STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF THE CITY OF ANDERSON, INDIANA, FOR AUTHORITY TO: (1) ISSUE LONG TERM DEBT TO FINANCE WATER SYSTEM IMPROVEMENTS; AND (2) ADJUST ITS RATES AND CHARGES	)))))	**CAUSE NO. 46171**

PUBLIC'S EXHIBIT NO. 4

TESTIMONY OF JAMES T. PARKS

ON BEHALF OF

THE INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

April 3, 2025

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's Exhibit No. 4 – Testimony of James T. Parks on behalf of the OUCC*** has been served upon the following captioned proceeding by electronic service on April 3, 2025.

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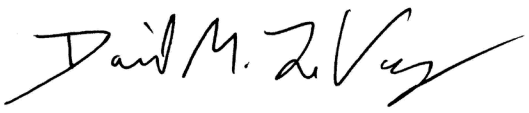

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TESTIMONY OF OUCC WITNESS JAMES T. PARKS
CAUSE NO. 46171
CITY OF ANDERSON

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is James T. Parks, P.E., 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 a Senior Utility Analyst in the Water/Wastewater Division. My qualifications and experience are described in Appendix A.

Q: What relief has Petitioner requested that is addressed in your testimony?

A: The City of Anderson Municipal Water Utility ("Petitioner" or "Anderson" or "Utility") requests the Indiana Utility Regulatory Commission ("Commission" or "IURC") grant it approval to issue $130,000,000 of long-term debt to fund major water system improvements. The capital projects include water main and service line replacements and the construction of a new 6 million gallon per day well field and South Side Water Treatment Plant.

Q: What is the purpose of your testimony?

A: My testimony addresses whether Petitioner's proposed South Side Water Treatment Plant is necessary. I show that Petitioner's forecasts of future water demand are overstated and unsupported. I point out several significant mistakes in Petitioner's historical water demand in 2022 and forecasted 2042 water demand. I testify that Petitioner's primary water supply issue is not a lack of supply but rather water losses approaching 40%, well in excess of the Commission's 15% water loss target and the Indiana Department of Environmental

Management's ("IDEM") 25% water loss criteria. IDEM considers water utilities that have water loss higher than 25% to have a Significant Deficiency under 317 Ind. Adm. Code 8-2-8.2 that must be remedied.[1]

Petitioner's proposed ten water main replacement projects at an estimated cost of $71 million will replace 22 miles of water main including 11.9 miles of 2-inch galvanized iron main. I agree the funding for the water main replacement projects should be approved because Petitioner needs to begin addressing its long-standing problem of undersized and leaking water mains. I testify that in 1977 Petitioner was ordered in Cause No. 34389 to file with the Commission a time schedule for its proposed replacement of two inch water mains.[2] Due to water losses near 40%, I recommend the Commission direct Petitioner to develop an ongoing, properly funded Water Loss Action Plan within two years to address high water losses by finding and fixing water leaks and inoperable distribution system valves, and including a long-term plan to replace aged and leaking water mains. I recommend the Commission order Anderson to submit its Water Loss Action Plan in a Post Order compliance filing, with a long-term goal of reducing its water loss rate to below 15%.[3]

I show that Petitioner's plans, currently underway to expand the Lafayette wells and water treatment plant to 14.0 MGD firm capacity and 16.0 MGD rated capacity and add new, higher capacity transmission mains on the west side and north side of the distribution system, will meet Petitioner's water production needs through the twenty-year design period of 2022

[1] Under 327 Ind. Admin. Code 8-2-8.2 (e)(3)(D), a Significant Deficiency identified by IDEM during periodic Sanitary Surveys includes having greater than a twenty-five percent (25%) water loss based on a one (1) year average.

[2] It is unknown if Petitioner ever submitted its replacement schedule for 2-inch water mains but in the current cause, Petitioner reports it still has 340,000 lineal feet of 2-inch galvanized iron water mains which are prone to failures.

[3] Interim goals would be to reduce water losses down to 30% by 2042 followed by further reductions and a timeframe to comply with Indiana's 25% water loss regulation and ultimately the 15% loss goal.

to 2042. I testify Petitioner has detected PFAS contamination in three of eight groundwater wells supplying the Wheeler Avenue WTP. I note Petitioner has two years remaining for additional PFAS testing in the Wheeler WTP wells followed by two more years to comply with the PFAS regulations by either implementing a PFAS removal system at the Wheeler WTP, running the Wheeler WTP supplied only by the non PFAS wells or constructing the new South Side WTP when future capacity demands dictate. I conclude that, in the meantime, the Wheeler WTP should remain in service.

I testify Petitioner's plans to install four new groundwater wells in a new South Side well field and build a new 6 MGD South Side water treatment plant are premature because the extra 6 MGD capacity is not yet needed due to the expansion of the Lafayette WTP, the continued operation of the Wheeler WTP, Anderson's declining residential water demand due to population loss, and Petitioner's water main replacement program focused on undersized water mains that are prone to leaks and main breaks. I explain that design for the South Side WTP has not started, with planning in the early stages and only preliminary cost estimates with large contingencies prepared. I note Petitioner has not performed life cycle cost analyses to determine the most cost effective alternatives. I recommend Petitioner complete the reanalysis of future water demand considering reductions in lost water and Petitioner complete its planned water main replacements.

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

A: I reviewed Anderson's Petition. I reviewed the case-in-chief testimonies and exhibits of Mr. Neal L. McKee, Director of the Utility and Ms. Lori A. Young, P.E., Senior Associate and Indiana Group Manager for Water and Wastewater, Fleis & VandenBrink Engineering, Inc. ("F&V"). I reviewed Petitioner's recent IURC Annual Reports, including 2021 to 2023. I

participated in writing discovery requests and reviewed Petitioner's responses. Through discovery I sought to understand how Petitioner justified its proposed capital improvements, how these projects were developed, how Petitioner estimated costs, and whether Petitioner identified and analyzed any alternatives. I reviewed population growth and water demand forecasts made by Petitioner's engineering consultant, Curry & Associates, Inc.[4] I reviewed Petitioner's reported water losses. I reviewed pertinent parts of the 2024 Preliminary Engineering Report ("PER"), prepared by Curry & Associates, Inc.[5] I reviewed documents provided in Petitioner's last rate case, which was filed in 2014 as Cause No. 44510. I reviewed information and reports from previous Anderson rate cases including the Waterworks Engineering Report, dated July 18, 2006, and the 2009 Preliminary Engineering Report, both of which were prepared by Robert E. Curry & Associates. I reviewed other documents, which I refer to in my testimony and which I have attached and listed in Appendix B. On February 12, 2025, along with OUCC analyst Carla A. Sullivan, I visited some of the Utility's facilities and met with Utility representatives, Neal McKee, Director and Joshua Castor, Water Foreman to discuss issues in the case. I performed a field inspection of Anderson's water utility facilities on September 18, 2014, in its last rate case, Cause No. 44510. Finally, I reviewed information placed in IDEM's Virtual File Cabinet for Anderson's water system and water treatment plants ("WTP").

[4] The civil engineering firm Fleis & VandenBrink Engineering, Inc. (F&V) headquartered in Michigan, acquired Anderson's long-time consultant, Curry & Associates, Inc., on October 1, 2024.

[5] Lori A. Young case-in-chief testimony, Attachment LAY-1, 2024 Professional [sic] Engineering Report, Curry & Associates, Inc., March 27, 2024. The 314-page Attachment LAY-1 does not have a header on each page indicating the page number. For purposes of my testimony, I refer to the PER page numbers at the bottom of the pages. I refer to the 2024 Preliminary Engineering Report as Petitioner's Attachment LAY-1, 2024 PER or 2024 PER.

Q: If your testimony does not address a specific topic, issue, or item, should it be construed to mean you agree with Petitioner's proposal?

A: No. My silence on any issue should not be construed as an endorsement. Excluding any specific issues regarding Petitioner's proposal from my testimony is not an indication of approval. Rather, the scope of my testimony is limited to the specific items addressed.

II. PETITIONER CHARACTERISTICS AND WATER FACILITIES

A. Anderson's Characteristics

Q: Please describe Petitioner's characteristics.

A: Petitioner is a municipality that owns and operates plant and equipment for the production, transmission, delivery, and furnishing of water. As of 2023 Petitioner served 22,441 customers and 271 fire protection customers in and around the City of Anderson, in Madison County, Indiana.[6] Anderson's service territory, bounded approximately by the city limits, includes water customers primarily in Anderson Township but with some customers in Lafayette, Richland, Union, Adams, and Fall Creek Townships. Anderson's 2023 estimated population was 55,199.[7] Following settlement with the OUCC, Petitioner's existing schedule of water rates and charges received Commission approval in Cause No. 44510 on March 4, 2015.

Q: Please describe Anderson's current facilities and operations.

A: Anderson relies on groundwater for its water supply. Petitioner has three distinct well fields with 19 existing wells. Groundwater is treated at the Wheeler Avenue Water Treatment Plant ("Wheeler WTP") and the Lafayette Water Treatment Plant ("Lafayette WTP"). Petitioner

[6] In its 2023 IURC Annual Report, Anderson reported that it had 2,441 total customers consisting of 20,881 residential, 1,411 commercial, 115 industrial, and 14 public authority customers. Petitioner also had 271 public fire protection customers for a total customer count of 22,712 customers. Total Water Operating Revenues in 2023 were $11,074,869.

[7] Indiana Business Research Center, STATS Indiana.

replaced the original 1970 Lafayette WTP with a new iron and manganese removal plant in 2019 with financing that was approved in Cause No. 44510 in 2015. Petitioner witnesses McKee and Young testified Anderson has 420 miles of water mains in its distribution system but in response to Data Request 1-7 Petitioner indicated it has 367.92 miles (1,942,595 lineal feet) of mains. In response to DR 9-5 in Cause No. 44510, Petitioner reported it had 289.60 miles (1,529,092 lineal feet) of mains at the end of 2012. Anderson has seven elevated storage tanks with a total capacity of 6.5 million gallons. In addition, Anderson has a 1,800,000 gallon finished water clearwell at the Wheeler WTP and a 600,000 clearwell at the Lafayette WTP. Petitioner added the Fairview booster station in 2017 to pump water from the Fairview elevated storage tank to the 2 MG Park Road water tower to keep it filled and create the Southwest/Flagship High Pressure Zone. The Park Road water tower, installed in 2011, serves Nestle and Petitioner's industrial customers in the Flagship Enterprise Center.

Q: What are Petitioner's current treatment capacities?

A: Petitioner indicated it can produce 12.7 million gallons per day ("MGD") at its two water treatment plants with 8 MGD at the Lafayette WTP and 4.7 MGD at the Wheeler WTP. [8, 9]

Q: What are Petitioner's plans to expand water supply wells and treatment capacity?

A: Petitioner is expanding water production at its Lafayette WTP through a project funded through the Federal American Rescue Plan Act ("ARPA") and local Tax Increment Financing ("TIF") monies. That project is currently underway with competitive bids received on March 18, 2025. The Lafayette project includes two additional water supply wells (Fuller wells) and a 6 MGD firm capacity expansion of the Lafayette WTP. The expanded WTP will increase

[8] Petitioner's Attachment LAY-1, 2024 PER, Table 1.1.1.4 Capacity Summary for Anderson Treatment Plants – 2023.

[9] Petitioner's Attachment LAY-1, 2024 PER, Section 1.1.1 Water Supply, Page 1 – 10, "The Wheeler Wells and Treatment Plant has reliably produced an average of 4.7 MGD per day for the past five (5) years."

the number of pressure filters from the current five filters to eight filters each able to filter 2.0 MGD with a firm capacity of 14 MGD (7 of 8 filters in service) and a rated capacity of 16 MGD. Funding for the Lafayette wells and Lafayette WTP expansion are not at issue in this Cause.

This Cause includes Petitioner's proposed financing to build four new wells and a new 6.0 MGD South Side WTP consisting of two 3.0 MGD Unilater type iron and manganese removal units. The South Side WTP is still in the early stages of planning, and it appears that the final site has not yet been selected or purchased for the new WTP. Test well drillings continue at multiple parcels to find well sites with enough potential capacity to supply the new WTP. The South Side WTP completion is currently scheduled for late 2028. Combined, the Lafayette and South Side WTPs would have a 19.0 MGD firm capacity (with one 3.0 MGD Unilater out of service) and a 22.0 MGD rated capacity (all ten filters in service).

III. POPULATION FORECASTS AND CUSTOMER COUNTS

Q: Petitioner proposes to significantly expand its water production facilities from Petitioner's claimed current rated treatment capacity of 12.7 MGD to 22 MGD.[10] Are increasing population and customer counts driving the proposed expansion projects?

A: No. Anderson's population is not expected to grow. Customer counts are not increasing. In the 2024 Preliminary Engineering Report ("2024 PER"), Curry & Associates acknowledges "a steady population decrease that is projected to continue for the foreseeable future."[11] Petitioner also shows the population steadily declining in Table 2.1.1 - Historic [sic] and

[10] The Recommended Standards for Water Works, commonly referred to as Ten States Standards uses the terms "rated capacity" for the well and treatment capacity with all units in service. "Firm capacity" (called "safe" capacity by Petitioner) refers to the treatment capacity with the largest unit (e.g. filter, high service pump) out of service. In my testimony I will refer to firm capacity and rated capacity.

[11] Petitioner's Attachment LAY-1, 2024 PER, p. 2-1.

Projected Population Data in the 2024 PER.[12] On its Drinking Water State Revolving Fund Loan Program ("DWSRF") application form, Petitioner provided no indication of its population trend as it did not check either of the boxes indicating whether it considered its population to be increasing or decreasing.

Q: How are population estimates used to set design capacity?

A: Under Ten States Standards, utilities must identify water use data including a description of the population trends and the estimated population that will be served by the proposed expanded water supply system in five-year intervals over 20 years or over the useful life of critical structures/equipment.[13] IDEM requires population and water demand forecasts be included in construction permit applications. As part of funding approval for capital projects under the Drinking Water State Revolving Fund ("DWSRF"), the Indiana Finance Authority also requires population and water demand forecasts over the 20-year planning period. Residential water demand is determined from future population estimates coupled with average water use expressed as gallons per capita per day ("gpcd"). As population grows, residential water demand increases. Conversely, as the population decreases, residential water demand decreases. Anderson acknowledged its population will be decreasing.

Q: Where is Anderson's service area and what is Anderson's estimated current population?

A: According to Petitioner, Anderson's current service area is generally within city limits, with only a small percentage of customers located outside that boundary consisting of three or four subdivisions and scattered homes on the edge of the city.[14] In 2020, the US Census Bureau

[12] Petitioner's Attachment LAY-1, 2024 PER, Table 2.1.1 - Historic [sic] and Projected Population Data, p. 2-1.

[13] Section 1.1.5 – Water Use Data in the *Recommended Standards for Water Works*, Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2022 Edition (also known as Ten States Standards), page 2.

[14] Petitioner's Attachment LAY-1, 2024 PER, pp. 1-1, 2-1, and March 27, 2024, DAC Memo, p. 310 of 314.

determined Anderson's population was 54,788 people. The update of Anderson's 2023 population listed 55,199 people.[15, 16] Petitioner claimed its 2023 population was 58,942 but did not identify the data source for the higher population or how it was determined.[17] For purposes of my testimony, I will use the IBRC's population estimate of 55,199 as the 2023 starting population.

Q: What is Anderson's population forecast over the planning period?

A: Petitioner provided historical 1900 to 2020 US Census counts and Petitioner's forecast for Anderson's 2030, 2040 and 2050 populations showing the population dropping by the year 2050 to 49,272 people.[18] This is 5,516 fewer people – an approximately 10% decrease from 2020.[19] Residential water demand should also drop by at least 10% by 2050 tracking with the population drop. In the 2024 PER Petitioner did not state its population for 2022 or provide its population estimate for the end of the twenty-year planning period in 2042.

Q: Were you able to estimate Petitioner's 2022 and 2042 populations?

A: Yes. STATS Indiana estimated Anderson's 2022 population was 54,948. I calculated that by 2042 Anderson's population will drop further to 50,190. I made the 2042 estimate as a linear interpolation using Petitioner's 2040 and 2050 population forecasts from Table 2.1.1 in the 2024 PER. I agree with Petitioner's forecast of Anderson's population decline. As I explain

[15] Indiana Business Research Center, STATS Indiana.

[16] The IBRC update of Anderson Township's 2023 population was 55,661 people but this includes the Town of Edgewood, which has an estimated 2023 population of 2,058. Edgewood has its own independent ground water system.

[17] Petitioner's Attachment LAY-1, 2024 PER, p. 1-22.

[18] Petitioner's Attachment LAY-1, 2024 PER, Table 2.1.1 - Historic [sic] and Projected Population Data, p. 2-1. The OUCC assumes that Curry & Associates made the 2030, 2040, and 2050 population forecasts for Anderson as no valid source for the data was identified.

[19] Petitioner cited STATS Indiana as the data source for the historical and forecasted population shown in PER Table 2.1.1. This is correct for the historical 1900 to 2020 US Census counts but is incorrect for the forecasted 2030, 2040, and 2050 populations since STATS Indiana does not publish 30 year forecasts for cities and towns. STATS Indiana does publish a three-year forecast for Anderson for 2021, 2022, and 2023. *See* Attachment JTP-1.

below, I used Anderson's own population estimate to calculate the 2042 residential water demand. *See* Attachment JTP-1 for population estimates by year and my Workpapers for Petitioner's data and calculations I made to estimate Anderson's population decrease.

Q: Did Petitioner provide information on current customer counts?

A: Yes. In the 2024 Preliminary Engineering Report, Petitioner provided current customer counts by customer class but did not indicate the year, but I assumed Petitioner was using 2022.[20]

Q: Has Anderson's customer base grown over the last 20 years?

A: No. Based on my review of Petitioner's IURC Annual Reports, customer count declined slightly over the last 20 years. Metered customers fell by 865 users from the 23,306 reported in 2003 to 22,441 customers in 2023. Total customers in 2023 totaled 22,712, which included 271 private fire customers.[21] Customer losses have primarily been residential (-848), but the number of commercial accounts also decreased by 146.[22] The drop in commercial customers mirrors the drop in population and residential customers as expected. Petitioner has fewer metered customers today than it had 20 years ago. Residential and commercial customers declined by 4% and 9% respectively since 2003. Anderson's customer counts have steadied somewhat in the last five years. I summarized Petitioner's customers and water operating

[20] Petitioner's Attachment LAY-1, 2024 PER, Table 1.3.1 - Water Customer Distribution, p. 1-23. There is a discrepancy in the Industrial and Institutional (Public Authority) customers counts between the 2024 PER and the IURC Annual Reports. Petitioner lists 107 Industrial and 14 Public Authority customers in the 2022 IURC Annual Report compared to 21 Industrial and 128 Institutional customers shown in PER Table 1.3.1. *See* Attachment JTP-1.

[21] 2023 IURC Annual Report, p. W-1. For 2023, Petitioner mistakenly listed fire protection customers as public rather than private fire customers. Petitioner should properly list its fire customers in future IURC Annual Reports.

[22] Petitioner listed no industrial or public authority customers in its 2003 IURC Annual Report but reported having 115 industrial and 14 public authority customers in its 2023 IURC Annual Report. The 2023 counts appear to be flipped because Petitioner reported serving 128 Institutional customers and 21 Industrial customers in the 2024 Preliminary Engineering Report, p. 1-23. Petitioner does not report serving any multi-family customers. Petitioner did not begin reporting industrial customers until 2008 or public authority customers until 2016.

revenues from 2003 to 2023 in Attachment JTP-B.[23]

In the 2024 PER, Curry & Associates reported that as of September 2023, Anderson had approximately 23,279 active accounts, including a total of 292 fire protection or flat rate connections.[24] Curry's count is 567 customers higher than the 22,712 total customers reported by Petitioner in its 2023 IURC Annual Report.

Q: Did Petitioner provide a forecast of future customer counts by class for 2042?

A: No.

IV. WATER DEMAND

Q: Where are Petitioner's current and projected water demands stated?

A: Petitioner presented what it purports to be the historical 2022 or future 2042 water demands three times in the 2024 PER.

1. Table 2.2.1 - 20-Year Projected Demand,
2. Figure 2.1.1 - City of Anderson Projected Future Water Demand, and
3. Table 2.2.2 - 20-Year Capacity Needs.[25]

Q: How does Petitioner describe its ability to meet the current and future 2042 demands with its existing water production facilities?

A: Petitioner claims that "to meet current and projected 20-year demand, treatment capacity must be expanded" and that "the existing treatment capacity is not sufficient to meet the projected 20-year water needs."[26]

[23] The customer counts shown in Attachment JTP-1 are based on reported data in Petitioner's IURC Annual Reports. Note that customer counts reported in Petitioner's Attachment LAY-1, 2024 PER, Table 1.3.1 Water Customer Distribution on page 2-23 are higher than the customer counts reported to the IURC.

[24] Petitioner's Attachment LAY-1, 2024 PER, p. 2-1.

[25] Petitioner's Attachment LAY-1, 2024 PER, pp. 2-2 to 2-4.

[26] Petitioner's Attachment LAY-1, 2024 PER, pp. Executive Summary 1, 2-2.

Q: On what basis does Petitioner claim it has insufficient treatment capacity?

A: Petitioner refers to a "steady demand increase" and compares it against the firm capacities of its wells and two existing water treatment plants.

Q: What does Petitioner attribute as the cause of the steady increase in demand?[27]

A: Petitioner claims "demand has been fueled by industry and has occurred even as population growth has declined."[28] (Emphasis added by the OUCC). Petitioner states "Future increase in water demand is anticipated to come primarily from industrial and commercial sectors, rather than residential, customers."[29] (Emphasis added by the OUCC). Petitioner does not indicate any other reason for the past or future increase in water demand.

Q: Do you agree with Petitioner that the increased demand has been caused by industrial and commercial growth?

A: No. Increased demand has not been caused by industrial and commercial growth over the last 15 years although it did jump significantly when Anderson's largest customer, Nestle, began operations in 2009 and when it added a seventh production line in 2014.[30]

Q: How has water sold changed in the last 15 years?

A: Water sold over the last 15 years (2009 to 2023) has not increased. It has been flat, averaging 6.38 MGD.[31] These 15 years of flat water sales follow Nestlé's ramp up to full production in 2009. *See* Attachment JTP-3 for a tabulation of 2009 to 2023 water production, sales, non-

[27] The demand in this instance refers to the total water produced that is pumped into the distribution system.

[28] Petitioner's Attachment LAY-1, 2024 PER, p. 2-1. "The recommended 20-year design flows are informed by the steady increase in water demand that has been fueled by industry and has occurred even as population growth has declined. Average and peak daily water use increased from 10.5 MGD to 11.3 MGD, and from 11.5 MGD to 13.4 MGD, respectively, from 2014 to 2022. These rates equate to an average annual increase of 1.0% in average demand and 2.1% in peak day demand."

[29] Petitioner's Attachment LAY-1, 2024 PER, p. ES-1. "Although no significant population growth is anticipated, demand has continued to grow and is expected to continue rising over the next 20 years. Future increase in water demand is anticipated to come primarily from industrial and commercial sectors, rather than residential, customers."

[30] Nestlé Press Release - Nestlé launches state-of-the-art factory and beverage distribution centre in USA, March 4, 2009. Nestle Press Release – Nestle Expanding Anderson Plant, September 25, 2013.

[31] Annual average flows since 2009 have ranged from a high of 6.62 MGD in 2012 to a low of 6.17 MGD in 2021.

revenue water and water losses.

Q: What then caused the need for water production increases since 2009?

A: Anderson's increased water demand is almost entirely caused by increased lost water. Lost water has steadily risen since 2009 and accelerated after 2017. Petitioner notes that "recent data show that average annual water loss continues to rise and exceeded 39% in 2022."[32] In the 2024 PER, Petitioner incorrectly attributes increased water demand to industrial and commercial customers instead of realizing the reason for increased water demand is the significant increase in lost water. The PER has overlooked and minimized a key finding that the cause of rising demand is Anderson's worsening water losses. OUCC witness Carl Seals discusses that the entire output from Petitioner's proposed 6 MGD South Side water treatment plant will effectively be wasted every day due to distribution system leaks. The sole purpose of the South Side WTP can thus be seen as producing lost water.

Q: Is managing the amount of water losses important for a utility?

A: Yes. It is a key part of effective utility management that balances the costs of a water main replacement program against the increasing costs to respond to leaks and build new treatment capacity. The Commission recognizes the benefits of controlling water losses in its Indiana Utility Guide, which states that "by mitigating water losses, utilities can reduce the need to develop new sources of supply and capacity to accommodate system peaks."[33]

Q: You testified Petitioner provided the historical 2022 or future 2042 water demands three times in the 2024 PER. What did your review of Petitioner's water demands reveal?

A: My review showed Petitioner has made several mistakes resulting in an overstatement of average day and peak day demands that lead to the false conclusion that "the existing treatment

[32] Petitioner's Attachment LAY-1, 2024 PER, p. 1-24.

[33] Indiana Utility Guide, 2023 Edition, p. 75.

capacity is not sufficient to meet the projected 20-year water needs."[34] Based on my review of Petitioner's testimony and discovery responses, I identified the following significant problems:

1. Petitioner applies the same 2022 water loss factor (39%) to its 2042 water demand forecast. This assumption, which Petitioner may characterize as being conservative, likely overestimates the 2042 water losses and implies Petitioner expects to see no benefit from water loss reduction efforts over the next 20 years despite the $71 million Petitioner plans to spend in the next four years to replace 22 miles of water mains including deteriorated mains in areas that experience numerous main breaks. For its 2042 demand forecast, Petitioner chose the highest 39% water loss it experienced in 2022. Petitioner's estimated 2042 water loss is problematic for three reasons. First, it assumes the worst water loss (39%) instead of an average water loss, such as from 2019 to 2023 of 36.7%. Second, it fails to account for any water loss reduction from Petitioner's main replacements. Finally, it assumes that neither the IURC nor IDEM will mandate Petitioner address its excessive water losses, which have been growing (approaching 40%), and keeps Anderson with a significant deficiency because losses exceed 25% of water produced.
2. Petitioner lists incorrect 2014 average daily and peak flows. In Table 2.2.1 - 20-Year Projected Demand, Petitioner mistakenly lists the WTP Average Design Flow (gpd) (10.5 MGD firm capacity) and Peak Design Flow (11.5 MGD) for the two WTPs instead of the 2014 average daily production of 8.66 MGD.[35] The incorrect values are from the 2014

[34] Petitioner's Attachment LAY-1, 2024 PER, p. 2-2.

[35] Petitioner's Attachment LAY-1, 2024 PER, p. 2-2. The OUCC does not have the 2014 water production data needed to determine the maximum day (peak) flow in 2014.

PER but are not the actual 2014 average and peak daily flows.[36]

3. Petitioner used data points from only two years (for 2014 and 2022) to calculate growth rates. Petitioner uses two sets of data points, one set of which are incorrect values for 2014 and the other set that are the highest values from 2022, to characterize the average and peak daily flow growth rates of 1.0% and 2.1%.[37] Two data points to represent variable flow data is insufficient to forecast future flows. Instead, the variable flow data from a representative and complete record should be plotted using multiple years of data to establish a trend line that best fits the data.

4. Petitioner used water production data prior to Nestle's start-up that should be excluded. Petitioner includes in its analysis, 2005 to 2008 water production data before Nestle started full production.[38] Because Nestle is such a large water user (20% of water sold in 2022), including water production data from years prior to Nestle's start-up biases the analysis by tilting the future demand trend line up. This inaccurately projects the 2042 average day and peak day demands upward.[39] There is an ample flow data record (water produced and sold) that includes Nestle's water usage over a 16-year period (2009 to 2024) to generate a more representative water demand trendline.[40] Petitioner should reanalyze its 2042

[36] Cause No. 44510, Robert E. Curry case-in-chief testimony, Exhibit REC-1, 2014 Preliminary Engineering Report, Curry & Associates, Inc., Table 2.4.1 - Summary of Anderson Waterworks Data for 2012 and 2013, p. 2-22.

[37] Petitioner's Attachment LAY-1, 2024 PER, p. 2-2. "Average and peak daily water use increased from 10.5 MGD to 11.3 MGD, and from 11.5 MGD to 13.4 MGD, respectively, from 2014 to 2022. These rates equate to an average annual increase of 1.0% in average demand and 2.1% in peak day demand."

[38] *See* Attachment JTP-4 for Petitioner's response to DR 6-7 that provided the water production data used to prepare Figure 2.1.1 Projected Future Water Demand in the 2024 PER, p. 2-3.

[39] Petitioner's Attachment LAY-1, 2024 PER, p. 2-4 "Nestle is the highest-consuming customer in the water system. Nestle's water demand increased from 2014 to 2021. Since then, Nestle's water use has somewhat stabilized. There are no known plans for significant increase in water demand from Nestle, but due to the size and nature of this large water user, it is important to anticipate potential increased demand in the future from industrial users."

[40] Petitioner should also include the 2024 water production and water sold data in its reanalysis of future water demand.

forecast with water data only for years when Nestle has been at or near full operation. Petitioner should determine a new trend line in Figure 2-1 using the 2009-2024 flow data.

5. Petitioner's water production data has a gap and is incomplete. There is a five-year gap of missing data (2015 to 2019).[41] Petitioner's analysis included 13 years of data from two periods: a) 2005 to 2014 (ten years which includes Nestle's start-up) and from b) 2020 to 2022 (three years). Petitioner should assemble the complete 16-year dataset from 2009 to 2024 for use in reanalyzing its forecast for 2042 water demand.

6. Petitioner does not show other authorized consumption for 2022 and 2042. Petitioner only shows water produced and sold and does not indicate other authorized consumption which may be included in the water loss values. In its reanalysis of future demand, Petitioner should account for water sold and other authorized consumption.

7. Water production data does not match. The 2005 to 2014 water production data used to generate Figure 2.1.1 - Projected Future Water Demand does not match the Water Pumped data reported by Petitioner in its Annual IURC Reports.[42] Petitioner should correct the water production data for 2009 to 2014.

8. Petitioner overestimates the 2042 residential water demand. Anderson's population will continue declining during the 20-year planning period. Nevertheless, Petitioner assumes residential demand still manages to grow by 27% or 1.2% annually over from 3,840,000 gpd in 2022 to 4,887,000 gpd in 2042.[43] Petitioner does not offer any evidence supporting

[41] Petitioner did not explain why the readily available five years of water production data is missing and not used in its forecast of future water demand.

[42] *See* Attachment JTP-4 for Petitioner's response to DR 6-7 that provided the water production data used to prepare Figure 2.1.1 Projected Future Water Demand in the 2024 PER, p. 2-3. *See* also Attachment JTP-3 for a tabulation of water production, sales, non-revenue water and water losses from 2009 to 2023 as reported in Petitioner's IURC Annual Reports.

[43] Petitioner's Attachment LAY-1, 2024 PER, Table 2.2.2 20-Year Capacity Needs., p. 2-4.

its assumed 1.2% growth rate. Decreased residential demand will track with population decline and decrease further due to installation of water saving plumbing fixtures. Petitioner's assumed 27% increase in residential water demand is counter to Anderson's population decline and contrary to the lower water use per capita trend.

Anderson's residential use in 2022 averaged 70 gallons per capita per day ("gpcd").[44] Petitioner's forecasted 2042 residential water usage spikes to 4,887,000 gpd causing a 37% increase in per capita usage to 96 gpcd.[45] This jump in per capita water is unlikely to occur. Absent an explanation why residential water use will jump on a total volume and per capita basis, Petitioner should lower its forecasted 2042 residential water demand of 4,887,000 by 1,323,300 gpd to 3,563,770 gpd to reflect Anderson's population decline and 70 gpcd usage.[46]

9. Petitioner overestimates the 2042 commercial water demand. Petitioner applied the same 1.2% annual growth rate it assumed for residential demand to commercial demand. Petitioner shows 2042 commercial demand increasing by 27% from 2022 demand. However, commercial demand should track with residential demand and should be lower in 2042. However, for purposes of my analysis, I accepted Petitioner's 2022 commercial demand of 1,510,000 gpd and have assumed that it does not decline.

[44] Calculated as 3,840,000 gpd of residential water demand in 2022 divided by Anderson's 2022 population of 54,948 people equals 70 gpcd. *See* Petitioner's Attachment LAY-1, 2024 PER, Table 2.2.2 20-Year Capacity Needs**.** p. 2-4.

[45] Calculated as 3,840,000 gpd (2022 residential water usage) times 1.2% annual growth rate equals 4,887,000 gpd (2042 residential water usage). 4,887,000 gpd of residential water demand in 2042 divided by Anderson's 2042 forecasted population of 50,910 people equals 96 gpcd. *See* Petitioner's Attachment LAY-1, 2024 PER, Table 2.2.2 20-Year Capacity Needs**,** p. 2-4.

[46] Calculated as 70 gpcd per the calculations shown on the previous page times the OUCC's estimate of Anderson's 2042 population of 50,910 people equals 3,563,770 gpd of residential water demand in 2042. For purposes of the OUCC's testimony, the 70 gpcd usage was used to forecast 2042 demand without applying likely reductions from improved water efficiencies.

10. Petitioner significantly underreports the 2022 industrial water demand. Petitioner underreports how much water industrial customers used in 2022. In Table 2.2.2 - 20-Year Capacity Needs, Petitioner erroneously reports 2022 industrial demand was only 1,151,000 gpd.[47] Yet Petitioner also reported its largest user, Nestle alone used 20% of water pumped, equal to approximately 2,136,714 gpd.[48] Petitioner presents 2022 water usage for its ten largest users in Table 1.3.2. For the four OUCC assumed industrial users (Nestle, Resin Partners, Inc., NTN Driveshaft, and Vision Works IX, LLC), the 2022 total water use was 880,752,797 gallons or 2.41 MGD. Petitioner should correct Table 2.2.2 in the 2024 PER to reflect the corrected total industrial water demand. For purposes of my testimony, I will assume that the 2022 Industrial water demand was 2,500,000 gpd to account for other industrial demand.

11. Petitioner underestimates the 2042 industrial demand. Petitioner's 2042 industrial water demand, shown growing by 311,000 gpd to 1,462,000 gpd in 2042 is also underestimated. For its future demand reanalysis, Petitioner should correct the 2042 industrial demand forecast and clearly show all data and assumptions made.

12. The corrected total 2022 DCI water demand exceeds the reported 6,501,000 gpd.[49] In Table 2.2.2, Petitioner reports 2022 water sold was 6,501,000 gpd which agrees with the volume Petitioner reported in the 2022 IURC Annual Report. However, leaving the 2022 residential (3,840,000 gpd) and commercial (1,510,000 gpd) demands unchanged but correcting the erroneous industrial demand to 2,500,000 gpd (discussed above) will

[47] *See* Petitioner's Attachment LAY-1, 2024 PER, Table 2.2.2 20-Year Capacity Needs, p. 2-4.

[48] Petitioner's Attachment LAY-1, 2024 PER, Table 2.2.2 20-Year Capacity Needs, p. 2-1.

[49] DCI stands for Domestic, Commercial, and Industrial. Petitioner did not separately identify water sold to institutional and public authority customers or other authorized consumption.

increase the water sold to 7,850,000 gpd causing it to no longer match the reported water sold. Petitioner should correct the 2022 DCI water sold in Table 2.2.2 when it reanalyzes its forecasted water demand. I recommend Petitioner also include the most recent water production and water sold data for 2023 and 2024.

13. The corrected 2042 DCI water demand forecast will not be 8,255,000 gpd. In Table 2.2.2, Petitioner forecasts the 2042 water sold will be 8,255,000 gpd. I estimate it will be 7,885,000 gpd.[50] I corrected the residential demand to account for population decline, retained Petitioner's 2022 commercial demand unchanged for 2042, accepted Petitioner's assumed 311,000 gpd increase in industrial demand from 2022 to 2042, and applied it to the 2,500,000 gpd revised demand I calculated for 2022.

14. Peak day demand for 2022 and 2042 are underreported and incorrect. In Table 2.2.2, Petitioner reports 2022 peak day demand was 8,122,500 gpd but the average day demand was higher at 11,334,882 gpd. This is impossible. The average day demand, by definition, can never exceed the peak day demand. The same problem exists for the 2042 forecast the average day demand again exceeds the peak day demand. Petitioner should correct these errors when it reanalyzes the 2042 demand forecast.

15. Peak DCI for 2042 is overestimated and incorrect. In Table 2.2.2, Petitioner flipped the entries for 2042 peak DCI demand (listed as 18,000,000 gpd – should be 10,319,000 gpd) and 2042 peak day demand (listed as 10,319,000 gpd – should be 18,000,000 gpd).

Q: What are your recommendations for Petitioner's mistakes in its water demand forecast?

A: Petitioner should correct all errors identified in my review and should reanalyze the 2042

[50] I calculated the 2042 water demand includes 3,563,770 gpd residential demand, 1,510,000 gpd commercial demand, and 2,811,000 gpd industrial demand equals 7,885,000 gpd (rounded up).

water demand forecast. Reanalysis will not affect any of the proposed projects accepted by the OUCC (Lafayette wells and WTP expansion, transmission mains, water main replacements). I recommend the Commission order Petitioner to complete its reanalysis within six months after the Final Order is issued and submit the reanalysis to the Commission and the OUCC in a Post Order compliance filing.

A. Residential and Commercial Water Demand

Q: What are Anderson's current residential and commercial water demands?

A: Petitioner indicated domestic (i.e. residential) demand in 2022 was 3,840,000 gpd which was 59% of the average daily water sold of 6,501,000 gpd. Petitioner listed the commercial demand at 1,510,000 gpd in 2022 which is 23% of the water sold.[51]

Q: What are Anderson's likely residential demand changes due to population loss in the future?

A: Demand will be lower. Along with Petitioner's forecasted 10% population decline by 2050, residential water demand should drop by at least 10%. Petitioner should lower its forecasted 2042 residential water demand of 4,887,000 by 1,323,300 gpd to 3,563,770 gpd to reflect Anderson's population decline and 70 gpcd usage.[52]

Q: Could residential water demand decrease more than the 10% caused by fewer people and fewer households?

A: Yes. Residential demand could go down more than 10% as homeowners replace less efficient plumbing fixtures (showerheads, toilets, faucets, etc.) with new low flow fixtures meeting

[51] Petitioner's Attachment LAY-1, 2024 PER, Table 2.2.2 20-Year Capacity Needs, p. 2-4.

[52] Calculated as 70 gpcd per the calculations shown on the previous page times the OUCC's estimate of Anderson's 2042 population of 50,910 people equals 3,563,770 gpd of residential water demand in 2042. For purposes of the OUCC's testimony, the 70 gpcd usage was used to forecast 2042 demand without applying likely reductions from improved water efficiencies.

EPA's WaterSense standards.[53] Residential demand can also decrease as builders construct new housing stock with water efficient plumbing fixtures meeting code in new subdivisions and older homes become vacant and are either remodeled or demolished.

B. Industrial Water Demand

Q: Has Anderson made any improvements to serve the Nestlé USA plant and other industrial users on the City's southwest side?

A: Yes. In 2012 Anderson constructed the 2-MG Park Road elevated composite water tower. Petitioner also constructed the Fairview booster station in 2017 to pump water from the Fairview elevated storage tank to the Park Rd. water tower and Southwest High Pressure Zone in order to keep the Park Rd. water tower filled.

Q: Are industrial demands driving the expansion projects?

A: No. The water demand of Nestle, Petitioner's largest customer, increased from 2014 to 2021. However, according to the 2024 PER, since 2021, Nestle's water use has somewhat stabilized and there are no known plans for significant increase in water demand from Nestle.[54]

Q: What are Anderson's changes to industrial demand in 2042?

A: I corrected Petitioner's assumed 2022 industrial demand of 1,150,000 gpd by raising it to 2,500,000 gpd. For 2042 industrial demand, I accepted Petitioner's estimate that it will grow by 311,000 gpd over the next 17 years raising the industrial demand to 2,811,000 gpd by 2042.

[53] WaterSense is an EPA program to help consumers take steps each day to save water and protect the environment by choosing WaterSense labeled products in the home, yard, and business. See https://www.epa.gov/watersense/about-watersense for more information on the WaterSense program.

[54] Petitioner's Attachment LAY-1, 2024 PER, Table 2.2.2 20-Year Capacity Needs, p. 2-4.

V. 2042 WATER DEMAND

Q: What will be Petitioner's water demand in 2042?

A: In Table 2.2.2, Petitioner forecasts the 2042 water sold will be 8,255,000 gpd. I estimate it will be 7,885,000 gpd.[55] I corrected the residential demand to account for population decline, retained Petitioner's 2022 commercial demand unchanged for 2042, accepted Petitioner's assumed 311,000 gpd increase in industrial demand from 2022 to 2042, and applied it to the 2,500,000 gpd revised demand I calculated for 2022.

Q: Including non-revenue water, what do you forecast for 2042 water demand?

A: Non-revenue water needs to be added to the 2042 water sold forecast above. The question is what water loss percentage should be applied. Petitioner assumes its water loss problem does not improve, and on that basis, it applies 2022's 39% water loss to its 2042 water demand forecast. Petitioner ignores its proposed investment of $71 million in ten transmission and water main replacement projects that target areas of Petitioner's distribution system with small diameter galvanized iron water mains that are prone to leaks with a high number of main breaks and service line leaks. IDEM has found Petitioner's system to have a significant deficiency due to continuing water losses above 25% that Petitioner must address.[56] The OUCC expects that the water main projects will achieve water loss reductions. I tabulated water production, sales, non-revenue water and water losses from 2009 to 2023 and forecasted the same parameters to 2042 at controlled water losses of 25% and 30%.[57]

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[55] I calculated the 2042 water demand includes 3,563,770 gpd residential demand, 1,510,000 gpd commercial demand, and 2,811,000 gpd industrial demand equals 7,885,000 gpd (rounded up).

[56] Under 327 Ind. Admin. Code 8-2-8.2 (e)(3)(D), a Significant Deficiency identified by IDEM during periodic Sanitary Surveys includes having greater than a twenty-five percent (25%) water loss based on a one (1) year average.

[57] See Attachment JTP-3 for the tabulation of water production, sales, non-revenue water and water losses from 2009 to 2023 with forecasts to 2042 at controlled water losses of 25% and 30%.

Q: What are the water demands through 2042 that you calculated?

A: I calculated two scenarios for reducing water losses to 25% and 30% by 2042. For either scenario, the annual average water production needed would be below 11.0 MGD. Using Petitioner's 1.25 peaking factor, the maximum (peak) day water demand would both be below 14.0 MGD, which is the firm capacity of the expanded Lafayette WTP. This indicates the South Side WTP is unneeded given the Lafayette WTP expansion currently in progress. Additional supply, at lower production volumes than currently achieved, could be provided by the existing Wheeler WTP if Petitioner only pumped raw water from wells without PFAS contamination.[58]

VI. NON-REVENUE WATER

Q: Was Petitioner concerned about non-revenue water and water losses in prior rate cases?

A: Yes. Water losses have been a continuing problem for nearly 50 years. In Cause No. 34839 in 1977, the Public Service Commission of Indiana ordered Petitioner to file a time schedule for its proposed replacement of two-inch water mains. The small diameter galvanized iron mains were prone to leaks and did not meet the minimum water main size for water service.[59]

In Cause No. 38855 in 1990, Petitioner's witness, Thomas A. Brewer, Water Utility Superintendent, testified that due to lack of valve maintenance, approximately 40% of the valves were either lost, inaccessible, or broken. This caused a lack of control and problems isolating or controlling water losses from main breaks. He testified that establishing a valve

[58] PFAS chemicals have been detected in three of the eight wells supplying water to the Wheeler WTP.

[59] Section 8.2.2 – Pipe Diameter in the *Recommended Standards for Water Works*, Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 2022 Edition (also known as Ten States Standards), pp. 153-154. The minimum size of water main which provides for fire protection and serving fire hydrants shall be six (6) inch diameter.

maintenance crew was the most logical solution for long term integrity of the system as well as addressing "the 350,000 linear feet of pre-world war two material that should have been on a replacement schedule years ago." [60] He also testified that "if these areas are neglected for too long of a time, the replacement of components all at once would be too great of a financial burden on the rate payer, not to mention possible loss of service due to failure as well as loss of quality and public health assurance."

Q: Was Petitioner concerned with lost water in Cause Nos. 42914 in 2006 and 44510 in 2014?

A: Yes. In both prior rate cases, Anderson's witness, Robert Curry, described the water losses and the problems with the undersized and deteriorated galvanized iron water mains. In Cause No. 42914, the problems were described as follows:

> The most problematic portion of the water distribution system is the presence of 2 [inch] and larger diameter steel water lines. After World War II the United States had an enormous capability to produce steel. During this period the county experienced major growth due to the return to normality after the war. Many cities, including the City of Anderson, installed steel water lines to address the immediate need for water distribution system extensions. Steel is a material that corrodes over a period of time. The rate of corrosion is a function of the aggressiveness of the soil. In the City of Anderson, the rate of corrosion has varied from very slow to very fast. However, today all steel water mains have corroded and need to be systematically replaced. Approximately 5% to 10% of the overall water distribution system is composed of 2" diameter black steel or galvanized steel pipe. Approximately 50% of all 3/4" water service lines (from the water main to the water meter) is made of galvanized steel. The percentage of lost water is greatly affected by the quantity of pin hole leaks in these old 2" steel water lines and 3/4" water service lines. Sandy soil in some parts of Anderson cause these pinhole leaks to go undetected for long periods of time.[61]

In Cause No. 44510 in 2014, Mr. Curry testified that "the distribution system has water loss issues and extensive effort has been made to reduce water loss. The lost water percent for

[60] Thomas A. Brewer case-in-chief testimony, Cause No. 38855, January 2, 1990, p. 3. *See* Attachment JTP-5.

[61] 2006 Waterworks Engineering Report, Curry & Associates, Inc. July 18, 2006, p. 19.

2012 was 23%."[62] Mr. Curry testified he did not consider the 23% lost water to be satisfactory, but he did not describe the extensive efforts he said were being made to reduce water loss.[63]

In this Cause and in the prior two rate cases (Cause Nos. 42914 in 2006 and 44510 in 2014) Petitioner did not present an asset management plan or financial plan for the distribution system to find and fix water leaks and replace deteriorated water mains and service lines to start reducing lost water from the 23%, which Mr. Curry had characterized as unsatisfactory to get below the Commission's 15% target.[64]

Q: Does Anderson have a history of high levels of non-revenue (lost) water?

A: Yes. As described in the testimony of OUCC witness Carl Seals, in its last ten IURC annual reports (2014 through 2023) Anderson's water loss has ranged from a low of 22.9% in 2017 to a high of 39.4% in 2022. Since 2003 Anderson has had only one year with water losses below 15% of pumped flows. IDEM considers water utilities with lost water rates between 10% and 20% to be "at risk". Utilities that exceed a lost water percentage of 25% have a Significant Deficiency that must be addressed.

Q: What was Anderson's lost water rate in 2022?

A: According to the 2024 PER, Table 1.4.1 Water Loss 2019-22, Anderson's water loss was 1.63 Billion gallons in 2022. On an average daily basis, Anderson is losing 4.47 Million gallons per day. In 2012 Anderson sold an average of 6.62 MGD but pumped 8.65 MGD. Non-revenue or lost water was 2.03 MGD. This means Anderson lost one gallon for every 3.3 gallons of

[62] Robert E. Curry case-in-chief testimony, Exhibit REC-1, 2014 Preliminary Engineering Report, Cause No. 44510, July 2, 2014, p. 2-2.

[63] Robert E. Curry case-in-chief testimony, Cause No. 44510, July 2, 2014, p. 19.

[64] The IURC informal water loss criteria has been that it should be less than 15% of the water produced. In the IURC Annual Report, the Commission asks utilities to explain efforts taken to mitigate losses (i.e., leak detection survey, meter replacement or calibration, AWWA Water Audit Completed) if real losses are greater than 10%.

water sold. In 2022 Anderson sold less water than in 2012 at an average of 6.50 MGD but pumped an increased volume of water at 11.33 MGD. Non-revenue water more than doubled from 2012 to 4.84 MGD. This means Anderson lost one gallon for every 1.3 gallons sold.

Q: What did Anderson assume for its lost water percentage in 2033 and 2042?

A: In Cause No. 44510, Anderson assumed that its 2012 lost water rate of 23.5% would continue at the same percentage of water produced until 2033. This assumption meant Anderson's lost water volumes would continue increasing and would grow to 2.9 MGD by 2033. In this Cause, Anderson has again assumed that its 2022 lost water rate of 39%, which grew significantly since 2012 to 39% in 2022, continues unchanged until 2042. This means Anderson assumes its lost water volumes will continue increasing and will grow to 5.62 MGD by 2042.

Q: What do you conclude about Anderson's non-revenue water?

A: Anderson's non-revenue water has increased significantly and is unacceptably high. Anderson assumes that water losses will grow worse by 2042 and does not factor in any reduction to the high level of water losses that the proposed ten water main projects will accomplish. It is critical that Anderson undertake a long-term continuous program to identify, reduce, and manage its water losses to a maximum target water loss rate of 15% of pumped water. Such a program will include active leak detection and elimination and a systematic replacement of problem water mains and service lines. The critical need for a water main replacement program is discussed in the next section. To establish 2042 water demands, I agree that an allowance for water losses should be included but recommend Anderson be required to develop and implement an ongoing, properly funded Water Loss Action Plan within two years to address high water losses by finding and fixing water leaks, locating and fixing or replacing all inoperable distribution system valves, and creating a long-term plan to replace aged and leaking water mains. The goal is to limit water losses to no more than 15% of pumped flows.

VII. OTHER MATTERS

PFAS Contamination

Q: What is the current status of PFAS detected in the Wheeler WTP Well Field?

A: PFAS was detected in groundwater samples taken by IDEM in three of the eight wells serving the Wheeler WTP. These wells were Ranney Well No. 1, Ranney Well No. 4, and Ranney Well No. 5. PFAS chemicals were not detected in the other five wells supplying the Wheeler WTP or any of the wells serving the Lafayette WTP.

Q: What do you recommend regarding PFAS at the Wheeler WTP?

A: Under the PFAS regulations finalized in April 2024, Petitioner has two more years to analyze the well water for PFAS and an additional two years to design and construct a PFAS removal system for the Wheeler WTP or find a new source of supply when required as water demand rises. As previously discussed in my testimony, I forecast that Anderson will have sufficient well and treatment capacity at its expanded Lafayette WTP to the 2042 design year.

Life Cycle Cost-Benefit Analysis

Q: Has Petitioner conducted a Life Cycle Cost-Benefit Analysis for the proposed South Side Water Treatment Plant?

A: Petitioner did not include a Life Cycle Cost-Benefit Analysis in its 2024 Preliminary Engineering Report.

Q: What options should be evaluated for the proposed South Side WTP?

A: Petitioner appears to have selected a Unilater iron and manganese removal plant.[65] Petitioner should evaluate installing horizontal pressure filters of the same design used for the Lafayette WTP. Choosing horizontal pressure filters would standardize operations for Petitioner's operations between the two WTPs. The benefit of the horizontal pressure filters is that they

[65] Unilater plants are fabricated by Bastin & Logan Water Services, Inc. of Franklin, IN. Other competitors include WesTech who markets the Aeralater® Iron and Manganese Removal System.

have a longer service life than the Unilater / Aeralater designs which have an approximate 25 year service life. The pressure filters in Petitioner's original Lafayette WTP were installed in the later 1960s and replaced in 2019. Their demonstrated service life is nearly 50 years. Horizontal pressure filters are also easier to access for painting. In addition, the pressure filters are smaller and would require three units rated at 2.0 MGD each compared to the two larger 3.0 MGD Unilater filters. The system wide firm capacity of the eleven horizontal pressure filters each rated at 2.0 MGD (eight at the expanded Lafayette WTP and three at the future South Side WTP) would be 20.0 MGD which is higher than the 19.0 MGD firm rated capacity of the expanded Lafayette WTP and proposed South Side WTP.

Q: What do you recommend regarding a Life Cycle Cost-Benefit Analysis for the proposed South Side WTP?

A: There is not a current need to construct the proposed plant at this time because the expanded Lafayette WTP will have enough capacity to meet Petitioner's water demands. The Wheeler WTP is also able to supply treated water to customers. The South Side WTP project is in the early stages of planning with many unknowns and does not yet have the properties for the wells and the WTP site. Petitioner did not indicate that design and permitting had begun. If and when additional capacity is needed, I recommend Petitioner conduct a Life Cycle Cost-Benefit Analysis of the available alternatives for the South Side WTP.

Water Loss Action Plan and Small Diameter Water Main Replacement Program

Q: Has Anderson historically experienced water main breaks and leakage problems with its small diameter steel water mains?

A: Yes. Of the 303 water main breaks reported from 2011 to 2013, 226 (75%) occurred in water mains 2-inch diameter or smaller. Likewise, for the 288 main breaks reported from 2021 to 2023, 199 (69%) occurred in 2-inch water mains. Anderson's corrosion and leakage problems from its small diameter steel water mains are well documented over the last 50 years.

Q: How many lineal feet of 2" steel water mains has Anderson replaced since 2014?

A: In response to discovery, Anderson reported it had replaced 25,235 feet of the 2-inch steel water mains since 2014."[66]

Q: How many lineal feet of galvanized iron water mains 2-inches and smaller currently exist in Petitioner's distribution system?

A: Petitioner reports that it currently has 340,000 lineal feet of such mains in its system.[67]

Q: Does Anderson have a schedule to replace all remaining small diameter galvanized iron water main and service lines in its distribution system?

A: No. Petitioner did indicate in response to discovery that the current project will eliminate approximately 20% of steel mains. Thereafter, the City will focus on replacement of steel mains based on funds available in the City's capital improvement fund.[68]

Q: Does Anderson propose an ongoing galvanized iron (steel) water main replacement program in this proceeding?

A: No. A specific annual program or funding level and schedule for a systematic replacement of all of Anderson's steel water mains is not included.

Q: Is your position that Anderson's needs a systematic water main replacement program?

A: Yes.

Q: What do you conclude about Anderson's small diameter water mains?

A: Anderson's small diameter water mains are a continuing source of problems within its distribution system. They are undersized and represent a major source of water leaks in the system. I recommend the Commission again require Anderson to develop and implement a long term plan on a date certain schedule to replace all 2-inch and smaller black steel and galvanized iron water mains. This program should also include requirements for Anderson to

[66] Petitioner's response to DR 8-13.

[67] Petitioner's responses to DR 8-3 and 8-4.

[68] Petitioner's response to DR 8-13.

create and maintain a water main database to track water main types, age, and diameters so that Anderson can accurately measure and assess its progress in ridding its system of small diameter water mains and steel water mains that have deteriorated and are prone to leaks and main breaks.

Due to water losses near 40%, I recommend the Commission direct Petitioner to develop an ongoing Water Loss Action Plan within two years to address high water losses by finding and fixing water leaks and inoperable distribution system valves and including a long-term plan to replace aged and leaking water mains. I recommend the Commission order Anderson to submit its Water Loss Action Plan in a Post Order compliance filing, with a long-term goal of reducing its water loss rate to below 15%.[69] I also recommend the Commission require Anderson to periodically report on the progress of its small diameter water main replacement program.

VIII. RECOMMENDATIONS

Q: What are your recommendations?

A: I recommend the following:

1. The Commission direct Petitioner to develop an ongoing Water Loss Action Plan within two years to address high water losses by finding and fixing water leaks and inoperable distribution system valves and including a long-term plan to replace aged and leaking water mains.

[69] Interim goals would be to reduce water losses down to 30% by 2042 followed by further reductions and a timeframe to comply with Indiana's 25% water loss regulation and ultimately the 15% loss goal.

2. The Commission order Anderson to submit its Water Loss Action Plan in a Post Order compliance filing, with a long-term goal to reduce water loss to below 15%.
3. Petitioner correct the numerous mistakes in its Water Demand Forecast and conduct a reanalysis of its 2042 water demand using the corrected forecast data and accounting for reductions in its lost water.
4. The Commission not approve the financing for the South Side water treatment plant.
5. The Commission order Petitioner to complete its reanalysis of the 2042 water demand within six months after the Final Order is issued and submit the reanalysis to the Commission and the OUCC in a Post Order compliance filing.
6. If and when additional capacity is needed, Petitioner should conduct a Life Cycle Cost-Benefit Analysis of the available alternatives for the South Side WTP.

Q: Does this conclude your testimony?

A: Yes.

Appendix A

Q: Please describe your educational background and experience.

A: In 1980 I graduated from Purdue University, where I received a Bachelor of Science degree in Civil Engineering, having specialized in Environmental Engineering. I then worked with the Peace Corps for two years in Honduras as a municipal engineer and as a Project Engineer on self-help rural water supply and sanitation projects funded by the U.S. Agency for International Development. In 1984 I earned a Master of Science degree in Civil Engineering and Environmental Engineering from Purdue University. I have been a Registered Professional Engineer in the State of Indiana since 1986. In 1984, I accepted an engineering position with Purdue University and was assigned to work as a process engineer with the Indianapolis Department of Public Works at the City's Advanced Wastewater Treatment Plants. I left Purdue and subsequently worked for engineering consulting firms, first as a Project Engineer for Process Engineering Group of Indianapolis and then as a Project Manager for the consulting firm HNTB in Indianapolis. In 1999, I returned to DPW as a Project Engineer working on planning projects, permitting, compliance monitoring, wastewater treatment plant upgrades, and combined sewer overflow control projects. Since 2014, I have been employed by the Indiana Office of Utility Consumer Counselor in the Water / Wastewater Division.

Q: What are the duties and responsibilities of your current position?

A: My duties include evaluating the condition, operation, maintenance, replacement, and expansion of water and wastewater facilities at utilities subject to IURC jurisdiction. I have also evaluated utility acquisitions, regulated territories, and certificates of territorial authority.

Q: Have you previously testified before the Commission?

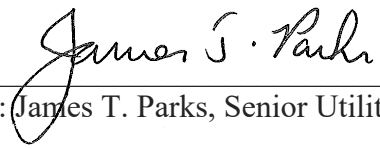
A: Yes.

Appendix B - List of Attachments

Attachment JTP-1	Population estimates by year to 2042
Attachment JTP-2	Anderson Customer Counts and Total Operating Revenues 2003 to 2023
Attachment JTP-3	Tabulation of water production, sales, non-revenue water and water losses from 2009 to 2023 with forecasts to 2042 at controlled water losses of 25% and 30%
Attachment JTP-4	Petitioner's response to DR 6-7 that provided the water production data used to prepare Figure 2.1.1 Projected Future Water Demand in the 2024 Preliminary Engineering Report, p. 2-3.
Attachment JTP-5	Thomas A. Brewer case-in-chief testimony, Cause No. 38855, January 2, 1990

AFFIRMATION

I affirm the representations I made in the foregoing testimony are true to the best of my knowledge, information, and belief.



By: James T. Parks, Senior Utility Analyst

Cause No. 46171

Office of Utility Consumer Counselor (OUCC)

Date: April 3, 2025

Anderson Historical and Projected Population 1900 to 2050

Year	Anderson Population Table 2.1.1 2024 PER	Population Change	Population Change %	Residential Customers per IURC Annual Reports	People per residence
1900	20,178				
1910	22,476	2,298	11.4%		
1920	29,767	7,291	32.4%		
1930	39,804	10,037	33.7%		
1940	41,572	1,768	4.4%		
1950	46,820	5,248	12.6%		
1960	49,061	2,241	4.8%		
1970	70,787	21,726	44.3%		
1980	64,695	-6,092	-8.6%		
1990	59,459	-5,236	-8.1%		
2000	59,734	275	0.5%		
2010	56,129	-3,605	-6.0%	20,380	2.75
2020	54,788	-1,341	-2.4%	20,696	2.65
2021	54,860	72	0.1%	20,821	2.63
2022	54,948	88	0.2%	20,840	2.64
2023	55,199	251	0.5%	20,881	2.64
2024	54,935	-264	-0.5%	20,804	2.64
2025	54,672	-264	-0.5%	20,718	2.64
2026	54,408	-264	-0.5%	20,610	2.64
2027	54,144	-264	-0.5%	20,504	2.64
2028	53,880	-264	-0.5%	20,409	2.64
2029	53,617	-264	-0.5%	20,310	2.64
2030	53,353	-264	-0.5%	20,208	2.64
2031	53,150	-203	-0.4%	20,131	2.64
2032	52,946	-203	-0.4%	20,055	2.64
2033	52,743	-203	-0.4%	19,978	2.64
2034	52,540	-203	-0.4%	19,901	2.64
2035	52,337	-203	-0.4%	19,824	2.64
2036	52,133	-203	-0.4%	19,747	2.64
2037	51,930	-203	-0.4%	19,670	2.64
2038	51,727	-203	-0.4%	19,593	2.64
2039	51,523	-203	-0.4%	19,516	2.64

Anderson Historical and Projected Population 1900 to 2050

Year	Anderson Population Table 2.1.1 2024 PER	Population Change	Population Change %	Residential Customers per IURC Annual Reports	People per residence
2040	51,320	-203	-0.4%	19,439	2.64
2041	51,115	-205	-0.4%	19,361	2.64
2042	50,910	-205	-0.4%	19,284	2.64
2043	50,706	-205	-0.4%	19,206	2.64
2044	50,501	-205	-0.4%	19,128	2.64
2045	50,296	-205	-0.4%	19,051	2.64
2046	50,091	-205	-0.4%	18,973	2.64
2047	49,886	-205	-0.4%	18,896	2.64
2048	49,682	-205	-0.4%	18,818	2.64
2049	49,477	-205	-0.4%	18,741	2.64
2050	49,272	-205	-0.4%	18,663	2.64
Loss 2022-2042	-4,038			-1,556	
Loss 2020-2050	-5,516			-2,033	

Notes:

1. Petitioner reported data is shown in black.
2. US Census data is shown in black.
3. Indiana Business Research Center population estimates for 2021-2023 are in blue.
4. OUCC calculated values are shown in red.
5. People per residence is calculated as population divided by residential customers for purposes of estimating the number of future residential customers. It is not the same as the US Census reported persons per household which was 2.22 for 2019-2023.

Anderson Customer Counts and Total Operating Revenues 2003 to 2023

Year	Residential Customers	Commercial Customers	Industrial Customers	Public Authorities	Total Customers	Customers Added	Total Revenue
2003	21,729	1,577			23,306	-36	$ 5,842,138
2004	21,674	1,549			23,223	-83	$ 5,969,845
2005	21,358	1,521			22,879	-344	$ 5,825,029
2006	21,409	1,533			22,942	63	$ 5,762,866
2007	21,242	1,504			22,746	-196	$ 7,040,157
2008	20,707	1,549	2		22,258	-488	$ 7,313,143
2009	20,521	1,525	3		22,049	-209	$ 7,491,432
2010	20,380	1,513	6		21,899	-150	$ 7,493,234
2011	20,004	1,511	7		21,589	-310	$ 7,502,529
2012	20,254	1,519	7		21,865	276	$ 7,681,004
2013	20,143	1,572	7		21,722	-143	$ 7,557,577
2014	20,052	1,562	7		21,621	-101	$ 7,558,834
2015	20,254	1,604	7		21,865	244	$ 8,561,341
2016	20,303	1,520	12	68	21,903	38	$10,209,626
2017	20,335	1,530	14	83	21,962	59	$10,869,333
2018	20,237	1,538	97	1	21,873	-89	$11,024,728
2019	20,840	1,497	89	15	22,441	568	$11,172,958
2020	20,696	1,522	97	14	22,329	-112	$10,950,641
2021	20,821	1,529	121	14	22,485	156	$11,470,333
2022	20,840	1,525	107	21	22,493	8	$11,420,519
2023	20,881	1,431	115	14	22,441	-52	$11,074,869

	New Customers		Average Growth %
	Total	Avg. per Yr.	
20-Year Growth 2003-2023	-865	-43	-0.19%
5-Year Growth 2019-2023	0	0	0.00%

Notes:

1. Anderson's Industrial and Public Authorities customer counts are listed above as shown as reported in Petitioner's IURC Annual Reports but appear to be switched.
2. Anderson reports it has no multi-family customers.

Petitioner Assumptions - No Water Loss Reduction (Held at 2022 39% Rate)

Water Pumped and Sold Data 2009-2023 Actual & 2024-2042 Forecasted

Year	Annual Average			Non-Revenue Water %	Other Authorized Consumption	Water Loss MGD	Water Loss %
	Water Pumped MGD	Water Sold MGD	NRW Water MGD				
2009	8.63	6.24	2.39	28%	0.00	2.39	27.7%
2010	8.54	6.45	2.09	24%	0.00	2.09	24.5%
2011	8.88	6.36	2.52	28%	0.00	2.52	28.4%
2012	8.65	6.62	2.03	23%	0.00	2.03	23.5%
2013	8.23	6.44	1.79	22%	0.00	1.79	21.7%
2014	8.66	6.62	2.04	24%	0.00	2.04	23.5%
2015	8.38	6.35	2.03	24%	0.00	2.03	24.2%
2016	8.82	6.18	2.64	30%	0.00	2.64	29.9%
2017	9.79	6.22	3.57	36%	1.33	2.24	22.9%
2018	10.23	6.23	3.99	39%	0.86	3.13	30.6%
2019	10.23	6.52	3.71	36%	0.27	3.44	33.7%
2020	9.98	6.38	3.60	36%	0.09	3.51	35.1%
2021	10.86	6.17	4.69	43%	0.50	4.19	38.6%
2022	11.33	6.50	4.84	43%	0.36	4.47	39.5%
2023	11.49	6.59	4.48	39%		4.48	39.0%
2024	11.64	6.68	4.54	39%		4.54	39.0%
2025	11.79	6.76	4.60	39%		4.60	39.0%
2026	11.95	6.85	4.66	39%		4.66	39.0%
2027	12.10	6.94	4.72	39%		4.72	39.0%
2028	12.25	7.03	4.78	39%		4.78	39.0%
2029	12.41	7.11	4.84	39%		4.84	39.0%
2030	12.56	7.20	4.90	39%		4.90	39.0%
2031	12.71	7.29	4.96	39%		4.96	39.0%
2032	12.87	7.38	5.02	39%		5.02	39.0%
2033	13.02	7.47	5.08	39%		5.08	39.0%
2034	13.17	7.55	5.14	39%		5.14	39.0%
2035	13.33	7.64	5.20	39%		5.20	39.0%
2036	13.48	7.73	5.26	39%		5.26	39.0%
2037	13.63	7.82	5.32	39%		5.32	39.0%
2038	13.79	7.90	5.38	39%		5.38	39.0%
2039	13.94	7.99	5.44	39%		5.44	39.0%
2040	14.09	8.08	5.50	39%		5.50	39.0%
2041	14.25	8.17	5.56	39%		5.56	39.0%
2042	14.40	8.26	5.62	39%		5.62	39.0%
	1.25	Petitioner Peaking Factor			2042	Peak Day Year	
	18.000	Calculated Peak Day MGD					

Water Loss Controlled to Achieve 25% Target by 2042

Water Pumped and Sold Data 2009-2023 Actual & 2024-2042 Forecasted

Year	Annual Average			Non-Revenue Water %	Other Authorized Consumption	Water Loss MGD	Water Loss Reduced to 25%
	Water Pumped MGD	Water Sold MGD	NRW Water MGD				
2009	8.63	6.24	2.39	28%	0.00	2.39	27.7%
2010	8.54	6.45	2.09	24%	0.00	2.09	24.5%
2011	8.88	6.36	2.52	28%	0.00	2.52	28.4%
2012	8.65	6.62	2.03	23%	0.00	2.03	23.5%
2013	8.23	6.44	1.79	22%	0.00	1.79	21.7%
2014	8.66	6.62	2.04	24%	0.00	2.04	23.5%
2015	8.38	6.35	2.03	24%	0.00	2.03	24.2%
2016	8.82	6.18	2.64	30%	0.00	2.64	29.9%
2017	9.79	6.22	3.57	36%	1.33	2.24	22.9%
2018	10.23	6.23	3.99	39%	0.86	3.13	30.6%
2019	10.23	6.52	3.71	36%	0.27	3.44	33.7%
2020	9.98	6.38	3.60	36%	0.09	3.51	35.1%
2021	10.86	6.17	4.69	43%	0.50	4.19	38.6%
2022	11.33	6.50	4.83	43%	0.36	4.47	39.5%
2023	10.91	6.35	4.55	42%	0.52	4.03	37.0%
2024	10.97	6.38	4.60	42%	0.56	4.03	36.77%
2025	11.00	6.39	4.61	42%	0.56	4.05	36.77%
2026	10.91	6.41	4.50	41%	0.56	3.94	36.1%
2027	10.82	6.43	4.40	41%	0.57	3.83	35.4%
2028	10.74	6.44	4.29	40%	0.57	3.73	34.7%
2029	10.65	6.46	4.19	39%	0.57	3.62	34.0%
2030	10.57	6.48	4.09	39%	0.57	3.52	33.3%
2031	10.49	6.50	3.99	38%	0.57	3.42	32.6%
2032	10.41	6.51	3.90	37%	0.57	3.33	31.9%
2033	10.33	6.53	3.80	37%	0.57	3.23	31.2%
2034	10.26	6.55	3.71	36%	0.58	3.13	30.6%
2035	10.18	6.57	3.62	36%	0.58	3.04	29.9%
2036	10.11	6.58	3.53	35%	0.58	2.95	29.2%
2037	10.04	6.60	3.44	34%	0.58	2.86	28.5%
2038	9.97	6.62	3.35	34%	0.58	2.77	27.8%
2039	9.90	6.63	3.27	33%	0.58	2.68	27.1%
2040	9.83	6.65	3.18	32%	0.58	2.60	26.4%
2041	9.77	6.67	3.10	32%	0.59	2.51	25.7%
2042	9.70	6.69	3.01	31%	0.59	2.42	25.0%
	1.25	Petitioner Peaking Factor			2025	Peak Day Year	
	13.751	Calculated Peak Day MGD					

Water Loss Controlled to Achieve 30% Target by 2042

Water Pumped and Sold Data 2009-2023 Actual & 2024-2042 Forecasted

Year	Annual Average			Non-Revenue Water %	Other Authorized Consumption	Water Loss MGD	Water Loss Reduced to 30%
	Water Pumped MGD	Water Sold MGD	NRW Water MGD				
2009	8.63	6.24	2.39	28%	0.00	2.39	27.7%
2010	8.54	6.45	2.09	24%	0.00	2.09	24.5%
2011	8.88	6.36	2.52	28%	0.00	2.52	28.4%
2012	8.65	6.62	2.03	23%	0.00	2.03	23.5%
2013	8.23	6.44	1.79	22%	0.00	1.79	21.7%
2014	8.66	6.62	2.04	24%	0.00	2.04	23.5%
2015	8.38	6.35	2.03	24%	0.00	2.03	24.2%
2016	8.82	6.18	2.64	30%	0.00	2.64	29.9%
2017	9.79	6.22	3.57	36%	1.33	2.24	22.9%
2018	10.23	6.23	3.99	39%	0.86	3.13	30.6%
2019	10.23	6.52	3.71	36%	0.27	3.44	33.7%
2020	9.98	6.38	3.60	36%	0.09	3.51	35.1%
2021	10.86	6.17	4.69	43%	0.50	4.19	38.6%
2022	11.33	6.50	4.83	43%	0.36	4.47	39.5%
2023	10.91	6.35	4.55	42%	0.52	4.03	37.0%
2024	10.97	6.38	4.60	42%	0.56	4.03	36.77%
2025	11.00	6.39	4.61	42%	0.56	4.05	36.77%
2026	10.96	6.41	4.55	42%	0.56	3.99	36.4%
2027	10.92	6.43	4.49	41%	0.57	3.93	36.0%
2028	10.88	6.44	4.44	41%	0.57	3.87	35.6%
2029	10.85	6.46	4.38	40%	0.57	3.82	35.2%
2030	10.81	6.48	4.33	40%	0.57	3.76	34.8%
2031	10.77	6.50	4.27	40%	0.57	3.70	34.4%
2032	10.73	6.51	4.22	39%	0.57	3.65	34.0%
2033	10.70	6.53	4.17	39%	0.57	3.59	33.6%
2034	10.66	6.55	4.11	39%	0.58	3.54	33.2%
2035	10.63	6.57	4.06	38%	0.58	3.48	32.8%
2036	10.59	6.58	4.01	38%	0.58	3.43	32.4%
2037	10.56	6.60	3.96	37%	0.58	3.38	32.0%
2038	10.52	6.62	3.91	37%	0.58	3.32	31.6%
2039	10.49	6.63	3.86	37%	0.58	3.27	31.2%
2040	10.46	6.65	3.80	36%	0.58	3.22	30.8%
2041	10.42	6.67	3.75	36%	0.59	3.17	30.4%
2042	10.39	6.69	3.70	36%	0.59	3.12	30.0%
	1.25	Petitioner Peaking Factor			2025	Peak Day Year	
	13.751	Calculated Peak Day MGD					

Water Loss Controlled to Achieve 25% Target by 2042 at Petitioner's Growth

Water Pumped and Sold Data 2009-2023 Actual & 2024-2042 Forecasted

Year	Annual Average			Non-Revenue Water %	Other Authorized Consumption	Water Loss MGD	Water Loss Reduced to 25%
	Water Pumped MGD	Water Sold MGD	NRW Water MGD				
2009	8.63	6.24	2.39	28%	0.00	2.39	27.7%
2010	8.54	6.45	2.09	24%	0.00	2.09	24.5%
2011	8.88	6.36	2.52	28%	0.00	2.52	28.4%
2012	8.65	6.62	2.03	23%	0.00	2.03	23.5%
2013	8.23	6.44	1.79	22%	0.00	1.79	21.7%
2014	8.66	6.62	2.04	24%	0.00	2.04	23.5%
2015	8.38	6.35	2.03	24%	0.00	2.03	24.2%
2016	8.82	6.18	2.64	30%	0.00	2.64	29.9%
2017	9.79	6.22	3.57	36%	1.33	2.24	22.9%
2018	10.23	6.23	3.99	39%	0.86	3.13	30.6%
2019	10.23	6.52	3.71	36%	0.27	3.44	33.7%
2020	9.98	6.38	3.60	36%	0.09	3.51	35.1%
2021	10.86	6.17	4.69	43%	0.50	4.19	38.6%
2022	11.33	6.50	4.83	43%	0.36	4.47	39.5%
2023	10.76	6.59	4.17	38.7%		4.17	38.7%
2024	10.77	6.68	4.10	38%		4.10	38.0%
2025	10.79	6.76	4.02	37%		4.02	37.3%
2026	10.80	6.85	3.95	37%		3.95	36.6%
2027	10.82	6.94	3.88	36%		3.88	35.9%
2028	10.83	7.03	3.81	35%		3.81	35.1%
2029	10.85	7.11	3.73	34%		3.73	34.4%
2030	10.86	7.20	3.66	34%		3.66	33.7%
2031	10.87	7.29	3.58	33%		3.58	33.0%
2032	10.89	7.38	3.51	32%		3.51	32.2%
2033	10.90	7.47	3.43	32%		3.43	31.5%
2034	10.91	7.55	3.36	31%		3.36	30.8%
2035	10.93	7.64	3.28	30%		3.28	30.1%
2036	10.94	7.73	3.21	29%		3.21	29.3%
2037	10.95	7.82	3.13	29%		3.13	28.6%
2038	10.96	7.90	3.06	28%		3.06	27.9%
2039	10.97	7.99	2.98	27%		2.98	27.2%
2040	10.98	8.08	2.91	26%		2.91	26.4%
2041	11.00	8.17	2.83	26%		2.83	25.7%
2042	11.01	8.26	2.75	25%		2.75	25.0%
	1.25	Petitioner Peaking Factor			2042	Peak Day Year	
	13.758	Calculated Peak Day MGD					

Water Loss Controlled to Achieve 30% Target by 2042 at Petitioner's Growth

Water Pumped and Sold Data 2009-2023 Actual & 2024-2042 Forecasted

Year	Annual Average			Non-Revenue Water %	Other Authorized Consumption	Water Loss MGD	Water Loss Reduced to 30%
	Water Pumped MGD	Water Sold MGD	NRW Water MGD				
2009	8.63	6.24	2.39	28%	0.00	2.39	27.7%
2010	8.54	6.45	2.09	24%	0.00	2.09	24.5%
2011	8.88	6.36	2.52	28%	0.00	2.52	28.4%
2012	8.65	6.62	2.03	23%	0.00	2.03	23.5%
2013	8.23	6.44	1.79	22%	0.00	1.79	21.7%
2014	8.66	6.62	2.04	24%	0.00	2.04	23.5%
2015	8.38	6.35	2.03	24%	0.00	2.03	24.2%
2016	8.82	6.18	2.64	30%	0.00	2.64	29.9%
2017	9.79	6.22	3.57	36%	1.33	2.24	22.9%
2018	10.23	6.23	3.99	39%	0.86	3.13	30.6%
2019	10.23	6.52	3.71	36%	0.27	3.44	33.7%
2020	9.98	6.38	3.60	36%	0.09	3.51	35.1%
2021	10.86	6.17	4.69	43%	0.50	4.19	38.6%
2022	11.33	6.50	4.83	43%	0.36	4.47	39.5%
2023	10.91	6.59	4.21	38.6%		4.25	39.0%
2024	10.86	6.68	4.18	39%		4.18	38.5%
2025	10.92	6.76	4.15	38%		4.15	38.0%
2026	10.98	6.85	4.12	38%		4.12	37.6%
2027	11.03	6.94	4.09	37%		4.09	37.1%
2028	11.09	7.03	4.06	37%		4.06	36.6%
2029	11.14	7.11	4.03	36%		4.03	36.2%
2030	11.20	7.20	4.00	36%		4.00	35.7%
2031	11.25	7.29	3.96	35%		3.96	35.2%
2032	11.30	7.38	3.93	35%		3.93	34.7%
2033	11.36	7.47	3.89	34%		3.89	34.3%
2034	11.41	7.55	3.85	34%		3.85	33.8%
2035	11.46	7.64	3.82	33%		3.82	33.3%
2036	11.51	7.73	3.78	33%		3.78	32.8%
2037	11.56	7.82	3.74	32%		3.74	32.4%
2038	11.61	7.90	3.70	32%		3.70	31.9%
2039	11.65	7.99	3.66	31%		3.66	31.4%
2040	11.70	8.08	3.62	31%		3.62	30.9%
2041	11.75	8.17	3.58	30%		3.58	30.5%
2042	11.79	8.26	3.54	30%		3.54	30.0%
	1.25	Petitioner Peaking Factor			2042	Peak Day Year	
	14.741	Calculated Peak Day MGD					

Preliminary conceptual estimate for electrical was based on bids for similar projects:

- **Anderson's Lafayette WTP Project, Bid 2017, Electrical Bid $852,517**
  - **This was a larger overall project**
- **Charlestown State Park WTP Project, Bid 2021, Electrical Bid $550,000**
  - **This project was smaller in overall scope**

Responsible Party: City, Lori A. Young, P.E.

Q-6-7: Please show all calculations and assumptions used to create Table 2.2.1 appearing in the PER.

Response: **Please see Attachment DR 6-7. Historical water pumpage data was evaluated from 2005-2014, and 2019-2022.**

Column "(A) Projected Avg Day-Regression", provides the calculated projected average daily pumpage based on linear regression of data from 2005-2014 and 2019-2022. Resulting formula for the projection:

Y = 20,577 (X) + 7,711,372
Y = Total Daily Water Pumpage (gallons/day)
X = Number of months since start of study period

Based on overall review of data and engineering judgment, the projection formula was adjusted in column "(B) Projected Average (Adjusted 15,000 gpd/mo)", to calculate 15,000 gpd/month average increase from 2005 – 2022. This rate of increase was projected for the next 20 years at the same average rate of increase as experienced from 2005 – 2022. Continued future growth based on historical growth results in annual pumpage increase of 180,000 gpd. Adjusted formula used for the graph:

Y = 15,000 (X) + 7,734,072
Y = Total Daily Water Pumpage (gallons/day)
X = Number of months since start of study period

The projected 20-Year Projected Demand for the year 2024 was rounded to 14.4 MGD Average, and 18.0 MGD Peak Day.

Responsible Party: City, Lori A. Young, P.E.

Q-6-8: Does Table 2.2.1 include in calculations a continued increase in the level or rate of lost or non-revenue water through 2042? Please explain.

Response: **No. The table is based on total water pumpage such that the historical lost or non-revenue water rates are anticipated to be approximately the same as for the study period.**

Responsible Party: City, Lori A. Young, P.E.

Q-6-9: Please verify that Figure 2.1.1 is simply a graphical representation of the data appearing in Table 2.2.1 of the PER. If this is not the case, please show all calculations and assumptions used to create Figure 2.1.1.

Response: **Yes, Figure 2.1.1 is simply a graphical representation of the data appearing in Table 2.2.1 of the PER. See also spreadsheet table provided in response to Q-6-9.**

Responsible Party: City, Lori A. Young, P.E.

Q-6-10: Please list the dates and volumes (mgd) of the ten highest total system maximum days over the last five years.

Objection: **The City objects to Data Request 6-10 to the extent that it calls for an analysis, compilation, or calculation that the City has not performed and objects to performing. The City does not track the requested information over a five (5) year period.**

Response: **Subject to and without waiver of the foregoing Objection, the City does not track running peak days over five years. The five highest days in the past two and a half years are as follows:**

Date	Pumpage
8/26/2022	13.1 MGD
7/13/2022	12.6 MGD
9/15/2022	12.4 MGD
6/30/2022	12.3 MGD
12/29/2022	12.1 MGD

Responsible Party: City, Lori A. Young, P.E.

Q-6-11: Has Anderson hydraulically modeled the proposed addition of the 6 mgd Southside treatment plant? Please explain.

Response: **No, not yet. Anderson plans to perform modeling when the site is selected and pumping capacity finalized based on available water resources.**

Responsible Party: City, Lori A. Young, P.E.

Month	Year	Avg Day Pumpage	Peak Day Pumpage	PF	(A) Projected Avg Day-Regression	(B) Projected Average (Adjusted 15,000 gpd/mo)	Projected Peak	Projected Peak Day (125% Avg.)	2024 Peak Capacity	2024 "Safe" Operating Capacity	Design Capacity w/Groundwater
1	2005	7,908,770	8,873,526	1.12	7,731,950	7,749,072	9,686,340	9,664,937	14,838,400	12,700,000	18,120,000
13	2006	7,853,652	9,162,974	1.17	7,978,879	7,929,072	9,911,340	9,973,599	14,838,400	12,700,000	18,120,000
25	2007	8,502,600	10,954,453	1.29	8,225,809	8,109,072	10,136,340	10,282,261	14,838,400	12,700,000	18,120,000
37	2008	8,657,813	9,901,430	1.14	8,472,738	8,289,072	10,361,340	10,590,923	14,838,400	12,700,000	18,120,000
49	2009	9,130,071	11,012,980	1.21	8,719,668	8,469,072	10,586,340	10,899,584	14,838,400	12,700,000	18,120,000
61	2010	9,025,003	10,317,483	1.14	8,966,597	8,649,072	10,811,340	11,208,246	14,838,400	12,700,000	18,120,000
73	2011	9,438,244	11,529,613	1.22	9,213,527	8,829,072	11,036,340	11,516,908	14,838,400	12,700,000	18,120,000
85	2012	9,169,319	10,665,532	1.16	9,460,456	9,009,072	11,261,340	11,825,570	14,838,400	12,700,000	18,120,000
97	2013	9,169,319	10,665,532	1.16	9,707,385	9,189,072	11,486,340	12,134,232	14,838,400	12,700,000	18,120,000
109	2014	10,143,209	11,551,369	1.14	9,954,315	9,369,072	11,711,340	12,442,894	14,838,400	12,700,000	18,120,000
121	2015				10,201,244	9,549,072	11,936,340	12,751,556	14,838,400	12,700,000	18,120,000
133	2016				10,448,174	9,729,072	12,161,340	13,060,217	14,838,400	12,700,000	18,120,000
145	2017				10,695,103	9,909,072	12,386,340	13,368,879	14,838,400	12,700,000	18,120,000
157	2018				10,942,033	10,089,072	12,611,340	13,677,541	14,838,400	12,700,000	18,120,000
169	2019				11,188,962	10,269,072	12,836,340	13,986,203	14,838,400	12,700,000	18,120,000
181	2020	10,524,691	11,810,403	1.12	11,435,892	10,449,072	13,061,340	14,294,865	14,838,400	12,700,000	18,120,000
193	2021	10,879,545	12,070,227	1.11	11,682,821	10,629,072	13,286,340	14,603,527	14,838,400	12,700,000	18,120,000
205	2022	10,819,609	12,486,632	1.15	11,929,751	10,809,072	13,511,340	14,912,188	14,838,400	12,700,000	18,120,000
217	2023				12,176,680	10,989,072	13,736,340	15,220,850	14,838,400	12,700,000	18,120,000
229	2024				12,423,610	11,169,072	13,961,340	15,529,512	14,838,400	12,700,000	18,120,000
241	2025				12,670,539	11,349,072	14,186,340	15,838,174	14,838,400	12,700,000	18,120,000
253	2026				12,917,469	11,529,072	14,411,340	16,146,836	14,838,400	12,700,000	18,120,000
265	2027				13,164,398	11,709,072	14,636,340	16,455,498	14,838,400	12,700,000	18,120,000
277	2028				13,411,328	11,889,072	14,861,340	16,764,159	14,838,400	12,700,000	18,120,000
289	2029				13,658,257	12,069,072	15,086,340	17,072,821	14,838,400	12,700,000	18,120,000
301	2030				13,905,186	12,249,072	15,311,340	17,381,483	14,838,400	12,700,000	18,120,000
313	2031				14,152,116	12,429,072	15,536,340	17,690,145	14,838,400	12,700,000	18,120,000
325	2032				14,399,045	12,609,072	15,761,340	17,998,807	14,838,400	12,700,000	18,120,000
337	2033				14,645,975	12,789,072	15,986,340	18,307,469	14,838,400	12,700,000	18,120,000
349	2034				14,892,904	12,969,072	16,211,340	18,616,130	14,838,400	12,700,000	18,120,000
361	2035				15,139,834	13,149,072	16,436,340	18,924,792	14,838,400	12,700,000	18,120,000
373	2036				15,386,763	13,329,072	16,661,340	19,233,454	14,838,400	12,700,000	18,120,000
385	2037				15,633,693	13,509,072	16,886,340	19,542,116	14,838,400	12,700,000	18,120,000
397	2038				15,880,622	13,689,072	17,111,340	19,850,778	14,838,400	12,700,000	18,120,000
409	2039				16,127,552	13,869,072	17,336,340	20,159,440	14,838,400	12,700,000	18,120,000
421	2040				16,374,481	14,049,072	17,561,340	20,468,101	14,838,400	12,700,000	18,120,000
433	2041				16,621,411	14,229,072	17,786,340	20,776,763	14,838,400	12,700,000	18,120,000
445	**2042**				**16,868,340**	**14,409,072**	**18,011,340**	**21,085,425**	**14,838,400**	12,700,000	18,120,000
457	2043				17,115,270	14,589,072	18,236,340	21,394,087	14,838,400	12,700,000	18,120,000
469	2044				17,362,199	14,769,072	18,461,340	21,702,749	14,838,400	12,700,000	18,120,000
481	2045				17,609,129	14,949,072	18,686,340	22,011,411	14,838,400	12,700,000	18,120,000

CITY OF ANDERSON, INDIANA

Municipal Water Utility
550 Baxter Road
Anderson, IN

Pre-Filed Testimony
Water Utility Superintendent
Thomas A. Brewer

Cause No. 38855

CITY OF ANDERSON, INDIANA

Municipal Water Utility
Cause No. 38855

Pre-Filed Testimony
of
Thomas A. Brewer
Water Utility Superintendent

1. Q - Please state your name, occupation and business address.

   A - Thomas A. Brewer, Superintendent, Anderson Water Utility, 550 Baxter Road Anderson, IN 46011.

2. Q - Would you explain your responsibilities in your position, as well as your education and experiences in the water supply industry.

   A - As Superintendent, I am responsible for all aspects of operations for the Utility. These include but are not limited to: Budget Development and Projections, Authorization of all Expenditures, Organization of the Work Force as well as Management Members, the identification of long and short range goals for the Utility and developing and implementing plans to achieve them. Also included are the interpretations of the U.S.E.P.A. and the I.D.E.M. mandates for operation and water quality standards for the sake of meeting compliance. I am the certified operator for the facilities and therefore bear that responsibility also.

   My affiliations with the water supply industry began in 1975 with the Anderson Water Utility. Previous to my appointment to the Superintendents position in January of 1988, I have worked in various positions throughout the Utility, including pipefitting repair crews, meter service, filter plant repair and foreman over various areas.

   My education includes the Indiana Section A.W.W.A. Short School Course in 1985 for Basic Water Treatment and Distribution and again in 1987 for the Advanced Water Treatment Course. In 1989 I completed the Advanced Operator Training Program in Waste Water Technologies presented by Advanced Treatment Systems of Cincinnati, Ohio. I am also a graduate of the Dale Carnegie "Human Relations and Effective Communications" along the Dale Carnegie "Management" Course.

3. Q - Would you give a physical description of the Utility?

   A - Starting with the source of supply, our system is basically composed of two halfs. First, we have the Lafayette Well Field, located north of Anderson in Lafayette Township. This well field is the only source for the Lafayette Treatment Facilities, located on the north side of Anderson on Hartman Road.

The second half of the source of supply is the Ranney Well Field, located on and north of the tributary of White River and Kilbuck Creek. The Ranney Well Field is the source for the Wheeler Ave. Plant. The Lawler and Norton Wells also feed the Wheeler Ave. Plant.

Having painted a picture of the two halfs of the system, let me describe the types of wells and the different processes at the two plants. Going to the first half again, the eight Lafayette Wells are all gravel pack wells, these wells, which are controlled both manually and by a S.C.A.D.A. system, pump water to the Lafayette Plant. The first step in the process is aeration. This is done with twin aerators to convert ferrous iron (F^2) to ferric iron (F^3) to allow the iron, as well as magnanese, to settle out or be filtered out. After aeration the water goes into a retention well located under the building for the oxidation reaction to occur. High service pumps then lift the water from the retention well into twin-cell pressure filters. Directly after passing through the anthracite loaded filter, chlorine and flouride are added as the water is pumped to distribution.

The Ranney Well Field, is composed of four Ranney Collector type wells, the new Lawler Gravel Wall Well and the two Norton Deep Wells.

These wells are either controlled manually at the control panel at the Wheeler Ave. Plant or have no remote control and must be operated from the field. The water then moves from the well field to the elevation or lift station at the Wheeler Ave. Plant. At this point pre-chlorination occurs. The lift station then lifts the water through twin up-flow clarifiers. After the settling and air contact process that occurs in the clarifiers, the water flows into the gravity sand filters. Water from the sand filters then passes through piping into the underground 2 m.g. clear well. High service pumps move the water to the distribution system. At this point, fluoridation as well as post-chlorination takes place.

The distribution system consists of about 320 linear miles of main trunk line, assembled over the ages in a grid network design. Although multi-directional flow characteristics were obviously the original design intentions, these intentions have been somewhat defeated by problems that will be discussed later. Ballast and fire fighting capability for the system is provided by six elevated tanks, 3-one m.g. and 3-half m.g. tanks. The remainder of the system is composed of approximately 21,500 taps and services, 1,127 hydrants and an array of assorted valving. Types of material in this system include, but are not limited to: cast iron, ductile iron, copper, lead, transite (A & C), concrete, galvanized and P.V.C.

4. Q - What is your opinion as to the condition or status of the Utility?

   A - Basically, I see that the level of maintenance effort has been too low. Although this can reduce costs to the consumer for a short period of time, eventually a level of decay is reached where the physical system no longer supports the design intentions.

5. Q - Can you cite a specific area as an example?

A - As one of the many circumstances evident out of the vast array of performances the Utility conducts, the distribution system would be a prime example. The distribution system was assembled in a grid network with the intentions of multi-directional flow capabilities. This means that when a demand is created at one point, whether by consumer or fire fighting, that water will flow from more than one direction. This has several advantages, maximum (Q) or flow, less head loss, more efficient dispersion and less disturbance to the rest of the system.

Because the level of maintenance effort has been too low, there has been no man power assigned to valve maintenance programs. The result is many valves (approximately 40%) either lost or inaccessible and even broken. This causes a lack of control, uneven dispersion and excessive velocities to name a few.

The problems become apparent when the Utility cannot isolate or control bad breaks in the system and must constantly fight pressure in order to effect repairs. Another concern is that valves broken or lost in the off position can cause dead ends. Without circulation to keep a proper chlorine residual, pathogens could threaten public health.

In this particular example, raising the level of maintenance effort by establishing a valve maintenance crew is the most lodgical solution for long term intergrity of the system. This concept also applies to well fields that are not producing a "yield" comparable to their design intentions, as well as the 350,000 linear feet of pre-world war two material that should have been on a replacement schedule years ago. If these areas are neglected for too long of a time, the replacement of components all at once would be too great of a financial burden on the rate payer, not to mention possible loss of service due to failure as well as loss of quality and public health assurance.

6. Q - In your opinion, is the requested 25% increase necessary to bring the system to a sound physical condition, to render adequate and efficient service?

A - Yes, I believe the 25% increase is necessary to help provide funds to bring the annual maintenance to a more reasonable level and to help meet operating costs which have increased since our last general rate order which was approved in 1981.

7. Q - Does that conclude your testimony?

A - Yes, it does.

Thomas A. Brewer
Superintendent