FILED
December 10, 2021
INDIANA UTILITY
REGULATORY COMMISSION

**STATE OF INDIANA**

**INDIANA UTILITY REGULATORY COMMISSION**

**IN THE MATTER OF THE PETITION OF**
**NORTH DEARBORN WATER AUTHORITY**
**FOR EXPEDITED APPROVAL TO ISSUE**
**LONG-TERM DEBT AND ADJUST ITS**
**RATES AND CHARGES**

**CAUSE NO. 45618**

IURC
PUBLIC'S #2
EXHIBIT NO.
1-25-22
DATE
REPORTER

# PUBLIC'S EXHIBIT NO. 2

# TESTIMONY OF CARL N. SEALS

**ON BEHALF OF**

**THE INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR**

**DECEMBER 10, 2021**

OFFICIAL
EXHIBITS

Respectfully submitted,

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

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# CERTIFICATE OF SERVICE

This is to certify that a copy of the ***Public Exhibit No. 2 – Testimony of Carl N. Seals on behalf of the OUCC*** has been served upon the following counsel of record in the captioned proceeding by electronic service on December 10, 2021.

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# TESTIMONY OF OUCC WITNESS CARL N. SEALS
# CAUSE NO. 45618
# NORTH DEARBORN WATER AUTHORITY

## I. INTRODUCTION

**Q: Please state your name and business address.**

A: My name is Carl N. Seals, and my business address is 115 West Washington Street, Suite 1500 South, Indianapolis, Indiana 46204.

**Q: By whom are you employed and in what capacity?**

A: I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC") as the Assistant Director in the Water/Wastewater Division. My qualifications and experience are set forth in Appendix A.

**Q: What is the purpose of your testimony?**

A: I describe the capital improvement projects North Dearborn Water Authority ("North Dearborn" or "Petitioner") plans to complete. I discuss whether these projects should be considered reasonable for purposes of approving North Dearborn's requested financing. I also discuss North Dearborn's request to recover periodic maintenance expenses.

**Q: Please describe the review and analysis you conducted to prepare your testimony.**

A: I reviewed North Dearborn's Petition and its Indiana Utility Regulatory Commission ("IURC" or "Commission") Annual Reports for years 2016 through 2020. I prepared data requests and reviewed North Dearborn's responses. I reviewed the Commission's final orders in North Dearborn's most recent cases (see Table 1). I reviewed reports North Dearborn filed with the Indiana Department of Environmental Management ("IDEM"), which I accessed on IDEM's Virtual File Cabinet.[1] Finally, on November 16, 2021, I met

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[1] https://vfc.idem.in.gov/DocumentSearch.aspx

with North Dearborn's Superintendent Gary Gaynor and visited North Dearborn's facilities and water main project sites. Pictures and brief descriptions of those facilities appear as OUCC Attachment CNS-1.

Table 1

| Cause No. | Request | Date Filed | Date Ordered | Percent Increase |
|---|---|---|---|---|
| 44248 | Financing | 9/13/2012 | 2/13/2013 | none |
| 43736 | Rates & Financing | 7/14/2009 | 10/1/2009 | 14.97% |

**Q: Does your testimony include attachments?**

A: Yes. My testimony includes the following attachments:

- OUCC Attachment CNS-1 – Pictures taken during site visit;
- OUCC Attachment CNS-2 – Map of service area and projects;
- OUCC Attachment CNS-3 – Utility Dashboard;
- OUCC Attachment CNS-4 – AWWA Water Loss Audit;
- OUCC Attachment CNS-5 – February 2020 MRO;
- OUCC Attachment CNS-6 – EPA Article on Drought Resilience;
- OUCC Attachment CNS-7 – USGS Document on overpumping wells;
- OUCC Attachment CNS-8 – Letter from WesTech representative;
- OUCC Attachment CNS-9 – Letter from Bastin Logan re: new Aeralater, and
- OUCC Attachment CNS-10 – Customer Comments.

## II. NORTH DEARBORN WATER SYSTEM

**Q: Please describe North Dearborn's characteristics.**

A: North Dearborn is a Water Authority providing water service to approximately 2,195[2] customers primarily in Dearborn County, but with a small number of customers in Franklin and Ripley Counties in southeastern Indiana. This includes the communities of St. Leon, Guilford, Yorkville, New Alsace, Dover, Weisburg and Lawrenceville as well as rural customers. A map of the service area, including locations of proposed projects appears as OUCC Attachment CNS-2. North Dearborn sources and treats most of its water from its

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[2] 2020 Annual Report, page W-1, Year End Customer Numbers.

River Road Wells and Highland Center plant, but also purchases water for resale from the City of Greendale, Hoosier Hills Regional Water District and Tri-Township Water Corporation at five discrete interconnections (Table 2). North Dearborn's system currently consists of two 600 gallon-per-minute ("gpm") wells, one 600 gpm Aeralater filter, two 600 gpm high service pumps, three elevated storage tanks and approximately 114[3] miles of main, with diameters ranging from 2 to 12 inches. North Dearborn sells an average of 342,000 gallons of water per day. North Dearborn's IURC Annual Report sets forth some general operating statistics, which I summarize in Attachment CNS-3 ("Utility Dashboard"). As shown in Table 1, North Dearborn's rates have not increased since receiving an Order in 2009.

Table 2

| Supplier | Point of Delivery | Connection Size | Contractual Availability |
|---|---|---|---|
| City of Greendale | Nowlin Avenue | 4" | open contract |
| Hoosier Hills SR 48 | Burns Road | 4" | 1,400,000/mo |
| Hoosier Hills Penntown | State Road 46 | 4" | combined |
| Tri-Township Mt Pleasant | Mt Pleasant Road | 3" | open contract |
| Tri-Township Georgetown | Georgetown Road | 2" | open contract |

**Q: What is North Dearborn's water storage capacity?**

A: With three storage tanks, North Dearborn currently has total storage capacity of approximately 1.1 million gallons (Table 3). With average sales in 2020 of approximately 342,000 gallons per day,[4] North Dearborn easily meets the Ten State Standard

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[3] Preliminary Design Summary appearing on page 137 of 155 of Petitioner's Exhibit 3.

[4] 2020 Annual Report page W-6, 125,317,000 gallons sold 2020 / 366 days = 342,396 gallons per day.

recommendation that total water storage meet average day demands.[5]

Table 3

| Tank | Description | Capacity | Installed | Last Painted |
|---|---|---|---|---|
| Old New Alsace | Elevated | 75,000 | 1965 | 2014 |
| St Leon | Elevated | 500,000 | 2000 | 2012 |
| New Alsace | Elevated | 500,000 | 2010 | 2017 |
| Total storage | | 1,075,000 | | |
| Avg gals/day (from Sales O3) | | 342,396 | | |
| Surplus (deficit) | | 732,604 | | |

**Q: Please discuss "water loss" as it pertains to North Dearborn's operations.**

A: IURC annual reports define "water loss" as the difference between total water pumped and purchased and the total amount of water sold to customers or used for backwash, flushing mains, street cleaning/sewer flushing, or other authorized consumption. Water loss may reasonably be attributed to leaks and inaccurate measurement of consumption.

**Q: How does water loss affect a utility's costs and operations?**

A: Whether finished water is metered, used for operations or lost through leaks, the cost to produce the water is already included in the utility's test year operating expenses. But the cost to produce water that is lost through leaks is a cost paid by all customers through higher rates.

**Q: What is North Dearborn's water loss?**

A: According to its IURC annual reports, since 2016, North Dearborn's water loss has dropped from 22.4% to 9.9% (also see OUCC Attachment CNS-3 "Utility Dashboard" for graphical representation).

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[5] 1.1 million capacity > 342,000 average day consumption recommended. According to the Recommended Standards for Waterworks, A Report of the Water Supply Committee of the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, Part 7 Finished Water Storage, Section 7.0.1(a) Sizing states: "The minimum storage capacity (or equivalent capacity) for systems not providing fire protection shall be equal to the average daily consumption. This requirement may be reduced when the source and treatment facilities have sufficient capacity with standby power to supplement peak demands of the system."

**Q: Do you have any concerns regarding North Dearborn's level of lost water?**

A: No. As further evidence of its continuing efforts to reduce lost water, North Dearborn provided in response to OUCC Data Request 4-4 an American Water Works Association Water Audit certified in December 2020 (OUCC Attachment CNS-4).

## III. PROPOSED CAPITAL IMPROVEMENTS

**Q: Has a Preliminary Engineering Report ("PER") been prepared to guide North Dearborn in planning for distribution improvements?**

A: Yes. A 2020 Preliminary Engineering Report was prepared by Curry and Associates, Inc. and was included as Petitioner's Exhibit 3. This PER describes Petitioner's system, examines several alternative projects, and ultimately selects five of those projects to be completed.

**Q: What types of projects did North Dearborn include in its PER?**

A: As discussed in Petitioner's Verified Petition, North Dearborn plans five capital improvements to its distribution system:

1. Upgrading the capacity of the wells to increase the pumping capacity of each well to 1,000 gpm (Alternative 1b);
2. Replacing the existing 600 gallon-per-minute ("gpm") Aeralater with new, 1,000 gpm Aeralater (Alternative 3);
3. Construction of a 12-inch water main along North County Line Road (Alternative 5);
4. Construction of a 12-inch water main along Central Drive (Alternative 6), and
5. Construction of an 8-inch water main along Post 464 Road (Alternative 7).

### A. Well capacity upgrades

**Q: Please describe the well capacity upgrades.**

A: The existing wells were installed in 1994 and were designed for 600 gallons per minute ("gpm"). This project includes upgrading the existing well pumps and electrical systems to enable them to deliver 1,000 gpm (a 67% increase[6]), as well as adding variable frequency drives to "allow the pumping rate to be adjusted to most effectively meet demand and optimize treatment operations."[7]

**Q: Why is Petitioner requesting to upgrade the well capacity?**

A: According to Ms. Young's testimony and the PER, there are three primary drivers for the additional well capacity. These are:

- Additional production capacity;
- Improve drought resiliency and redundancy, and
- Provide water resources for the current and long-term needs of NDWC.

I will discuss each of these reasons in turn and explain why I do not believe additional well capacity is necessary for North Dearborn.

**Q: Does Petitioner have a need for additional production capacity?**

A: No. North Dearborn currently has 1.075 million gallons of finished water storage, equivalent to more than three days' average usage (342,000 gpd).[8] Because of this large amount of storage, and to reduce aging water problems (reduced chlorine residual, increasing disinfection byproducts), North Dearborn's operator correctly draws down the tanks to lower levels than might otherwise be expected before turning on wells to replenish the stored supply. Thus, during periods of lower usage (e.g. colder months), it may take multiple days to draw the tanks down to the necessary level (to activate the wells). While this makes sense operationally, it causes higher than normal "maximum day" demands once well pumping and treatment is restarted to return storage tank levels to normal. As

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[6] (1,000 – 600) / 600 = .667

[7] Petitioner's Exhibit 1, page 13 of 16.

[8] Ten States Standards recommends storage equal to an average day in most cases, or 342,000 gallons here.

such, the maximum days or peaks may no longer represent typical flows or demands over a 24-hour period but may instead represent a significantly longer period.[9] Thus, reliance on peak days for decision making (plant/well sizing) may yield inefficient results[10] given the amount of North Dearborn's finished water storage.

Each of the current 600 gallon per minute ("gpm") wells can supply 864,000[11] gallons per day (gpd) if operated for 24 hours. This available 864,000 gpd would have met North Dearborn's "peak" *plant* production over the last two years of 800,000 gallons on February 28, 2020. Furthermore, even this "peak" plant production of 800,000 gpd on February 28, 2020 was preceded by *two days* of the plant and wells not running at all.[12] This is confirmed by Monthly Report of Operations for the month (see OUCC Attachment CNS-5).

The Ten States Standards recommends that "The total developed groundwater source capacity, unless otherwise specified by the reviewing authority, shall equal or exceed the design maximum day demand with the largest producing well out of service." As can be seen from the above discussion, North Dearborn already meets this requirement with the existing wells, and given its five-year historical growth in sales volumes,[13] will likely meet it for some time.

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[9] Water utilities will frequently operate their system in a manner that allows storage to drop during the day and recharge at night when demand is typically less. This typically occurs on a 24-hour cycle.

[10] Inefficient in that equipment may be oversized because of inaccurate maximum or peak day representations. For example, auto manufacturers do not start out building a plant to produce 3,000 cars a day and then operate it at only 1,000 (unless market forces have caused them to reduce production). Auto manufacturers (and manufacturers in general) attempt to maximize the use of capital equipment, including multiple shifts of production, weekends etc.

[11] 600 gals/min x 1,440 min/day = 864,000 gals/day

[12] The second highest plant production rate of 774,000 gallons on February 19, 2021 was also preceded by a day when the plant didn't operate.

[13] See Utility Dashboard appearing as OUCC Attachment CNS-3. Also note that from this same data set that total growth in sales from 2016-2020 was approximately 5%.

Petitioner has proposed to increase well capacity to 1,000 gpm per well, which equates to 1.4 million gallons per day per well.[14] This upgrade would enable the production of either well, operating alone, to be more than 4.21 times the average sales of 342,000 gpd. This would also be well in excess of both the peak day, *system-wide* (i.e. including all purchases and production) of 902,000 gallons on February 28, 2020 and the peak *plant* production (same day) of 800,000 gallons. As discussed above a single, existing 600 gpm (864,000 gpd) well can meet any of the peak plant production days observed over the November 2019 through October 2021 period and does not need to meet system-wide production due to the availability of multiple sources of purchased water.

**Q: Please discuss the project's impact on drought resiliency and redundancy.**

A: It is unclear how a well upgrade project intended to significantly increase groundwater withdrawal will improve the utility's drought resiliency. From a review of information from the Environmental Protection Agency (EPA)[15] I see discussion of (for example) Water Efficiency and Aging Infrastructure, Water Reuse and Watershed Sustainability, but no discussion of increased groundwater withdrawal or increased well capacity as an approach to improve drought resiliency. In fact, increased withdrawals from the local aquifer (as would be achieved by increasing well capacity from 600 gpm to 1,000 gpm) may instead serve to negatively impact watershed sustainability as greater volumes are withdrawn.[16]

Redundancy, which is defined as "the duplication of critical components or functions of a system with the intention of increasing reliability of the system, usually in

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[14] 1,000 gpm x 1,440 min/day = 1,440,000 gallons per day ("gpd") assuming 24-hour operation.
[15] See OUCC Attachment CNS-6.
[16] See OUCC Attachment CNS-7.

the form of a backup or fail-safe,"[17] is already provided by the second available well – redundancy is not enhanced by simply increasing capacity of the existing wells.

**Q: Please discuss the project's impact on current and long-term needs of North Dearborn.**

A: It does not appear that given the utility's historical growth in customers and usage that increased well capacity will be needed within the next several years. Even with customer growth, many utilities are experiencing lower demand per customer, which is slowing the overall growth in water sales/demand.[18]

**Q: Have Petitioner's wells reached the end of their service lives?**

A: No. Petitioner's witness, Ms. Young, stated that "both wells are in good condition and should be fully productive for the 20-year planning horizon."[19]

**Q: Have Petitioner's well pumps reached the end of their service lives?**

A: Ms. Young made no assertion that the exiting well pumps were at the end of their service lives.

**Q: Do you believe that the existing wells should be upgraded from 600 gpm to 1,000 gpm?**

A: No, I do not believe that the additional capacity is necessary at this time.

**Q: What is the cost associated with the well capacity upgrade?**

A: The cost of the well capacity upgrade is $254,000. Therefore, I recommend reducing the amount of the requested debt authority by $254,000.

### B. Replacement and upsizing of existing Aeralater

**Q: Please describe the replacement of the 600 gpm Aeralater.**

A: The existing 600 gpm Aeralater was constructed in 1994 and required repairs in 2019 due

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[17] https://en.wikipedia.org/wiki/Redundancy_(engineering)

[18] According to the American Water Works Association, "2019 State of the Water Industry Report," Nearly half of water utilities report declining or flat total water sales in the past 10 years, largely due to efficiency improvements.

[19] Testimony of Lori A. Young, P.E., Petitioner's Exhibit 1, page 13 of 16.

to corrosion. These repairs, which required taking half of the unit out of service,[20] are shown on the inside picture of the Aeralater found in OUCC Attachment CNS-1. Steel versions of these plants have an expected life of around 25 years according to the manufacturer, while newer, aluminum versions may last 30 years or longer.[21] Since North Dearborn was already planning to replace this unit, they decided to increase the capacity to 1,000 gpm for an additional $100,000[22] as supported in response to OUCC Attachment CNS-9.[23]

**Q: Do you have any concerns with the increase of the Aeralater from 600 gpm to 1,000 gpm?**

A: Yes, I have concerns but ultimately agree the Aeralater size should be increased. Given that the expected life of these units is approximately 25 years, and that almost one-quarter of North Dearborn's water sales volumes come from purchased water, I am concerned that the increased size *based only upon customer growth* may be premature. However, given that North Dearborn could not have met its recent, peak plant flow of 800,000 gallons per day (February 28, 2020) with its largest filtration unit (i.e. half of the Aeralater) out of service, I accept the proposed increase in Aeralater size.[24] While half of the proposed 1,000 gpm Aeralater (500 gpm or 720,000 gpd) would still not have met the recent February 28,

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[20] Thereby reducing filter capacity to 300 gpm or 432,000 gallons per day ("gpd"). It is my understanding from discussion with WesTech staff that this capability to run at essentially half capacity may not be common to all models.

[21] See OUCC Attachment CNS-8 for 2020 letter from WesTech which was included in testimony of James T. Parks in Cause No. 45342.

[22] $80,000 for the Aeralater plus $20,000 for foundation.

[23] Response to OUCC Data Request 4-1.

[24] "At least two units shall be provided. Where only two units are provided, each shall be capable of meeting the plant design capacity (normally the projected maximum daily demand) at the approved filtration rate. Where more than two filter units are provided, the filters shall be capable of meeting the plant design capacity at the approved filtration rate with one filter removed from service." Section 4.3.1.3, Recommended Standards for Water Works, Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2012 ("Ten State Standards")

2020 peak day, it would have still met peak days in 15 out of the last 24 months (Nov. 2019 – Oct. 2021). For these reasons, I support the increase in size from 600 gpm to 1,000 gpm.

**Q: Does the Aeralater need to "match" the wells in terms of flow rate, i.e., gallons per minute?**

A: No, the Aeralater is simply a self-contained unit combining aeration, detention, and filtration in a single piece of equipment. As such, it has a maximum rate for effective filtration, but does not otherwise need to have the same flow rate as the wells. In fact, the high service pumps downstream of the Aeralater, which are not being replaced, are listed in Petitioner's Annual Report as 600 gpm pumps, the same as the existing wells.

**Q: What is the total estimated cost for the Aeralater replacement project?**

A: The preliminary estimate of probable construction cost for Alternative No. 3, Water Treatment Plant Improvements is $1,400,000. The project budget includes a construction contingency of $210,000 (15%), and non-construction costs of $321,000 (20%) for a total probable project cost of $1,931,000.

## C. <u>Installation of new water mains</u>

**Q: Please generally describe the water main projects North Dearborn is proposing.**

A: The water main projects, located just north of I-74 in the northern part of Dearborn County, tie together smaller (three-inch through ten-inch) existing mains to reinforce the system in this area and to provide for a potential, additional I-74 crossing.[25] These mains are highlighted in blue in Table 4, which is a selected portion of the larger map provided in

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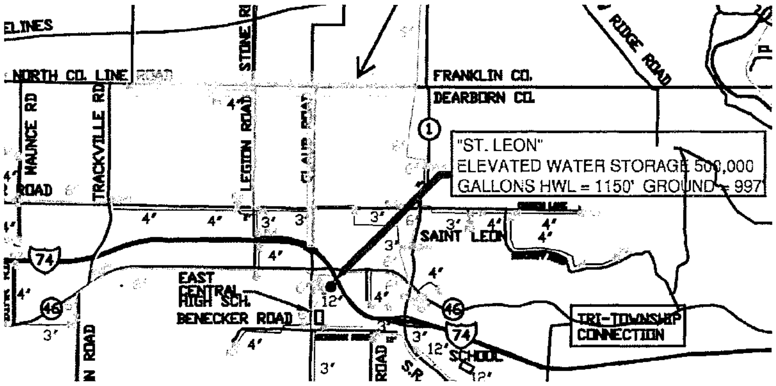
[25] "It will allow for a redundant feed to the 500,000-gallon water storage tank once the main can be extended across I-74." Petitioner's Exhibit 3, page 35 of 155.

Petitioner's Exhibit 3, page 61 of 155. On this map, Legion Road is now actually Post 464 Road and Glaub Road should be Central Drive.[26]

Table 4



**Q:** **Please describe the North County Line Road project.**

A: This project, which is identified as Alternative 5 in the Preliminary Engineering Report ("PER"), primarily involves the installation of 13,500 feet of 12-inch main[27] and appurtenances[28] along North County Line Road, north of I-74, to achieve the following:

- Provide a direct connection to the existing six-inch water main along State Road 1, which is currently a dead-end main fed from the south side of I-74;
- Improve distribution system and capacity to convey water east and south;
- Add redundancy of transmission mains, and
- Provide greater pressures and volumes north of I-74.

The preliminary estimate of probable construction cost for Alternative No. 5 is $590,500. The project budget additionally includes a construction contingency of $88,000 (15%), and non-construction costs of $134,000 (20%) for a total probable project cost of $812,500.

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[26] This was confirmed in Petitioner's response to OUCC Data Request 2-14 and 2-15.

[27] The project also includes the incidental installation of 100 feet of six-inch main, for a total of 13,600 feet of new water mains.

[28] Associated valves, fitting and hydrants.

The total probable project cost of $812,500, when divided by 13,600 feet (including six-inch main), yields a unit cost of $59.74 per foot.

**Q: Please describe the Central Drive project.**

A: This project, which is identified as Alternative 6 in the PER, involves the installation of 7,000 feet of 12-inch main and appurtenances along Central Drive, north of I-74, to achieve the following:

- Provide a redundant feed to the 500,000-gallon storage tank once another main is extended across I-74;
- Provide for looping within the area north of I-74, and
- Improve pressures and flow on the north side of I-74.

The preliminary opinion of probable construction cost for Alternative No. 6 is $331,000. The project additionally includes a construction contingency of $49,800 (15%), and non-construction costs of $75,000 (20%) for a total probable project cost is $455,800. The total probable project cost of $455,800, when divided by 7,000 feet, yields a unit cost of $65.11 per foot.

**Q: Please describe the Post 464 Road project.**

A: This project, which is identified as Alternative 7 in the ("PER"), involves the installation of 5,300 feet of eight-inch main and appurtenances along Post 464 Road, north of I-74, to provide for improved pressures and flows north of I-74 and to support additional anticipated development. The preliminary opinion of probable construction cost for Alternative No. 6 is $249,200. The project additionally includes a construction contingency of $32,000 (15%), and non-construction costs of $49,000 (20%) for a total probable project cost of $298,200. The total probable project cost of $298,200, when divided by 5,300 feet, yields a unit cost of $56.26 per foot.

### D. Conclusion

**Q: Did North Dearborn provide cost support for the projects listed in its Capital Improvement Plan?**

A: Yes. Table 6.6.1, Preliminary Estimate of Probable Project Costs summarized the cost of each project and was provided on page 51 of 155 of the Preliminary Engineering Report (Petitioner's Exhibit 3). More detailed information for each project was included in individual Opinions of Probable Construction Cost located throughout the PER.

**Q: What amount do you recommend for North Dearborn's Capital Improvement Plan?**

A: I recommend $3,641,000[29] for North Dearborn's Capital Improvement Plan. This total removes the Well Capacity Upgrade and does not adjust any of the contingencies.

**Q: Do you agree the projects included in North Dearborn's Capital Improvement Plan are reasonable?**

A: Except for the Well Capacity Upgrade project, the capital improvement projects proposed by North Dearborn appear to be reasonable and necessary for the continued provision of reliable service.

## IV. PERIODIC MAINTENANCE

**Q: Please describe North Dearborn's proposed adjustments to Periodic Maintenance expense.**

A: Table 5, which replicates Adjustment (4) from Petitioner's Exhibit 5, page 17 of 36 sets out proposed adjustments to Periodic Maintenance and includes maintenance activities and costs for wells, Aeralater and filter media, high service pumps and storage tanks.

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[29] North Dearborn's total cost including contingencies is $3,895,000. The Well Capacity Upgrade total cost including contingencies is $254,000. $3,895,000-$254,000 = $3,641,000.

Table 5

| Periodic Maintenance Item | Amount |
|---|---|
| Well testing ($500 x 2) | $1,000 |
| Well cleaning ($10,000 x 2 / 3 yrs) | 6,667 |
| Well pump repair & rebuild ($7,500 x 2 / 3 yrs) | 5,000 |
| High service pump insp & service ($200 x 2) | 400 |
| High service pump repair/rebuild ($6,000 x 2 / 3 yrs) | 4,000 |
| Detention tank, aerator & filter media clean & inspect ($1,500 / 3 yrs) | 500 |
| Filter media replacement ($25,000 / 10 yrs) | 2,500 |
| Tank painting & maintenance (per maint contract) | 12,504 |
| Total | $32,571 |
| Less test year | (12,409) |
| Adjustment | $20,162 |

Source: Petiitoner's Exhibit 5, page 17 of 36

Tank Maintenance includes an annual contract amount with a service provider for the old New Alsace (75,000 gallons) and St. Leon tanks.

Q: **Did you seek additional information regarding historical expenditures for these periodic maintenance activities?**

A: Yes, in response to OUCC Data Request 4 Petitioner provided additional information supporting their proposed costs for these activities.

Q: **Do you accept Petitioner's pro forma expense amount for each periodic maintenance item?**

A: Yes. These expenses appear to be reasonable for continued maintenance and operation of these critical assets.

## V. OTHER MATTERS

Q: **Do you have any concerns regarding North Dearborn's operations reporting?**

A: Yes, on page W-6 of its Annual Report, North Dearborn indicates that it does not maintain a database of main breaks. In response to OUCC Data Request 2-3 North Dearborn indicated that it *does* track and report main breaks in monthly notes provided at each Board meeting. Since main breaks are in fact being tracked and reported, North Dearborn should include this information in its Annual Reports to the Commission.

**Q: Did the OUCC receive any customer comments regarding North Dearborn's proposed rate increase?**

A: Yes. These comments are included as OUCC Attachment CNS-10.

## VI. RECOMMENDATIONS

**Q: Please summarize your recommendations.**

A: I recommend that except for the Well Capacity Upgrade, the Commission accept North Dearborn's Capital Improvement Plan for purposes of approving North Dearborn's requested authorization for financing. I also recommend the Commission accept North Dearborn's proposed Periodic Maintenance adjustments.

**Q: Does this conclude your testimony?**

A: Yes.

## APPENDIX A

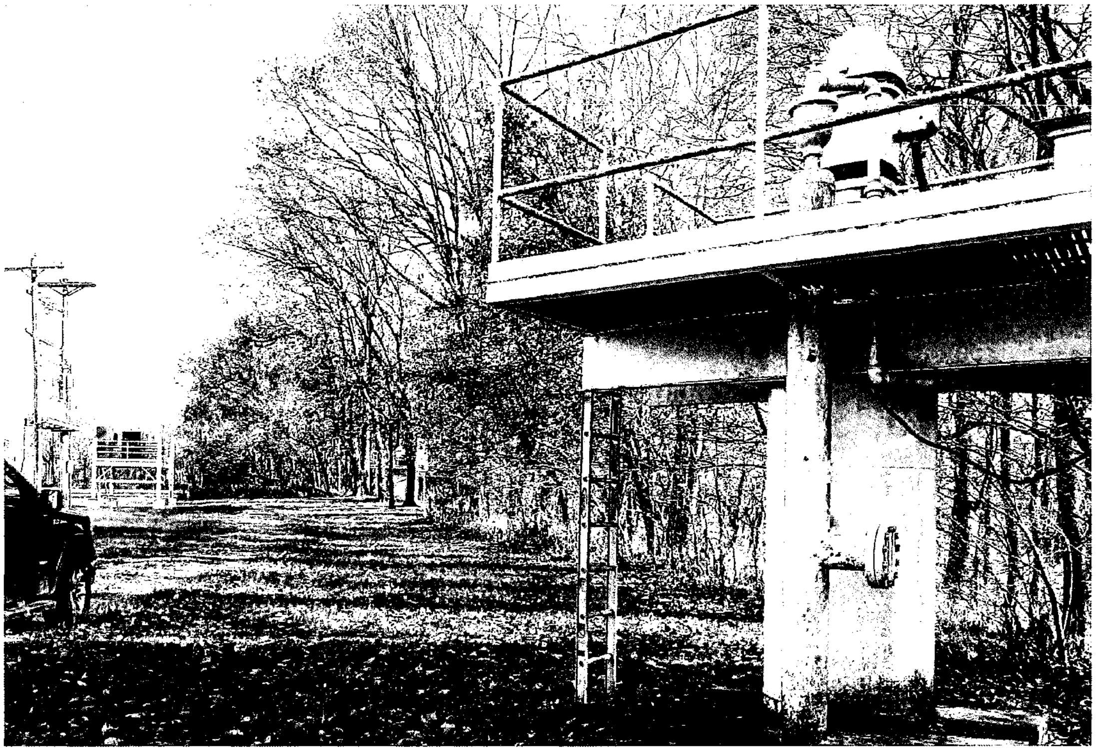
## QUALIFICATIONS

**Q: Please describe your educational background and experience.**

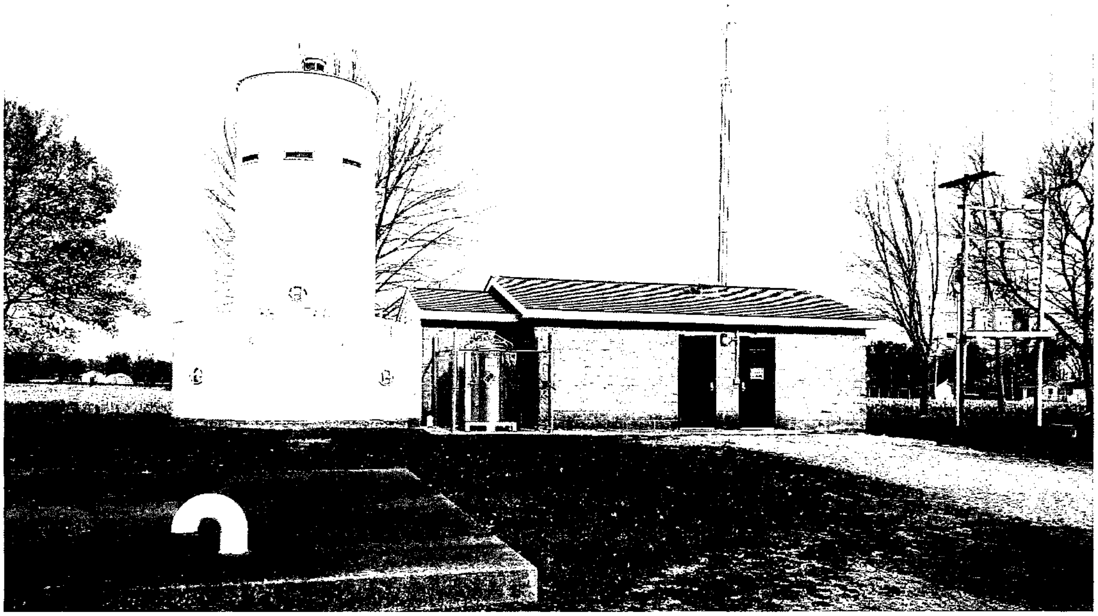
A: In 1981 I graduated from Purdue University, where I received a Bachelor of Science degree in Industrial Management with a minor in Engineering. I was recruited by the Union Pacific Railroad, where I served as mechanical and maintenance supervisor and industrial engineer in both local and corporate settings in St. Louis, Chicago, Little Rock and Beaumont, Texas. I then served as Industrial Engineer for a molded-rubber parts manufacturer before joining the Indiana Utility Regulatory Commission ("IURC") as Engineer, Supervisor and Analyst for more than ten years. It was during my tenure at the IURC that I received my Master of Health Administration degree from Indiana University. After the IURC, I worked at Indiana-American Water Company, initially in their rates department, then managing their Shelbyville operations for eight years, and later served as Director of Regulatory Compliance and Contract Management for Veolia Water Indianapolis. I joined Citizens Energy Group as Rate & Regulatory Analyst following the October 2011 transfer of the Indianapolis water utility and joined the Office of Utility Consumer Counselor in April of 2016. In March 2020 I was promoted to my current position of Assistant Director of the Water and Wastewater Division.

**Q: Have you previously testified before the Indiana Utility Regulatory Commission?**

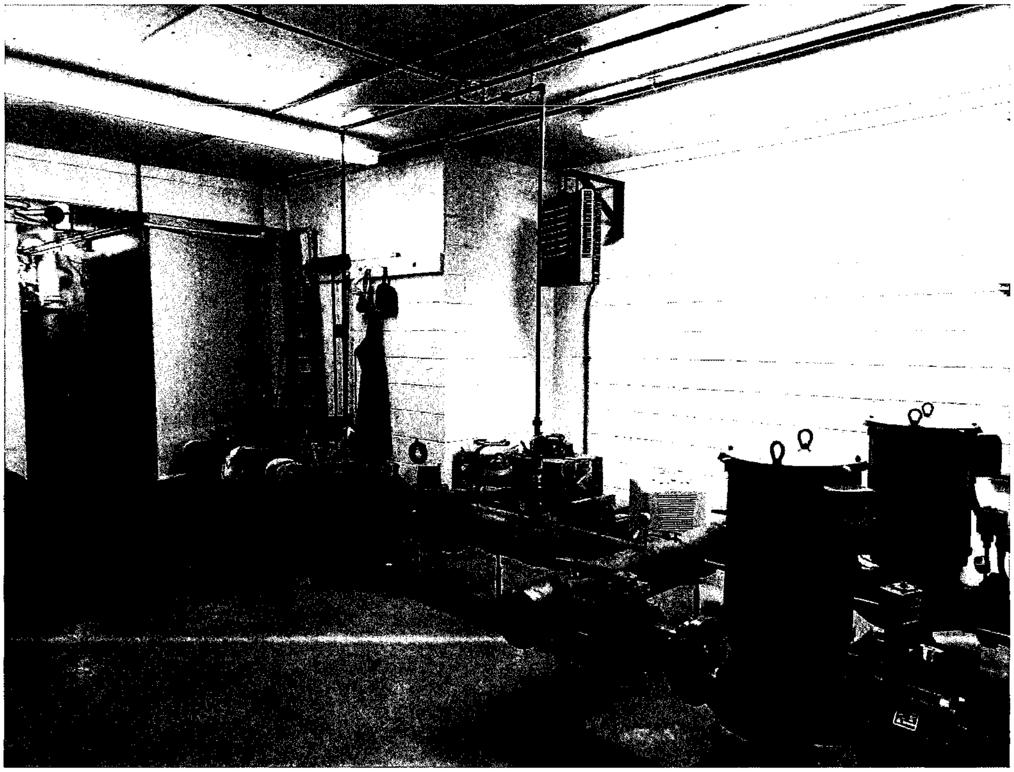
A: Yes, I have testified in telecommunications, water and wastewater utility cases before the Commission.



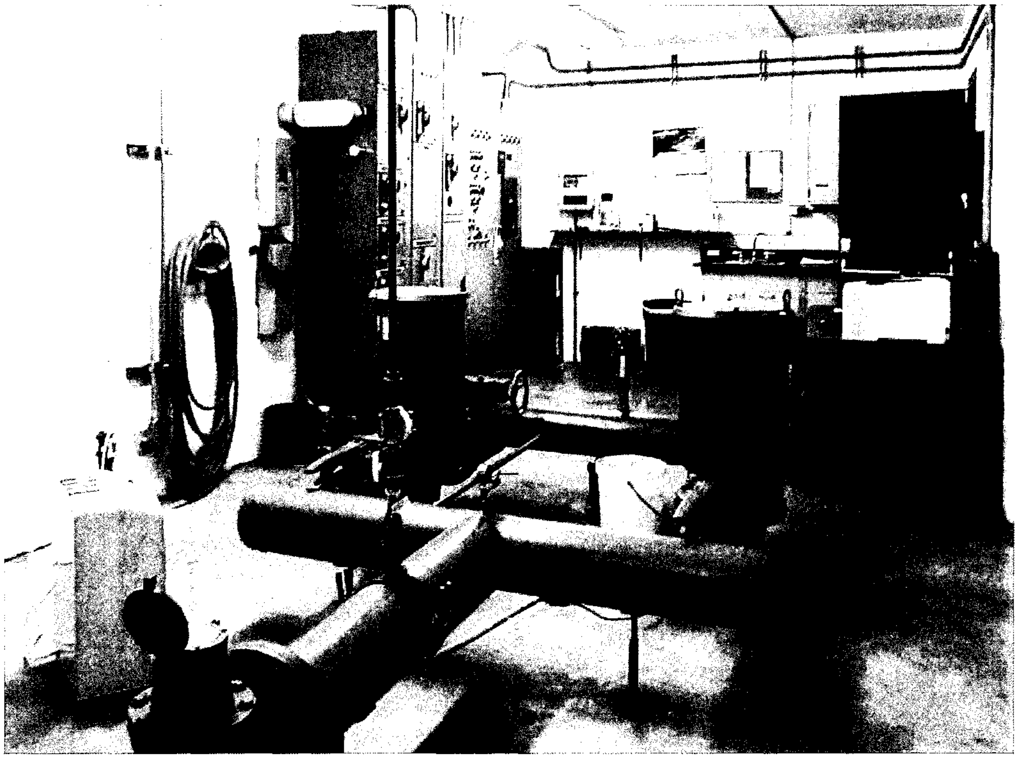
Wells located along Whitewater River, standby generator on platform at left



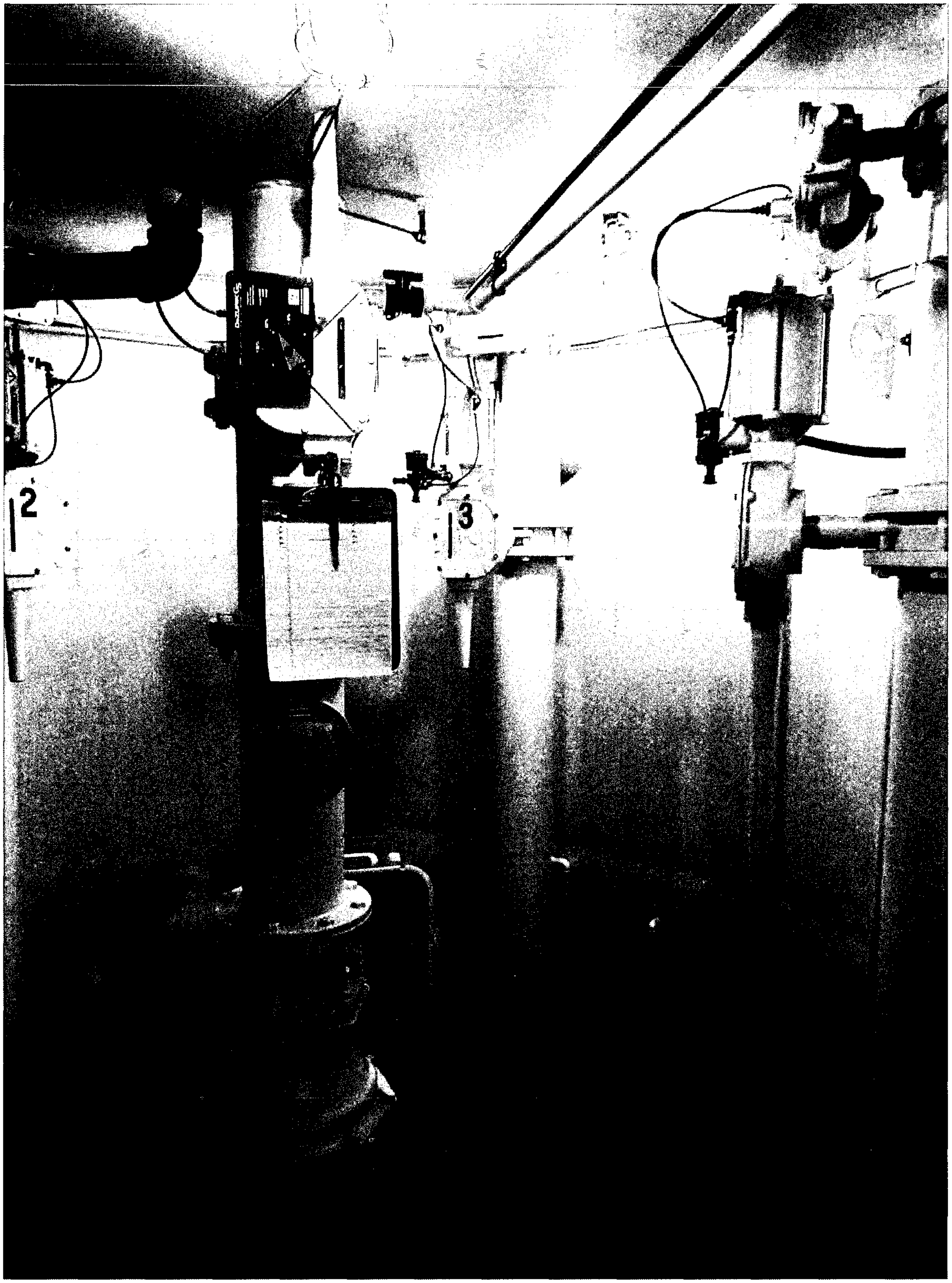
Treatment plant exterior, Aeralater on left



Plant interior, high service pumps on right, Aeralater on left



Plant interior showing high service pumps, control panel

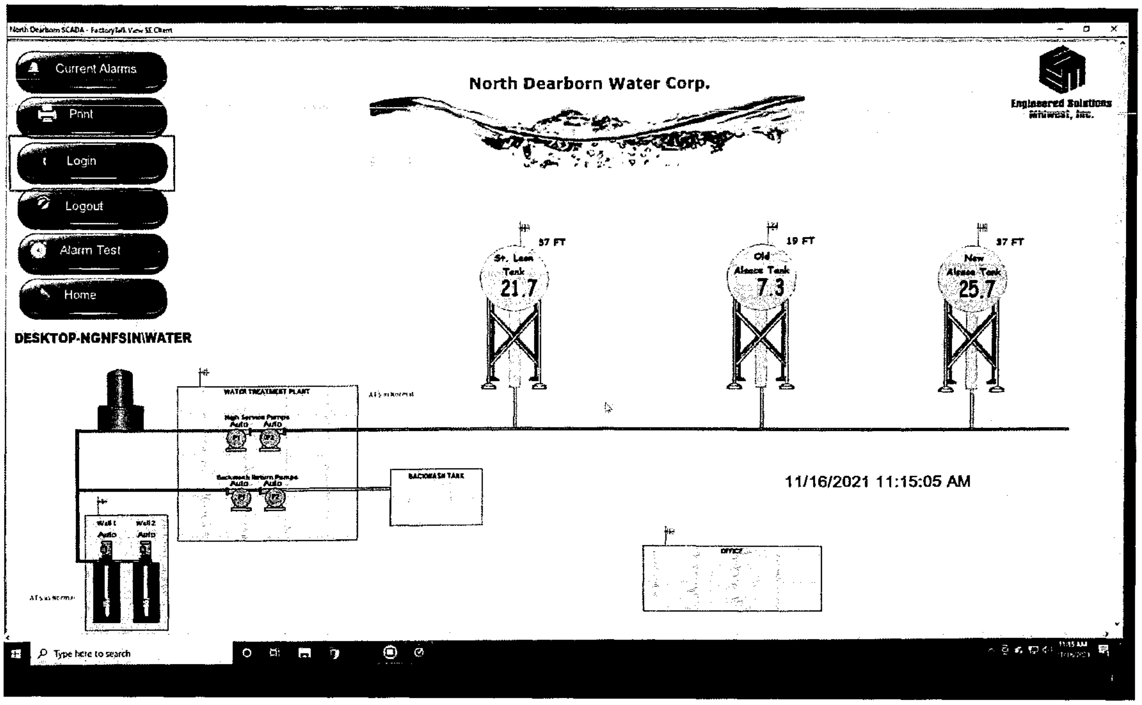


Aeralater interior, note lighter-colored repair seam towards bottom

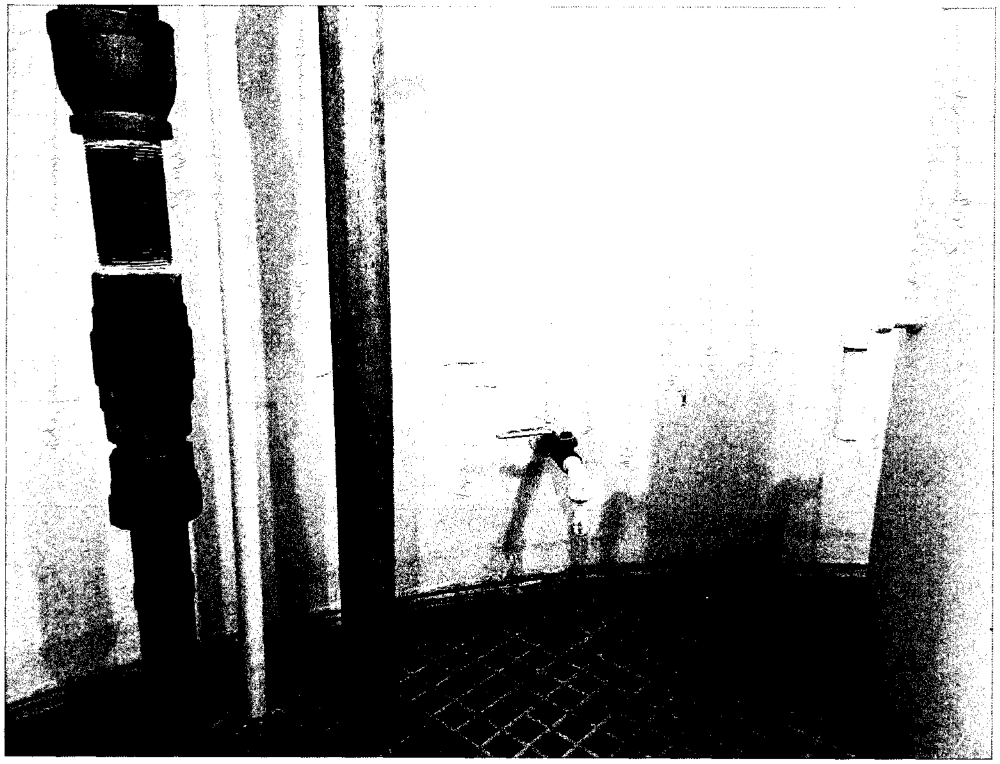
New New Alsace 500,000-gallon Tank

Old New Alsace 75,000-gallon tank

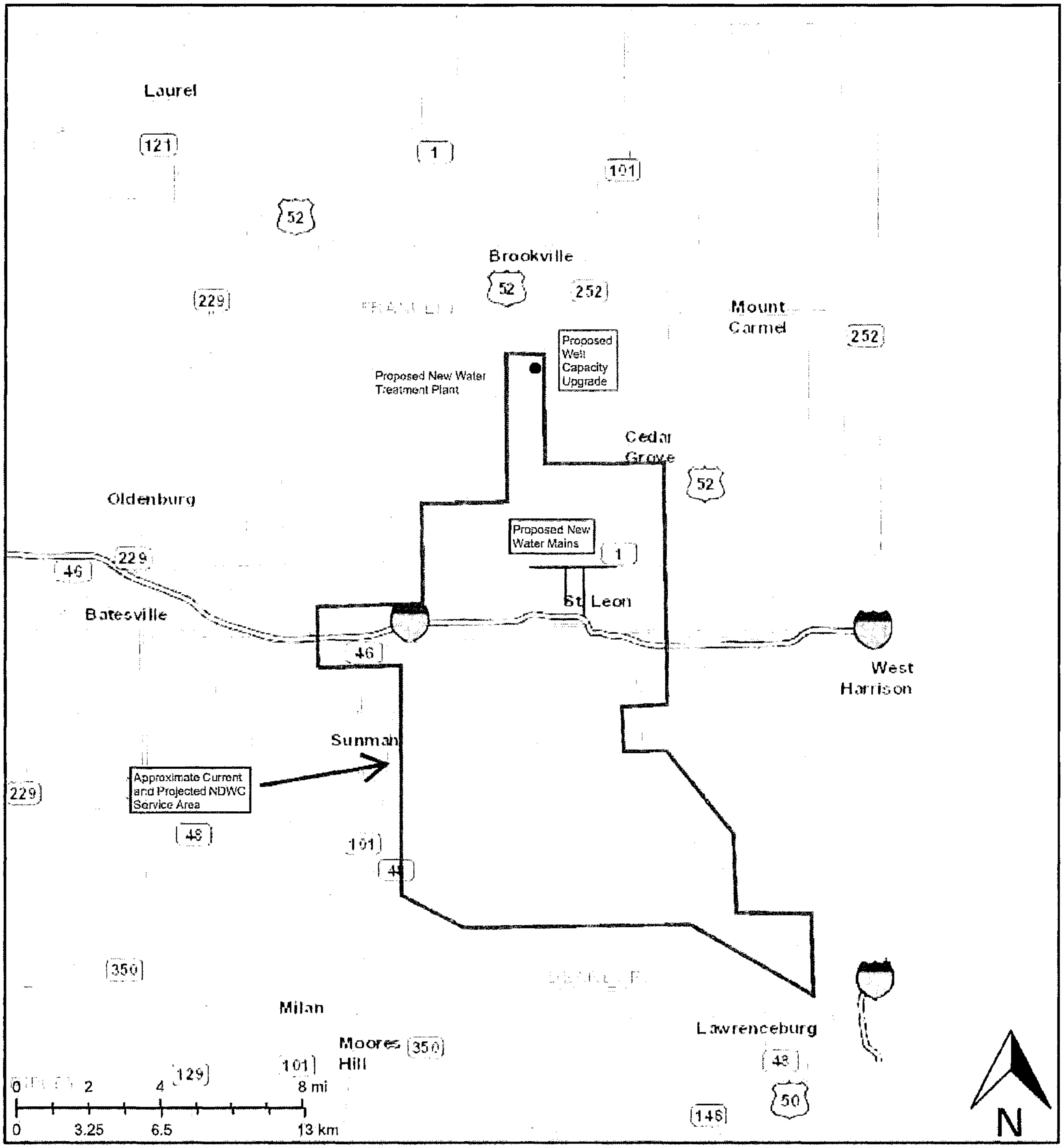
St. Leon 500,000-gallon tank



SCADA overview of North Dearborn system



Close-up shot of Aeralater repair



Indiana Department of Transportation (INDOT); U S. Census Bureau (USCB) Indiana Geographic Information Council (IGIC), UITS, Indiana Spatial Data Portal

Figure 1.3.1: Proposed Project Areas for NDWC's Waterworks Improvements

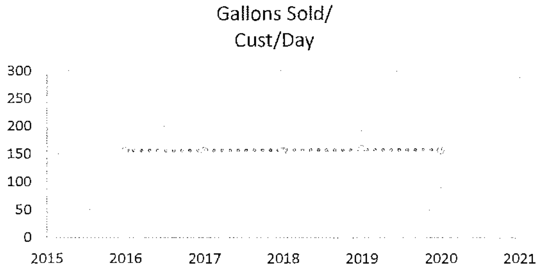
OUCC Attachment CNS-3
Cause No. 45618
Page 1 of 1

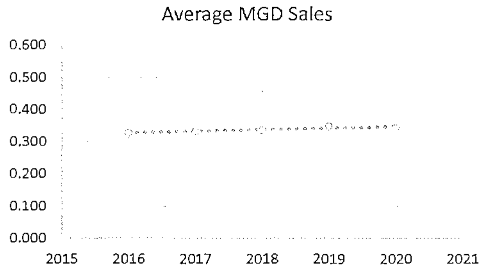
# Utility Dashboard
# North Dearborn Water Corporation
# Cause No. 45618

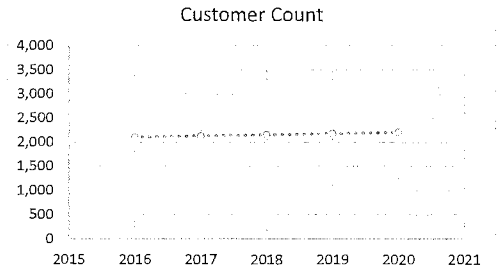
| | W-1 | W-6 | W-6 | | W-6 | | | | | W-6 |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Customers Year-End | Total Pumped & Purchased | Total Sold | Non-Revenue (C - D) | System Usage | Water Loss (E - F) | Percent Loss (G / C) | Average MGD | Gallons Sold/ Cust/Day | Main Breaks |
| 2016 | 2,095 | 154,240 | 119,219 | 35,021 | 423 | 34,598 | 22.4% | 0.326 | 155 | |
| 2017 | 2,120 | 149,967 | 120,714 | 29,253 | 1,076 | 28,177 | 18.8% | 0.331 | 156 | |
| 2018 | 2,154 | 135,221 | 121,956 | 13,265 | 244 | 13,021 | 9.6% | 0.334 | 155 | |
| 2019 | 2,173 | 139,721 | 126,940 | 12,781 | 618 | 12,163 | 8.7% | 0.348 | 160 | |
| 2020 | 2,195 | 140,380 | 125,317 | 15,063 | 1,213 | 13,850 | 9.9% | 0.342 | 156 | |

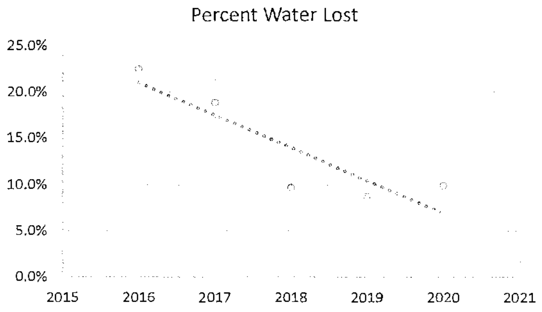
| | |
|---|---|
| average mgd 2020 | 0.342 mgd |
| avg gals/cust/mo 2020 | 4,758 gals |
| average mgd 5 yrs | 0.336 mgd |

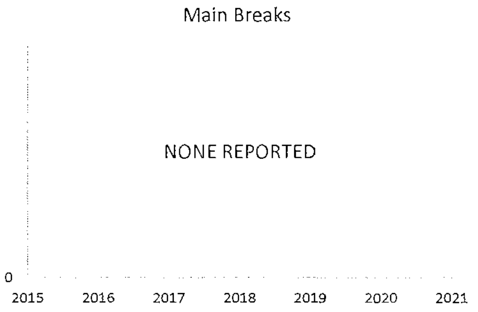
All reported in thousand gallons unless otherwise noted
System usage includes water used for firefighting, backwashing, main flushing, etc.
Source: IURC Annual Reports


Gallons Sold/
Cust/Day


Average MGD Sales


Customer Count


Percent Water Lost


Main Breaks

Dashed lines shows results of linear regression (trend) over period shown

# Water Loss Audit - Certificate of Level 1 Validation

Utility Name: North Dearborn Water Corporation

PWSID #: 5215008 Water Loss Audit Year: 2019

Water Loss Audit prepared by/primary contact:

Name: Jill Curry Phone: 317-745-6995

Organization, Title: Curry & Associates, Inc. – Project Manager

Email: jill@recurry.com

Comments from utility (optional; attach additional pages if needed): The Utility has traditionally had low water loss due to management practices. The low ILI score is noted. Recent annual water losses have been 9-11%.

Certified Water Loss Audit Validation prepared by:

Name: Lori Young Phone: 317-745-6995

Organization, Title: Curry & Associates, Inc. – President, P.E.

Email: lyoung@recurry.com

Certified Validator License Number: 012020004

Validation Metrics (to be completed by Validator; fill in all that apply):

Water Audit Data Validity Score (out of 100): 60

Apparent Loss (gallons/service connection/day): 2.39

Real Loss (gallons/service connection/day): N/A

Real Losses (gallons/length of main/day): 307.67

Infrastructure Leakage Index (ILI): 0.53

Certification Statement:

I hereby certify that:

1. I did not work on the water loss audit portion of this project.
2. I have conducted a Level 1 Validation review of the above referenced water loss audit according to the 2017 Level 1 Water Audit Validation: Guidance Manual (Water Research Foundation) and the results meet the requirements of the American Water Works Association methodology for water loss auditing.
3. The validation documentation for the above referenced water loss audit is summarized in the Level 1 Validation Form, which is available upon request.

Certified Validator Signature: Lori A Young Date: 12/16/2020

# AWWA Free Water Audit Software v5.0

This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits
for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

**Please begin by providing the following information**

Name of Contact Person: Gary Gaynor
Email Address: garyndwc2@etczone.com
Telephone (Incl Ext.): 812-576-2177
Name of City / Utility: North Dearborn Water Corporation
City/Town/Municipality: West Harrison
State / Province: Indiana (IN)
Country: USA
Year: 2019 Calendar Year

Audit Preparation Date: 12/10/2020
Volume Reporting Units: Million gallons (US)
PWSID / Other ID: 5215008

**The following guidance will help you complete the Audit**

All audit data are entered on the *Reporting Worksheet*

☐ Value can be entered by user
☐ Value calculated based on input data
☐ These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: 0.25% ● ○ Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

**The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page**

***Instructions***
The current sheet. Enter contact information and basic audit details (year, units etc)

***Reporting Worksheet***
Enter the required data on this worksheet to calculate the water balance and data grading

***Comments***
Enter comments to explain how values were calculated or to document data sources

***Performance Indicators***
Review the performance indicators to evaluate the results of the audit

***Water Balance***
The values entered in the Reporting Worksheet are used to populate the Water Balance

***Dashboard***
A graphical summary of the water balance and Non-Revenue Water components

***Grading Matrix***
Presents the possible grading options for each input component of the audit

***Service Connection Diagram***
Diagrams depicting possible customer service connection line configurations

***Definitions***
Use this sheet to understand the terms used in the audit process

***Loss Control Planning***
Use this sheet to interpret the results of the audit validity score and performance indicators

***Example Audits***
Reporting Worksheet and Performance Indicators examples are shown for two validated audits

***Acknowledgements***
Acknowledgements for the AWWA Free Water Audit Software v5.0

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org

Attachment OUCC DR 4-4

## AWWA Free Water Audit Software:
## Reporting Worksheet

Click to access definition
Click to add a comment

Water Audit Report for: North Dearborn Water Corporation (5215008)
Reporting Year: 2019 1/2019 - 12/2019

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

Master Meter and Supply Error Adjustments

**WATER SUPPLIED**

<------ Enter grading in column 'E' and 'J' ------>

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Grade | | | Grade | Pcnt: | | | Value: | |
| Volume from own sources: | 5 | 107.263 | MG/Yr | 3 | -2.00% | ● | ○ | | MG/Yr |
| Water imported: | 5 | 32.458 | MG/Yr | 3 | -2.00% | ● | ○ | | MG/Yr |
| Water exported: | n/a | 0.000 | MG/Yr | | | ● | ○ | | MG/Yr |

Enter negative % or value for under-registration
Enter positive % or value for over-registration

**WATER SUPPLIED:** 142.572 MG/Yr

**AUTHORIZED CONSUMPTION**

Click here: for help using option buttons below

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Billed metered: | 6 | 126.940 | MG/Yr | | | | |
| Billed unmetered: | n/a | 0.000 | MG/Yr | | | | |
| Unbilled metered: | n/a | 0.000 | MG/Yr | Pcnt: | | Value: | |
| Unbilled unmetered: | 8 | 0.818 | MG/Yr | ○ | ● | 0.818 | MG/Yr |

**AUTHORIZED CONSUMPTION:** 127.758 MG/Yr

Use buttons to select percentage of water supplied
OR
value

**WATER LOSSES (Water Supplied - Authorized Consumption)** 14.814 MG/Yr

**Apparent Losses**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Pcnt: | | | Value: | |
| Unauthorized consumption: | | 0.356 | MG/Yr | 0.25% | ● | ○ | | MG/Yr |

**Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Customer metering inaccuracies: | 3 | 1.282 | MG/Yr | 1.00% | ● | ○ | | MG/Yr |
| Systematic data handling errors: | 5 | 0.317 | MG/Yr | 0.25% | ● | ○ | | MG/Yr |

**Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed**

**Apparent Losses:** 1.956 MG/Yr

**Real Losses (Current Annual Real Losses or CARL)**

**Real Losses = Water Losses - Apparent Losses:** 12.858 MG/Yr

**WATER LOSSES:** 14.814 MG/Yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:** 15.632 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

| | | | |
|---|---|---|---|
| Length of mains: | 5 | 114.5 | miles |
| Number of active AND inactive service connections: | 8 | 2,244 | |
| Service connection density: | | 20 | conn./mile main |

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line (length of service line, beyond the property boundary, that is the responsibility of the utility)

**Average length of customer service line has been set to zero and a data grading score of 10 has been applied**

Average operating pressure: 6 70.0 psi

**COST DATA**

| | | | |
|---|---|---|---|
| Total annual cost of operating water system: | 10 | $603,886 | $/Year |
| Customer retail unit cost (applied to Apparent Losses): | 6 | $6.85 | $/1000 gallons (US) |
| Variable production cost (applied to Real Losses): | 10 | $1,234.30 | $/Million gallons |

☐ Use Customer Retail Unit Cost to value real los

**WATER AUDIT DATA VALIDITY SCORE:**

*** YOUR SCORE IS: 66 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

Attachment OUCC DR 4-4

## AWWA Free Water Audit Software:

## System Attributes and Performance Indicators

WAS v5.0

**Water Audit Report for:** **North Dearborn Water Corporation (5215008)**
**Reporting Year:** **2019** **1/2019 - 12/2019**

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 60 out of 100 ***

**System Attributes:**

Apparent Losses: 1.956 MG/Yr
\+ Real Losses: 12.858 MG/Yr
= **Water Losses:** **14.814** MG/Yr

Unavoidable Annual Real Losses (UARL): 24.43 MG/Yr

Annual cost of Apparent Losses: $13,399

Annual cost of Real Losses: $15,871 Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumpiton

**Performance Indicators:**

Financial:
- Non-revenue water as percent by volume of Water Supplied: 11.0%
- Non-revenue water as percent by cost of operating system: 5.0% Real Losses valued at Variable Production Cost

Operational Efficiency:
- Apparent Losses per service connection per day: 2.39 gallons/connection/day
- Real Losses per service connection per day: N/A gallons/connection/day
- Real Losses per length of main per day*: 307.67 gallons/mile/day
- Real Losses per service connection per day per psi pressure: N/A gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 12.86 million gallons/year

Infrastructure Leakage Index (ILI) [CARL/UARL]: 0.53

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

OUCC Attachment CNS-5
Cause No. 45618
Page 1 of 1

Attachment OUCC DR 2-1
2020

**North Dearborn Water Corp.**
**P.O.E. #1 Highland Center Plant**
**Public Water Supply I.D. No. 5215008**
**I.D.E.M. Field Rep. Angie Willoughby**
**For the Month of February 2020**
**Monthly Report of Operation**

I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who manage the system, or those persons directly responsible for gathering the information,the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

**Submitted by: Gary Gaynor Plant Operator Certification No. 976881 Signature:**

| | | | Chemicals | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Water | Chlorine | Chlorine Residuals mg/l | | | | PH | | Iron | | Manganese | | Hardness | | | Fluoride | | |
| DATE | Treated | lbs. Used | Plant Finished | | Distribution Syster | | Raw | Finished | Raw | Finished | Raw | Finished | Finished | Filter Run | Backwash | Finished | Gal. Used | |
| | 1000 gal. | per day | Free | Total | Free | Total | | | mg/l | mg/l | mg/l | mg/l | mg/l | hours | gal x 1000 | mg/l | per day | Remarks |
| 1 | 665.0 | 8 | 1.14 | 1.17 | 0.67 | 0.70 | 7.1 | 7.4 | 0.15 | 0.04 | 0.050 | 0.040 | 256.5 | 21.6 | 33.0 | 0.9 | 26 | |
| 2 | 87.0 | 1 | 0.91 | 0.96 | 0.77 | 0.81 | | | | | | | | 2.7 | | 0.9 | 2 | |
| 3 | 79.0 | 1 | 1.08 | 1.09 | 0.78 | 0.81 | 7.1 | 7.4 | 0.11 | 0.03 | 0.060 | 0.030 | 256.5 | 3.9 | | 0.8 | 4 | |
| 4 | 709.0 | 9 | 1.20 | 1.22 | 0.71 | 0.74 | | | | | | | | 24.2 | | 0.7 | 28 | |
| 5 | 99.0 | 1 | 1.26 | 1.29 | 0.79 | 0.83 | 7.1 | 7.4 | 0.09 | 0.02 | 0.050 | 0.030 | 249.4 | 3.2 | | 0.8 | 4 | |
| 6 | 322.0 | 3 | 1.08 | 1.13 | 0.81 | 0.87 | | | | | | | | 10.5 | | 0.9 | 12 | |
| 7 | 508.0 | 6 | 1.14 | 1.16 | 0.73 | 0.75 | 7.1 | 7.4 | 0.23 | 0.07 | 0.070 | 0.030 | 249.4 | 16.6 | | 0.6 | 18 | |
| 8 | 5.0 | 0 | 1.12 | 1.15 | 0.82 | 0.85 | | | | | | | | 0.9 | 33.0 | 0.8 | 0 | |
| 9 | 286.0 | 3 | 1.10 | 1.13 | 0.79 | 0.83 | | | | | | | | 9.4 | | 0.7 | 10 | |
| 10 | 516.0 | 5 | 1.22 | 1.24 | 0.78 | 0.80 | 7.1 | 7.4 | 0.07 | 0.02 | 0.050 | 0.040 | 256.5 | 16.8 | | 0.7 | 18 | |
| 11 | 0.0 | 0 | 1.00 | 1.10 | 0.81 | 0.84 | | | | | | | | 0.0 | | 0.8 | 0 | |
| 12 | 7.0 | 0 | 1.01 | 1.04 | 0.74 | 0.76 | 7.1 | 7.4 | 0.15 | 0.05 | 0.050 | 0.030 | 249.4 | 0.5 | | 0.8 | 0 | |
| 13 | 713.0 | 7 | 1.16 | 1.19 | 0.75 | 0.78 | | | | | | | | 24.0 | | 0.6 | 28 | |
| 14 | 113.0 | 1 | 1.22 | 1.23 | 0.87 | 0.89 | 7.2 | 7.4 | 0.21 | 0.07 | 0.090 | 0.070 | 249.4 | 3.8 | | 0.7 | 4 | |
| 15 | 4.0 | 0 | 1.16 | 1.19 | 0.77 | 0.80 | | | | | | | | 1.0 | 32.0 | 0.5 | 0 | |
| 16 | 595.0 | 7 | 1.04 | 1.10 | 0.76 | 0.79 | 7.1 | 7.4 | 0.13 | 0.02 | 0.040 | 0.030 | 249.4 | 20.0 | | 0.6 | 22 | |
| 17 | 305.0 | 3 | 1.15 | 1.25 | 0.88 | 0.90 | | | | | | | | 10.2 | | 0.7 | 12 | |
| 18 | 0.0 | 0 | 1.07 | 1.12 | 0.80 | 0.82 | | | | | | | | 0.0 | | 0.5 | 0 | |
| 19 | 363.0 | 4 | 1.05 | 1.09 | 0.77 | 0.82 | 7.1 | 7.4 | 0.15 | 0.05 | 0.060 | 0.040 | 249.4 | 12.7 | | 0.5 | 12 | |
| 20 | 120.0 | 1 | 1.21 | 1.24 | 0.82 | 0.86 | | | | | | | | 4.1 | | 0.5 | 4 | |
| 21 | 368.0 | 4 | 1.14 | 1.18 | 0.89 | 0.90 | | | | | | | | 12.5 | | 0.6 | 8 | |
| 22 | 565.0 | 5 | 1.21 | 1.27 | 0.79 | 0.82 | 7.1 | 7.4 | 0.08 | 0.03 | 0.070 | 0.060 | 249.4 | 19.2 | | 0.7 | 20 | |
| 23 | 0.0 | 0 | 1.13 | 1.21 | 0.81 | 0.84 | | | | | | | | 0.0 | | 0.6 | 0 | |
| 24 | 241.0 | 3 | 1.09 | 1.11 | 0.83 | 0.86 | | | | | | | | 8.4 | | 0.6 | 7 | |
| 25 | 582.0 | 6 | 1.18 | 1.20 | 0.86 | 0.89 | 7.1 | 7.4 | 0.19 | 0.10 | 0.090 | 0.060 | 249.4 | 19.9 | | 0.7 | 22 | |
| 26 | 0.0 | 0 | 1.18 | 1.23 | 0.89 | 0.91 | | | | | | | | 0.0 | | 0.7 | 0 | |
| 27 | 0.0 | 0 | 1.09 | 1.14 | 0.84 | 0.88 | | | | | | | | 0.0 | | 0.6 | 0 | |
| 28 | 800.0 | 8 | 1.07 | 1.11 | 0.84 | 0.88 | | | | | | | | 26.2 | | 0.4 | 26 | |
| 29 | 3.0 | 0 | 1.14 | 1.17 | 0.82 | 0.85 | 7.1 | 7.4 | 0.15 | 0.03 | 0.010 | 0.010 | 256.5 | 0.8 | 33.0 | 1.0 | 0 | |
| 30 | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | |
| TOTAL | 8,055.0 | 86.0 | | | | | | | | | | | | 273.1 | 131.0 | | 287 | |
| AVG. | 277.8 | 3.0 | 1.12 | 1.16 | 0.80 | 0.83 | 7.1 | 7.4 | 0.14 | 0.04 | 0.058 | 0.039 | 251.8 | 9.4 | 32.8 | 0.7 | 10 | |
| MAX. | 800.0 | 9.0 | 1.26 | 1.29 | 0.89 | 0.91 | 7.2 | 7.4 | 0.23 | 0.10 | 0.090 | 0.070 | 256.5 | 26.2 | 33.0 | 1.0 | 28 | |
| MIN. | 0.0 | 0.0 | 0.91 | 0.96 | 0.67 | 0.70 | 7.1 | 7.4 | 0.07 | 0.02 | 0.010 | 0.010 | 249.4 | 0.0 | 32.0 | 0.4 | 0 | |

EPA United States Environmental Protection Agency

Menu

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**Related Topics:** **Water Research** <https://epa.gov/water-research>

CONTACT US <https://epa.gov/water-research/forms/contact-us-about-water-research>

# Drought Resilience and Water Conservation

In many areas of the United States, the frequency, intensity, and duration of drought events is increasing. This pattern is expected to continue and shift outside of historical trends, making forecasting our water supply and quality more difficult. EPA is conducting research and working with stakeholders to better understand the impact of drought on water quality and availability, and to provide solutions to help communities become more resilient.

EPA Technical Brief: Drought Resilience and Water Conservation Efforts
<https://epa.gov/water-research/drought-resilience-and-water-conservation-technical-brief>

## Water Efficiency and Aging Infrastructure

EPA supports innovative plumbing products that help conserve water and energy through its WaterSense program. By purchasing products with a WaterSense label, consumers can save money, while conserving water and energy. EPA also works with the U.S. Department of Housing and Urban Development to incorporate water efficiency into HUD programs. Advances in low-flow plumbing and fixtures for water quantity conservation present new challenges for maintaining water quality in systems designed for higher flows. EPA is funding research to support water conservation and healthy drinking water in distribution and premise plumbing systems (plumbing in homes and other buildings) under lower-flow conditions

Aging infrastructure, such as leaky pipes and water mains, is estimated to result in the loss of 2.1 trillion gallons of treated drinking water in the U.S. each year. Replacing our Nation's failing water infrastructure is expected to cost approximately $500 billion. EPA is helping by providing water loss training workshops to public and tribal water utilities and collaborating with states and tribes to leverage Drinking Water State Revolving Funds--EPA's largest funding source for drinking water infrastructure--for water loss control auditing.

## Aquifer Recharge

Prolonged drought can deplete groundwater aquifers that many communities rely on for drinking water and irrigation. Through the National Drought Resilience Partnership (NDRP), EPA will work with municipalities and utilities to promote stormwater and rainwater capture to augment water supplies and replenish aquifers. EPA scientists and partners are conducting field studies to explore the influences of innovative green infrastructure practices, such as dry wells and infiltration basins, on water movement into aquifers. They are also evaluating the quality of the recharged water.

## Water Reuse

Water conservation practices promoting water reuse--also known as fit-for-purpose water--for potable (drinking) and nonpotable (not for drinking) water are becoming increasingly important. Such practices are especially critical in parts of the western U.S. where climate change, extreme drought, increased evaporation, and population growth are decreasing water availability. To help states achieve water supply resiliency, EPA is promoting water reuse and the expansion of nontraditional water supplies (for example, impaired, alternative, or reclaimed water) previously not considered for reuse, while continuing to protect human and environmental health. EPA is also working with other federal agencies to address sustainability at the federal level, including water resource management and drought response.

To advance innovative water reuse, EPA is assessing approaches for controlling waterborne contaminants associated with built infrastructure; evaluating treatment, monitoring, and risks to human health; advancing water systems that encompass the entire water cycle; developing approaches to evaluate transformative water systems (systems that meet public health and environmental goals while optimizing treatment and maximizing resource recovery and system resiliency); and evaluating rainwater harvesting systems for nonpotable water supplies. EPA has awarded grants to five institutions to better understand potential human and ecological health effects associated with water reuse and conservation practices. Their research will evaluate how reclaimed water applications, such as direct and indirect potable reuse, aquifer recharge, and irrigation, might affect public and ecological health.

## Desalination

Brackish and salt water can augment water supplies in areas impacted by drought. EPA scientists are growing salt-tolerant algae that remove salts from these waters, which could reduce the energy footprint and costs of desalination. The algae could then be harvested and used as raw material for biofeul production. EPA scientists are also identifying, designing, and demonstrating cost-effective options that will enable the recovery of water from compromised sources, with an added goal of managing the brine concentrates produced by desalination systems.

EPA has given Small Business Innovation Research awards to companies developing and testing new cost-effective technologies. These include a microdevice to desalinate water off grid, allowing its use where it is needed most, and a system that will enable small water utilities to include lower water quality source water (such as salt water) at their intakes, further reducing the demand on groundwater and surface water.

## Response, Recovery, and Restoration

EPA is participating in partnerships across the Nation and providing research grants, tools, support, and training to help communities become more drought resilient. Through the National Drought Resilience Partnership (NDRP), EPA is collaborating on the development of tools and guides that water and wastewater utilities can use to prepare for, respond to, and recover from droughts. EPA's Climate Ready Utilities Program is working nationwide while using the *Climate Resilience Evaluation and Awareness Tool* to help utilities conduct climate change risk assessment to identify utility-level strategies that will build readiness and resilience. EPA and the Indian Health Service are convening federal and state partners to coordinate information on infrastructure needs and funding, technical assistance, emergency drought relief, and conservation opportunities for tribes.

To advance drought-related research even further, EPA has awarded grants to four institutions to investigate how drought and wildfire--and projects for managing wildfires--might impact the quality of surface water and its treatment at drinking water facilities. The research also includes reducing risks associated with preparedness for pre-drought planning and emergency response.

## Watershed Sustainability

EPA is supporting community efforts to identify, and find solutions for, issues related to drought resiliency and watershed sustainability. EPA's Centers of Excellence for Watershed Management program works with academia across the Southeast to provide products and services for communities to address watershed problems related to water scarcity and drought and issues of climate resilience and water utility infrastructure sustainability. EPA is supporting projects in vineyards and orchards that are implementing management practices to reduce irrigation demand, retain soil moisture, and minimize soil loss. Other actions include working with partners to decrease the impacts of low flows and climate change on wetland projects, and to provide information on changes in water flow due to drought, floods, and other stresses that impact flow regimes and affect aquatic life.

EPA researchers are also providing tools and conducting studies to better understand how drought affects watersheds, including evaluating drought-related stream salinization effects on the local extinction of aquatic organisms, quantifying the extent and impact of drought conditions affecting watershed resilience and integrity, and assessing influences of drought and water management on lake level decline and habitat quality.

## Resources

- U.S. Drought Portal – National Integrated Drought Information System (NIDIS) <http://www.drought.gov/drought/>. This portal provides early warning on emerging and anticipated droughts, assimilates quality control data for droughts and models, provides information to agencies and stakeholders on risk and impact of droughts; provides information on past droughts for comparison and to understand current conditions, explains how to plan for and manage impacts of drought, and provides a forum for stakeholders to discuss drought-related issues.
- WaterSense Program <https://www3.epa.gov/watersense/>. WaterSense helps people save water with a product label and tips for saving water indoors and out. Products bearing the WaterSense label have been independently certified to perform well; help save water, energy, and money; and encourage innovation in manufacturing.
- Water Research Grants <https://www3.epa.gov/watersense/>. EPA funds water research grants to develop and support the science and tools necessary to develop sustainable solutions to 21st century water resource problems, ensuring water quality and availability in order to protect human and ecosystem health.
- Climate Ready Water Utilities (CRWU) Initiative <https://epa.gov/crwu>. CRWU provides drinking water, wastewater, and stormwater utilities with the practical tools, training, and technical assistance needed to adapt to climate change by promoting a clear understanding of climate science and adaptation options. Information on training events and links to online resources and tools, including the Extreme Events Workshop Planner and the CRWU Adaptation Strategies Guide, can be found on the homepage.
- Drought Incident Action Checklist <https://epa.gov/waterutilityresponse/access-incident-action-checklists-water-utilities>. "Rip and run" styled checklist that drinking water and wastewater utilities can use to help with emergency preparedness, response, and recovery activities.

- Drought Response and Recovery: A Basic Guide for Water Utilities <https://epa.gov/waterutilityresponse/drought-response-and-recovery-water-utilities>. Published in 2016, this interactive, user-friendly guide provides worksheets, best practices, videos and key resources for responding to drought. It is divided into four main sections: staffing, response plans and funding, water supply and demand management, communication and partnerships, and case studies and videos.
- Public Awareness Kit for Utilities <https://epa.gov/communitywaterresilience/water-utility-public-awareness-kit>. This kit is used to help inform customers and community members about the threats to their water system and motivate them to take action. By using several of the most effective communications methods—print, web, and TV—it will help officials reinforce the message and drive home the call to action.
- Climate Resilience Evaluation and Awareness Tool (CREAT) <https://epa.gov/crwu/assess-water-utility-climate-risks-climate-resilience-evaluation-and-awareness-tool>. CREAT, developed under EPA's Climate Ready Water Utilities (CRWU) initiative, assists drinking water and wastewater utility owners and operators in understanding potential climate change threats and in assessing the related risks at their individual utilities. CREAT guides users through identifying threats based on climate change projections and designing adaptation plans based on the types of threats being considered
- National Water Program Climate Adaptation Tools <https://epa.gov/sites/production/files/2015-10/documents/epa_national_water_program_climate_adaptation_tools_handout.pdf>. This fact sheet provides a summary of tools developed by EPA for state, tribal, and local governments and others to adapt their clean water and drinking water programs to a changing climate.
- Watershed Management Optimization Support Tool. WMOST is a decision support tool that evaluates the relative cost-effectiveness of management practices at the local or watershed scale.
- All Hazards Boot Camp <https://epa.gov/waterresiliencetraining/waterwastewater-utility-all-hazards-bootcamp-training%23all-hazards>. This training course is designed for water and wastewater employees responsible for emergency response and recovery activities. It also explains why and how to implement an all-hazards program. Prevention and mitigation, preparedness, response and recovery are all topic covered during the training course.

- Environmental Finance Center (EFC) <https://epa.gov/envirofinance/efcn>. EFCs deliver targeted technical assistance to, and partner with states, tribes, local governments, and the private sector in providing innovative solutions to help manage the costs of environmental financing and program management.
- Federal Funding for Utilities in Natural Disasters (Fed FUNDS) <https://epa.gov/fedfunds>. Fed FUNDS provides tailored information to water and wastewater utilities about applicable federal disaster funding programs for national-level disasters. The funds could also apply to large-scale and even local disasters that result in service interruptions and significant damage to the critical water/wastewater infrastructure.
- State Revolving Fund (SRF) – Green Project Reserve <https://epa.gov/cwsrf/green-project-reserve-guidance-clean-water-state-revolving-fund-cwsrf>. The American Recovery Act of 2009 requires all Clean Water SRF programs to use a portion of their federal grant for projects that address green infrastructure, water and energy efficiency, or other environmentally innovative activities, including practices such as green infrastructure and water reuse.
- Sustainability and the Clean Water State Revolving Fund (CWSRF) – A Best Practices Guide <https://epa.gov/cwsrf/clean-water-state-revolving-fund-cwsrf-reports>. This guide contains references to certain documents EPA believes would be helpful to state SRF programs as well as suggestions for new and innovative practices that are not widespread among the states which could promote the goals of the sustainability policy and benefit state CWSRF programs.

Contact Us <https://epa.gov/water-research/forms/contact-us-about-water-research> to ask a question, provide feedback, or report a problem.

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## Follow.

LAST UPDATED ON NOVEMBER 16, 2021

# Groundwater Decline and Depletion

usgs.gov/special-topic/water-science-school/science/groundwater-decline-and-depletion

Groundwater is a valuable resource both in the United States and throughout the world. Groundwater depletion, a term often defined as long-term water-level declines caused by sustained groundwater pumping, is a key issue associated with groundwater use. Many areas of the United States are experiencing groundwater depletion.

*Pumping groundwater faster than it can recharge can lead to dry wells, especially during droughts.*

*Credit: Wikipedia, Creative Commons*

**Groundwater** is a valuable resource both in the United States and throughout the world. Where surface water, such as **lakes and rivers**, are scarce or inaccessible, groundwater supplies many of the hydrologic needs of people everywhere. In the United States, it is the source of drinking water for about half the total population and nearly all of the rural population, and it provides over 50 billion gallons per day for agricultural needs. Groundwater depletion, a term often defined as long-term water-level declines caused by sustained groundwater pumping, is a key issue associated with groundwater use. Many areas of the United States are experiencing groundwater depletion.

## Excessive pumping can overdraw the groundwater "bank account"

The water stored in the ground can be compared to money kept in a bank account. If you withdraw money at a faster rate than you deposit new money you will eventually start having account-supply problems. Pumping water out of the ground faster than it is replenished over the long-term causes similar problems. The volume of **groundwater in storage** is decreasing in many areas of the United States in response to pumping. Groundwater depletion is primarily caused by sustained groundwater pumping. Some of the negative effects of groundwater depletion:

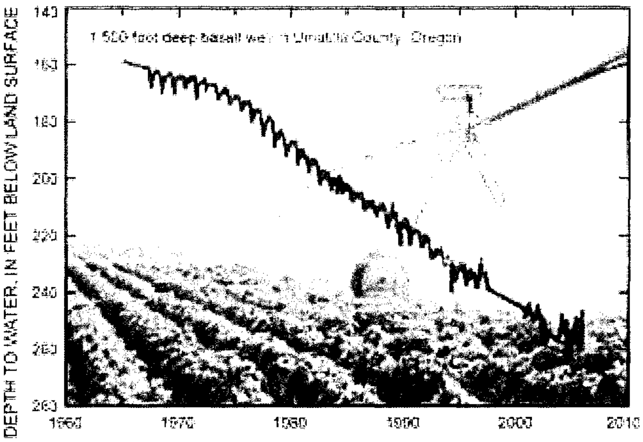
- drying up of **wells**
- reduction of water in streams and lakes

- deterioration of **water quality**
- increased pumping costs
- land subsidence

## What are some effects of groundwater depletion?

Pumping groundwater at a faster rate than it can be recharged can have some negative effects of the environment and the people who make use of the water:

### LOWERING OF THE WATER TABLE



*Pumping has removed water from storage in basalt aquifers and caused declines in many areas of the Columbia Plateau.*

The most severe consequence of excessive groundwater pumping is that the **water table**, below which the ground is saturated with water, can be lowered. For water to be withdrawn from the ground, water must be pumped from a well that reaches below the water table. If groundwater levels decline too far, then the well owner might have to deepen the well, drill a new well, or, at least, attempt to lower the pump. Also, as water levels decline, the rate of water the well can yield may decline.

### REDUCTION OF WATER IN STREAMS AND LAKES

There is more of an interaction between the water in lakes and rivers and groundwater than most people think. Some, and often a great deal, of the water flowing in rivers comes from seepage of groundwater into the streambed. **Groundwater contributes to streams** in most physiographic and climatic settings. The proportion of stream water that comes from groundwater inflow varies according to a region's geography, geology, and climate.

Groundwater pumping can alter how water moves between an aquifer and a stream, lake, or wetland by either intercepting **groundwater flow** that discharges into the surface-water body under natural conditions, or by increasing the rate of water movement from the surface-water body into an aquifer. A related effect of groundwater pumping is the lowering of groundwater levels below the depth that streamside or wetland vegetation needs to survive. The overall effect is a loss of riparian vegetation and wildlife habitat.

### LAND SUBSIDENCE

The basic cause of **land subsidence** is a loss of support below ground. In other words, sometimes when water is taken out of the soil, the soil collapses, compacts, and drops. This depends on a number of factors, such as the type of soil and rock below the surface. Land subsidence is most often caused by human activities, mainly from the removal of subsurface water.

### INCREASED COSTS FOR THE USER

As the depth to water increases, the water must be lifted higher to reach the land surface. If pumps are used to lift the water (as opposed to **artesian** wells), more energy is required to drive the pump. Using the well can become prohibitively expensive.

### DETERIORATION OF WATER QUALITY

One water-quality threat to fresh groundwater supplies is contamination from saltwater intrusion. All of the water in the ground is not fresh water; much of the very deep groundwater and water below oceans is saline. In fact, an estimated 3.1 million cubic miles (12.9 cubic kilometers) of saline groundwater exists compared to about 2.6 million cubic miles (10.5 million cubic kilometers) of fresh groundwater (Gleick, P. H., 1996: Water resources. In Encyclopedia of Climate and Weather, ed. by S. H. Schneider, Oxford University Press, New York, vol. 2, pp. 817-823). Under natural conditions the boundary between the freshwater and saltwater tends to be relatively stable, but pumping can cause saltwater to migrate inland and upward, resulting in saltwater contamination of the water supply.

## Where does groundwater depletion occur in the United States?

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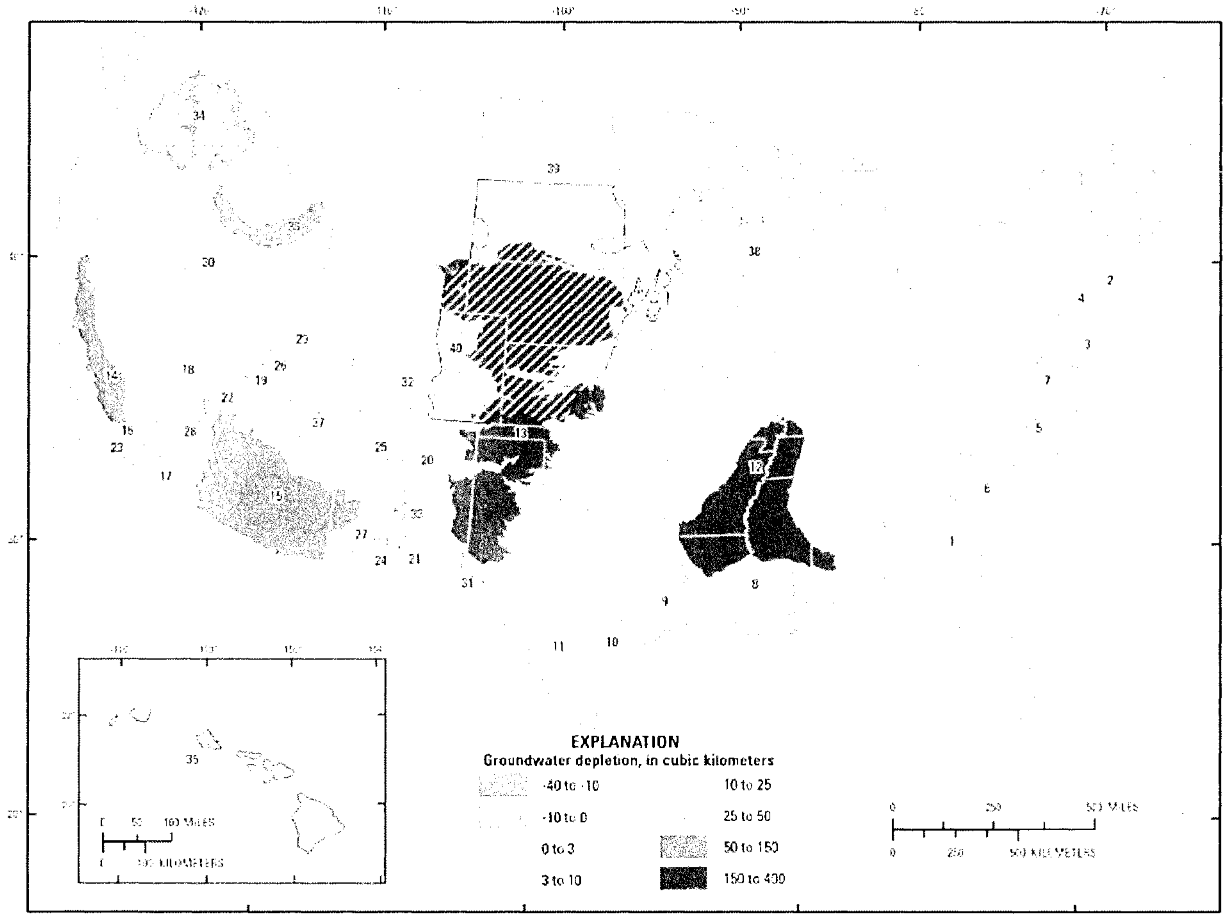
**Groundwater Depletion in the United States (1900–2008)**. A natural consequence of groundwater withdrawals is the removal of water from subsurface storage, but the overall rates and magnitude of groundwater depletion in the United States are not well characterized. This study evaluates long-term cumulative depletion volumes in 40 separate aquifers or areas and one land use category in the United States, bringing together information from the literature and from new analyses. Depletion is directly calculated using calibrated groundwater models, analytical approaches, or volumetric budget analyses for multiple aquifer systems. Estimated groundwater depletion in the United States during 1900–2008 totals approximately 1,000 cubic kilometers ($km^3$). Furthermore, the rate of groundwater depletion has increased markedly since about 1950, with maximum rates occurring during the most recent period (2000–2008) when the depletion rate averaged almost 25 $km^3$ per year (compared to 9.2 $km^3$ per year averaged over the 1900–2008 timeframe).



Base from U.S. Geological Survey digital data, 1972, 1:2,000,000
Albers Equal-Area Conic Projection
Standard parallels 29°30' N and 45°30' N, central meridian 96°00' W

**Figure 2.** Map of the United States (excluding Alaska) showing cumulative groundwater depletion, 1900 through 2008, in 40 assessed aquifer systems or subareas. Index numbers are defined in table 1. Colors are hatched in the Dakota aquifer (area 39) where the aquifer overlaps with other aquifers having different values of depletion.

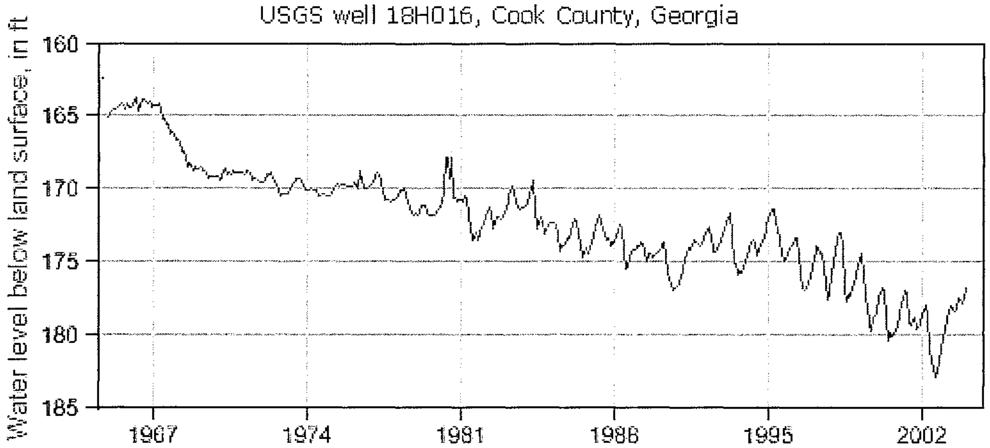
*From Groundwater Depletion in the United States (1900-2008), USGS Scientific Investigations Report 2013-5079.*

Groundwater depletion has been a concern in the Southwest and High Plains for many years, but increased demands on our groundwater resources have overstressed aquifers in many areas of the Nation, not just in arid regions. In addition, groundwater depletion occurs at scales ranging from a single well to aquifer systems underlying several states. The extents of the resulting effects depend on several factors including pumpage and natural discharge rates, physical properties of the aquifer, and natural and human-induced recharge rates. Some examples are given below.

**ATLANTIC COASTAL PLAIN** - In Nassau and Suffolk Counties, Long Island, New York, pumping water for domestic supply has lowered the water table, reduced or eliminated the base flow of streams, and has caused **saline** groundwater to move inland.

Many other locations on the Atlantic coast are experiencing similar effects related to groundwater depletion. Surface-water flows have been reduced due to groundwater development in the Ipswich River basin, Massachusetts. Saltwater intrusion is occurring in coastal counties in New Jersey; Hilton Head Island, South Carolina; Brunswick and Savannah, Georgia; and Jacksonville and Miami, Florida (Barlow).

The chart below shows monthly-mean water levels from 1964 to 2003 for a well in Cook County, southwest Georgia. The well is used for **irrigation** and **public-supply** purposes and offers a good visual representation of long-term groundwater declines due to excessive pumping. Periods of **drought** also have an effect on groundwater levels, as replenishing water infiltrating into the aquifer would be reduced.



**WEST-CENTRAL FLORIDA** - Groundwater development in the Tampa-St. Petersburg area has led to saltwater intrusion and subsidence in the form of **sinkhole** development and concern about surface-water depletion from lakes in the area. In order to reduce its dependence on groundwater, Tampa has constructed a desalination plant to treat seawater for municipal supply.

**GULF COASTAL PLAIN** - Several areas in the Gulf Coastal Plain are experiencing effects related to groundwater depletion:

- Groundwater pumping by Baton Rouge, Louisiana, increased more than tenfold between the 1930s and 1970, resulting in groundwater-level declines of approximately 200 feet.
- In the Houston, Texas, area, extensive groundwater pumping to support economic and population growth has caused water-level declines of approximately 400 feet, resulting in extensive land-surface subsidence of up to 10 feet.
- Continued pumping since the 1920s by many industrial and municipal users from the underlying Sparta aquifer have caused significant water-level declines in Arkansas, Louisiana, Mississippi, and Tennessee.

- The Memphis, Tennessee area is one of the largest metropolitan areas in the world that relies exclusively on groundwater for municipal supply. Large withdrawals have caused regional water-level declines of up to 70 feet.

**HIGH PLAINS** - The High Plains aquifer (which includes the Ogallala aquifer) underlies parts of eight States and has been intensively developed for irrigation. Since predevelopment, water levels have declined more than 100 feet in some areas and the saturated thickness has been reduced by more than half in others.

**PACIFIC NORTHWEST** - Groundwater development of the Columbia River Basalt aquifer of Washington and Oregon for irrigation, public-supply, and **industrial** uses has caused water-level declines of more than 100 feet in several areas.

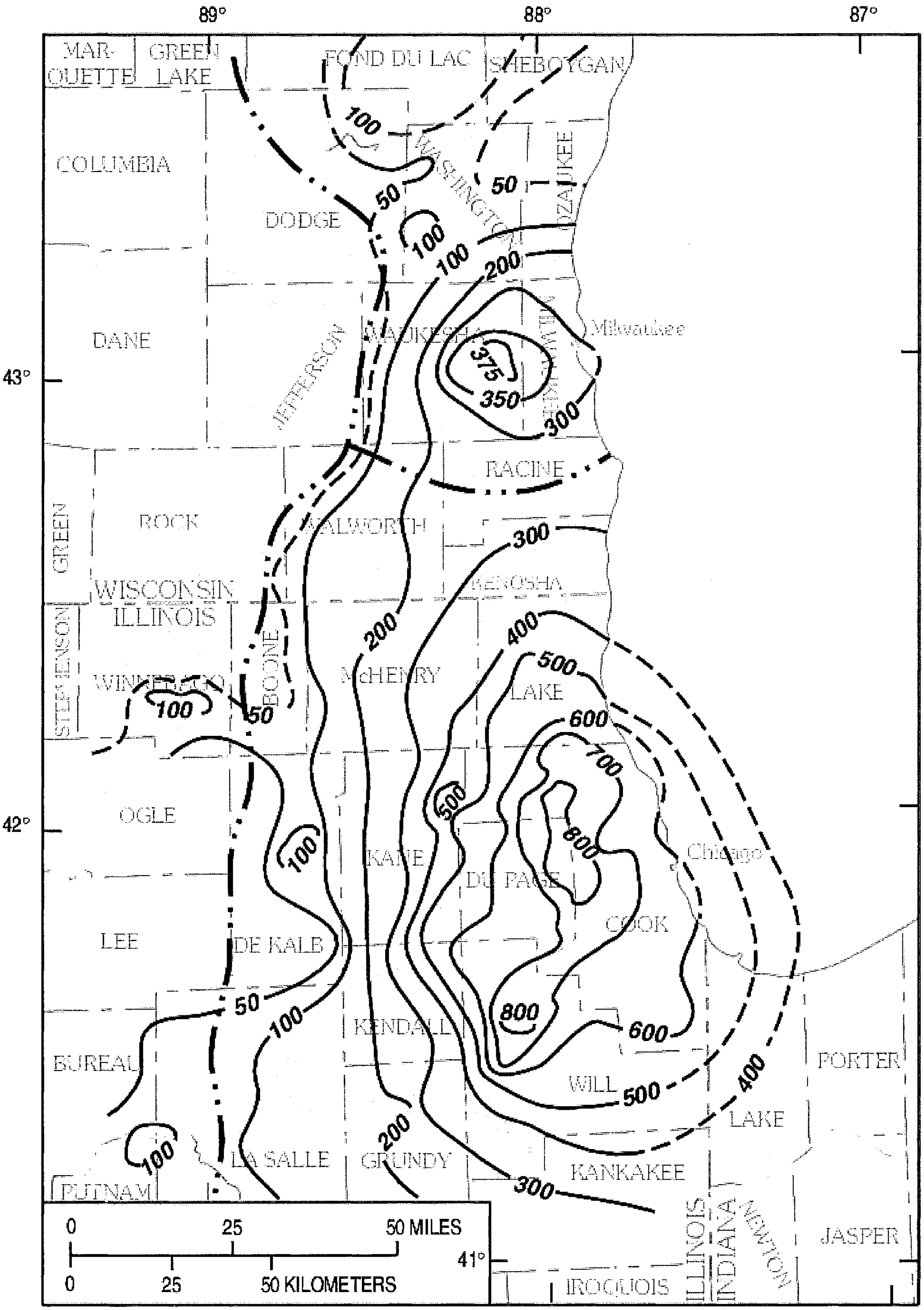
**DESERT SOUTHWEST** - Increased groundwater pumping to support population growth in south-central Arizona (including the Tucson and Phoenix areas) has resulted in water-level declines of between 300 and 500 feet in much of the area. Land subsidence was first noticed in the 1940s and subsequently as much as 12.5 feet of subsidence has been measured. Additionally, lowering of the water table has resulted in the loss of streamside vegetation.

These pictures show a reach of the Santa Cruz River south of Tucson, Arizona. In the 1942 picture vegetation is growing in the riparian (river bank) area the river, indicating that sufficient water in the soil existed at a level that plant roots could access it. The same site in 1989 shows that the riparian trees have largely disappeared as a result of lowered groundwater levels.

*Perennial streams, springs, and wetlands in the Southwestern United States are highly valued as*
*a source of water for humans and for the plant and animal species they support. Development of*
*ground-water resources since the late 1800's has resulted in the elimination or alteration of many*
*perennial stream reaches, wetlands, and associated riparian ecosystems. As an example, a 1942 photograph*
*of a reach of the Santa Cruz River south of Tucson, Ariz., at Martinez Hill shows stands of*
*mesquite and cottonwood trees along the river (left photograph). A replicate photograph of the same*
*site in 1989 shows that the riparian trees have largely disappeared (right photograph). Data from two*
*nearby wells indicate that the water table has declined more than 100 feet due to pumping, and this*
*pumping appears to be the principal reason for the decrease in vegetation.*

**CHICAGO-MILWAUKEE AREA** - Chicago has been using groundwater since at least 1864 and groundwater has been the sole source of drinking water for about 8.2 million people in the Great Lakes watershed. This long-term pumping has lowered groundwater levels by as much as 900 feet.

This map shows contours of water-level declines, in feet, in the Chicago-Milwaukee area from 1864 to 1980.



Base from U.S. Geological Survey 1:2,000,000 Digital Data
Albers Equal-area Conic projection

Albers Equal-area Conic projection
Standard parallels 33° and 45°, central meridian –89°

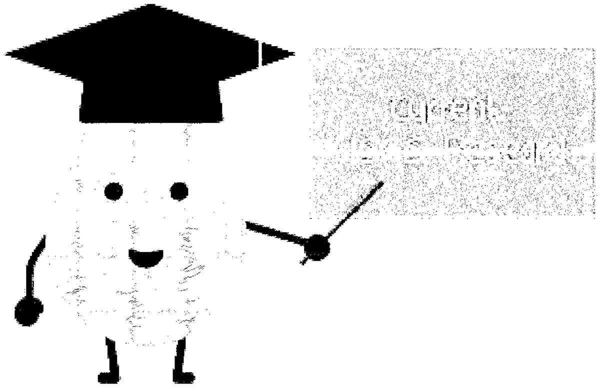
## EXPLANATION

| | |
|---|---|
| —— *700* — — | **Line of equal water-level decline, 1864–1980**—Dashed where approximate. Interval, in feet, is variable |
| —— · · —— | **Major ground-water divide** |

*Source: Alley, William & Reilly, T.E. & Franke, O.L.. (1999). Sustainability of Ground-Water Resources. U.S. Geological Survey Circular 1186. Public domain.*

*Sources and more information:*

***Want to learn more about groundwater decline and depletion?*** *Follow me to the* *USGS Groundwater Use* *website!*



## Status - Completed

## Contacts

OUCC Attachment JTP-8
Cause No. 45342
Page 2 of 5

OUCC Attachment CNS-8
Cause No. 45618
Page 1 of 1

WESTECH®

March 2, 2020

Sean Carbonaro
Community Utilities of Indiana

RE: 1930111 Twin Lakes Water Treatment Plant #1 - South Filter Replacement and Distribution Improvements - Life Expectancy of Water Treatment Equipment

Dear Sean,

Thank you for the opportunity to bid on your water treatment plant in Crown Point.

The proposed AERALATER will replace an existing unit that has been in service since the 1980's. It's common to see a life expectancy of 20-25 years with these type of steel tanks. We anticipate the proposed aluminum AERALATER will provide additional life over a steel tank. We would anticipate a life of 30 years or more for an aluminum vessel based on the life of your current equipment.

Again we appreciate the opportunity and look forward to working with you.

Sincerely,

Tom Dumbaugh
Regional Sales Manager
tdumbaugh@westech-inc.com
Office: (515) 268-8549
Cell: (920) 243-3348

**Bood, Lisa**

---

|  |  |
|---|---|
| **From:** | Lori Young <lyoung@recurry.com> |
| **Sent:** | Thursday, April 8, 2021 11:44 AM |
| **To:** | Joe Paszek |
| **Cc:** | Bob Curry |
| **Subject:** | RE: Budget costs for aeralator plants |

Thanks Joe,
I think we would construct a new foundation because they need to keep the old plant in service during construction of the new.

This budget information is very helpful!

Thanks,
Lori

**From:** Joe Paszek <joe@bastinlogan.com>
**Sent:** Thursday, April 08, 2021 11:34 AM
**To:** Young, Lori <lyoung@recurry.com>
**Cc:** Bob Curry <bcurry@recurry.com>
**Subject:** RE: Budget costs for aeralator plants

Hi Lori
Pricing on steel and valves is so volatile right now it is difficult to quote anything long term. The best I can do is give you a ball park cost for each plant size.
I am going to assume that you have an existing foundation that is going to be reused…
1000 GPM WTP with all internal piping and valves (no BW control panel or painting)
$500,000.00 this unit is 26’0” in diameter and may require a larger concrete base
600 GPM WTP with all internal piping and valves (no BW panel or painting)
$420,000.00
I hope this helps.

*Joe Paszek*
*Bastin Logan Water Services, Inc.*
*1010 N. Hurricane Road*
*PO Box 55*
*Franklin, IN 46131*
*Phone: 317-738-4577*
*Fax: 317-738-9295*
*Mobile: 317-695-3496*

**From:** Young, Lori [mailto:lyoung@recurry.com]
**Sent:** Thursday, April 08, 2021 11:15 AM
**To:** Joe Paszek <joe@bastinlogan.com>
**Cc:** Bob Curry <bcurry@recurry.com>
**Subject:** Budget costs for aeralator plants

Hi Joe,

North Dearborn Water is looking at options for replacement of their WTP. We are considering a 600 gpm unit that matches existing, and a 1,000 gpm option.

Could you provide budget pricing for a 600 gpm package unit and a 1,000 gpm package unit? We would like to compare the incremental cost increase for the larger plant.

Thanks much for your assistance!

Best regards,
Lori

Lori A. Young, P.E.
Curry & Associates, Inc.
110 Commerce Drive
Danville, Indiana 46122
Phone 317.745.6995
www.recurry.com

CURRY & ASSOCIATES, INC.
CONSULTING ENGINEERS & ARCHITECTS

## Rivera, Olivia

**From:** dkohlsdorf <dkohlsdorf@aol.com>
**Sent:** Tuesday, December 7, 2021 4:46 PM
**To:** UCC Consumer Info
**Subject:** IURC Cause No. 45618 - North Dearborn Water

Good Afternoon,

I am writing to you as a concerned customer – business and personal - of North Dearborn Water Corp.

It was brought to my attention today through another concerned customer, that NDWC is proposing an increase of 40% to our rates.

Unfortunately with such short notice, this does not permit a thorough review of the documents via the IURC system, although it does give way to many, many concerns and questions as to the effective management, efficiency and administration of the NDWC. It seems that the timeline of this process was quite hurried and rushed to meet deadlines, and I am curious as to why. I may not be a water corporation specialist, but these type of projects are hardly surprises.

I completely understand infrastructure upgrades and allowances for inflation. However, failure on the Corp to use planning and foresight to properly account for such standard business operations is unfathomable. Failure to increase rates for 12 years is not the fault of the consumer.

I find it infuriating that they would want to pass such an increase on to the consumer with such lack of transparency. How exactly are current customers really going to benefit? How much of this increase is to the benefit of other "potential" clients? Are we funding the NDWC to enable them to expand their business, would that ultimately spread the cost-share amongst more clients, or simply be an expense we assume? Who is benefitting from new infrastructure? How are they contributing financially? What kind of back door agreements are taking place?

As a farm business owner, I plan for potential upgrades, problems, and accumulate expansion capital in order to maintain and grow my business without the expectation of passing it entirely on to the consumer. My only option is to go to a financial institution in order to procure the funds to do so.

I expanded my operation in 2016, which required an additional water source to be extended from an existing NDWC line already on the same piece of property. I was denied any assistance from the water corporation and paid for every cent from my own pocket.

How are other "potential" businesses/developments funding their own growth in this regard, or are the existing consumers footing the bill?

My business requires 30-40k gallons a month to water cattle, and a 40% rate increase certainly impacts any profit I may recoup. Is there a plan to implement any type of Ag exemption? Any other businesses besides the school corp receiving fixed rates?

Apparently, employees received raises in 2021. Why is 31% being directed toward salary increase? From a cursory look at the submitted work documents, NDWC also contracts with another water corp for skilled labor. Absolutely, cost of living has increased, but what positions and who are receiving a raise?

Is there a push to rush the upgrades under the auspice of potential new commercial development in the area? Given some of the goings on in neighboring Franklin County (of which I am actually a resident), it would not be surprising if there was behind the scene hand shake agreements that ultimately pass along the debt to existing client base.

Bottom line, the corporation should have planned for upgrades more appropriately and operated as a business rather than having the expectation of a large, sudden rate increase to the consumer. I question the efficacy of Baker Tilly's representation if this is standard protocol. It seems that an external evaluation of the efficiency of the entire operation is warranted. NDWC has already committed over $300,000 for next year in accounting and engineering representation – of course the deposed stand to benefit through this project.

All of this said, safe, clean water is a critical need, and should be handled as such. Detroit showed the nation what ineffective leadership and planning can lead to.

However as a consumer funding this increase, I feel we are entitled to further transparency in exactly how and why this increase is just, fair, and non-discriminatory. The current situation hardly spells out clearly why exactly this increase is in my best interest.

Please support the citizens of our community to have an equitable voice in this matter.

Thank you for your consideration,

David Kohlsdorf
8161 St. Peter's Rd.
Brookville, IN 47012

765-490-0466

**Rivera, Olivia**

**From:** sara duffy <saraduffy@heavenwire.net>
**Sent:** Monday, December 6, 2021 4:45 PM
**To:** UCC Consumer Info
**Subject:** "IURC Cause No. 45618" or North Dearborn Water

Dear OUCC,

Please look into the fairness of the 40% proposed rate increase by North Dearborn Water.

This is too much for families to pay. Will business have big increases too or just families? I can't find out the answer to that.

Are we paying to expand capacity for new business properties and new subdivisions? Shouldn't the businesses and the subdivisions pay their fair share of any expansion in service lines and capacity?

I suggest applying for grants from Indiana's Office of Rural & Community Affairs (OCRA) or asking Dearborn County for some of its American Rescue Plan Act (ARPA) federal grant money. I realize grants take time and and are not guaranteed. Please try that rather then just giving us a price increase.

Does North Dearborn Water really need overall 31% increase in money for employee salaries and to pay board members? Employees got raises in 2021.

Thank you for being fair. From a North Dearborn Water customer.

Sara Duffy
8098 St. Peters Rd
West Harrison IN 47060
765-647-4962

**Rivera, Olivia**

**From:** noreply@formstack.com
**Sent:** Tuesday, December 7, 2021 9:19 AM
**To:** UCC Consumer Info
**Subject:** North Dearborn Water

## **Formstack Submission For:** OUCC_Contact_2361 - COPY

Submitted at 12/07/21 9:18 AM

| | |
|---|---|
| Title: | Mrs. |
| Name: | Gloria Hoog |
| Email: | hooggr01@etczone.com |
| Address: | 29819 Trackville Road<br>Brookville, IN 47012 |
| Telephone (Best number to reach you between 8:00 am and 4:00 pm, Eastern Time, Monday through Friday):: | (812) 584-0065 |
| If providing comments on a specific case, please indicate the cause number and/or name of utility:: | North Dearborn Water Corporation |
| Your Comments:: | I am commenting on the proposed 40% increase in customer water bills over the next 2 years. I think that this amount of increase in outrageous. My husband and I are retired and our income is minimal. Social seurity is not going to increase to cover the amount of increase in our water bill increase. |

With the increase in price of food at the grocery store and gas at the pumps right now, this is not a good time to be hiking the water bill. What is this increase going for? New Businesses? Subdivisions? The builders and business owners should be paying for their hook-ups and lines, it is their business. Also, do employees need a 31% increase in salaries?
I feel like the customers and people of St. Leon would be taken advantage of and footing the bill for what is to come.

**Rivera, Olivia**

**From:** noreply@formstack.com
**Sent:** Saturday, December 4, 2021 11:27 AM
**To:** UCC Consumer Info
**Subject:** North Dearborn water rate increase

## **Formstack Submission For:** OUCC_Contact_2361 - COPY
Submitted at 12/04/21 11:26 AM

| | |
|---|---|
| Title: | Mr. |
| Name: | Ron Alig |
| Email: | ronalig@yahoo.com |
| Address: | 27106 sawmill rd<br>West harrison, IN 47060 |
| Telephone (Best number to reach you between 8:00 am and 4:00 pm, Eastern Time, Monday through Friday):: | |
| If providing comments on a specific case, please indicate the cause number and/or name of utility:: | North Dearborn water rate increase |
| Your Comments:: | A rate increase of over 40% over 2 years is unheard of - how the commission would consider this astronomical raise is what is wrong with this country - when was the last time the working class got a 2 year raise of 40% ? |

**Rivera, Olivia**

**From:** noreply@formstack.com
**Sent:** Wednesday, November 24, 2021 1:03 PM
**To:** UCC Consumer Info
**Subject:** North Dearborn Water Cause Number 45618

**** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. ****

## Formstack Submission For: OUCC_Contact_2361 - COPY

Submitted at 11/24/21 1:02 PM

Title: Mrs.

Name: Betty Bruns

Email: lizbruns17@yahoo.com

Address: 27218 Sawmill Road
West Harrison, IN 47060

Telephone (Best number to reach you between 8:00 am and 4:00 pm, Eastern Time, Monday through Friday):: (812) 576-4142

If providing comments on a specific case, please indicate the cause number and/or name of utility:: North Dearborn Water Cause Number 45618

Your Comments:: I don't mind a rate increase, but this is too much of an increase. Please do not let this high increase go through. I have never heard of such a jump with two increases one year after the next; 23 percent one year and 17.26 percent the next year.

What if all our other utilities decided to raise rates too. How can we support this and still pay our other bills.
Please do not let this increase go through. Why do we need a new water treatment plant? Just add on to existing structure and upgrade.

Thanks for your help.

**Rivera, Olivia**

**From:** Bryan rabe <bryanrabe78@gmail.com>
**Sent:** Monday, December 6, 2021 7:23 PM
**To:** UCC Consumer Info
**Subject:** North Dearborn Water--St leon Indiana

My name is Bryan Rabe and I live just outside St leon Indiana. It was brought to my attention that North Dearborn Water is looking to increase the cost for water service.

OUCC, please look into the fairness of the 40% proposed price increase by North Dearborn Water.

This is too much for families to pay. Will business have big increases too or just families?

Are we paying to hook up new businesses and new subdivisions? Shouldn't they pay for part of any expansion?

Do they really need overall 31% increase in money for salaries and pay to board members? Employees got raises in 2021.

For more info, go to

https://www.in.gov/oucc/files/North-Dearborn-NR-11-23-21.pdf

**Rivera, Olivia**

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| | |
|---|---|
| **From:** | Rod Surber <ratman40@gmail.com> |
| **Sent:** | Tuesday, December 7, 2021 5:39 PM |
| **To:** | UCC Consumer Info |
| **Subject:** | water bill |

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OUCC, please look into the fairness of the 40% proposed price increase by North Dearborn Water.

This is too much for families to pay. Will business have big increases too or just families?

Are we paying to hook up new businesses and new subdivisions? Shouldn't they pay for part of any expansion?

Do they really need overall 31% increase in money for salaries and pay to board members? Employees got raises in 2021.