron and PVC pipe extending in all directions from the water treatment plants. Flow from the elevated storage tank at the water treatment plant is by gravity pressure throughout the distribution system assisted by two 700 gallons per minute booster stations, one 1500 gallons per minute booster station, two 500 gallons per minute booster stations, and one 400 gallons per minute booster station creating static pressures varying from 20 PSI to 200 PSI with a customer average of 60 PSI depending on location of service. Storage tanks are constructed throughout the system to provide flows during peak demand periods and maintain system pressures.

The system is complete with the necessary valves, flush and fire hydrants, blow-offs, pressure reducing valves, radio read meters, and service lines.



PATOKA LAKE REGIONAL WATER DISTRICT



PATOKA LAKE REGIONAL SEWER DISTRICT

