

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

**PETITION OF COMMUNITY UTILITIES OF)
INDIANA, INC. FOR: AUTHORITY TO)
INCREASE ITS RATES AND CHARGES FOR)
WATER AND WASTEWATER UTILITY)
SERVICE; APPROVAL OF NEW SCHEDULES)
OF RATES AND CHARGES APPLICABLE)
THERE TO; AUTHORITY TO RECOVER)
CERTAIN COSTS INCURRED IN)
CONNECTION WITH CAUSE NOS. 44724,)
45342 AND 45389; AUTHORITY TO RECOVER)
COSTS INCURRED AND DEFERRED IN)
CONNECTION WITH THE COVID-19)
PANDEMIC; APPROVAL OF A NEW)
RESIDENTIAL LOW-INCOME RATE FOR)
WATER AND WASTEWATER SERVICE; AND)
OTHER APPROPRIATE RELIEF)**

CAUSE NO. 45651

DIRECT TESTIMONY

OF

LOREN GROSVENOR

PETITIONER'S EXHIBIT 3

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Loren Grosvenor. My business address is 10996 Four Seasons Pl., Suite 100G,
4 Crown Point, Indiana 46307.

5 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

6 A. I am the State Operations Manager ("SM") for Community Utilities of Indiana, Inc.
7 Community Utilities of Indiana, Inc. ("CUII," "Petitioner," or "Company") is a wholly
8 owned subsidiary of Corix Regulated Utilities (US) Inc. ("CRU").

9 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL BACKGROUND.**

10 A. In May 2006, I began employment with Utilities, Inc. as a Field Technician. Since that
11 time, I have been involved in the operation and management of water and wastewater
12 systems for over 15 years. I have operated and managed water systems ranging from a
13 Single-Well System to a Surface Water System. I have also managed wastewater systems
14 ranging from 0.155 million gallons per day ("MGD")/Extended Aeration to a
15 1.1MGD/Extended Aeration System. I currently hold a Class III water treatment, DSL
16 certification, and Class III wastewater treatment license in Indiana, and a Class A water
17 treatment and Class 1 wastewater treatment license in Illinois.

18 **Q. WHAT DO YOUR JOB RESPONSIBILITIES AS STATE OPERATIONS
19 MANAGER OF CUII INCLUDE?**

20 A. In my State Operations Manager position, I am responsible for leading the operations team
21 in Indiana to ensure compliance with all applicable local, state, and federal regulations to
22 ensure our customers receive safe and reliable water and wastewater services at low-cost.

1 I am the Responsible Operator In Charge (“ROINC”) for all treatment plants and
2 distribution/collection systems in Indiana. I regularly interface and report to the various
3 regulatory agencies and environmental health agencies.

4 Some of my day-to-day duties include making operating decisions on the changes
5 related to chemicals, detention times, water flows; investigating and troubleshooting
6 service issues; directing preventative maintenance and repair activities within our
7 distribution and collection systems; and managing and monitoring the operating budget.
8 Additionally, I collaborate with the local operations staff in Indiana, the Director of
9 Engineering and Asset Management, Project Manager, Finance Manager, and the President
10 of CUII regarding the capital and operating expense budgets, and I provide stewardship of
11 legal issues ensuring that all issues are reported through the management hierarchy. I am
12 also responsible for recruiting and training employees and providing leadership and
13 training to the operations staff.

14 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE INDIANA UTILITY**
15 **REGULATORY COMMISSION (“COMMISSION”)?**

16 A. Yes. I testified in Cause No. 45342, in which CUII requested preapproval of certain
17 expenditures incurred to design and construct a water treatment plant improvement
18 project.

19 **Q. PLEASE DESCRIBE THE PURPOSE OF YOUR DIRECT TESTIMONY.**

20 A. The purpose of my testimony is to support CUII’s request to adjust its water and sewer
21 rates. I will describe our service territory and provide an overview of our water and

1 wastewater operations. In addition, I describe the capital improvements that have been
2 made or that need to be made to the Company's system in 2022 and 2023.

3 **Q. ARE YOU SPONSORING ANY ATTACHMENTS?**

4 A. Yes, I am sponsoring the following attachments:

- 5 • Petitioner's Attachment LG-1: Summary of SSOs;
- 6 • Petitioner's Attachment LG-2: IDEM Inspection Summary Letter, dated
7 July 11, 2018;
- 8 • Petitioner's Attachment LG-3: Watermain and Service Line Break Map;
- 9 • Petitioner's Attachment LG-4: Estimates for IWS and Twin Lakes
10 Watermains;
- 11 • Petitioner's Attachment LG-5: Lateral Replacement Estimate; and
- 12 • Petitioner's Attachment LG-6: Lift Station L Cleaning and Replacement
13 Report.

14 **II. CUII'S SERVICE TERRITORY**

15 **Q. PLEASE GENERALLY DESCRIBE CUII'S SERVICE TERRITORY AND ITS**
16 **WATER AND WASTEWATER SYSTEMS.**

17 A. CUII provides water and wastewater utility services to three independent systems located
18 in Lake, Porter, Jasper, and Newton Counties to approximately 8,800 equivalent residential
19 connections ("ERCs") with over fifty-two miles of water mains and approximately forty
20 miles of sewer mains, ten wells, three water treatment plants, sixteen lift stations, and two
21 wastewater treatment plants.

22 **Q. PLEASE DESCRIBE IN GREATER DETAIL THE SERVICE PROVIDED IN**
23 **LAKE AND PORTER COUNTIES THROUGH THE TWIN LAKES/LAKES OF**
24 **THE FOUR SEASONS ("LOFS") SYSTEM.**

1 A. Potable water is supplied to approximately 3,200 water and 3,200 wastewater ERCs in the
2 LOFS system from eight ground water wells flowing through two water treatment plants
3 (“WTP1” and “WTP2”). The ground water supply at WTP1 flows through two gravity
4 iron-filtration units and is chemically treated with sodium hypochlorite and polyphosphate
5 before being pumped directly into the water distribution system via three high service
6 pumps or backflowing into two on-site 500,000-gallon ground storage tanks (1,000,000
7 gal. total); the ground water supply at WTP2 flows through two pressurized iron-filtration
8 units before flowing directly into the water distribution system. System pressure is
9 maintained at an average of approximately 60 - 65 pounds per square inch (“PSI”). The
10 water capacity and pressure in the LOFS system are sustained by a 200,000-gallon elevated
11 storage tank and the two 500,000-gallon ground-level storage tanks with related high
12 service pumps that deliver the water from the tanks into the distribution system as
13 necessary. The Twin Lakes water distribution system contains approximately 174,240
14 linear feet (“LF”) of water mains. CUII does not provide fire protection in Twin Lakes but
15 has flushing hydrants located throughout the system for seasonal flushing purposes. The
16 wastewater collection and treatment facilities serving the LOFS system is comprised of
17 fourteen lift stations and includes nearly 177,000 LF of gravity and pressure sewer mains.
18 The sanitary sewage is treated at the 1.1 MGD Wastewater Treatment Plant (“WWTP”).
19 This plant is a Class III, 1.1 MGD extended-aeration activated sludge wastewater treatment
20 facility consisting of two bar screens, Parshall flume with ultrasonic influent flow meter,
21 flow splitter box, activated carbon odor control equipment at the headworks, six aeration
22 basins, two final clarifiers, one package plant, aerobic digestion,

1 chlorination/dechlorination facilities, post-aeration, and area velocity effluent flow
2 monitoring. Solids handling includes a sludge storage tank and thickening, which is land
3 applied for final disposal.

4 **Q. PLEASE DESCRIBE THE WATER SERVICE PROVIDED LAKE COUNTY**
5 **THROUGH THE FORMER INDIANA WATER SERVICE, INC. (“IWSI”)**
6 **TERRITORY IN GREATER DETAIL.**

7 A. Potable water service is provided to approximately 1,800 ERCs located in our former IWSI
8 system via bulk water supplied by Indiana-American through CUII’s bulk water
9 interconnect meters and through approx. 88,600 LF of 4”, 6”, and 8” water distribution
10 mains. Flushing hydrants are located within the water distribution system but are owned
11 and maintained directly by the Town of Merrillville and utilized by CUII for routine
12 flushing and maintenance purposes within the system.

13 **Q. PLEASE DESCRIBE THE WATER AND SEWER SERVICE PROVIDED IN**
14 **JASPER AND NEWTON COUNTIES?**

15 A. CUII provides water and sewer services in Jasper and Newton Counties to approximately
16 240 water and 320 wastewater ERCs in the former Water Service Company of Indiana,
17 Inc. (“WSCI”) division. The potable water is supplied from two ground water wells located
18 at the Water Treatment Plant, which pump directly into a 10,000 gal. hydropneumatic
19 storage tank. The water is chemically treated with sodium hypochlorite and polyphosphate,
20 and the water distribution system pressure is maintained at 60 PSI to 65 PSI via the Variable
21 Frequency Drive (“VFD”) operated wells. The water distribution system piping is
22 approximately 13,200 LF in length. CUII does not provide fire protection but has flushing

1 hydrants located throughout the system for seasonal flushing and maintenance purposes.
2 The sanitary sewage collection system is comprised of two lift stations with 640 LF of
3 sewer force main and approximately 30,400 LF of gravity sewer piping. The sanitary
4 sewage is treated at the 0.155 MGD dual-train, extended-aeration activated sludge
5 Wastewater Treatment Plant.

6 **III. CUII PERSONNEL**

7 **Q. PLEASE DESCRIBE THE DUTIES OF THE STAFF AT CUII.**

8 A. CUII Operations Staff collect and test water samples at the various entry points of and
9 within the water distribution system on a daily basis. The staff also collect and run process
10 sampling for the wastewater system. The staff are also responsible for the operation and
11 maintenance of the water and wastewater treatment plants, and complete necessary
12 equipment repairs. They are responsible for submitting complete and accurate monthly
13 reports to the Indiana Department of Environmental Management ("IDEM") and for
14 maintaining compliance with all applicable local, state, and federal regulations. They
15 operate maintain the distribution and collection systems, order and safely store and identify
16 necessary chemicals, complete field activities, respond to customer inquiries, and collect
17 water meter readings on a monthly basis at all locations.

18 **Q. IS CUII IN COMPLIANCE WITH ALL IDEM REQUIREMENTS AND PERMITS?**

19 A. Yes.

20 **Q. PLEASE DESCRIBE THE SPECIFIC POSITIONS HELD BY CUII EMPLOYEES.**

21 A. Including me, CUII currently has eight full time employees. CUII has one Lead Operator
22 responsible for managing and operating the WWTP and water treatment plant. The Lead

1 Operator supervises and performs tasks necessary for the safe and reliable operation of
2 WWTP. The Lead Operator also is responsible for maintaining plant compliance with
3 Environmental Protection Agency ("EPA") standards and water regulations. Our goal is to
4 have two Lead Operators, one that is primarily responsible for wastewater and another
5 primarily responsible for water. However, both must be competent and trained with respect
6 to the operation of both plants so they can cover each other. As further discussed below,
7 CUII is down to one Lead Operator at the present time.

8 In addition, CUII currently employs six field technicians. Field Technicians are
9 responsible for water meter reading to facilitate customer billing and for performing minor
10 meter and/or system maintenance. In addition, Field Technicians act as liaisons between
11 the customers and customer service personnel for problem/complaint resolution. Field
12 Technicians also assist with maintaining mechanical, electrical, and piping systems for area
13 wastewater facilities and collection systems. Once new Field Technicians are on staff, we
14 train them and work to get them certified as Operators.

15 **Q. DOES CUII NEED TO HIRE ADDITIONAL STAFF?**

16 A. Yes. CUII has experienced significant turnover largely due to of the competitive job
17 market. We have lost multiple experienced plant Operators to higher paying opportunities.
18 To ensure we can continue providing adequate and reliable service, CUII needs to replace
19 those employees and compensate them at competitive levels. CUII currently has four open
20 positions. CUII is seeking to hire:

- 1 • Another Lead Operator that will share responsibility for maintaining plant
2 compliance with EPA standards and water regulations in addition to
3 assisting with training of personnel and leading work crews.
- 4 • A Water-Wastewater Operator I who, under direct supervision, will be
5 responsible for performing routine tasks related to the operation of water
6 and/or wastewater treatment facilities. The Water-Wastewater Operator I
7 will assist the Lead Operator with maintaining plant compliance and ensure
8 plant safety and sanitary requirements.
- 9 • An Operation Apprentice, who will be a high school student enrolled in a
10 work study program that will shadow licensed operators to learn about the
11 career opportunities that exist within the Water-Wastewater industry. In
12 addition to shadowing staff on a variety of tasks, students participating in
13 the apprentice program may perform a range of non-skilled tasks such as
14 data entry and some routine maintenance functions.
- 15 • A Field Technician to read water meters to facilitate customer billing,
16 identify water meter equipment problems, and perform minor water meter
17 and/or system maintenance. This Field Technician would be hired with the
18 expectation that they would become an Operator to provide needed
19 assistance at the plant.

20 **Q. WILL IT BE IMPORTANT TO PAY COMPETITIVE WAGES TO THE**
21 **INDIVIDUALS HIRED TO FILL THE FOREGOING POSITIONS, ALONG WITH**
22 **CUII'S EXISTING EMPLOYEES?**

1 A. Yes. CUII has experienced a large amount of turnover because our employees have been
2 able to seek and obtain higher salaries from manufacturers in northwest Indiana. The Lead
3 Operator that left most recently specifically stated in his exit interview that CUII needs to
4 raise wages in order to stay competitive. Conversely, there are few, if any, applicants with
5 the type of experience needed to immediately join CUII's staff and perform all of the tasks
6 we need them to complete. This lack of experience creates difficulties for me and the Lead
7 Operators to train new employees and help get them certified. In my opinion, offering
8 competitive salaries to current and new personnel is crucial to ensuring the safe and
9 efficient operation of the system.

10 **Q. HAS CUII INCREASED OPERATOR WAGES IN ORDER TO BE COMPETITIVE**
11 **AND TO RETAIN EXISTING STAFF?**

12 A. Yes. CUII recently increased operator salaries in order to help retain its employees. Those
13 increases are reflected in the total salaries and wages expenses used by Petitioner's witness
14 Guttormsen to forecast salaries and wages for this proceeding.

15 **Q. IN YOUR OPINION, IS IT NECESSARY FOR CUII TO INCREASE OPERATOR**
16 **WAGES IN ORDER TO REMAIN COMPETITIVE AND TO RETAIN EXISTING**
17 **STAFF?**

18 A. Yes, it was difficult to stay competitive at the current salary and benefit structure.

19 **Q. ASIDE FROM SALARIES AND WAGES ARE ANY OTHER EXPENSES**
20 **INCREASING?**

21 A. Yes. CUII's maintenance costs continue to increase, with deferred maintenance activity
22 on a WSC sludge tank and sewer cleaning and televising completed partway through the

1 base year. Additional efforts on well and intake pumps are undertaken through the future
2 test year, as well as elevated tank painting in Twin Lakes. These types of maintenance
3 activities are reflective of the types of expenses that CUII must incur on an ongoing basis
4 to ensure that it continues to provide safe and reliable service.

5 **IV. SERVICE QUALITY**

6 **Q. HOW WOULD YOU DESCRIBE WATER SERVICE QUALITY IN CUII'S**
7 **SERVICE TERRITORY?**

8 A. CUII is in compliance with all applicable water quality regulations and standards. CUII
9 previously implemented a more vigorous and comprehensive unidirectional flushing and
10 hydrant maintenance program. This process is conducted on a semi-annual basis and has
11 resulted in a decrease in water quality issues since the inception of the program. CUII has
12 also noted certain areas of the system that require additional flushing due to geographic
13 locations, such as at dead ends or at locations that may have inconsistent water flow in the
14 area. Staff routinely visits these areas between scheduled flushing events to ensure the
15 proper movement of water through the mains and to provide the best possible water quality
16 to the customers. Hydrant flushing for 2021 was completed in June 2021 and will be
17 completed again before the end of the year. Rogers Hydrant Service, a professional hydrant
18 inspection/repair contractor, completed the annual hydrant inspections on April 21-22,
19 2021, and I would anticipate its personnel performing the same services in the spring of
20 2022.

21 CUII also has completed replacement of multiple watermain and service lines. The
22 locations where replacements were made were selected by identifying areas with

1 watermain breaks and coordinating with LOFS on a paving schedule. Previous watermain
2 and service lines were abandoned in place. In addition, CUII performs annual well
3 inspections and cleanings. Well inspections at Twin Lakes were performed in August 2021.
4 CUII cleans two of the Twin Lakes wells per year, so that all of our wells are cleaned at
5 least once every five years. For WSCI, both wells are cleaned once every five years, and
6 we just completed that work in October.

7 **Q. IS CUII MAKING ANY OTHER UPGRADES TO IMPROVE WATER QUALITY?**

8 A. Yes. As approved in Cause No. 45342, CUII is making improvements to WTP1, which
9 include replacement of the South Filter; upgrades to the plant's electrical system, controls,
10 and chemical storage; and reconfiguration of the distribution and yard piping. CUII has
11 designed, permitted, and received bids for this project. CUII has engaged Bowen
12 Engineering as the contractor for construction. Construction is ongoing and is expected to
13 be complete by spring 2022. CUII also rehabilitated the pressure filters at WTP2 in March
14 2021 to May 2021. The pressure filters were abrasive blasted and recoated. New media
15 was installed in the pressure filters. The water tower is scheduled for rehabilitation in 2022,
16 which entails blasting, painting, repairs, and OSHA required updates.

17 **Q. HAVE THESE ACTIONS REDUCED THE NUMBER OF COMPLAINTS**
18 **REGARDING CUII'S SERVICE?**

19 A. Yes. While we recognize that there is always room for improvement, the significant service
20 quality efforts undertaken in the past several years have measurably improved service
21 quality for our customers. As reflected in the quarterly reports filed with the Commission

1 in Cause No. 44724 customer complaints regarding water quality issues and discoloration
2 have essentially gone down to zero over the past year.

3 **Q. HOW WOULD YOU DESCRIBE WASTEWATER SERVICE QUALITY IN**
4 **CUII'S SERVICE TERRITORY?**

5 A. CUII is in compliance with its permits and IDEM regulations most of the time, but
6 sometimes not during rain events. The system has experienced sanitary sewer overflows
7 ("SSOs"), including manhole overflows and basement backups, for many years. In the last
8 year, CUII has not experienced the number of overflows that are normally experienced, but
9 that is because of lesser rain events. A summary of all SSOs since 2008 is provided in
10 Attachment LG-1. A total of five backups at the WWTP and 112 SSOs in the collection
11 system have been identified. Of the 117 total SSOs, 87 were related to precipitation events.
12 The next most common SSO cause is sewer main obstruction, which the Company is
13 addressing through regular cleaning and televising.

14 In addition, a majority of the facilities at the WWTP are at the end of their service
15 life or do not have capacity for existing conditions. IDEM sent an Inspection Summary
16 Letter, dated July 11, 2018, to CUII (Attachment LG-2), and in that letter, IDEM rated the
17 Facility/Site as marginal and noted that "potential problems were discovered or observed."
18 In my opinion, the plant is in poor condition and needs reconditioning. Due the lack of
19 redundancy, CUII is unable to remove the plant from service. Accordingly, CUII has been
20 unable to service most of the diffusers, piping, and mechanical equipment since the WWTP
21 was put in service in approximately 1996. Based upon the air bubbles and distribution from

1 the aerators observed at the surface, CUII believes several of the diffusers are in poor
2 condition.

3 **Q. HAS CUII MADE IMPROVEMENTS TO ITS WASTEWATER SYSTEM OVER**
4 **THE LAST SEVERAL YEARS?**

5 A. Yes. CUII has implemented the Sewer Capital Improvement Program (“SCIP”) discussed
6 further below. This program includes the annual cleaning and televising of a minimum of
7 10% of the wastewater collection system. Video results and documentation are provided to
8 CUII from the CCTV Contractor, along with plans for replacements and remediation to
9 sections of the collection system. This includes work regarding the reduction of inflow and
10 infiltration (“I&I”), as well as any other issues that may be identified during these
11 investigations. This work has been organized on an annual basis and awarded to outside
12 contractors to perform the necessary remediation work.

13 In 2020, CUII lined a total of 8,516 LF of sewer with defects identified from sewer
14 televising between November 2020 and February 2021. The project was completed by
15 Inland Waters Population Control, Inc. (“Inland”). The 2021, CUII’s SCIP work included
16 investigating and engineering for the potential pigging of the Lift Station L forcemain and
17 miscellaneous sewer repairs. We are working on a project that will increase the capacity of
18 that forcemain. CUII staff also inspected manholes in July 2021 and 131 manholes were
19 inspected by consulting engineer in September/October 2021 to identify potential manhole
20 repairs. Several sewer main repairs were made from defects identified from sewer cleaning
21 and televising. In the next years, we will continue to inspect and televise sewer mains,
22 inspecting manholes, smoking sewers, and repairing defects.

1 In normal years, we complete home inspections to look for inflow connections that
2 are not permitted. We discontinued inspections in 2020 due to the COVID-19 pandemic
3 but anticipate resuming in 2022.

4 **V. DESCRIPTION OF CUII CAPITAL IMPROVEMENTS**

5 **Q. PLEASE DESCRIBE YOUR ROLE IN DEVELOPING THE FORECASTS FOR**
6 **CAPITAL IMPROVEMENTS AND HOW YOU DETERMINE WHAT CAPITAL**
7 **PROJECTS WILL BE NEEDED IN THE FUTURE.**

8 A. Company forecasts were developed with input from CUII staff, including myself, based
9 upon review of our water and wastewater operations and discussing the needs of the
10 community.

11 **Q. PLEASE DESCRIBE THE MAJOR CAPITAL IMPROVEMENTS MADE BY THE**
12 **COMPANY TO ITS WATER AND WASTEWATER SYSTEM SINCE ITS LAST**
13 **RATE CASE.**

14 A. The Company has completed several capital projects since its last rate case, which include
15 among others:

- 16 • Twin Lakes SCIP projects: Cured-in-Place-Pipe (“CIPP”) lining of approximately
17 2,715 and 8,516 LF of sewer main in 2018 and 2020-2021, respectively, and lining
18 of 55 manholes in 2019.
- 19 • Twin Lakes 2019 Watermain Replacement: Replacement of approximately 1,540
20 LF of watermain and 44 service lines in 2019.
- 21 • Twin Lakes 2021 Watermain Replacement: Replacement of approximately 3,607
22 LF of watermain and 56 service lines in 2021.

- 1 • WSC SCIP: CIPP lining of approximately 720 LF of sewer main in 2018.
- 2 • IWS 2019 Watermain Replacement: Replacement of approximately 934 LF of
- 3 watermain and 11 service lines in 2019.
- 4 • Rehabilitation of north and south package plants at WSC, which included
- 5 sandblasting, painting, and sealing concrete walls in 2019 and 2020.
- 6 • Twin Lakes WTP #2 Iron Pressure Filters were rehabilitated, which consisted of
- 7 sandblasting, painting, and new media, completed in 2021.
- 8 • WSC sludge storage tank was rehabilitated with blasting and painting in 2021.

9 **Q. ARE EACH OF THE FOREGOING PROJECTS IN SERVICE?**

10 A. Yes. The foregoing projects are all in service.

11 **Q. WHAT PROJECTS DOES CUII NEED TO COMPLETE BETWEEN THE BASE**
 12 **YEAR AND END OF THE TEST PERIOD?**

13 A. Table 1 below lists each project, along with their associated start and completion dates as
 14 well as their associated costs:

Table 1

W/ S	Project	Expected Start Date	Expected Completion Date	Estimated Cost
W	Indiana AMR Replacements - 2021	3/1/2021	12/31/2021	\$450,233
W	Indiana AMR Replacements - 2022	1/1/2022	9/30/2022	\$367,142
W	Twin Lakes WTP Iron Filter	6/1/2019	5/31/2022	\$2,355,816
S	Twin Lakes 2021 SCIP	6/1/2021	12/31/2021	\$197,610
S	Twin Lakes 2022 SCIP	1/1/2022	9/30/2022	\$521,086
S	WSC 2022 SCIP	4/1/2022	9/30/2022	\$44,999
W	2022 Twin Lakes Watermain and Service Line Replacements	10/1/2021	9/30/2022	\$445,952
W	2022 IWSI Watermain Replacement	10/1/2021	9/30/2022	\$800,523
S	Twin Lakes Lift Station C Generator	11/1/2021	9/30/2022	\$107,742

W/ S	Project	Expected Start Date	Expected Completion Date	Estimated Cost
S	Twin Lakes 2022 Lateral Replacements	5/1/2022	9/30/2022	\$342,092
S	Twin Lakes Lift Station L Forcemain Replacement	11/1/2021	6/30/2022	\$427,206
W	Twin Lakes Wells #12 and #13	12/1/2018	11/30/2021	\$351,157
W	2020/2021 Twin Lakes Watermain and Service Line Replacements	11/1/2019	11/30/2021	\$786,877
S	WSCSI 2020 SCIP	2/1/2020	10/30/2021	\$26,523
W	Indiana AMR Replacements – 2023	1/1/2023	9/30/2023	\$427,325
W	2023 Twin Lakes Watermain and Service Line Replacements	4/1/2023	9/30/2023	\$274,289
S	Twin Lakes 2023 SCIP	4/1/2023	9/30/2023	\$521,086
S	WSCSI 2023 SCIP	4/1/2023	9/30/2023	\$44,999
W	2023 IWSI Watermain Replacement	4/1/2023	9/30/2023	\$492,419
S	Twin Lakes 2023 Lateral Replacements	5/1/2023	9/30/2023	\$358,967
S	Twin Lakes Chemical Building/Office Building	11/1/2022	9/30/2023	\$500,000
S	Twin Lakes Headworks	11/1/2022	9/30/2023	\$2,296,298

1 **Q. PLEASE DESCRIBE THE AMR REPLACEMENT PROJECTS SHOWN ON THE**
 2 **CHART ABOVE.**

3 A. Customer meters in all three of CUII’s water systems will be replaced. Automatic Meter
 4 Reading (“AMR”) meters will be used for all meter replacements. CUII began installing
 5 Neptune meters in 2021, consistent with other states where Corix operates. A plumbing
 6 contractor assisted CUII with meter replacements in 2021 due to COVID restrictions.
 7 Meters were also replaced by CUII staff in 2021. In 2022, CUII anticipates that loosening
 8 of COVID restrictions will allow all meters to be replaced by CUII staff. CUII purchased
 9 a meter reading device in 2021 as part of this project and plans to purchase another in 2022.
 10 A total of 1,564 meters are planned to be installed by the end of 2021. CUII plans to replace
 11 the remaining meters in 2022 and 2023 with, an estimated total of 1,653 meters in 2022.

1 **Q. PLEASE EXPLAIN THE NEED FOR THE AMR REPLACEMENT PROJECTS.**

2 A. Meters are replaced so that CUII can continue to collect accurate water usage readings from
3 customers. Prior to 2021, all meters in CUII's water systems were MasterMeter AMR
4 meters. These meters began to fail on a widespread scale in 2020 and have continued to
5 fail through 2021. Replacement of the meters is necessary for CUII to continue to
6 accurately measure customer water usage and accurately bill customers.

7 **Q. HOW WERE THE COST ESTIMATES FOR THE PROJECTS DETERMINED?**

8 A. The cost estimates for the projects were developed by identifying the cost for each
9 component. All meters for 2021 have been purchased and the estimated costs here are
10 reflective of actual costs already incurred. The cost estimate for 2022 includes direct
11 purchase of materials (meters and reading device) and capitalized time. The direct purchase
12 of materials cost is estimated by multiplying the estimated number of meters by the average
13 meter cost. Capitalized time is estimated as 1 hour per meter replacement.

14 **Q. PLEASE DESCRIBE THE TWIN LAKES WTP IRON FILTER IMPROVEMENT**
15 **PROJECT.**

16 A. The Twin Lakes WTP Iron Filter improvement projects includes the South Filter
17 replacement, pumping and piping improvements, SCADA improvements, and the other
18 miscellaneous improvements that the Commission pre-approved in Cause No. 45342. The
19 amount shown above includes the pre-approved cost of the projects of \$2,079,406, as well
20 as expenditures associated with AFUDC, Cap Time, and regulatory costs.

21 **Q. PLEASE DESCRIBE THE SCIP PROJECTS SHOWN IN THE TABLE ABOVE.**

1 A. The SCIP projects are planned to continue to improve the sewer systems, including sewer
2 main repairs, sewer main lining, manhole rehabilitation, and other miscellaneous
3 improvements. Determining locations for sewer main repairs and lining are primarily
4 driven by engineering review of sewer televising videos. The consulting engineer prepares
5 recommendations based on the sewer condition and other attributes and factors such as
6 depth or access. Manhole inspections are performed by CUII staff and by consulting
7 engineers. Manhole rehabilitation needs are determined by either CUII staff or by the
8 consulting engineer following review of the inspection reports. Other improvements are
9 identified either through the AMP or from other evaluations such as lift station inspections.

10 **Q. WHY ARE THOSE PROJECTS NECESSARY IN ORDER FOR CUII TO**
11 **CONTINUE TO PROVIDE ADEQUATE AND RELIABLE SERVICE?**

12 A. Sewer improvements are necessary to remedy sewer defects identified by CUII and allow
13 CUII to continue to provide adequate and reliable service. Sewer defects can lead to I&I.
14 I&I can increase operational costs for pumps, blowers, and other wastewater equipment.
15 I&I can also lead to sewer overflows, such as basement backups and manhole overflows.
16 Timely remediation of defects reduces the risk of sudden failures of sewer mains and
17 manholes, which could cause sewer overflows.

18 **Q. HOW WERE THE ESTIMATES FOR THOSE SCIP PROJECTS DERIVED?**

19 A. The SCIP projects have been recurring in nature, so their costs from year-to-year is fairly
20 consistent. The 2021 projects are largely complete and the costs include engineering for
21 pigging the Twin Lakes Lift Station L forcemain, manhole inspections, a sewer spot repair,
22 and manhole rehabilitation. The pigging engineering is complete. The estimated manhole

1 inspection cost is estimated from an engineering proposal. The sewer spot repair cost is
2 estimated from CUII's experience with similar repairs. The manhole rehabilitation is
3 estimated at a high-level until the engineering review on manhole inspections are complete.
4 Any additional manhole rehabilitation beyond the 2021 amount would be completed in the
5 2022 project. The 2022 and 2023 SCIP project cost is currently estimated at a high level to
6 include any potential sewer improvements work identified from sewer cleaning and
7 televising, manhole inspections, and the engineer evaluation of CUII's I&I program.

8 **Q. WHY DOES THE AMOUNT ESTIMATED FOR TWIN LAKES SCIP PROJECTS**
9 **INCREASE FROM THE 2021 LEVEL TO THE HIGHER LEVELS IN 2022 AND**
10 **2023?**

11 A. CUII needs to make improvements beyond the those made in 2021 in order to maintain the
12 collection system. In particular, CUII needs to reduce inflow into the collections system,
13 which will cause CUII to incur costs above normal SCIP levels. Of course, nothing will
14 go in rates until actual dollars are spent on an actual project. In 2022 and 2023, CUII plans
15 to focus on I&I reduction one basin at a time. CUII already has repaired all Level 1 and
16 Level 2 defects in multiple basins. We now plan to investigate and identify our worst
17 performing basins with respect to I&I and eliminate all known defects. To accomplish that
18 objective, each year we will focus on one basin and make all repairs necessary to eliminate
19 I&I. In some cases, this may take longer than a year. Once the repairs are made to that
20 basin, CUII will move to the next worst performing basin. I would note that while I believe
21 the estimate increases for 2022 and 2023 are reasonable, nothing will go in rate base until
22 actual dollars are spent on actual projects.

1 **Q. PLEASE DESCRIBE THE TWIN LAKES WATERMAIN AND SERVICE LINE**
2 **REPLACEMENT PROJECT.**

3 A. The 2022 Twin Lakes watermain and service line replacement project will include
4 replacement of watermain and service lines on Wallhaven Court and service lines on
5 Hidden Valley Drive. The areas for replacement were identified by reviewing historical
6 watermain and service line breaks. The historical watermain and service line break map is
7 provided as Attachment LG-3. Multiple watermain and service line breaks have been
8 observed on Wallhaven Court in recent years. Service lines on Hidden Valley Drive have
9 a historical trend of breaking. Operations staff have identified that the services on Hidden
10 Valley Drive are typically an older plastic material that is prone to breaks. CUII will replace
11 all service lines on Hidden Valley Drive that do not have records of replacement. CUII
12 worked with Commonwealth Engineers ("Commonwealth"), a consulting engineering
13 firm, to develop a cost estimate for the project. The cost estimate for the project is provided
14 in Attachment LG-4. The construction costs for the Wallhaven Court area and Hidden
15 Valley Drive area are estimated at \$185,500 and \$191,500, respectively. The engineering
16 costs are estimated to be \$45,110 from Commonwealth's proposal.

17 **Q. WHY DO THE ESTIMATES FOR THE COST OF THESE REPLACEMENTS ON**
18 **THE TWIN LAKES SYSTEM DECREASE FROM THE 2021 LEVEL TO THE**
19 **2022 AND 2023 LEVELS?**

20 A. CUII is replacing the worst performing watermains on its system and those efforts will
21 continue in 2022. By 2023, however, we believe a large majority of the necessary
22 watermain replacements will be completed and CUII will be able to focus on service lines.

1 The 2023 estimate is based on a reasonable expectation of the cost of replacing service
2 lines.

3 **Q. ARE THE WATERMAIN REPLACEMENTS BEING MADE ON THE IWSI**
4 **SYSTEM NECESSARY FOR THE SAME PURPOSE?**

5 A. Yes. As with the Twin Lakes system, IWSI needs to replace watermains on the IWSI
6 system. CUII experiences a significant number of watermain breaks on the IWSI system,
7 and it is imperative that we devote attention to that system now that the worst performing
8 watermains on the Twin Lakes system have largely been addressed. The areas for
9 replacement will be identified by reviewing historical watermain and service line breaks.

10 **Q. WHY IS CUII REPLACING CUSTOMER SERVICE LINES?**

11 A. CUII's replacement of service lines is consistent with meeting the performance metric of
12 replacing at least 60 service lines per year. CUII replaces the service line from the
13 watermain to the curb box at the property line. The curb box and valve will also be replaced.
14 This will reduce the likelihood of service line breaks that can interrupt service to the
15 customer and neighboring properties.

16 **Q. WHY DOES THE GENERATOR NEED TO BE REPLACED AT TWIN LAKES**
17 **LIFT STATION C?**

18 A. This project will replace the existing trailer-mounted generator at Twin Lakes Lift Station
19 C with a permanent generator. The initial phase of this project will include an engineering
20 evaluation of tying Lift Station C into the Lift Station L forcemain. If that tie-in is feasible
21 and cost-effective, CUII will size the generator to provide back-up power to pumps sized

1 for that operation mode. If that tie-in is not feasible or cost-effective, CUII will size the
2 generator for the existing pumps.

3 The community has requested that CUII remove the trailer-mounted generator. Lift
4 Station C is located in the community in an area visible to many homes and the golf course.
5 A permanent generator, potentially with some landscaping, would be more attractive to the
6 community. CUII will move the trailer-mounted generator to another location or keep it on
7 stand-by for emergency deployment elsewhere in the systems.

8 **Q. HOW WAS THE COST ESTIMATE DERIVED FOR THE GENERATOR**
9 **REPLACEMENT?**

10 A. The cost estimate was developed using experience with similar projects that CUII has
11 completed. However, based on discussion with engineers and contractors, CUII
12 understands the costs of generators have risen in recent months and continue to rise. CUII's
13 current estimate includes \$20,000 for engineering (evaluation and design), \$45,000 for
14 generator procurement and \$40,000 for installation.

15 **Q. PLEASE DESCRIBE THE TWIN LAKES LATERAL REPLACEMENT**
16 **PROJECTS AND THEIR NEED.**

17 A. Previous investigations have identified that sewer laterals (CUII side and property owner
18 side) contribute to I&I in the Twin Lakes sewer system. CUII estimates that approximately
19 10% of the sewer laterals in the system are in need of replacement. The Company has
20 lateral televising data from inspections and has identified between 8% to 12% of laterals
21 may need replacement. This indicates that system-wide, a replacement a percentage of
22 10% may be appropriate, leading to a total of approximately 315 laterals to be replaced.

1 The average lateral replacement is estimated at \$5,200 as shown in Attachment LG-5, not
2 including engineering or other associated costs. The total construction capital cost for
3 lateral replacement is estimated at \$1,638,000, including approximately 20% for
4 engineering and contingency, total cost would be expected to be \$2,000,000. This amount
5 does not include the cost to televise all laterals in the system. We have estimated lateral
6 replacement cost of \$342,092 in 2022 and \$358,967 for 2023. However, lateral repair or
7 replacement is likely to become an ongoing cost as the collection system, including the
8 laterals, continues to age.

9 The Company's preference would be to replace laterals on both the Company-
10 owned side and the property owner's side in a single construction project, as proposed in
11 these projects. The Company believes it would be able to complete the replacements in a
12 more cost-effective and efficient matter than requiring individual property owners to
13 identify contractors and complete the replacements. Significant coordination would be
14 necessary for the replacement on the Company-owned side and the property owner-side by
15 likely separate contractors. The Company would need to inspect work completed by
16 property owner-engaged contractors to verify work meets the Company's construction
17 standards, adding additional coordination and complexity.

18 **Q. HOW WAS THE COST ESTIMATE FOR THAT PROJECT DETERMINED?**

19 A. As reflected above, CUII has estimated the construction and engineering cost for lateral
20 replacements to be \$2,000,000. This amount does not include the cost to televise all laterals
21 in the system, which could be achieved either through home inspections or camera launches
22 from the sewer main, or cost for data review to identify which laterals are candidates for

1 replacement. A total of \$342,092 and \$358,967 are estimated for the 2022 and 2023
2 projects, respectively. CUII started the budget with a base amount for replacement and
3 escalated it by 5% per year for anticipated Consumer Price Index ("CPI") increases. CUII
4 plans to complete as many lateral replacements as possible within the estimate for each
5 year.

6 **Q. WHAT IS DRIVING THE NEED FOR THE TWIN LAKES LIFT STATION L**
7 **FORCE MAIN REPLACEMENT?**

8 A. The Lift Station L forcemain replacement will be completed to remove a hydraulic
9 bottleneck in the Lift Station L forcemain. Removal of this bottleneck will increase the
10 pumping capacity of Lift Station L. The Lift Station L forcemain is approximately 22,900
11 LF in length, nearly all (approximately 21,799 LF) of which is 12" Polyvinyl Chloride
12 ("PVC") pipe. The remainder (approximately 1,101 LF) is 8" PVC. CUII engaged Baxter
13 & Woodman, a consulting engineering firm, to perform an analysis on the benefits of
14 replacing this section and/or cleaning the forcemain. The memorandum summarizing this
15 analysis is provided as Attachment LG-6. From review of this analysis, CUII decided to
16 replace the 8" section of forcemain to increase the pumping capacity of Lift Station L.
17 Removing this 8" section will also provide CUII the ability to effectively clean (pig) the
18 forcemain in the future. Previous investigations by CUII, identified that improvements to
19 Lift Station L may be necessary in the future to prevent sewer overflows. Completing this
20 project would improve the pumping capacity of Lift Station L at a lower cost than those
21 possible future projects, potentially eliminating the need for or reducing the scope of those
22 projects.

1 **Q. HOW WERE COST ESTIMATES FOR THAT PROJECT DETERMINED?**

2 A. Baxter & Woodman prepared a cost estimate for the project, included in the memorandum
3 in Attachment LG-6. CUII discussed the cost estimate in the memorandum with Baxter &
4 Woodman and it is not anticipated that the proposed air release valves and bypass pumping
5 would be necessary. CUII adjusted the estimated construction cost to \$350,000. CUII will
6 solicit bids for the construction work from qualified contractors. Engineering costs are
7 estimated to be \$52,000 from Baxter & Woodman's proposal.

8 **Q. PLEASE DESCRIBE THE TWIN LAKES WELLS #12 AND #13 PROJECT.**

9 A. This project related to the design, installation, and connection of two new water wells (Well
10 #12 and Well #13) within our Twin Lakes system. These new wells will service WTP #2.
11 Historically WTP #2 has been served by two wells, Well #8 and Well #9, which were each
12 installed with a design capacity of 200 gpm. Well #8 was installed in 1987 and is located
13 directly to the west of WTP #2, within a permanent easement. Well #9 was installed in
14 1987 and is located to the east in Lions Park, within a permanent easement. The production
15 capacity of each of the wells had declined to 60 gpm for Well #8 and 70 gpm for Well #9.
16 Several well rehabilitation procedures were conducted in Spring and Summer of 2018 to
17 try and improve the yield from Well #9 but these attempts were unsuccessful. Accordingly,
18 CUII made the decision to construct the two new wells.

19 **Q. WHAT ARE THE BENEFITS OF THE TWO NEW WELLS?**

20 A. New Well #12 is located near to existing Well #8 and therefore, CUII can use both wells
21 to provide raw water to the Twin Lakes system. New Well #13 is within the easement of
22 existing Well #9, but approximately 95 feet to the northwest.

1 **Q. WHEN WILL THE NEW WELLS BE IN SERVICE?**

2 A. Both wells are in service, we are just finishing landscaping.

3 **Q. HOW WAS THE COST SHOWN ON THE TABLE ABOVE DETERMINED?**

4 A. The cost largely based on the actual cost of installing the new wells. As of October 1,
5 2021, CUII had spent \$340,425 to complete the wells. CUII has some costs still
6 outstanding, including landscaping expense.

7 **Q. PLEASE DESCRIBE THE NEED FOR THE NEW HEADWORK BUILDING.**

8 A. The headworks hydraulic capacity is inadequate and leads to surcharging of the collection
9 system. Basement backups in customers' houses have been observed due to inadequate
10 headworks capacity. To prevent fouling of the facilities from rags and other debris, an
11 automated mechanical headworks is needed. Rags and other debris can clog or damage
12 pipes, pumps, rotors, and other equipment within wastewater treatment plants. Automated
13 mechanical headworks are typical of other facilities of similar size. An automated screen
14 removes the need for manual racking by operators and reduces the potential for screen
15 blinding during peak flow events that occur aside from normal working hours. The
16 headworks building is necessary to protect the headworks equipment. Automated
17 mechanical screens have moving parts and water lines that are susceptible to freezing.
18 Housing the headworks indoors should also extend the life of the equipment by reducing
19 deterioration of the metal structure and degradation of the moving parts. The Company
20 discussed outdoor installations of headworks with two other utilities with a similar
21 arrangement. Both utilities identified operational challenges during winter. The headworks
22 building will house the electrical and controls equipment for the headworks, as well as

1 ancillary equipment such as the automated sampler. Due to the corrosive nature of gas from
2 raw wastewater, headworks buildings are typically constructed of masonry materials rather
3 than metal or wood. Additional ventilation and electrical safety requirements were
4 implemented due to the explosion potential of gas from raw wastewater.

5 **Q. PLEASE DESCRIBE THE NEED FOR THE NEW CHEMICAL**
6 **BUILDING/OFFICE BUILDING?**

7 A. The proposed Operations Building will serve several functions, consolidating what may
8 typically be several buildings into a single building. The building will house several offices
9 and the Phosphorous treatment chemical storage and treatment equipment. The intent of
10 this is to reduce construction costs by using common-wall construction and sharing other
11 building functions, such as plumbing, heating/ventilation/air conditioning (“HVAC”), and
12 electrical.

13 The offices are proposed to replace the office space that the Company currently
14 rents, which includes three offices and a conference room that can seat eight people. Staff,
15 including the State Operations Manager, Administrative Assistant, and operators, will have
16 workspace in the offices.

17 The Phosphorous treatment equipment is necessary due to IDEM requirements for
18 chemical treatment for phosphorous removal. The building will store the chemical dosage
19 skid and the chemical storage tank (approximately 6,100-gallons).

20 **Q. IS THERE AN URGENCY TO HAVING A NEW BUILDING CONSTRUCTED**
21 **FOR THE PHOSPHOROUS TREATMENT EQUIPMENT?**

1 A. Yes. This equipment currently is maintained in CUII's garage pursuant to a temporary
2 IDEM permit. While the temporary permit does not have an expiration date, I believe
3 having this chemical equipment in the garage will be problematic in the future.

4 **Q. HOW WERE THE ESTIMATES FOR THE NEW HEADWORKS BUILDING AND**
5 **THE CHEMICAL BUILDING/OFFICE BUILDING DETERMINED?**

6 A. The estimates for the Headworks were based on the engineering estimates for those projects
7 as provided in Cause No. 45389 and in Quarterly Reports filed in Cause No. 44724. Those
8 supporting estimates are included as part of the Motion for Administrative Notice. The
9 total cost for the Headworks Building includes: (i) the estimated cost of the facility at a
10 90% opinion of the probable cost multiplied by an inflation factor of 1.2, (ii) an additional
11 10% for engineering cost; and (iii) IDC and Cap Time costs. Baxter & Woodman provided
12 a high-level estimate for the Office Building of \$500,000.¹ I spoke with Baxter &
13 Woodman and believe the estimated costs of the two projects are accurate. Again,
14 however, the only costs included in rate base will be costs actually expended to construct
15 the headworks building. The estimates for both the Headworks Building and Office
16 Building are included as part of the Motion for Administrative Notice.

17 **Q. WERE HEADWORKS AND OFFICE BUILDING AN ISSUE IN THE**
18 **PREAPPROVAL CASE?**

19 A. Yes. OUCC witness Parks testified that there was no need for the new Operations Building.
20 However, the OUCC did not identify an alternative as to where to house the Phosphorous
21 treatment chemical storage and treatment equipment. In my opinion, CUII must resolve

¹ The rate model uses a projection of approximately \$273,000 for the Office Building, which was based on a preliminary estimate. This will be corrected in Petitioner's rebuttal testimony.

1 this issue and the new Operations building is the best solution. In addition, housing
2 operations and management staff at the new Operations Building, rather than an off-site
3 office, provides the intangible benefit of having staff more readily available and able to
4 observe plant operations and maintenance, which should ultimately improve operations
5 and reduce life cycle costs. Simply put, I believe it is imperative that CUII construct the
6 new Operations Building.

7 As to the Headworks Building, Mr. Parks did not contest the need for the
8 improvement but recommended that the Commission "order CUII to conduct a life cycle
9 analysis of the alternatives for phosphorus, sludge storage, and headworks to determine the
10 lowest cost option." CUII believes construction of the Headworks building is the best
11 solution and will look to complete it at the lowest cost reasonably possible.

12 **Q. IS CUII PLANNING ANY OTHER SERVICE QUALITY IMPROVEMENTS IN**
13 **THE FUTURE?**

14 A. CUII plans to make improvements to the wastewater system in the upcoming three years.
15 In addition to those improvements, however, CUII also must develop a plan to address its
16 treatment plant issues in the near future. Rehabilitating the package plant would require the
17 plant to be out of service for an extended period, likely two months or longer, depending
18 on the amount of welding repairs and mechanical work identified. Based on operational
19 experience, CUII operations staff is aware that taking the plant out of service reduces the
20 treatment capacity of the facility and could lead to permit violations.

1 **VI. DIRECTIVES FROM CUII'S LAST RATE CASE**

2 **Q. IN CUII'S LAST RATE CASE, THE COMMISSION DIRECTED CUII TO**
3 **COMMUNICATE WITH THE LEADERSHIP AND RESIDENTS OF LOFS**
4 **REGARDING CAUSES OF DISCOLORED DRINKING WATER, STEPS CUII IS**
5 **TAKING TO DECREASE COMPLAINTS, AND HOW RESIDENTS CAN HELP**
6 **PREVENT DISCOLORED WATER. WHAT HAS CUII DONE TO COMPLY**
7 **WITH THIS DIRECTIVE?**

8 A. CUII has taken a number of steps to communicate with LOFS regarding causes, steps
9 taking to decrease complaints, and how residents can prevent discolored water. Among
10 other things, CUII communicated to customers for known issues or maintenance that may
11 cause discoloration. CUII also held informational meetings with residents to discuss the
12 Water Discoloration Mitigation Program. In addition, CUII has improved its
13 communications for notifying customers in advance of water outages or water maintenance
14 items. CUII uses both telephone notice and door tags to notify customers of upcoming
15 maintenance, which has reduced complaints. In addition, CUII has made a mobile app
16 available to its customers designed to improve communications. The mobile app informs
17 customers of planned maintenance and system issues. Customers also can review their
18 account data and pay their bills online.

19 **Q. IN CUII'S LAST RATE CASE, THE COMMISSION ALSO DIRECTED CUII TO**
20 **MEASURE AND REPORT ON THREE KEY ASPECTS OF SERVICE QUALITY.**
21 **DID CUII COMPLY WITH THIS DIRECTIVE?**

1 A. Yes. The Commission directed CUII to develop a master plan to address three key aspects
2 of service quality: (1) wastewater backups in homes; (2) manhole overflows; and (3)
3 discoloration of drinking water. CUII was directed to provide detailed plans to measurably
4 improve performance in the three key aspects through use of two primary components: a
5 comprehensive I&I program and a multi-faceted program to decrease incidences of
6 discolored water. As I discussed above, CUII has reduced complaints regarding discolored
7 water to nearly zero. Wastewater backups and manhole overflows have also decreased.
8 Copies of recent quarterly reports containing statistics regarding backups and overflows
9 are included as Attachment LG-3.

10 **Q. IN CUII'S LAST RATE CASE, THE COMMISSION ALSO DIRECTED CUII TO**
11 **IMPROVE ITS MONITORING OF CONTRACTOR PERFORMANCE. HAS IT**
12 **DONE SO?**

13 A. Yes. CUII assigns staff to directly oversee the more significant projects being completed
14 on the system by contractors. Those staff members work closely with contractors and
15 maintain open communications. In addition, CUII is using Lucy software to track all
16 replacements and work on the system. Lucy is an asset tracking software program that
17 enables utilities to extend the useful life of capital assets while managing customer
18 requests, capital improvement projects, work orders, and preventive maintenance. Our
19 customer information software communicates with Lucy, which enables work orders to
20 be completed more efficiently. In addition, our outside engineering firm is now required to
21 be on-site during major points of the project to ensure that contractors are completing the
22 project as planned.

1 **VII. CONCLUSION**

2 **Q. DOES THIS CONCLUDE YOUR PREPARED DIRECT TESTIMONY?**

3 **A. Yes.**

VERIFICATION

I hereby verify under the penalties of perjury that the foregoing representations are true to the best of my knowledge, information and belief.

Date: 12-6-2021



Loren Grosvenor
State Operations Manager for
Community Utilities of Indiana, Inc.

Twin Lakes Collection System Sanitary Sewer Overflows since 2008

Date	Location	Overflow/Basement Backup	Reason for Bypass/Overflow	Precipitation (inches)	Comments	
1/11/2020	Collection System	Manhole 329	Overflow	Precipitation	4	
1/11/2020	WWTP	North Aeration Basins	Overflow	Precipitation	4	
1/5/2020	Collection System	1929 Loganberry Lane	Basement Backup	Sewer obstruction	N/A	Sewer obstructed due to customer lateral collapse
5/1/2019	Collection System	Manhole 329	Overflow	Precipitation	4	
3/7/2018	WWTP	9201 E 123rd Ave	Spill	Hose came out of basin	N/A	During transfer of sludge back to treatment for reseeded and spilled on ground
2/23/2018	Collection System	1840 Forest Lane	Backup	Unverified	N/A	All sewer flowing fine and lateral to customers home upon investigation
2/21/2018	Collection System	3445 W. Lakeshore Drive	Backup	Power outage	N/A	
2/21/2018	Collection System	Manhole 329	Overflow	Power outage/Precipitation	N/A	
2/20/2018	Collection System	Manhole 329	Overflow	Precipitation	6.5	There was power failure at already high levels due to heavy rain in 2 days
3/16/2017	Collection System	Manhole 466	Overflow	Alarm Failure	N/A	Pump failed at Lakeshore Drive and tripped out control panel and prevented system alarm to call out. The pump was repaired and alarm system corrected.
11/25/2016	Collection System	Lift Station L	Overflow	Air Relief Valve	N/A	Air Relief Valve Replaced
8/15/2016	Collection System	3987 Kingsway Drive	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3862 Kingsway	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3668 Kingsway	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3993 Willowwood	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3999 Willowwood	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3254 Rustic	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3256 Rustic	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3258 Rustic	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3212 Rustic	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	3663 Kingsway	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	1533 Happy Valley	Basement Backup	Precipitation	4.7	
8/15/2016	Collection System	Manhole 530	Overflow	Precipitation	4.7	
8/15/2016	Collection System	Manhole 465	Overflow	Precipitation	4.7	
8/15/2016	Collection System	Manhole 329	Overflow	Precipitation	4.7	
8/15/2016	Collection System	Manhole 527	Overflow	Precipitation	4.7	
6/27/2016	Collection System	Manhole 364	Overflow	Sewer obstruction	N/A	
6/27/2016	Collection System	Meadow Drive	Basement Backup	Sewer obstruction	N/A	
12/28/2015	Collection System	Manhole 465	Overflow	Precipitation	2	
8/18/2015	Collection System	Manhole 213	Overflow	Unverified	N/A	Complaint was received and upon investigation nothing was found
8/18/2015	Collection System	Manhole 466	Overflow	Precipitation	4.2	
8/18/2015	Collection System	Manhole 329	Overflow	Precipitation	4.2	
8/18/2015	Collection System	Manhole 303	Overflow	Precipitation	4.2	
8/18/2015	Collection System	3663 Kingsway Dr	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	1254 Brandywine	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3674 Kingsway Dr	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3258 Rustic	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3668 Kingsway	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3667 Kingsway	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3669 Kingsway	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3999 Willowwood	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3280 Rustic	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3254 Rustic	Basement Backup	Precipitation	4.2	
8/18/2015	Collection System	3274 Trailside	Basement Backup	Precipitation	4.2	
7/17/2015	Collection System	Manhole 329	Overflow	Precipitation	1.3	Rain event that produced heavy rainfall in less than an hour
7/17/2015	Collection System	Manhole 466	Overflow	Precipitation	1.3	Rain event that produced heavy rainfall in less than an hour
6/15/2015	Collection System	Manhole 329	Overflow	Precipitation	1.5	
6/7/2015	Collection System	Manhole 466	Overflow	Unverified	N/A	Complaint was received and upon investigation nothing was found
6/7/2015	Collection System	Manhole 329	Overflow	Unverified	N/A	Complaint was received and upon investigation nothing was found
6/7/2015	Collection System	3258 Rustic	Basement Backup	Precipitation	3.4	
1/28/2015	Collection System	Manhole 170	Overflow	Unverified	N/A	
9/5/2014	Collection System	Manhole 329	Overflow	Precipitation	2	
6/23/2014	Collection System	3693 Kingsway	Basement Backup	Precipitation	1.6	Rain Event that was produced heavy rainfall in less than an hour
6/23/2014	Collection System	Manhole 329	Overflow	Precipitation	1.6	Rain Event that was produced heavy rainfall in less than an hour
4/3/2014	Collection System	Manhole 329	Overflow	Unverified	N/A	
2/20/2014	Collection System	Manhole 303	Overflow	Precipitation	N/A	
2/20/2014	Collection System	Manhole 329	Overflow	Precipitation	N/A	
2/20/2014	Collection System	Manhole 465	Overflow	Precipitation	N/A	
9/21/2013	Collection System	N. Lakeshore Dr (Pro Shop)	Spill	Discharge hose trash pump	N/A	Construction site discharge hose leak
4/4/2013	Collection System	Manhole 211	Overflow	Sewer obstruction	N/A	
5/7/2012	Collection System	2153 Green Valley	Basement Backup	Precipitation	2.75	
5/7/2012	Collection System	1254 Brandywine	Basement Backup	Precipitation	2.75	
5/7/2012	Collection System	2155 Green Valley	Basement Backup	Precipitation	2.75	

Twin Lakes Collection System Sanitary Sewer Overflows since 2008

Date	Location	Overflow/Basement Backup	Reason for Bypass/Overflow	Precipitation (inches)	Comments
5/7/2012	Collection System	1822 Sandy Baach Dr	Basement Backup	Precipitation	2.75
5/7/2012	Collection System	2156 Green Valley	Basement Backup	Precipitation	2.75
4/23/2012	WWTP	North Aeration Basins	Overflow	Not determined	N/A
4/3/2012	Collection System	Manhole 421	Overflow	Sewer obstruction	N/A
12/14/2011	Collection System	4158 Oakmont	Overflow	Precipitation	1.7
10/20/2011	Collection System	2371 Four Season Pkwy	Basement Backup	Sewer obstruction	N/A
7/1/2011	Collection System	4373 W Lakeshore Dr	Basement Backup	Precipitation	1.8
7/1/2011	Collection System	Manhole 465	Overflow	Precipitation	1.8
7/1/2011	Collection System	Manhole 329	Overflow	Precipitation	1.8
6/9/2011	Collection System	174 Meadows	Basement Backup	Precipitation	2.75
6/9/2011	Collection System	Manhole 465	Overflow	Precipitation	2.75
6/9/2011	Collection System	4158 Oakmont	Basement Backup	Precipitation	2.75
6/9/2011	Collection System	Manhole 329	Overflow	Precipitation	2.75
12/6/2010	WWTP	Digester	Overflow	Not determined	N/A
10/5/2010	Collection System	2537 E. Lakeshore Drive	Overflow	Valve Malfunction	N/A
6/18/2010	Collection System	3473 W. Lakeshore Drive	Basement Backup	Precipitation	1.1
6/18/2010	Collection System	2465 E. Lakeshore Drive	Basement Backup	Sewer obstruction	N/A
6/18/2010	Collection System	2472 E. Lakeshore Drive	Basement Backup	Sewer obstruction	N/A
6/1/2010	Collection System	2482 E. Lakeshore Drive	Basement Backup	Sewer obstruction	N/A
3/4/2010	Collection System	1982 Green Valley Drive	Basement Backup	Sewer obstruction	N/A
2/19/2010	Collection System	1982 Green Valley Drive	Basement Backup	Sewer obstruction	N/A
10/30/2009	Collection System	4158 Oakmont	Basement Backup	Precipitation	2.5
10/30/2009	Collection System	174 Meadows	Basement Backup	Precipitation	2.5
10/14/2009	Collection System	1799 Forest Ln	Overflow	Clogged Sewer Main	N/A
6/10/2009	Collection System	4351 Lakshore Drive	Spill	Broken Section of Force Main	N/A
1/28/2009	Collection System	8251 E 109th Avenue	Spill	Broken Section of Force Main	N/A
9/14/2008	Collection System	3860 Kingsway	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	Manhole 2472 E. Lakeshore Drive	Overflow	Precipitation	5.8
9/14/2008	Collection System	3275 Trailside	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	3274 Trailside	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	3993 Willowwood	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	3681 Cherryhill	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	4159 Oakmont	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	3673 Kingsway	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	1822 Sandy Baach Dr	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	Manhole 307	Overflow	Precipitation	5.8
9/14/2008	Collection System	Manhole on Meadow Dr	Overflow	Precipitation	5.8
9/14/2008	Collection System	3674 Kingsway Dr	Basement Backup	Precipitation	5.8
9/14/2008	Collection System	3271 Trailside	Basement Backup	Precipitation	5.8
9/13/2008	Collection System	Outfall Stony Run Creek	Overflow	Precipitation	5.8
9/13/2008	Collection System	3673 Kingsway	Basement Backup	Precipitation	4.1
9/13/2008	Collection System	3862 Kingsway	Basement Backup	Precipitation	4.1
9/13/2008	Collection System	Manhole 307	Overflow	Precipitation	4.1
9/13/2008	Collection System	3275 Trailside	Basement Backup	Precipitation	4.1
9/13/2008	WWTP	Aerobic Digester	Overflow	Precipitation	4.1
9/13/2008	Collection System	151 Meadow Cir	Basement Backup	Precipitation	4.1
9/13/2008	Collection System	3271 Trailside	Basement Backup	Precipitation	4.1
9/13/2008	Collection System	3274 Trailside	Basement Backup	Precipitation	4.1
9/13/2008	Collection System	Manhole on Meadow Dr	Overflow	Precipitation	4.1
9/13/2008	Collection System	3993 Willowwood	Basement Backup	Precipitation	4.1
9/13/2008	Collection System	3693 Kingsway	Basement Backup	Precipitation	4.1
3/18/2008	Collection System	11161 Randolph	Spill	Broken Section of Force Main	N/A
2/9/2008	Collection System	3598 Kingsway	Overflow	Valve Malfunction	N/A
1/8/2008	Collection System	Ground and Lake Holiday	Overflow	Precipitation	2
					Rain Event



Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno Pigott
Commissioner

July 11, 2018

Via Email to: mamiller@uiwater.com
Mr. Mike Miller, Regional Manager
Community Utilities
10996 Four Season Place, Suite 100G
Crown Point, Indiana 46307

Dear Mr. Miller:

Re: Inspection Summary Letter
Community Utilities WWTP
NPDES Permit No. IN0037176
Crown Point, Lake County

An inspection of the above-referenced facility or location was conducted by a representative of the Indiana Department of Environmental Management, Northwest Regional Office, pursuant to IC 13-18-3-9. A summary of the inspection is provided below:

Date(s) of Inspection: July 09, 2018
Type of Inspection: Reconnaissance Inspection
Inspection Results: Potential problems were discovered or observed.

1. Facility/Site was rated as marginal. Pitted concrete and rusted metal were observed at the bar rack structure, influent flume and splitter box. It is recommended that other methods be examined at the headworks due to the need to capture hydrogen sulfide which is, apparently, causing damage to the current structures in place.
2. Operations was rated as marginal. Minor pin-flock was observed overflowing the weirs of the secondary clarifiers. Mr. Grosvenor stated that wasting had very recently occurred.

A copy of the NPDES Wastewater Facility Inspection Report is enclosed for your records. Please direct any response to this letter and any questions to Nicholas Ream at 219-730-1691 or by email to nream@idem.IN.gov.

Sincerely,

Rick Massoels, Deputy Director

Enclosure



NPDES Wastewater Facility Inspection Report

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

NPDES Permit Number: IN0037176	Facility Type: Mixed Ownership	Major	Facility Classification: III	TEMPO AI ID 17381
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Date(s) of Inspection: July 09, 2018

Type of Inspection: Reconnaissance Inspection

Name and Location of Facility Inspected: Community Utilities WWTP 9201 East 123rd Avenue Crown Point IN 46307	County: Lake	Receiving Waters: East Branch of Stoney Run Creek	Permit Expiration Date: 5/31/2023
			Design Flow: 1.1MGD

On Site Representative(s):				
First Name	Last Name	Title	Email	Phone
Loren	Grosvenor	Area Manager	lgrosvenor@uiwater.com	815-509-0317

Was a verbal summary of findings presented to the on-site representative? **Yes**

Certified Operator: Loren Grosvenor	Number: 20434	Class: III	Effective Date: 7-1-17	Expiration Date: 6-30-19	Email: lgrosvenor@uiwater.com
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Responsible Official: Mr. Mike Miller, Regional Manager 10996 Four Season Place, Suite 100G Crown Point, Indiana 46307	Permittee: Community Utilities Email: mamiller@uiwater.com Phone: Fax:
	Contacted? No

INSPECTION FINDINGS

- Conditions evaluated were found to be satisfactory at the time of the inspection. (5)
- Violations were discovered but corrected during the inspection. (4)
- Potential problems were discovered or observed. (3)
- Violations were discovered and require a submittal from you and/or a follow-up inspection by IDEM. (2)
- Violations were discovered and may subject you to an appropriate enforcement response. (1)

AREAS EVALUATED DURING INSPECTION

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

S	Receiving Waters	M	Facility/Site	N	Self-Monitoring	N	Compliance Schedules
S	Effluent Appearance	M	Operation	S	Flow Measurement	N	Pretreatment
S	Permit	N	Maintenance	N	Laboratory	N	Effluent Limits Compliance
N	Collection System	N	Sludge	N	Records/Reports	N	Other:

DETAILED AREA EVALUATIONS

Receiving Waters:

Comments:
The receiving stream was free of notable foam, algae or solids.

Effluent Appearance:

Comments:
The effluent was clear and free of color at the time of the inspection.

Permit:

Comments:
The facility was found to have a valid permit and the facility description, including units of treatment and receiving stream, is accurate.

Collection System:

Comments:
Kim Rohr, with IDEMs Wastewater Inspection Section, conducted a Sanitary Sewer Survey during the reconnaissance inspection. Please refer to Ms. Rohr's report, dated July 9, 2018, for more information.

Facility/Site:

Comments:
Facility/Site was rated as **marginal**. Pitted concrete and rusted metal were observed at the bar rack structure, influent flume and splitter box. It is recommended that other methods be examined at the

headworks due to the need to capture hydrogen sulfide which is, apparently, causing damage to the current structures in place.

Operation:

Comments:

Operations was rated as **marginal**. Minor pin-flock was observed overflowing the weirs of the secondary clarifiers. Mr. Grosvenor stated that wasting had very recently occurred.

Flow Measurement:

Comments:

The effluent flow meter was last calibrated by Phoenix Innovations on May 1, 2018.

Effluent Limits Compliance:

No 1. Were DMRs reviewed as part of the inspection?

Comments:

IDEM REPRESENTATIVE

Inspector Name:

Nicholas Ream

Email:

nream@idem.IN.gov

Phone Number:

219-730-1691

Other staff participating in the inspection:

Name(s)

Kim Rohr

Phone Number(s)

317-719-1666

IDEM MANAGER REVIEW

IDEM Manager:

Rick Massoels

Date:

7/11/2018

Inspection Photographs



Facility: Community Utilities WWTP
Photographer: Nicholas Ream
Date: 7/9/2018 Time: 12:40:00 PM
Others Present: Kim Rohr, Loren Grosvenor
Location/Description: East and down view of the parshall flume.



Facility: Community Utilities WWTP
Photographer: Nicholas Ream
Date: 7/9/2018 Time: 12:45:00 PM
Others Present: Kim Rohr, Loren Grosvenor
Location/Description: East view of the influent meter box. Through difficult to see in the picture, the steel has nearly rusted through.



Facility: Community Utilities WWTP
Photographer: Nicholas Ream
Date: 7/9/2018 Time: 12:45:00 PM
Others Present: Kim Rohr, Loren Grosvenor
Location/Description: South view of the splitter box. Heavy pitting was visible in the splitter box, likely due to hydrogen sulfide.



Facility:

Community Utilities WWTP

Photographer:

Nicholas Ream

Date: 7/9/2018

Time: 12:45:00 PM

Others Present:

Kim Rohr, Loren Grosvenor

Location/Description:

South view of the splitter box. Heavy pitting was visible in the splitter box, likely due to hydrogen sulfide.

Community Utilities of Indiana, Inc.

Indiana Water Service, Inc
Watermain Breaks
5/3/2021



* Watermain Breaks

Water Features

⊕ Flushing Hydrant

⊗ Valve

— Unknown

Diameter

— 1 1/2"

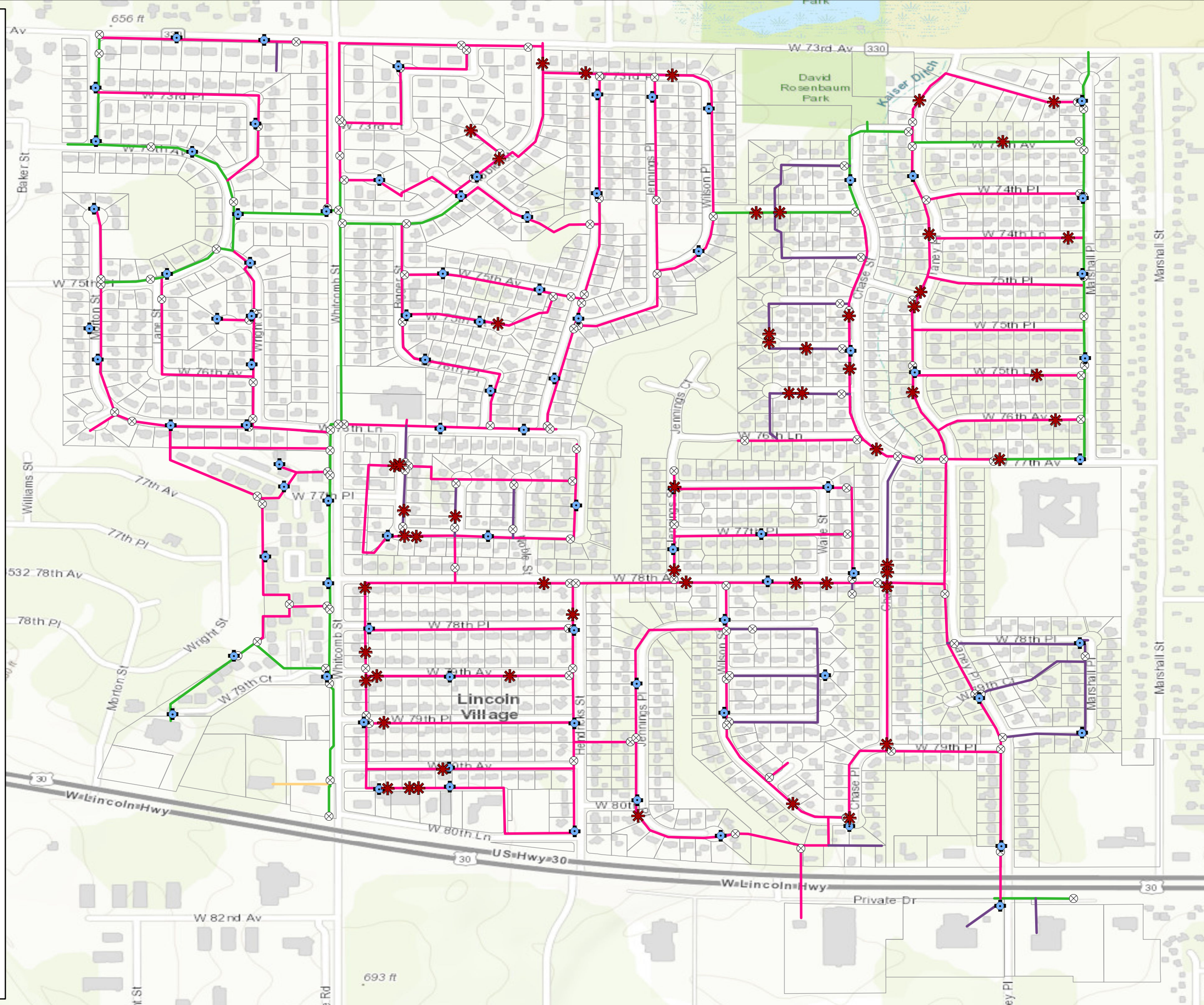
— 4"

— 6"

— 8"

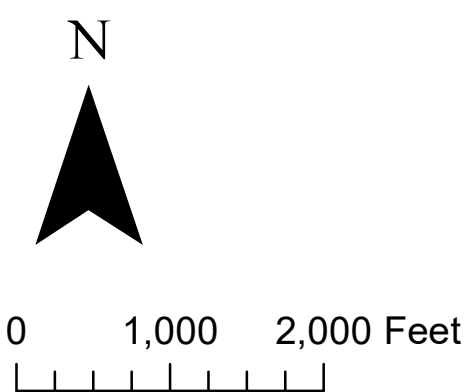
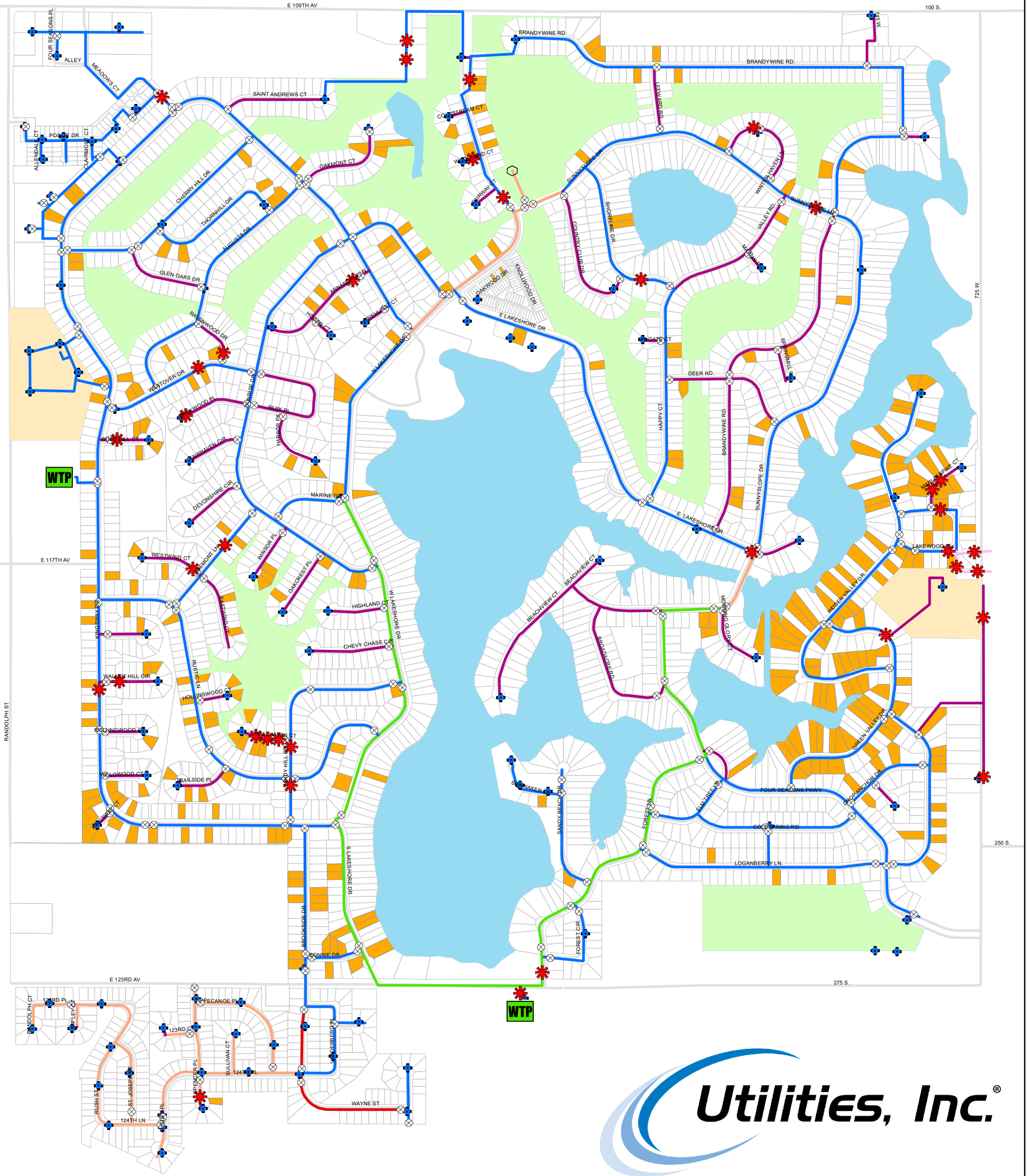


0 375 750 1,500 Feet



Community Utilities of Indiana, Inc.

Twin Lakes Water System Watermain and Service Line Breaks 5/3/2021



	WTP		Watermain		Municipal Features
	Valve		2"		Park
	Tower		4"		School
	Hydrant		6"		Lake
	Watermain Breaks		8"		Streets
			10"		Service Line Breaks
			12"		

Utilities Inc

2022 Water Main Replacement Projects

Project	Estimate Cost	
1 IWS Merrillville	\$ 608,700.00	0
2 Twin Lakes - Wallhaven	\$ 185,500.00	0
3 Twin Lakes - Hidden Valley WSs	\$ 191,500.00	0
TOTAL	\$ 985,700.00	

Project	Estimate Cost	
1 IWS Merrillville - Alt Route / Design	\$ 649,400.00	0
2 Twin Lakes - Wallhaven	\$ 185,500.00	0
3 Twin Lakes - Hidden Valley WSs	\$ 191,500.00	0
TOTAL	\$ 1,026,400.00	

\$ 40,700.00

**INDIANA WATER SERVICE, INC. - MERRILLVILLE
WHITCOMB ALLEY & 80TH ALLEY WATER MAIN REPLACEMENT
PRELIMINARY CONSTRUCTION ESTIMATE (05/20/21)**

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
1	Mobilization, Demobilization, Bond and Startup	1	LS		\$ 33,000.00
2	Construction Engineering	1	LS		\$ 11,000.00
3	Temporary Erosion Control	1	LS		\$ 5,000.00
4	Traffic Control	1	LS		\$ 11,000.00
5	Asphalt Pavement Repair, Standard Duty	175	SYD	\$ 140.00	\$ 24,500.00
6	Concrete Curb and Gutter Repair	100	LF	\$ 70.00	\$ 7,000.00
7	Aggregate Base, 8-inch	175	SYD	\$ 35.00	\$ 6,200.00
8	Final Grading, Seeding and Mulching	1	LS		\$ 20,000.00
9	6" Water Main	2140	LF	\$ 130.00	\$ 278,200.00
10	Utility Allowance	1	AL	\$ 10,000.00	\$ 10,000.00
11	6" Gate Valve with Valve Box	6	EA	\$ 2,500.00	\$ 15,000.00
12	Two Way 2-1/8" Hydrant with Auxiliary 6" Gate Valve and Box	4	EA	\$ 7,000.00	\$ 28,000.00
13	Connection to Existing Water Mains	6	EA	\$ 7,500.00	\$ 45,000.00
14	Abandonment of Water Mains in Place	1	LS		\$ 5,000.00
15	Service Tap and Corporation Stop	36	EA	\$ 1,200.00	\$ 43,200.00
16	1" Water Service	720	LF	\$ 35.00	\$ 25,200.00
17	Connection to Existing Water Service	36	EA	\$ 650.00	\$ 23,400.00
18	Curb Stop and Box	36	EA	\$ 500.00	\$ 18,000.00
TOTAL				\$	608,700.00

**INDIANA WATER SERVICE, INC. - MERRILLVILLE
WHITCOMB ALLEY & 80TH ALLEY WATER MAIN REPLACEMENT (ALT ROUTE)
PRELIMINARY CONSTRUCTION ESTIMATE (07/07/21)**

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
1	Mobilization, Demobilization, Bond and Startup	1	LS		\$ 35,000.00
2	Construction Engineering	1	LS		\$ 12,000.00
3	Temporary Erosion Control	1	LS		\$ 6,000.00
4	Traffic Control	1	LS		\$ 12,000.00
5	Asphalt Pavement Repair, Standard Duty	1760	SYD	\$ 55.00	\$ 96,800.00
6	Concrete Curb and Gutter Repair	200	LF	\$ 70.00	\$ 14,000.00
7	Concrete Sidewalk Repair	27	SYD	\$ 85.00	\$ 2,300.00
8	Sidewalk ADA Ramp Repair	20	SYD	\$ 200.00	\$ 4,000.00
9	Aggregate Base, 8-inch	1760	SYD	\$ 35.00	\$ 61,600.00
10	Final Grading, Seeding and Mulching	1	LS		\$ 30,000.00
11	6" Water Main (Open-Cut)	2140	LF	\$ 65.00	\$ 139,100.00
12	Utility Allowance	1	AL	\$ 10,000.00	\$ 10,000.00
13	6" Gate Valve with Valve Box	6	EA	\$ 2,500.00	\$ 15,000.00
14	Two Way 2-1/8" Hydrant with Auxiliary 6" Gate Valve and Box	4	EA	\$ 7,000.00	\$ 28,000.00
15	Connection to Existing Water Mains	6	EA	\$ 7,500.00	\$ 45,000.00
16	Abandonment of Water Mains in Place	1	LS		\$ 5,000.00
17	Service Tap and Corporation Stop	36	EA	\$ 1,200.00	\$ 43,200.00
18	1" Water Service	1400	LF	\$ 35.00	\$ 49,000.00
19	Connection to Existing Water Service	36	EA	\$ 650.00	\$ 23,400.00
20	Curb Stop and Box	36	EA	\$ 500.00	\$ 18,000.00
TOTAL				\$	649,400.00

**TWIN LAKES
WALLHAVEN COURT WATER MAIN REPLACEMENT
PRELIMINARY CONSTRUCTION ESTIMATE (05/20/21)**

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
1	Mobilization, Demobilization, Bond and Startup	1	LS		\$ 10,000.00
2	Construction Engineering	1	LS		\$ 3,000.00
3	Temporary Erosion Control	1	LS		\$ 2,000.00
4	Traffic Control	1	LS		\$ 3,000.00
5	Asphalt Pavement Repair, Standard Duty	80	SYD	\$ 140.00	\$ 11,200.00
6	Concrete Curb and Gutter Repair	20	LF	\$ 70.00	\$ 1,400.00
7	Aggregate Base, 8-inch	80	SYD	\$ 35.00	\$ 2,800.00
8	Final Grading, Seeding and Mulching	1	LS		\$ 7,500.00
9	6" Water Main	500	LF	\$ 130.00	\$ 65,000.00
10	Utility Allowance	1	AL	\$ 10,000.00	\$ 10,000.00
11	6" Gate Valve with Valve Box	2	EA	\$ 2,500.00	\$ 5,000.00
12	Two Way 2-1/8" Hydrant with Auxiliary 6" Gate Valve and Box	1	EA	\$ 7,000.00	\$ 7,000.00
13	Connection to Existing Water Mains	1	EA	\$ 7,500.00	\$ 7,500.00
14	Abandonment of Water Mains in Place	1	LS		\$ 2,500.00
15	Service Tap and Corporation Stop	14	EA	\$ 1,200.00	\$ 16,800.00
16	1" Water Service	420	LF	\$ 35.00	\$ 14,700.00
17	Connection to Existing Water Service	14	EA	\$ 650.00	\$ 9,100.00
18	Curb Stop and Box	14	EA	\$ 500.00	\$ 7,000.00
TOTAL				\$	185,500.00

*It was assumed that the water main would be able to be installed outside of the roadway

**TWIN LAKES
HIDDEN VALLEY WATER SERVICE REPLACEMENTS
PRELIMINARY CONSTRUCTION ESTIMATE (05/20/21)**

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL PRICE
1	Mobilization, Demobilization, Bond and Startup	1	LS		\$ 10,000.00
2	Construction Engineering	1	LS		\$ 3,000.00
3	Temporary Erosion Control	1	LS		\$ 2,000.00
4	Traffic Control	1	LS		\$ 3,000.00
5	Asphalt Pavement Repair, Standard Duty	100	SYD	\$ 140.00	\$ 14,000.00
6	Aggregate Base, 8-inch	100	SYD	\$ 35.00	\$ 3,500.00
7	Final Grading, Seeding and Mulching	1	LS		\$ 20,000.00
8	Service Tap and Corporation Stop	40	EA	\$ 1,200.00	\$ 48,000.00
9	1" Water Service	1200	LF	\$ 35.00	\$ 42,000.00
10	Connection to Existing Water Service	40	EA	\$ 650.00	\$ 26,000.00
11	Curb Stop and Box	40	EA	\$ 500.00	\$ 20,000.00
TOTAL				\$	191,500.00

*It was assumed that the existing water main is outside of the roadway

**CUII Twin Lakes
Sanitary Sewer Service Replacement
Preliminary Engineer's Opinion of Probable Costs**

Prepared by: PDS
Checked by: BWM

5/31/2019

I. Right of Way

1.1 Deep Service (15'-25') (Near)

Service with Riser	1 LS	\$ 3,200.00	\$ 3,200.00
Lawn Resto (15'x20')	33.3 SY	\$ 10.00	\$ 333.33
Trench Backfill (25%)	74.07 CY	\$ 25.00	\$ 1,851.75
			\$ 5,385.08

1.2 Deep Service (15'-25') (Far)

Service with Riser	1 LS	\$ 4,200.00	\$ 4,200.00
Lawn Resto (15'x20')	33.3 SY	\$ 10.00	\$ 333.33
Pavement Resto (24'x10')	26.7 SY	\$ 60.00	\$ 1,600.00
Trench Backfill (25%+crossing)	132.59 CY	\$ 25.00	\$ 3,314.75
			\$ 9,448.08

1.3 Shallow Service (5' - 15') (Near)

Service	1 LS	\$ 2,200.00	\$ 2,200.00
Lawn Resto (15'x15')	25.0 SY	\$ 10.00	\$ 250.00
Trench Backfill (25%)	37.04 CY	\$ 25.00	\$ 926.00
			\$ 3,376.00

1.4 Shallow Service (5' - 15') (Far)

Service	1 LS	\$ 3,200.00	\$ 3,200.00
Lawn Resto (15'x15')	25.0 SY	\$ 10.00	\$ 250.00
Pavement Resto (24'x10')	26.7 SY	\$ 60.00	\$ 1,600.00
Trench Backfill (25%+crossing)	89.41 CY	\$ 25.00	\$ 2,235.25
			\$ 7,285.25

II. Private Property

2.1 Deep Service (12'-15'), Short

Service	50 LF	\$ 60.00	\$ 3,000.00
Lawn Resto (20' x 50')	111.11 SY	\$ 10.00	\$ 1,111.10
			\$ 4,111.10

2.2 Deep Service (12'-15'), Long

Service	100 LF	\$ 60.00	\$ 6,000.00
Lawn Resto (20' x 100')	222.22 SY	\$ 10.00	\$ 2,222.20
			\$ 8,222.20

2.3 Shallow Service (<15'), Short

Service	50 LF	\$ 50.00	\$ 2,500.00
Lawn Resto (20' x 50')	111.11 SY	\$ 10.00	\$ 1,111.10
			\$ 3,611.10

2.4 Shallow Service (<15'), Long

Service	100 LF	\$ 50.00	\$ 5,000.00
Lawn Resto (20' x 100')	222.22 SY	\$ 10.00	\$ 2,222.20
			\$ 7,222.20

III. Spot Repairs

3.1 Deep Spot Repair (>15')

Spot Repair (up to 10' of pipe)	1 LS	\$ 4,200.00	\$ 3,400.00
Lawn Resto (15'x20')	33.3 SY	\$ 10.00	\$ 333.33
			\$ 3,733.33

3.2 Shallow Spot Repair (<15')

Spot Repair (up to 10' of pipe)	1 LS	\$ 3,200.00	\$ 2,800.00
Lawn Resto (15'x20')	33.3 SY	\$ 10.00	\$ 333.33
			\$ 3,133.33

Notes

1. Restoration pay widths are typically 15', however the above assumes 20' due to the small quantity.
2. Trench backfill included in short ROW service costs as a conservative assumption - it may be necessary depending on proximity to streets/driveways
3. Crossing depths assumed to be 8' and 10' for shallow and deep services, respectively
4. For services under driveways, restoration and trench backfill costs will be at least 2-3 times the cost of landscape restoration

8840 W. 192nd Street
Mokena, IL 60448
815.459.1260
708.478.8710
www.baxterwoodman.com
info@baxterwoodman.com

Memo

To: Mr. Sean Carbonaro, Director Engineering & Asset Management

Community Utilities of Indiana, Inc.

10996 Four Seasons Place, Suite 100G Crown Point, Indiana 46307

From: Mike Kenny, P.E.

Date: September 9, 2021

Project No.: 210623.00

Subject: Lift Station L Force Main Cleaning and Replacement Design Report

Lift Station L and its 4.5 mile long force main located in the Twin Lakes Community has shown noticeable loss of capacity over the last several years. Community Utilities of Indiana, Inc. (Utilities, Inc.) has contracted with Baxter and Woodman, Inc. (B&W) to evaluate if the force main is the cause for the capacity loss, and provide recommendations to restore the system to original capacity. B&W met on site with Utilities, Inc. staff in March of 2021 to discuss possible reasons for reduced capacity including pump wear, air release valve issues on the force main, mechanical issues in the valve vault, and other potential causes. Utilities, Inc. evaluated and inspected these potential issues and determined they were not the cause of capacity reduction.

The force main piping itself was then evaluated to determine if it could be the cause. The force main is made up of 21,799 LF of 12" PVC pipe and a 1,101 LF segment of 8" PVC pipe in the middle of the 4.5 miles of force main. The force main conveys wastewater from Lift Station L located next to 1521 Happy Valley Road. The force main heads west across the golf course to East Lakeshore Drive, then back through the golf course until it crosses Kingsway Drive behind Jerry Ross Elementary School. From here the force main heads south down Randolph Street to East 123rd Avenue where it runs east until it reaches the Twin Lakes Wastewater Treatment Plant. The 8" force main section is located behind Jerry Ross Elementary School to the corner of Randolph Street and the northwest property corner of the school. Here the force main changes back to 12" pipe where Lift Station K connects to the force main on Randolph Street. The subsequent sections discuss the evaluation of the force main.

Force Main Cleaning

In March of 2021, after evaluating other possible issues that would cause reduced capacity at Lift Station L, B&W along with Utilities, Inc. determined that cleaning the force main to remove potential deposits and obstructions was the best option. To complete the cleaning project, B&W prepared a set of bidding documents to “pig” the force main. Pigging is a pipe maintenance operation that uses various devices to scrape and clean pipe walls while the system is still in operation to return the pipe to original conditions as age allows.

The pigging project was designed to allow cleaning of the entire force main without the need for intermediate launching and receiving pits due to the location of the force main under the golf course and other access concerns. The force main pipe diameter change from 12” to 8” back to 12” also caused restrictions in which types of pigs could be used to clean the force main. Hard, dense pigs would not be able to be utilized because they are unable to make the diameter changes without getting stuck within the force main. These pigs are typically pushed through a force main last and perform the final scraping of pipe walls to ensure a clean pipe. Only the less dense, brush type pigs could be utilized for a light cleaning of the force main. The advantages of this type of operation is that it is minimally invasive while providing a cleaning that would bring the “C” factor (smoothness) of the pipe closer to original conditions. The disadvantage is that the hard scrubbing pigs could not be utilized to ensure a proper cleaning without excavating several pits along the length of the force main.

Bids were opened for the Force Main Pigging project on August 13, 2021. Only one bid was received from American Pipeline for \$149,600. Pigging pipelines is a very specialized service and there are only a few qualified contractors in the United States to complete the work, which resulted in only receiving a single bid. Another contractor, SFE Global, was intending to submit a bid on the project but could not find a local contractor to assist with mechanical changes in the lift station valve vault to install the launching equipment. Upon discussion with American Pipeline, their price was higher than expected due to the fact they were planning on installing one intermediate access pit and the costs to complete the mechanical changes for the pig launcher were higher than expected from their subcontractor.

After reviewing the bid and speaking with contractors it was determined that for the bid price of \$149,600, the level of cleaning that would be achieved would not justify the costs. Alternatives to reduce pigging costs and provide better cleaning were investigated and summarized in the following sections including replacing the 8” section of force main with 12” pipe and performing the mechanical work in the valve vault as a standalone project.

Force Main Replacement

The existing 8" force main is approximately 1,101 LF long and is located along the northern and eastern border of the Jerry Ross Elementary School. The force main extends east between homes to Kingsway Drive where it changes back to 12" pipe. To successfully pig the entire force main without intermediate pits, the entire length of force main would need to be 12" pipe. Replacing the 8" force main with 12" force main provides additional benefits that include an increase of flow capacity of the lift station due to the decrease of friction loss within the force main. The hydraulic evaluation of the force main is discussed in a subsequent section. To complete the replacement of the 8" force main, the new 12" force main would need to be directionally drilled between homes across Kingsway Drive to the school property. From this point, the force main can be installed via directional drilling or open cut methods depending on easement availability and coordination with the school. For the estimate of costs, directional drilling was used for the entirety of the replacement. The removal of the existing air release valve at the connection point at Kingsway Drive and the installation of new one within the new 12" force main will be determined after topographic survey is obtained and final alignment determined.

The estimated cost for replacement of 1,101 LF of force main with 12" pipe including contingencies, legal and administrative fees, and design and construction engineering is \$470,000. Potential easement acquisition costs are not included in the estimated cost. A detailed break-down of the cost estimate is shown in Attachment 1.

Hydraulic Evaluation

Evaluation of the current lift station and force main hydraulics was necessary to determine the effectiveness of pigging the system as it currently exists and what increase capacity would result in replacing the 8" force main with 12" force main. The following scenarios were evaluated:

- Existing force main with C Factor = 130, assuming clean pipe
- All 12" force main with C Factor = 130
- All 12" force main with C Factor = 100 for existing dirty force main
- Existing force main with C Factor = 115
- Existing force main with C Factor = 100

The existing pump curves were utilized to show the planned performance of the pumps.

The following results were found during the hydraulic evaluation and are summarized in Table 1 below and are shown in the pump curve in Attachment 2

Table 1 Lift Station L Hydraulics at 1,000 GPM	
Hydraulic Condition	Max TDH (feet)
Existing Force Main, C =130	128.17
12" Force Main, C = 130	110.76
12" Force Main, C = 100	147.3
Existing Force Main, C =115	147.49
Existing Force Main, C =100	175.58

The existing pump curves were utilized to show the planned performance of the pumps.

Recommendations

Community Utilities of Indiana has experienced a loss of capacity at their Lift Station L at the Twin Lakes Sanitary System. After investigation of others causes of capacity lost, B&W and Utilities, Inc. has determined the force main for Lift Station L requires cleaning and investigated options to complete this.

Based on the hydraulic analysis and reduced costs for force main pigging, B&W recommends replacing the existing 8” force main with new 12” force main. With the force main compromised of all 12” pipe, the entirety of the force main can be properly cleaned and will be more cost effective. In addition to allowing proper cleaning of the force main, the replacement of the 8” force main with 12” will provide increased flow capacity. B&W also recommends evaluation of the pumps be performed to indicate where the pump is performing on its design curve. If the pump is found to be operating off of the curve, pump changes such as installing different impellers can be determined. New impellers for a pump can range from one-fifth the cost of the pumps to a one-third the cost.

Baxter & Woodman appreciates this opportunity to work with Community Utilities of Indiana on this project. Upon your review of this memorandum, we would like to meet with you to discuss this report and address any questions you may have.

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**Community Utilities of Indiana
Lift Station L - Force Main Replacement Study
Engineer's Opinion of Probable Total Project Cost**

No.	Pay Item	Approximate Quantity	Unit Price	Amount
FORCE MAIN				
1	FORCE MAIN (HDD) 12-inch PVC	901 lin. ft.	\$ 200.00	\$ 180,200.00
2	FORCE MAIN (OPEN CUT) 12-inch PVC	200 lin. ft.	\$ 150.00	\$ 30,000.00
3	CONNECTION TO EXISTING FORCE MAIN 12-inch PVC	2 each	\$ 5,000.00	\$ 10,000.00
3	AIR RELEASE VALVE 12-inch	2 each	\$ 7,500.00	\$ 15,000.00
3	PAVEMENT RESTORATION HMA	50 sq.yd.	\$ 75.00	\$ 3,750.00
3	SIDEWALK RESTORATION 6-inch	50 sq. ft.	\$ 50.00	\$ 2,500.00
4	RESTORATION OF LAWNS AND PARKWAYS: Topsoil and Sod	250 sq.yd.	\$ 75.00	\$ 18,750.00
5	BYPASS PUMPING		Lump Sum	\$ 10,000.00
6	EROSION CONTROL		Lump Sum	\$ 15,000.00
7	TRAFFIC CONTROL:		Lump Sum	\$ 25,000.00
TOTAL ESTIMATE OF CONSTRUCTION COST				\$ 310,200.00
Contingencies (20%)				\$62,000.00
Engineering (20%)				\$62,000.00
Legal / Admin (6%)				\$26,100.00
TOTAL OPINION OF PROBABLE COST				\$ 470,000.00

ATTACHMENT 2 COMMUNITY UTILITIES OF INDIANA TWIN LAKES LIFT STATION L

