

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

**PETITION OF THE CITY OF COLUMBUS,)
INDIANA, FOR (1) AUTHORITY TO ISSUE)
BONDS, NOTES, OR OTHER)
OBLIGATIONS, (2) AUTHORITY TO)
INCREASE ITS RATES AND CHARGES) CAUSE NO. 45427
FOR WATER SERVICE, (3) APPROVAL)
OF NEW SCHEDULES OF WATER RATES)
AND CHARGES, AND (4) AUTHORITY TO)
ESTABLISH AND IMPLEMENT SYSTEM)
DEVELOPMENT CHARGES.)**

PUBLIC'S EXHIBIT NO. 2

**TESTIMONY
OF
KRISTEN WILLOUGHBY
ON BEHALF OF
THE INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR**

December 11, 2020

Respectfully Submitted,



Daniel M. Le Vay, Atty. No. 22184-49
Deputy Consumer Counselor
Scott Franson, Atty. No. 27839-49
Deputy Consumer Counselor
115 W. Washington St., Suite 1500 South
Indianapolis, IN 46204

CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing *Public's Exhibit No. 2, Testimony of Kristen Willoughby on behalf of the Indiana Office of Utility Consumer Counselor's* has been served upon the following counsel of record in the captioned proceeding by electronic service on December 11, 2020.

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TESTIMONY OF OUCC WITNESS KRISTEN WILLOUGHBY
CAUSE NO. 45427
CITY OF COLUMBUS

I. INTRODUCTION

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

2 A: My name is Kristen Willoughby, and my business address is 115 West Washington
3 Street, Suite 1500 South, Indianapolis, Indiana 46204.

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

5 A: I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC") as
6 a Utility Analyst in the Water/Wastewater Division. I described my qualifications
7 and experience in Appendix A.

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

9 A: The City of Columbus ("Columbus" or "Petitioner") requests authority to borrow
10 approximately \$22.2 million to make capital improvements to its system and
11 include its debt service costs as a revenue requirement. Columbus also asks to
12 include in its rates moneys needed to perform periodic maintenance of its assets. I
13 discuss why Petitioner's proposed capital improvement projects are reasonable and
14 support its requested borrowing. I explain why Petitioner's proposed periodic
15 maintenance revenue requirement should be approved. Finally, I note Columbus's
16 level of water loss and note the steps it has taken to address water loss.

17 **Q: What did you do to prepare your testimony?**

18 A: I reviewed Columbus's petition and the testimonies of its witnesses Douglass
19 Baldessari, James McNulty, and Scott Dompke. I reviewed the final order and
20 supplemental order in Cause No. 39425, which set Columbus's current rates. I

1 reviewed Columbus's Indiana Utility Regulatory Commission ("IURC") Annual
2 Reports for years 2014 through 2019. I wrote data requests and reviewed
3 Columbus's responses. I reviewed reports Columbus filed with the Indiana
4 Department of Environmental Management ("IDEM").¹ I reviewed comments
5 provided by customers of Columbus, included as OUCC Attachment KW-01.

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

7 A: Yes. My testimony includes the following attachments:

- 8 • OUCC Attachment KW-01: Columbus customer comments.
- 9 • OUCC Attachment KW-02: Utility Dashboard, showing operational statistics
10 based upon Columbus's IURC Annual Reports from 2014-2019.
- 11 • OUCC Attachment KW-03: Petitioner's response to OUCC DR 10-1.
- 12 • OUCC Attachment KW-04: Petitioner's response to OUCC DR 10-2.
- 13 • OUCC Attachment KW-05: Petitioner's response to OUCC DR 10-3.

II. PETITIONER'S CHARACTERISTICS

14 **Q: Please describe Petitioner's characteristics.**

15 A: Petitioner is a municipal utility providing water service to 17,071 customers in
16 Bartholomew County.² Petitioner's current source of supply consists of 21 wells
17 divided between two well fields. Petitioner relies on two water treatment plants to
18 treat its water. Petitioner's storage and distribution system consists of four clear
19 wells, five storage tanks, two booster stations, and an estimated 1,552,929 feet of
20 water main.³ Columbus provides fire protection throughout its distribution system.

¹ IDEM Virtual File Cabinet available at <https://vfc.idem.in.gov/DocumentSearch.aspx>

² 2019 Annual Report, page W-1, Year End Customer Numbers.

³ 2019 Annual Report, pages W-7 and W-9.

1 **Q: Does Petitioner have adequate storage capacity?**

2 A: Yes. Including storage capacity provided by its clear wells, Columbus currently has
3 a total storage capacity of 9,300,000⁴ gallons. Without considering its clear wells,
4 Columbus has a storage capacity of 3,700,000 gallons.⁵ Columbus had total average
5 sales in 2019 of 6,125,115⁶ gallons per day. Petitioner has backup power at both
6 water treatment plants. With its storage capacity and backup power, Columbus
7 meets the Ten States Standards recommendation for storage of finished water.⁷

III. CAPITAL IMPROVEMENT PROGRAM

8 **Q: Has Petitioner identified a need to make capital improvements to its system?**

9 A: Yes. Columbus engaged Strand Associates, Inc. in 2016 to evaluate its long-term
10 capital needs and develop a 20-year master plan. Columbus's master plan was
11 completed in July of 2018 and amended in July of 2020. The plan laid out projects
12 to be done in the next five, ten, and twenty years.

13 **Q: Does Columbus plan to complete all the improvements Strand recommended
14 for the first five years?**

15 A: No. Columbus engaged two engineering firms to do a more detailed evaluation of
16 the projects listed in the master plan and help Columbus prioritize them based on
17 current and future needs.⁸ Based on these evaluations, Petitioner requests authority
18 to finance several master plan projects, which are to be completed in the next five

⁴ 2019 Annual Report, page W-7, 1,000,000 + 600,000 + 500,000 + 500,000 + 500,000 + 1,700,000 + 500,000 + 2,000,000 + 2,000,000 = 9,300,000 gallons.

⁵ 2019 Annual Report page W-7, 500,000 + 500,000 + 500,000 + 1,700,000 + 500,000 = 3,700,000 gallons.

⁶ 2019 Annual Report page W-6.

⁷ The Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers Recommended Standards for Water Works (“Ten States Standards”), Section 7.0.1 Sizing of Finished Water Storage.

⁸ Page 6 line 19 of Mr. Dompke's testimony.

1 years, and to finance the planning stages of other projects to be completed in the
 2 next ten to twenty years.

3 **Q: What projects will Columbus fund through the borrowing in this rate case?**

4 A: Petitioner proposes 12 categories of capital improvement projects. The table below
 5 summarizes information included in Mr. Dompke's testimony (pp. 7-12):

Capital Improvement	Brief Description	Amount	Funding Method
Wells and raw water – South Wellfield	Construct 4 new wells	\$3,000,000	Long-term debt
Storage tanks	Adjust the height of 4 storage tanks and construct 1 new tank	\$5,300,000	Long-term debt
Transmission mains	A 20-inch transmission main under I-65	\$1,400,000	Long-term debt
Water boosters	Replace and relocate 1 booster station	\$1,400,000	Long-term debt
New plant scoping, pilot testing and design	New treatment plant scoping, pilot testing and design	\$2,650,000	Long-term debt
Main replacements	10 water main replacement projects	\$8,340,000	Long-term debt and rates
Distribution system	9,900 ft small diameter main replacement	\$2,700,000	Depreciation
Meters	Replacing meters and meter reading technology	\$500,000 per year	Depreciation
Information systems	SCADA, customer information systems, asset management, work order management, GIS	\$50,000-\$150,000 per year	Depreciation
Vehicles	Work vehicles including excavation equipment and dump trucks	\$150,000 - \$300,000	Depreciation
Quality control	HVAC, roofing, laboratory equipment, space needs and security	\$5,000 - \$50,000 per year	Depreciation
Utility service center	HVAC, roofing, furnishings, space needs, and security	\$50,000 - \$100,000 per year	Depreciation

1 **Q: Did you request additional information for the proposed projects?**

2 A: Yes. I sought and received additional information on each of the projects to be
3 financed through data requests. Each of these capital projects appear to be
4 reasonable.

5 **Q: Do you accept Petitioner's cost estimates for each capital project?**

6 A: Yes. Furthermore, Columbus will competitively bid the projects to ensure the best
7 prices are obtained.⁹

8 **Q: Do you have any recommendations regarding Petitioner's proposed capital
9 improvement project expenditures?**

10 A: Yes. Based on my review of Columbus's Master Plan, its assets, and its operations,
11 I recommend the Commission find Petitioner's planned capital improvements
12 projects justify its requested level of borrowing.

IV. PERIODIC MAINTENANCE

13 **Q: What is Columbus's proposed adjustment to Periodic Maintenance expense?**

14 A: During the test year, Petitioner spent \$227,387 on periodic maintenance. As a *pro*
15 *forma* revenue requirement, Columbus proposes to increase these expenditures to
16 \$399,656, which is an increase of \$172,269 over test year expense. Petitioner's
17 Exhibit DLB-1 at page 24 shows how this amount will be expended:

Periodic Maintenance Item	Annual Amount
Hydrant flow testing and valve maintenance	\$23,375
Tower 1, 4, and 5 tank maintenance contract	\$92,466
Tower 2 tank maintenance contract	\$51,365
Tower 3 tank maintenance contract	\$65,561

⁹ See page 13 line 14 of Mr. Baldessari's testimony.

Periodic Maintenance Item	Annual Amount
Well maintenance	\$125,000
Chemical feed system maintenance	\$8,066
Generator maintenance	\$1,200
Plant meter maintenance	\$1,200
Booster station maintenance	\$5,000
Gravity filter maintenance	\$9,000
High service pump maintenance	\$6,000
Hoist maintenance	\$750
Fire extinguisher maintenance	\$378
Furnace / HVAC maintenance	\$1,295
Total	\$399,656
Less test year amount	(\$227,387)
Increase	\$172,269

1 **Q: Is it reasonable for Petitioner to incur expenses to perform periodic**
2 **maintenance?**

3 A: Yes. Water utilities need to perform periodic maintenance on their capital assets.
4 Periodic maintenance will allow Columbus to continue to operate its facilities and
5 prevent early termination of assets.

6 **Q: Did you request additional information regarding each of these proposed**
7 **projects?**

8 A: Yes. I sought and received additional information on each of the projects through
9 data requests. Based on the responses to those data requests, I determined that each
10 of the proposed maintenance expenses is reasonable.

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

13 A: Yes. I accept Petitioner’s *pro forma* expenses for each periodic maintenance item.
14 I recommend the Commission approve \$399,656 per year in *pro forma* Periodic
15 Maintenance expense.

V. WATER LOSS

1 **Q: What is “water loss” as it pertains to a utility’s operations?**

2 A: As used in IURC annual reports, “water loss” means the difference between the
3 total volume of water pumped and purchased by the water utility and the total
4 volume of water sold to customers or used for backwash, flushing mains, street
5 cleaning/sewer flushing, or other authorized consumption. Water loss may
6 generally be attributed to leaks or inaccurate measurement of consumption.

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

8 A: Whether finished water is metered, used for operations or lost through leaks, the
9 cost to produce the water is included in the utility’s test year. The cost to produce
10 water that is lost through leaks is a cost paid by all customers through higher rates.
11 Water loss caused by inaccurate or slow meters presents a different dynamic. Water
12 “lost” through under recording is nonetheless consumed, and therefore, the actual
13 cost to produce that unrecorded water is not avoided by more accurate meters.
14 However, removing inaccurate meters avoids subsidization among customers and
15 allows the utility to both recognize that water is being lost through leaks and
16 measure its success in mitigating that problem.

17 **Q: What is Columbus’s current water loss?**

18 A: According to its IURC annual reports, over the last six years Columbus’s water loss
19 has increased from 17.2% to 20.7% of water produced.¹⁰

¹⁰ See “Percent Water Loss” chart in Attachment KW-02.

1 **Q: Has Columbus ascertained the cause of its water loss?**

2 A: Yes. Columbus believes most of its water loss is due to metering inaccuracies (i.e.
3 slow meters). In response to OUCC DR 10-1,¹¹ Columbus stated that “Based on the
4 AWWA Water Loss Audit spreadsheet calculations, metering inaccuracies appear
5 to be the primary source of unaccounted for water.” Additionally, as part of
6 Columbus’s water main replacement program, Petitioner had a Leak Survey Report
7 compiled in 2020 where several leaks were found and repaired.¹²

8 **Q: How does Columbus propose to mitigate its water loss?**

9 A: In response to OUCC discovery Columbus indicated it has taken steps to address
10 the water loss by “conducting leak surveys, meter testing, plant meter calibration
11 and revenue meter replacement to mitigate water loss.”¹³ Thus, Columbus has taken
12 appropriate steps to prevent and reduce water loss. I recommend Columbus
13 continue to employ these activities to reduce its water loss.

VI. OUCC RECOMMENDATIONS

14 **Q: Please summarize your recommendations in this Cause.**

15 A: I recommend the Commission find Petitioner’s planned capital improvements
16 projects justify its requested level of borrowing. I recommend the Commission
17 approve \$399,656 per year in Periodic Maintenance expense. I recommend

¹¹ The entire response to OUCC DR 10-1 has been included as Attachment KW-03.

¹² Response to OUCC DR 10-2 included as Attachment KW-04.

¹³ Response to OUCC DR 10-3, included as Attachment KW-05.

1 Columbus continue to conduct leak surveys, meter testing, plant meter calibration

2 and revenue meter replacement to reduce its water loss.

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

4 **A: Yes.**

APPENDIX A

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

2 A: I graduated from Indiana University with a Bachelor of Science degree in Biology
3 and a Master of Public Affairs (“MPA”) concentrating in Environmental
4 Management. My graduate coursework included studying how water pollution
5 affects aquatic ecosystems, environmental rules and regulations, toxicology, risk
6 analysis, epidemiology, finance and budgeting, economics, statistics, public
7 management, and other courses on how pollution affects human health and the
8 environment. After graduating with my MPA, I was hired as an Environmental
9 Manager (EM2) by the Indiana Department of Environmental Management, Office
10 of Air Quality, Permits Branch in 2006 where I analyzed projects for a variety of
11 industries, calculated the air emissions associated with those projects, determined
12 applicable state and federal rules, and drafted federally enforceable air permits. I
13 was promoted to a Senior Environmental Manager (SEM1) about one year later. I
14 held this position for more than ten years. As an SEM1, I worked on complex
15 permit projects, trained and mentored staff, reviewed staff’s work, and developed
16 templates, guidance, and training materials. Since joining the OUCC, I have
17 attended numerous utility related seminars and workshops including the National
18 Association of Regulatory Utility Commissioners (“NARUC”) Western Utility
19 Rate School.

From: [Jay Brooks](#)
To: [UCC Consumer Info](#)
Subject: Columbus city utility rate increase
Date: Wednesday, November 25, 2020 12:54:07 PM

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

I'm opposed to the water rate increase even though the last water rate increase was in 1992. There have been several rate increases for waste water. All fees for water and waste water go into the same account.

Columbus is fortunate to be sitting on an under ground aquifer which cost less to treat than surface water. As far as a new storage tank and new meters they are not needed at this time. The Utilities currently have 5 over head storage tanks which is more than sufficient for a community the size of Columbus. As far as a new meters is concerned they were replaced with digital meters 6 yrs. ago!

As far as operating and maintenance costs that is away to say pay increase for the workers. It is my understanding that some departments within the Utilities have already had their pay restructured (Increased).

Treatment plant improvements are unnecessary for several reasons: the city has a NEW waste water treatment plant. The water treatment plant has had all its filters, motors, and actuators replaced as well as a NEW Cummins generator at water plant #2. Water plant #1 recently had a new roof installed.

As far as distribution mains they do need some attention. The last several months there has been multiple boil water advisories.

With the current state of the country due to the Covid 19 virus and the uncertainty of future lock downs. **It is not a good time for a rate increase.**

I hope the facts that I sent you will be considered and the city's water rate increase will be denied at this time.

Respectfully, J.W.Brooks

From: [walptommy](#)
To: [UCC Consumer Info](#)
Subject: water rates
Date: Saturday, November 28, 2020 9:56:11 AM

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I would hope you use common sense on the rate hike. I feel you are forgetting about seniors in Columbus, I am a retired 70 yr. Old on a fixed income I drive a car that's 8 yrs old. Everytime there is any kind of price hike I feel it. Remember you may not be a 70 but you will be.

Sent from my Galaxy Tab A

From: noreply@formstack.com
To: [UCC Consumer Info](#)
Subject: OUCC_Contact_2361
Date: Wednesday, November 25, 2020 8:58:44 AM

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Formstack Submission For: [OUCC_Contact_2361](#)

Submitted at 11/25/20 8:58 AM

Title:	Mr.
Name:	Marvin Scroggins
Email:	mscroggins@hotmail.com
Address:	3327 N Marr Road Columbus, IN 47203
Telephone (Best number to reach you between 8:00 am and 4:30 pm, Eastern Time, Monday through Friday)::	
Type of phone::	Home
If you do not have telephone	Check here

service,:

**If providing
comments
on a specific
case, please
indicate the
cause
number
and/or name
of utility::**

Columbus city utility rate hike.

**Your
Comments::**

I don't say no. I say Hell no. We are taxed to death in this town. I certainly don't make the money I used to in 1992 and I'm sure most citizens don't but they want to double our water rate in 3 years time while we are still in a time of uncertainty with this pandemic? I'm already having to pay more for schools which have been closed all year and now this? NO to a rate hike.

Swinger, Anthony

From: noreply@formstack.com
Sent: Monday, December 07, 2020 9:24 AM
To: UCC Consumer Info
Subject: OUCG_Contact_2361

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Formstack Submission For: [OUCG_Contact_2361](#)

Submitted at 12/07/20 9:24 AM

Title:	Mrs.
Name:	Robin Winters
Email:	robin_winters@ymail.com
Address:	1510 W 625 S COLUMBUS, IN 47201-9231
Telephone (Best number to reach you between 8:00 am and 4:30 pm, Eastern Time, Monday through Friday)::	(812) 603-0900
Type of phone::	Mobile
If you do not have telephone service,:	
If providing comments on a specific case, please indicate the cause number and/or name of utility::	IURC Cause No. 45427

Your Comments::

While I understand that rates do need to be increased, I feel that a smaller increase should be considered given the uncertainty of the economy, business stability, and individuals employment status. All of these will affect the coming years and will not recover as quickly as we would like. This utility is proposing a very high rate increase. As a consumer with no other options, this doesn't seem fair to allow such an outrageous increase over a short amount of time. Some of us have went from a two income home to a one income home and still trying to adjust. I propose a more reasonable rate increase of around 25%, which will raise needed money without such a profound impact on consumers that are already struggling not only today, but in the recovery period to come.

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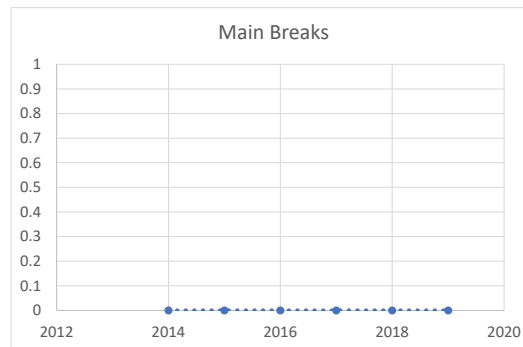
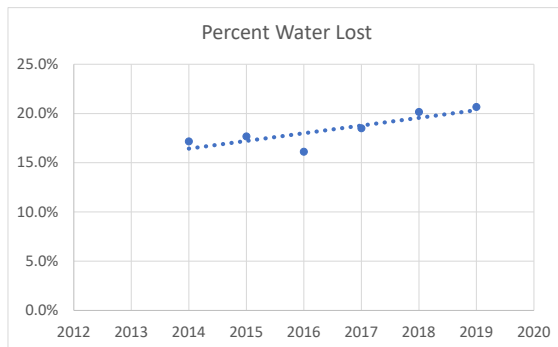
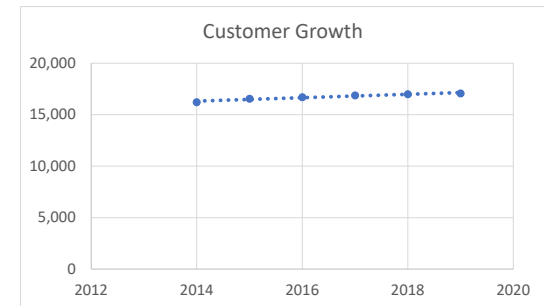
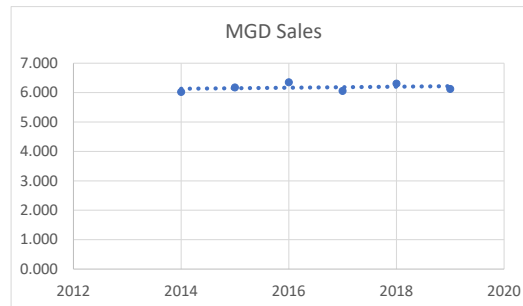
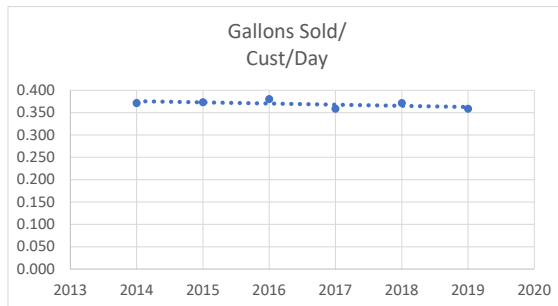
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Utility Dashboard City of Columbus Cause No. 45427

Year	W-1 Customers Year-End	W-6 Total Pumped & Purchased	W-6 Total Sold	W-6 Non- Revenue (C - D)	W-6 System Usage	W-6 Water Loss (E - F)	W-6 Percent Loss (G / C)	W-6 Average MGD	W-6 Gallons Sold/ Cust/Day	W-6 Main Breaks
2014	16,208	3,042,150	2,198,634	843,516	321,183	522,333	17.2%	6.024	0.372	-
2015	16,550	3,314,188	2,254,847	1,059,341	473,294	586,047	17.7%	6.178	0.373	-
2016	16,705	3,374,063	2,319,973	1,054,090	510,109	543,981	16.1%	6.356	0.380	-
2017	16,883	3,154,236	2,218,451	935,785	352,103	583,682	18.5%	6.061	0.359	-
2018	16,984	3,417,054	2,303,521	1,113,533	424,494	689,039	20.2%	6.311	0.372	-
2019	17,071	2,945,919	2,235,667	710,252	101,244	609,008	20.7%	6.125	0.359	-

average mgd 2019 6.125 mgd
 avg gals/cust/mo 2019 10,914 gals
 average cust growth 215.75 /yr
 average mgd 5 yrs 7.410 mgd

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



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

OUC DR 10-1

DATA REQUEST

**City of Columbus, Indiana
Cause No. 45427**

Information Requested:

According to its IURC annual reports, over the last six years Columbus's water loss values have increase from 17.2% to 20.7% of water produced. Has Columbus identified any causes of the water loss? Please describe any studies performed to determine the cause.

Information Provided:

Based on the AWWA Water Loss Audit spreadsheet calculations, metering inaccuracies appear to be the primary source of unaccounted for water. This is to be expected based on the age profile of the approximately 19,000 revenue meters in the system and the age of the finished water meters at the plants. Revenue meter age is a primary reason CCU intends to conduct a meter replacement program with this rate case.

Over the past few years, CCU has contracted M. E. Simpson Company to conduct large meter testing, leak detection (as a subcontractor to GRW on the Water Main Replacement Program), plant meter testing, and hydrant flow testing.

The large meter testing covered all revenue meters 4-inch and larger. Meters that tested outside AWWA acceptable limits were repaired, where possible. Non-testable meters were identified, and plans are moving forward to install bypass lines or test ports to permit testing of these meters.

The leak survey covered four geographic areas as described in the GRW Water Main Replacement Program (Confidential Attachments SD-4 and SD-5). Several leaks were found and repaired. Widespread leakage was not evident.

Plant meter testing and electronic calibration protocols and preparations are underway to make and capture taps for use in an annual finished water meter testing program. More discussion is pending on well meter testing and electronic calibration with TurnKey.

Plant 1 has two finished water meters. One is a propeller meter on HSP #4. This meter is at least 20-years old. The other is a pressure differential orifice plate. This meter is likely more than 30-years old. It appears that neither of these meters has been calibrated against a known quantity of water. The electronics have been calibrated periodically.

Plant 2 finished water meter is a pressure differential venturi meter. The venturi piping was installed in 1971 when the plant came online. Approximately ten years ago the electronics were replaced with an Endress Hauser analog pressure transducer on the existing venturi piping. This meter has never been calibrated against a known quantity of water. The electronics have been calibrated periodically.

OUCC DR 10-2

DATA REQUEST

**City of Columbus, Indiana
Cause No. 45427**

Information Requested:

Please identify any water loss problem locations Columbus has identified.

Information Provided:

The leak survey conducted for the Water Main Replacement Program (provided as Confidential Attachments SD-4 and SD-5) identified several leaks that were found and repaired.

OUCR DR 10-3

DATA REQUEST

**City of Columbus, Indiana
Cause No. 45427**

Information Requested:

Please describe what steps Columbus is taking to mitigate water loss.

Information Provided:

CCU is conducting leak surveys, meter testing, plant meter calibration and revenue meter replacement to mitigate water loss.