



3875 Embassy Parkway, Suite 200
Akron, OH 44333
330.375.0800
www.ctconsultants.com

Hudson Rate Study

Prepared for:
City of Hudson
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220325

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CHAPTER 1

I. EXECUTIVE SUMMARY

A. RECOMMENDATIONS FOR UPDATING FEES AND RATE SCHEDULES

- Adopt a blended rate to one “rate schedule” for all customers (existing original and expanded service areas).
- Increase Rates 6% per year to maintain carry over balances: 2023 – 2027
- Adjust Capital fee to basically recover \$450,000 average cost for planned annual water main improvement projects through 2027. (See table A, below, for rate increases.)
- Adjust rates a minimum of 2% annually for years 2028 and beyond to cover average inflationary impacts.
- Per OEPA Asset Management Plan requirements – review rates every three years at a minimum and verify that rates are appropriate for capital improvements requirements outlined in City Asset Management Plan – NOTE CT recommends biennial rate reviews.
- Increase “Availability, Standby Charge” to \$5.00 per month.
- Increase “Water System Investment Fee” i.e. Tap Fee to \$1,000 per equivalent residential user (ERU).

The impact on the typical residential bill, whether maintaining the current rate schedule (first 2 rows) or blending all customers into a blended rate schedule (3rd row), and increasing by 6% annually as recommended, is shown in Table A below. The typical residential user consumes 800 cf of water per month. Table A shows monthly cost including all three components, 1) minimum charge, 2) commodity charge, and 3) capital fee as proposed.

TABLE A TYPICAL MONTHLY BILL – AVERAGE RESIDENTIAL ACCOUNT						
	2022*	2023	2024	2025	2026	2027
Original Service Area (1)	\$40.01	\$44.11	\$46.84	\$49.70	\$52.70	\$55.85
Expanded Service Area(1)	\$62.52	\$67.97	\$72.13	\$76.51	\$81.12	\$85.97
ALL Customers (2)		\$46.61	\$49.53	\$52.57	\$55.75	\$59.06

* = Current Rates

(1) IF NOT BLENDING RATES

(2) IF BLENDED RATES ADOPTED

Recommended rates, as discussed and shown below, are based on needed revenues to cover increased expenses for all expenses discussed in this Study except for the Capital Cost needed to extend water service into the five MAP areas, which are discussed in Chapter 2. Several other fees such as Tap-in-fees are also recommended to be adjusted as discussed herein.

Water Rate schedule appears to have been last adjusted in 2013 by Ordinance #13-57.

The three components of the monthly bill are recommended to be adjusted as noted below.

- a. Base Charge – Readiness to Serve (minimum bill) – For 2023-2027 additional revenues are needed to cover projected costs and inflation.

Table 2-1 shows the recommended schedules using a blended rate. This incorporates a 6% rate increase annually to continue to maintain a similar carryover balance over the next five years. More details can be found in Section II below.

TABLE 2-1 PROPOSED RATE SCHEDULES BASE MINIMUM MONTHLY CHARGE FOR ALL CUSTOMERS								
Size	eq fac	2022*	2022**	2023	2024	2025	2026	2027
5/8 & 3/4***	1	\$ 11.65	\$ 21.60	\$ 13.61	\$ 14.43	\$ 15.29	\$ 16.21	\$ 17.18
1 & 1- 1/4	4	\$ 46.20	\$ 86.37	\$ 54.45	\$ 57.71	\$ 61.18	\$ 64.85	\$ 68.74
1 1/2	10	\$115.48	\$215.93	\$136.11	\$144.28	\$152.94	\$162.11	\$171.84
2	20	\$230.95	\$431.90	\$272.23	\$288.56	\$305.88	\$324.23	\$343.68
3	30	\$346.42	\$647.81	\$408.34	\$432.84	\$458.81	\$486.34	\$515.52
>3	30	\$346.42	\$647.81	\$408.34	\$432.84	\$458.81	\$486.34	\$515.52

* = Original Service Area

*** = Meter Size - average single family home

** = Expanded Service Area

- b. Commodity Charge – Demand (uniform rate block for all users) charge per hundred cubic feet Ccf of water consumption is recommended to be adjusted per Table 2-2 below. This incorporates a 6% rate increase annually to continue to maintain a similar carryover balance over the next five years.

		TABLE 2-2 MONTHLY COMMODITY OR DEMAND CHARGE						
		2022*	2022**	2023	2024	2025	2026	2027
Demand Charge	PER Ccf/mo.	\$2.92	\$4.49	\$3.25	\$3.45	\$3.66	\$3.88	\$4.11

* = Original Service Area
 ** = Expanded Service Area

- c. Capital Fee charges are to be utilized for annual asset management plan – capital improvements plan (AMP-CIP) and should cover at least 1% of the water distribution system replacements. For the four years, 2024-2027, these water main projects average \$450,000 annually, and do not include waterline extensions expanding the system. More detailed information can be found in Section II below.

TABLE 2-3 PROPOSED RATE SCHEDULES MONTHLY CAPITAL FEE FOR ALL CUSTOMERS						
eq fac	2022	2023	2024	2025	2026	2027
1	\$5.00	\$7.00	\$7.50	\$8.00	\$8.50	\$9.00
2.5	\$12.50	\$17.50	\$18.75	\$20.00	\$21.25	\$22.50
5	\$25.00	\$35.00	\$37.50	\$40.00	\$42.50	\$45.00
8	\$40.00	\$56.00	\$60.00	\$64.00	\$68.00	\$72.00
15	\$75.00	\$105.00	\$112.50	\$120.00	\$127.50	\$135.00
15	\$75.00	\$105.00	\$112.50	\$120.00	\$127.50	\$135.00

- B. Availability, standby charge should be increased to \$5.00 per month beginning in 2023. All other fire system related fees that are currently \$3.50 per month should also be increased to \$5.00 per month.
- C. Water System Investment Fee (also referred to as the Tap Fee) is recommended to be raised from \$750 per EMR (equivalent meter ratio) to \$1,000 per EMR. Larger meter sizes would be multiplied by the current equivalency ratios per city ordinances. This is a one-time fee when new users connect into the water system. This was last changed in 2019, 4-years ago.

- D. Labor and Materials Charges have not been updated in the past 4 years. Given the recent excessive inflation, these charges should be verified through existing or proposed City/vendor agreements and updated accordingly. These prices have been changing very rapidly since 2021; therefore, CT recommends adding 10% to the current prices for 2023. These costs should be reviewed every six months and updated accordingly – based on current conditions.

OVERVIEW

- A. Brief history summary – City of Hudson was created by the mid-1990s merger of Hudson Village and Hudson Township. Since then, water service has been one of the key emphasis for the newly formed City. In 1999 water rates were adjusted significantly to develop a User Class for customers in the former township to connect into the water treatment plant and water distribution system. In addition, a single tier block structure was developed so that all customers pay the same unit rate for water within their rate use class (i.e. original village vs. expanded system customers). In a similar manner, this current rate study includes an element to bring both of these user classes into one, unified rate block structure.
- B. Findings & Conclusions: Rate adjustments are needed. Last rate increase was ten years ago. Changes in water usage, inflation, and new customers all create impacts on the rate structure as well as the rate schedule. The City may be able to extend water service into currently unserved areas if financing provides incentive and keeps homeowner costs low.
- C. Recommendations – Rates 1) blended rates to one “rate schedule,” 2) Increase 6% per year to maintain carry over balances, 3) adjust Capital fee to basically recover \$450,000 average cost for annual water main improvement projects.

II. RATE MODEL

A. HISTORICAL REVIEW

The City of Hudson currently has two user classes for water customers. One user class for residential customers existing prior to November 10, 1999 and a second for residential customers after November 10, 1999, following extensions of water mains into unwatered areas, subsequent to the merger of the Village and the Township in 1994. An examination of the current, historical and projected financial data for the City's water utility revenues, O&M expenses as well as projected capital expenses replacement and improvement costs, debt service costs and utility operating data were reviewed for the purpose of preparing this Study.

One of the goals of the study is to formulate a comprehensive water rate structure. A structure that blends the existing service area user class with the expanded service area user class into a single user class for the entire City water system. A single user class is desired to enable the City to cover operating and maintenance costs, construction of new infrastructure, replacement and upgrading of existing infrastructure and meeting current and future demands.

This analysis included the current user charge schedules, metered usage records, and other related data. Progress meetings and conversations with Mr. Brian Griffith, Director of Management and Budget, and Mr. Jeff Knoblauch, Finance Director of the City of Hudson provided valuable information and assistance. Additional information was provided from the Engineering Department.

The following specific items were obtained and reviewed.

- City of Hudson Five Year Plan – Water Fund (501).
- 2013 – 2021 Fund 501 Revenue detail, 2022 – 2026 projections.
- 2013 – 2021 Fund 501 Expense detail, 2022 -2026 projections.
- 2022 updates YTD for revenue and expenses and 2027 projections.
- Five Year Plan – Capital Improvement Summary.
- New Debt.
- Billing summary by class, month and year.
- Customer breakdown by Class, Meter Size, “existing” v “expanded” Service areas.
- Rates for breakdown information.

- Count by meter size.
- Connection/Tap in Fees.
- Water Rates Existing Service Area and Expanded Service Area.
- Chapter 1040 Water, City of Hudson Codified Ordinances.
- Water Bill existing service area.
- Water Bill expanded service area.
- Expense Report 1/1/2022 through 5/31/2022.
- Map of Areas 1 through 5 (proposed water service extension areas).
- Brine well information and historical costs.

The documentation provided has been accumulated and included into a Rate Model (excel workbook developed as the rate model) to better evaluate the information. This excel workbook will be referred to extensively throughout this Study and should be utilized by the City for tracking and updating the Rate Model. Additionally, current water rate legislation, rates and fees from the Cities of Akron, Stow, Kent, Twinsburg/Cleveland, Cuyahoga Falls, and Tallmadge were obtained and included into the Rate Model to use as comparisons (Comparables tab).

The City provided five residential areas in the city for potential expansion of the water system. Each of these areas were evaluated to determine an estimated probable construction cost and possible funding sources for these project areas. These are included as tabs MAP 1 thru MAP 5 in the excel file, along with a tab labeled "Project Funding Sum" which incorporates and summarizes the five areas for potential extension.

Private well operating and replacement costs (tab Well Cost Projections) were evaluated to compare with the cost to extend water service to areas currently served by wells. Insurance cost comparisons were also reviewed in this analysis.

B. CURRENT RATE STRUCTURE

The current rate structure is comprised of the following components (Chapter 1040 – City codified ordinances)

- a. Minimum Base charge – by meter size "Readiness to Serve"
- b. Commodity Charge or demand charge per one-hundred cubic feet (Ccf) per month
- c. Capital Maintenance Fee – to help cover cost of maintaining the assets of the water utility
- d. Different customer classes are charged different rates as outlined in Chapter 1040.

C. PROJECTIONS GOING FORWARD

The City Finance group submitted updated 2022 income & expenses along with projected budgets through 2027. This data has been incorporated into the Rate Model excel workbook.

- a. Specific areas of increasing expenses (Asset Management Plan, Capital Improvement Plan, etc.)
 - i. Personnel costs – one of the largest & fastest growing expense categories
 - ii. Capital Improvements to maintain water supply, treatment, transmission, storage and distribution to all water customers within the City. Water utilities should be replacing at least 1% of their water mains annually, which equals a 100 year life expectancy, for an asset with a 50 year design life.
 - iii. Debt Service – both existing and projected new debt.
 - iv. Water system extensions into the five areas noted
- b. Supply chain challenges - materials availability and inflation: As a cautionary reminder, current escalating inflation makes it next to impossible to provide accurate cost projections for capital improvements projects. For construction costs CT has provided cost projections in accordance with American Association of Cost Engineering (AACE) guidelines, and assumes that these are Level 4 estimates (estimate based on limited information and subsequently have fairly wide accuracy ranges). This provides for a range of projected costs that could range from 30% less to 50% more than the provided cost opinion – as is shown in the Project Funding Sum tab. The cost for materials, labor and future inflation are provided to the best information available at this time. As any particular project moves forward, updating cost projections will be essential for final funding & planning.

D. COMBINING USER CLASSES INTO ONE COMMON RATE SCHEDULE

- a. Customer User Classes – in 1999 the City’s rate study and subsequent modifications eliminated subsidizing large water customers’ excessive usage through a declining rate block structure. All customers were placed on a “one-rate block” tier such that all demand usage would pay the same rate, regardless of usage. However, a second change was implemented to create a new User Class – defined as “expanded” service area customers. This User Class is to be charged a higher rate to account for capital and increased operating cost to supply water further out within the water system. Only a few customers were added onto the water utility beyond the municipal borders of Hudson, including Boy Scouts of America

and Cuyahoga Valley National Park – both along SR 303 heading west towards Peninsula, Ohio. At that time, no new User Class was defined to account for “outside municipal boundaries” due to the nature of these few customers.

The practice of funding the additional cost for the expanded service area customers through higher rate cost may have resulted in fewer customers connecting to Hudson City Water. Therefore, the City desires for this Rate Study to review blending all City customers into a single user class with one rate structure with proposed updated water rates.

- b. Meter profiling is key to understand the breakdown of revenues by meter size and by demand/commodity usage (refer to Customer Profile tab). This is also important to calculate a “blended rate” that would continue to collect needed revenues for the Water Utility. Based on information received from the City, about 90.5% of the water “demand” usage is from “existing” customers and about 9.5% is from “expanded” area customers. Given this percentage, the blended commodity rate to place all users on the same rates would be \$3.07 per Ccf. To increase about 6% for 2023, we recommend using a demand or commodity charge of \$3.25 per Ccf for all water sold to current user classes.
- c. Weighted averages for Minimum Bill to develop one, equivalent charge to equalize revenue collections (refer to Customer Profile tab) also requires evaluating meters in each user category. In addition, equivalent meter ratios (EMRs) for both user categories must be calculated. (Throughout this Study EMRs and Equivalent Residential Users – ERUs are terms that are utilized interchangeably). The equivalency factors vary for the different fee categories to keep costs low for larger meter sizes.)

From data provided, CT calculated the revenue from each size meter by combining existing and expanded meter counts multiplied by each respective minimum bill rate. The total revenue for each meter class was then divided by total meters in each size to determine a projected rate per meter size. This is shown in Row 18 of the noted tab and also shown in Column I in the Rates and Fees tab. The equivalent residential user (1 ERU) rate was calculated to be \$12.84 per month per EMR. For 2023 this was increased by 6% to create the recommended EMR/ERU rate of \$13.61/month. The Row 18 calculated values were then compared to multiplying the equivalency factors for all meter sizes as shown in Column H in the Rates and Fees tab. As shown utilizing the Column H results is similar to Column I but just a little more conservative. These ratios will provide similar revenues as currently collecting, but by utilizing a weighted average value.

- d. The Capital Fee is already the same for both user classes, and thus no adjustment is needed to create a weighted average rate for combining all current users into the same rate schedule.
 - e. “Outside User Surcharges” and Consecutive Systems - Through this process, CT recognizes that water extensions further outside the City to surrounding areas and/or municipalities could create a burden on existing rate payers to cover increased costs to transport water further out of the City. CT recommends that a new customer class be defined for any future customers outside the City corporation boundaries. And, for the potential of a consecutive system, such as in Peninsula, Ohio, that a Bulk Water Customer class be defined. The specific rate structure and/or schedule for these future customer classes is outside the scope of this study. CT recommends that an evaluation be performed at such time to understand the cost to serve any new customer class(es), including the potential average day, maximum day, and peak hour demands on the system and resulting impacts for all facets of the water utility including supply, treatment, transmission, storage and distribution.
- E. RECOMMENDATIONS FOR UPDATING FEES AND RATE SCHEDULES

Recommended rates as discussed and shown below are based on needed revenues to cover increased expenses for all expenses discussed in this Study except for the Capital Cost needed to extend water service into the five MAP areas, which are discussed below. Several other fees such as Tap-in-fees are also recommended to be adjusted as discussed herein. Water Rate schedule appears to have been last adjusted in 2013 by Ord. #13-57.

- a. Base Charge – Readiness to Serve (minimum bill) – based on 2022 – Column H Rates and Fees tab at \$12.84 per equivalency factor. For 2023-2027 additional revenues are needed to cover projected costs. Therefore Table 2-1 shows the recommended schedules. This incorporates a 6% rate increase annually to continue to maintain a similar carryover balance over the next five years.

TABLE 2-1 PROPOSED RATE SCHEDULES BASE MINIMUM MONTHLY CHARGE FOR ALL CUSTOMERS								
Size	eq fac	2022*	2022**	2023	2024	2025	2026	2027
5/8 & 3/4 ***	1	\$ 11.65	\$ 21.60	\$ 13.61	\$ 14.43	\$ 15.29	\$ 16.21	\$ 17.18
1 & 1- 1/4	4	\$ 46.20	\$ 86.37	\$ 54.45	\$ 57.71	\$ 61.18	\$ 64.85	\$ 68.74
1 1/2	10	\$115.48	\$215.93	\$136.11	\$144.28	\$152.94	\$162.11	\$171.84
2	20	\$230.95	\$431.90	\$272.23	\$288.56	\$305.88	\$324.23	\$343.68
3	30	\$346.42	\$647.81	\$408.34	\$432.84	\$458.81	\$486.34	\$515.52
>3	30	\$346.42	\$647.81	\$408.34	\$432.84	\$458.81	\$486.34	\$515.52

* = Original Service Area

*** = Meter Size - average single family home

** = Expanded Service Area

- b. Commodity Charge – Demand (uniform rate block for all users) charge per hundred cubic feet Ccf of water consumption is recommended to be adjusted per Table 2-2 below. This incorporates a 6% rate increase annually to continue to maintain a similar carryover balance over the next five years.

TABLE 2-2 MONTHLY COMMODITY OR DEMAND CHARGE FOR ALL								
		2022*	2022**	2023	2024	2025	2026	2027
Demand Charge	PER Ccf/mo.	\$2.92	\$4.49	\$3.25	\$3.45	\$3.66	\$3.88	\$4.11

* = Original Service Area

** = Expanded Service Area

- c. Capital Fee charges are to be utilized for annual asset management plan – capital improvements plan (AMP-CIP) and should cover at least 1% of the water distribution system replacements. For the four years, 2024-2027, these water main projects average \$450,000 annually. Therefore,

CT recommends collecting this value of \$450,000 through the Capital Fee, which will increase it significantly. There are currently 4,560 ERUs (EMRs) based on the equivalency factors for this Capital Fee, so the cost per ERU would be $\$450,000/4,560/12 = \8.22 per ERU/month averaged over the next five years. Since this is charged based on ERU equivalency factor, the rates are recommended to be adjusted as noted in Table 2-3 below. These rates have been validated to raise about \$450,000 on average over this 5 year planning period. This revenue stream will not replace 1% of the water mains annually. Some of the annual cost may well be covered by debt service. Based on approximately 3,600 feet of main (about 1% of total length of main) at about \$325 per lineal foot, the City would need to reinvest \$1.16 million annually towards rehabilitation, renewal or replacement of water mains. Future rate increases may consider further increases in the Capital Fee to cover most, if not all, of this line item expense.

TABLE 2-3 PROPOSED RATE SCHEDULES MONTHLY CAPITAL FEE FOR ALL CUSTOMERS						
eq fac	2022	2023	2024	2025	2026	2027
1	\$5.00	\$7.00	\$7.50	\$8.00	\$8.50	\$9.00
2.5	\$12.50	\$17.50	\$18.75	\$20.00	\$21.25	\$22.50
5	\$25.00	\$35.00	\$37.50	\$40.00	\$42.50	\$45.00
8	\$40.00	\$56.00	\$60.00	\$64.00	\$68.00	\$72.00
15	\$75.00	\$105.00	\$112.50	\$120.00	\$127.50	\$135.00
15	\$75.00	\$105.00	\$112.50	\$120.00	\$127.50	\$135.00

- d. Water Line Extension Costs – five MAP areas noted: The rates as noted above do NOT include funding the capital for extending water system to the five MAP areas. Several funding options will be discussed below in Chapter 2 - Section IV for each of these extension areas. If debt service is to be added to the water utility, the rates would need increased to cover the new FIXED expense of debt. There are currently 5,932 Equivalent Meter Ratios (EMRs) as calculated for Readiness to Serve portion of bill, as shown in the Customer Profile. With a few new customers that would come on board (and to remain somewhat conservative) CT recommends using 6,000 EMRs for calculation purposes. Thus, for every \$100,000 of new debt service, the “fixed fee” portion of the monthly bill (Base or Minimum charge) would need to be increased by \$1.40 per EMR/month.

A 3" or larger meter has 30 EMRs for the meter – so that sized meter would be $30 \times \$1.40/\text{mo} = \42.00 per month additional. Review Study Section III and V in detail for additional information regarding extending water service to new areas.

- e. Availability, standby charge should be increased to \$5.00 per month beginning in 2023. All other fire system related fees that are currently \$3.50 per month should also be increased to \$5.00 per month.
 - f. Water System Investment Fee (also referred to as the Tap Fee) is recommended to be raised from \$750 per EMR to \$1,000 per ERU. Larger meter sizes would be multiplied by the current equivalency ratios per city ordinances. This is a one-time fee when new users connect into the water system. This was last changed in 2019, 4-years ago.
 - g. Labor and Materials Charges have not been updated in the past 4 years. Given the recent excessive inflation, these charges should be verified through existing or proposed City/vendor agreements and updated accordingly. These prices have been changing very rapidly since 2021; therefore, CT recommends adding 10% to the current prices for 2023. These costs should be reviewed every six months and updated accordingly – based on current conditions.
- F. COMPARISON OF RECOMMENDED RATES TO OTHER WATER UTILITIES

Six communities were chosen as comparable to Hudson for the water rate study. The communities were; Akron, Stow, Kent, Twinsburg/Cleveland, Cuyahoga Falls, and Tallmadge. These communities were deemed comparable by Hudson and CT Consultants to assist in developing the future rate. To evaluate the communities rates a consumption of 6,000 gallons per month (800 cf) was used to calculate water cost to typical residential consumer. The comparable rates are listed high to low following the Hudson rates in Table 2-4. Both the Village and Expanded rate fall in the top four of cost to consumer. Also the proposed rates for the City for 2023 are also shown. It is unknown what other municipal water utilities are preparing for their rates for the next few years. However, it is well known that utilities are in one of three phases in the rate setting process 1) already raised rates recently; 2) in process of raising rates; or 3) will be raising rates. Projected City customer costs for years 2023 – 2027 can also be found in tab "Comparables" rows 20-28.

Table 2-4 Hudson Comparable Rates (800 cf)				
Current Hudson Rates	# of accounts	Base Cost	Commodity Cost	Monthly Cost
Hudson Original Service Area	2728	\$16.65	\$23.36	\$40.01
Hudson Expanded Service	354	\$26.60	\$35.92	\$62.52
Hudson Proposed 2023 rates	3082	\$20.61	\$26.00	\$46.61
Comparable Hudson Rates		Base Cost	Commodity Cost	Monthly Cost
Twinsburg/Cleveland		\$ 9.20	\$81.65	\$90.85
Kent		\$25.54	\$21.20	\$46.74
Tallmadge Water		\$34.00	\$ 8.18	\$42.18
Stow		\$ 2.43	\$27.99	\$30.42
Akron		\$ 4.00	\$21.84	\$25.84
Cuyahoga Falls		\$10.93	\$10.92	\$21.85

CHAPTER 2 - WATER SYSTEM EXTENSION REVIEW

I. EXECUTIVE SUMMARY

- A. Extension areas summary – Map Areas 4 and 2 are the most likely areas to secure future customers in a timely manner. Debt service for extensions is calculated to cost \$1.40 per equivalent meter ratios/equivalent residential users (EMR/ERU) per \$100,000 of annual debt service. Homeowner cost to connect (one time charge) average = \$36,500 for capital and \$5,840 connection charges.
- B. The 30-year cost for typical private well owner is estimated to be \$60,000 - \$88,000. The “perceived cost” over 30 years is more likely \$19,000 to \$32,000. But, the average homeowner in the areas studied is ten years or less, thus reducing the perceived impact of well ownership.
- C. The 30-year cost for typical homeowner on City water is estimated to be \$59,120 but net cost, less homeowner insurance savings of \$30,000 would be \$29,120. *It is more cost effective, by a factor of 2 to 3 times, long term, for residents to connect into Hudson city water system.*

Table B – Summary 30-Year Cost of Service Comparison		
Description	Well Owner Cost	City Water Customer Cost
ACTUAL Costs		
Impact of homeowner's insurance (1)	\$ 30,000.00	-30,000
O&M cost and/or cost of water	\$ 42,280.00	\$16,780.11
capital cost	\$ 46,300.00	\$36,500.00
connection charges - one-time cost	0	\$ 5,840.00
NET 30 year cost (2)	\$118,580.00	\$29,120.11
PERCEIVED costs		
Impact of homeowner's insurance (1)	0	0
O&M cost and/or cost of water	\$ 8,080.00	\$16,780.11
capital cost	\$23,800.00	\$36,500.00
connection charges - one-time cost	0	\$ 5,840.00
NET 30 year cost (2)	\$31,880.00	\$59,120.11
(1) = 2 out of 3 insurance companies have stated projected savings of 20% - 30% for having a fire hydrant within 1,000 feet of the house.		
(2) Typical homeowner moves in less than ten years, so the 30 year cost would not be realized and thus "perceived costs" are much less than shown.		

- D. The financial incentive to homeowners to connect to City water is most probably the homeowners insurance savings that two out of three (on average) insurance companies provide based on proximity to a public fire hydrant. It is our opinion that this is not adequately understood or publicized. Typical homeowners may save on average \$1,000 - \$1,500 per year based on having fire protection nearby.
- E. Funding alternatives including source, brief description of what is available and eligibility to apply have been included in this report.

II. WATER SYSTEM EXTENSION REVIEW

A. AREAS FOR CONSIDERATIONS

Five areas were proposed for expansion by the City of Hudson. The city has referred to these areas as Map 1-5. These are included in the Rate Model tool in tabs bearing their title, and are generally known as:

- a. Map Area 1 Chittenden Acres, Westbridge Crossing, Bridgewater.
- b. Map Area 2 Towbridge (Private water system), Nottingham Gate Estates Place.
- c. Map Area 3 Westhaven Colony, Woods of Williamsburg, Williamsburg Colony.
- d. Map Area 4 Carriage Hill Estates, Barlow Oaks, Hudson Homes, Plymouth Village, Challander Circle,
- e. Map Area 5 Elmcrest Sub, PineBrooke, Crown Colony 5.

The areas were examined to determine lengths of streets, number of homes to be served, and number of recent well permits. This information is essential for determining future expansion, likelihood of connection, and future Hudson water rates. See water rate model tool for detailed information.

Area	Number of Homes	Total Length (ft.)	Recent Well Permits	Average Well Age
Area 1	160	11,200	6	1991
Area 2	131	8,300	1	1995
Area 3	273	17,900	4	1992
Area 4	332	24,000	4 (3 Sealed)	1974
Area 5	152	12,500	5	1977

B. ENGINEER'S OPINION OF PROBABLE PROJECT COST (EOPPC) FOR AREAS

Using the data listed above an Engineer's Opinion of Probable Project Cost (EOPPC) can be developed for the areas for consideration. Each area was estimated using following; \$300 per LF 8", \$2,000 per home for water services, Contingencies at 10%, and an AACE Level 4 Cost Opinion of +50%/-30%. These costs were also back-checked against figures developed by Hudson Engineering Department. CT cost opinions may not exactly match City cost opinions, but they provide a basis for comparative analysis. Following is the summary by map area. A Debt Service for each project was also provided. In the Total column in Table 3-2 the cost per home has been included in parentheses for comparison purposes, and equals total cost divided by # of homes. The Engineering Department and CT independently counted potential homes, projected lengths of new main, etc. These values are relatively close with only a couple of exceptions – most notably the number of homes in Area 5.

**Table 3-2
Engineer's Opinion of Probable Project Cost**

Area	Total	-30%	(+50%)	Debt Service	Interest	Term
Area 1	\$5,044,000 (31,525)	\$ 3,531,000	\$ 7,566,000	\$ 257,340	3%	30
Area 2	\$3,792,000 (28,947)	\$ 2,654,000	\$ 5,688,000	\$ 193,470	3%	30
Area 3	\$8,130,000 (29,780)	\$ 5,691,000	\$12,195,000	\$ 414,790	3%	30
Area 4	\$10,841,875 (32,656)	\$ 7,589,000	\$16,263,000	\$ 553,140	3%	30
Area 5	\$5,552,000 (36,526)	\$ 3,886,000	\$ 8,328,000	\$ 283,260	3%	30
Total	\$33,359,875	\$23,351,000	\$50,040,000	\$ 1,702,000		

C. FUNDING ALTERNATIVES (See Appendix A for more detail.)

a. Funding Sources well-suited to these projects. City of Hudson is eligible.

1. WSRLA - Water Supply Revolving Loan Account through OEPA (Administered by OWDA)

The Water Supply Revolving Loan Account (WSRLA) assists applicants by providing low cost financing and technical assistance to public water systems.

-
2. Ohio Water Development Authority (OWDA) Fresh Water Loan Program
The Ohio Water Development Authority created the Fresh Water Loan Program to provide financial assistance for planning/design and/or construction of drinking water, wastewater, and storm water projects.
- b. Funding Sources not ideally suited for these projects – low likelihood of funding.
1. Ohio Public Works Commission (OPWC) - State Capital Improvement Program (SCIP)
OPWC provides several options for a variety of projects including infrastructure funding which includes water supply.
 2. Building Ohio's Infrastructure Water and Wastewater Infrastructure Grant Program
Funded through American Rescue Plan Act (ARPA) dollars, the State of Ohio created the **Water and Wastewater Infrastructure Grant Program** to provide funding to improve access to clean drinking water and wastewater infrastructure.
 3. American Rescue Plan Act State and Local Fiscal Recovery Funds (ARPA SLFRF)
The Coronavirus State and Local Fiscal Recovery Funds (SLFRF) program, a part of the American Rescue Plan.
 4. Congressionally Directed Spending (CDS) Appropriation Requests

The Senate and House Appropriations Committee consider funding requests through 9 separate Subcommittees. Each account carries its own unique goals, objectives, and criteria for qualification.
- c. Funding Sources in which either the City or the waterline extension project do not meet the eligibility criteria based on known information:
1. Community Development Block Grant (CDBG)
CDBG Funded projects must meet a national objective

2. United States Dept. of Agriculture (USDA) Water & Sewer Loan Program
This program provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas.
3. Economic Development Administration (EDA) Public Works Program
EDA's Public Works program helps distressed communities revitalize, expand, and upgrade their physical infrastructure.
4. Appalachian Regional Commission (ARC) Area Development Program
The Appalachian Regional Commission (ARC) is an economic development partnership agency of the federal government and 13 state governments focusing on 423 counties across the Appalachian Region.

D. EXISTING ORDINANCES FOR EXTENSIONS & RELATED COSTS – AND RECOMMENDED CHANGES

a. Water System Investment Fee

Pursuant to Section 1043.01 of Chapter 1043 of the City of Hudson's Codified Ordinances, a Water System Investment Fee is charged at the time the property is connected to the Municipal water system or at the time water usage at the property is expanded to increase the daily demand on the City's water system. This is also commonly referred to as a Tap In Fee.

This fee generally recognizes the past investments of current customers into the water system. This fee has been changed over time and value of this fee has been significantly reduced at some point in the past 20 years.

CT recommends no changes to the Ordinances for this fee, except to recommend increasing the base fee to \$1,000 per ERU.

b. Special Area Capital Improvements Fee

Section 1043.04 of Chapter 1043 of the City of Hudson's Codified Ordinances, Special Water Investment Fee, provides for the extension of water service to a new service area or substantially improved (as designated by Council as a water service improvement area). The users who receive the direct benefit of the extension or improvement "shall pay a special water investment fee **in addition to the general water investment fee.**" CT does not recommend developing a lot of individual "special fees" for various areas. This only leads to confusion, misunderstandings, and tracking issues over time. There are recent trends to eliminate these types of fees for lots of areas, and instead develop an easier method for simplification of financing extensions.

Section 1044.01 of Chapter 1044 of the City of Hudson's Codified Ordinances, Installation and Maintenance Cost, at (b) Water Laterals, provides that any and all costs for the installation of all water laterals from the water main to the building shall be paid by the owner of the property being served by the water lateral. CT recommends updating these costs semi-annually until inflation and supply chain issues settle down to a more predictable cost.

c. Debt service thru WSRLA & similar

The City of Hudson has elected, based on the information provided, to bond capital improvement projects. The City is eligible to nominate projects to the Water Supply Revolving Loan Account (WSRLA) which finances eligible capital improvement projects at below-market rates (currently at 2.41% for October, 2022).

d. Rates – adder to minimum bill (fixed costs)

Chapter 1040 of the City's Codified Ordinances at Section 1040.01 provides that a capital maintenance fee shall apply to any account whether it is a new water customer account, an account established for an existing water customer at a new service location or any existing water customer. In addition the minimum bill rate can be increased as needed to cover other fixed costs such as new debt service. No changes are recommended to the ordinances, other than updating the rate schedule.

e. Rates – adder to demand charge

Section 1043.01 of Chapter 1043 of the Codified Ordinances provides that the owner of property at the time water usage at the property is expanded to increase the daily demand on the City's distribution system, pay to the City Water Resources Department a fee as provided in Section 1043.03. No changes are recommended to the ordinances, other than updating the rate schedule.

f. Assessments (past practice)

The City of Hudson, based on the information provided, has not widely used the traditional assessment process to fund the extension of water to an un-serviced area. This is however a process which has been utilized by the City previously, and is an option that reduces tracking costs for special investment area fees, and may more equitably spread the costs. The funds to cover the extension costs are collected through tax assessments, even if the property owner does not connect to the water system. The Special Assessment process can be found in the City of Hudson's Codified Ordinances Chapter 1018.04. Note that as part of the process, the legal signatures of the property owners of a minimum of 60% of the lots in the district and 60% of the frontage on a front-foot basis in the district shall be required. No changes are recommended to the ordinances. "Generally, where the frontages, lot sizes, and benefits are approximately equal for all of the properties within the assessment district, the cost shall be equally divided among the properties that benefit. Where lot sizes are substantially disparate the cost will be assessed on a front foot basis or other standard of proportionate benefit." Please review Section 1018.04 Special Assessment Petitions for the full process.

E. IMPACT ON RECOMMENDED RATES FOR EXTENSIONS

- a. WITH DEBT FUNDING – Section II E. d. discussed the impact of the Minimum Charge per \$100,000 of debt service funding. The availability of principal forgiveness or other grants for any extension area will aid in reducing impact on either the individual property owners and/or water customers. Generally debt service is paid for by all utility customers. Thus, in a sense existing users are subsidizing new customers to connect to the utility. But, there are cost implication such as economy of scale for larger systems to run more efficiently (less costly) per connection.
- b. WITH ASSESSMENTS – the property owners would cover the majority of the expense for the water system extension through tax assessments on the real estate. The City's portion could be covered by either the Water System Investment fee and/or the Capital Fee.

III. WELL OWNER COST OF SERVICE ANALYSIS

A. COST COMPONENTS

In determining an accurate cost comparison between owning a well for water use vs. connecting to a municipal water system and the cost components of well ownership were analyzed. Detailed values and categories are included in tab Well Cost Projections in the Rate Model tool. These include major categories such as: Operational costs, Maintenance costs, and Capital replacement costs (re-drilling, major rehabilitation, repairs to septic tanks from brine damage, replacing softeners). Table 4-1 shows the breakdown by category. These components are essential for creating an accurate cost comparison to municipal water for well owners over a 30 year planning period. The components are based on current prices and quotes gathered directly from the Hudson area. The drilling cost is from Anderson Well and Drilling and ranges directly based on the average well depths.

Table 4-1 Cost Components		
Operational Costs	Estimated Cost	Frequency
Carbon filter replacement	\$20	6 Months
Yearly inspection for components (1)	\$100-\$150	Annually
Salt 1/2 bag/week at 40#	\$150	Annually
Electrical cost for well (2)	\$75	Monthly
Maintenance Costs	Costs	Frequency
General Maintenance (1)	\$150-\$350	Annually
Faucet repairs (2)	\$40	Annually
New reverse osmosis (RO) filters	\$200	5 years
Replace RO pressure tank	\$500	15 years
Capital Replacement Costs	Costs	Frequency
Drain field/leach bed repairs (3)	\$15,000	30 Years
Septic tank renewal (3)	\$7,500	20 Years
New well pump	\$1,000	10 Years
In 30 years assume one new re-drill (3)	\$10,100-\$16,000	50 Years
New softener	\$2,600	10 Years

- (1) = Recommended but probably not performed by most
 (2) = Generally not “perceived” as part of cost for well water
 (3) = Longer time between when needed and most residents probably do not perform – unless absolute emergency

B. HOMEOWNER INSURANCE SAVINGS

Over the past 20 years the writer has performed several investigations into potential savings for home-owner insurance based on availability of fire protection via a nearby fire hydrant. Recently the City also assisted in contacting local insurance companies for this comparison. In every investigation performed, two out of three insurance companies contacted noted that potential savings with nearby fire hydrants were available for savings between 20% - 30%. A homeowner paying \$5,000 annually could have a savings between \$1,000 - \$1,500 per year for insurance. Over 30 years (at today's costs) this would save the average homeowner between \$30,000 - \$45,000. With recent, significant insurance cost increases, this could be even more substantial over a 30 year time horizon. This is one main factor in justifying the "Availability Charge" for fire hydrants for non-water customers. But, this cost component generally impacts only 67% of the well water users; and also is generally not understood or "perceived" as a cost to owning a private well. Although a real cost to many, it may not be a major factor in making a change to public water.

C. SCENARIOS FOR WELL OWNERS GROUPS

Based on the cost components in Table 4-1 cost scenarios can be developed for well ownership for homeowners in the extension areas. Scenario 1 Table 4-2 30-year shows the cost of ownership for a home beginning with a brand new well. This would be more representative for a homeowner who has recently replaced or significantly rehabilitated their well. Scenario 2 Table 4-3 30-year contains cost of ownership for a home beginning with 20 year old well, which is most typical for the five areas under review.

Table 4-2 Homeowner Beginning with Brand New Well			
Cost Components	Qty	Cost	Total
Annual O&M cost for Well (2)	30	\$ 1,140	\$ 34,200
Annual O&M cost for softener	30	\$ 196	\$ 5,880
Annual O&M cost for RO system	30	\$ 73	\$ 2,200
New softener & pump every 10 years	3	\$ 3,600	\$ 10,800
Septic tank renewal (3)	1	\$ 7,500	\$ 7,500
Total			\$ 60,580

Table 4-3 Homeowner Beginning With 20 Year Old Well			
Cost Components	Qty	Cost	Total
Annual O&M cost for Well	30	\$ 1,140	\$34,200
Annual O&M cost for softener	30	\$ 196	\$ 5,880
Annual O&M cost for RO system	30	\$ 73	\$ 2,200
Drain field/leach bed repairs (3)	1	\$15,000	\$15,000
Septic tank renewal (3)	1	\$ 7,500	\$ 7,500
New softener	3	\$ 2,600	\$ 7,800
In 30 years assume one new re-drill (3)	1	\$13,000	\$13,000
In 30 years assume new pump every 10 years	3	\$ 1,000	\$ 3,000
Total			\$88,580

- (1) = Recommended but probably not performed by most
- (2) = Generally not “perceived” as part of cost for well water
- (3) = Longer time between when needed and most residents probably do not perform – unless absolute emergency

Cost elements in Tables 4-2 and 4-3 are actual range of costs that well owners are likely to incur. However, many of these costs may not be “perceived” by the well owners. Other costs may never be incurred – specifically if a softener is not utilized or a reverse osmosis (RO) system. Finally, several cost elements may be put off for many years, and unless forced to repair, will likely never be completed – such as fixing the septic tanks and/or drainage field from salt damage. Based on the “reality factors” noted above, the “true perceived cost” of well water is more likely \$19,000 to \$32,000 over 30 years. And, with the typical homeowner moving in less than 10 years, their “experience” of total cost is around \$6,000 to \$10,000.

A major contributing factor preventing homeowners with failing wells from connecting to public water is TIME. It is human nature to put off expensive costs that do not provide “instant gratification”. Instead we tend to wait until failure of the wells before spending money to fix, replace a pump, or to re-drill a well. At the time of failure the homeowner simply does not have time to go through the lengthy process of extending water mains and making connections to the public water main.

D. 30 YEAR COST COMPARISON

Cities cost for water, based on current cost inflation to impact all cost components in a similar manner.

- a. 2023 Recommended Water bill for average customer, as shown in Table 2 = \$46.68/month x 12 = \$560.16 annually, which is already less than the 20% homeowner insurance savings of \$1,000 per year.
- b. For a relatively new well, the low cost scenario for homeowner well from Table 4-2 would be about \$34,200 for annual operations and \$10,500 for new pumps and rehab septic tank for a total of \$44,700 (without a softener or reverse osmosis (RO) system – bare basic well). At \$560.16 per year, this equates to about 80 years' worth of municipal water bills. And, if there is an insurance savings of \$30,000 over the 30 years, then the payback period for the homeowner would be about 133.5 years. However, the perceived cost for private wells is between \$6,000 - \$10,000. Thus, the perceived cost of City water is \$560.16 x 10 years = \$5,600 (water) + connection of \$5,840 + capital cost to extend the water main to their home, which is higher than perceived costs for well.
- c. For a typical homeowner with a softener, RO system and 20 year old well (see Table 4.3) the estimated 30 year cost of ownership is estimated to be \$88,580. This would be equivalent to about 158 years of municipal water cost. Perceived costs are basically as stated above, detracting from homeowner desire to connect to City water.
- d. Water main extension cost per service for the five extension areas ranges from about \$29,000 to \$36,500 per user.
 1. Capital cost for extension = \$36,500
 2. Connection charges = \$ 5,840
 3. Water cost for 30 years = \$16,780
 4. Total cost for water = \$59,120
 5. *Average insurance savings* = \$30,000 (not necessarily perceived)
 6. Net cost for City Water = \$29,120

Relatively new well (no softener) = \$37,200 (Table 4-2)

1. *Cost for home insurance* = \$30,000
2. Subtotal Cost new well = \$67,200
3. Softener, RO & septic cost = \$23,380 (Table 4.2)
4. Subtotal cost = \$90,580 *

* This is 3.1X the cost of City Water over 30 years

5. Additional cost for older well = \$ 28,000 (Table 4.3 minus 4.2)
 6. Subtotal cost older well = \$118,580 **
- ** *This is 4.1X the cost of City Water over 30 years*

The homeowner cost to operate, maintain & rehabilitate individual well obviously increases with age of the well, softener, and/or RO system. This is true of most every mechanical system, including furnaces, appliances, cars, plumbing, etc. Correspondingly, the older wells are more likely to need major rehabilitation or replacement which is very expensive. As wells age, the financial risk to homeowners for need to replace or rehabilitate the well increases significantly. As shown above, over the 30 year projections, private wells cost the homeowner between 3.1 to 4.1 times the cost of municipal water.

- e. The “perceived cost” and quality of well water for the typical home owner (10 years or less ownership in City) is between \$6,000 to \$10,000. The cost for connection to public water is \$5,840 – basically the same as the total perceived 10 year cost of well water. This is an emotional and perception hurdle to educating and engaging well owners and helping them understand the true cost and value of public water.
- f. The financial incentive to homeowners to connect to City water is most probably the homeowners insurance savings that two out of three (on average) insurance companies provide based on proximity to a public fire hydrant. It is our opinion that this too is not adequately understood or publicized. Furthermore, the savings for homes within 1,000 ft. of a fire hydrant is significant – as noted above (savings about \$1,000 per year); but, the cost per year for the “Availability Charge” is \$60.00 (\$5/month x 12 months). For homes close to hydrants, the difference between cost of \$60 per year vs. savings of \$1,000 per year may be creating incentive NOT to actually connect to City water, since they are already receiving the largest financial benefit of connecting. *Consideration may be justified to significantly increase the Availability Charge for customers receiving a direct impact from the water system, but are not connected to the City water system.*
- g. All costs are presented in 2023 costs for comparison purposes. It is our opinion that these water main extension costs are artificially high due to construction sector excessive inflation and supply chain challenges. Reduction in costs and/or receipt of grants/principal forgiveness will further reduce these cost impacts on the homeowners and result in even more cost effectiveness to connect to City water.

E. BENEFITS TO WELL OWNERS TO CONNECT TO HUDSON WATER UTILITY

- a. Long term cost savings potential vs capital renewal costs as shown in IV. D.d. above.
- b. Insurance savings for home owner's insurance with hydrants nearby.
- c. Protects homeowner from financial risk of major capital cost with aging private water infrastructure.
- d. Water quality verification and sustaining: One of the most overlooked concern is water quality. Generally the only time a homeowner tests the water quality of a well is at time of purchase, as required by County Health Department. Public water systems are highly regulated and must perform multiple tests daily to verify appropriate water quality. A homeowner may never know if/when a contaminant has entered his/her well.

IV. PRIORITIZATION OF WATER SYSTEM EXTENSIONS

A. PROJECTED NEW USERS FOR EACH AREA EVALUATED

- a. CT counted the number of homes that could connect in each area, and compared that to the City count. Map 5 has the biggest discrepancy, which could result in a much higher cost per home (see Table 3-2) which could make this the most expensive per home. Table 5-1 shows similar data to Table 3-1 including average year for installation of wells in each area. The last column includes our best projection on number of potential connections over the 20 year planning period. If all 1,048 potential customers were to connect, the current maximum daily demand of about 1.37 mgd would increase to about 1.7 mgd, still within the current WTP capacity of 2 mgd. However, this would reach 85% of the current capacity, which is typically when a water utility needs to consider the next upgrade. Instead of expanding the water treatment, the City could purchase more water from Cleveland Water to manage the few times that additional water is needed until usage increases to a point where it is financially feasible to expand the water treatment plant.

Table 5-1 Areas for Consideration				
Area	Number of Homes	Avg. Well Installation Year	Recent Well Permits	Projected New Connections
Area 1	160	1991	6	48
Area 2	131	1995	1	95
Area 3	273	1992	4	68
Area 4	332	1974	4 (3 Sealed)	200
Area 5	152	1977	5	91

- b. Reason(s) or assumptions used to project these new customers will want to connect to city water:
- i. How many wells have been attempted or drilled in each MAP area.
 - ii. Average age of wells in each area.
 - iii. Customer complaints or concerns in each area.
 - iv. Number or percentage assumed are based on having the water mains in front of the homes and ready to connect. However, as engineers CT cannot make assumptions related to socio-economic or psychological factors – such as “investor psyche”.
 - v. More home owners are likely to be willing to connect, however, if the capital cost for the water mains were subsidized or reduced significantly.
- B. IMPEDIMENT TO CONNECT TO CITY WATER

The largest Impediment to connecting to City water is the upfront capital cost to extend the water mains into an area, and to connect on private property. As shown above this cost could be \$36,500 for the extension, about \$5,840 for Water System Investment Fee, tap fee, and homeowner materials and labor cost to connect a water service line to City water, **for a total of \$42,340.**

TIME – is a second significant factor. Typically homeowners consider connection only after their well system has experienced some type of failure. Therefore, restoring water is an emergency. There is not available time to start the process of designing and constructing new water mains to serve customers. However, if water mains are constructed without appropriate usage, negative water quality issues are likely to be created.

C. PRIORITIZATION SUMMARY FOR EACH MAP AREA

In order of priority areas that are most likely to connect are detailed below. Refer to Tables in Section IV and II for data, in addition to the Rate Model tool excel file.

- a. Map Area 5 is in the due east area off SR 303 at the eastern end of the water utility service area north of Map Area 4. This is the second oldest area with well drilling circa 1977 on average. Thus wells are already 45 years old, nearing life expectancy of 50 years. Unknown to the writer is how many wells have been rehabilitated or replaced, other than the most recent five wells. CT estimates the potential for 60% of homes (91 total) to connect over the next 10 years or so based on when cost of private well rehabilitation/replacement becomes a reality to the homeowners. Based on EOPPC cost and debt service from Table 3-2 of \$283,260 the debt service would cost \$3.97 per ERU/EMR.
- b. Map Area 4 is in the southeast area of the City near Barlow Road and SR 91. This is the oldest area based on average date of well drillings around 1974. Also this area has the most “abandoned” or sealed older wells indicating an increasing frequency of well failures, thus the highest potential for well rehabilitation cost, again due to age. It also has the most infrastructure need to extend water mains to all areas. In about 1997 – 1998 several streets in this area had petitioned the City for water service and some streets were added to the water system. CT estimates the potential for 60% of homes (200 total) to connect over the next 10 years or so based on when cost of private well rehabilitation/replacement becomes a reality to the homeowners. Debt service cost per \$100,000 was stated above at \$1.40 per ERU/EMR. Based on EOPPC cost and debt service from Table 3-2 of \$553,140 the debt service would cost \$7.74 per ERU/EMR.
- c. Map Area 2 is in the southwest area of the City near Barlow Road and Terex Road. This area includes 85 customers served by a private well system; which has on several occasions approached the City to take over their private system. Overall 65% of homes, or 95 total are estimated to connect, with the majority coming over from the private utility as one block of customers. The estimated cost per home for this area is about \$29,000. Based on incentives with Principal Forgiveness for “regionalization” funding in this area, these customers are likely to have the least capital cost to extend mains to their properties. And, since service laterals already exist, the capital cost for those (estimated at \$2,000 each) will most likely not be needed, unless a water service needs replaced. The other two streets are more recent and are not likely to have many interested homeowners due primarily to age of wells and short term cost risk for capital needs. Only one well has been drilled in this area in the recent years that were reviewed, and that may have been for a new home, but reason for well is unknown. Based on EOPPC cost and debt service from Table 3-2 of \$193,470 the debt service would cost \$2.71 per ERU/EMR. But since about 65% of the cost in this area may be

eligible for principal forgiveness due to regionalization, this overall cost is likely to be significantly reduced. Principal Forgiveness, this cost could be reduced to about \$0.95 per ERU/EMR.

- d. Map Area 1 is in the due west area between SR 303 and Terex Road at the western end of the water utility service area just north of Map Area 2. Wells in this area were drilling circa 1991 on average. Even though this area is relatively newer, the wells are already 30 years old; and, recently six wells were drilled in this area – likely rehabilitating or replacing older wells. CT estimates the potential for 30% of homes (48 total) to connect over the next 10 years or so based on when cost of private well rehabilitation/replacement becomes a reality to the homeowners. This percentage would not be high enough to encourage or permit assessment funding to be utilized. Based on EOPPC cost and debt service from Table 3-2 of \$257,340 the debt service would cost \$3.60 per ERU/EMR.
- e. Map Area 3 is in the western area between SR 303 (east of the water treatment plant) and Barlow Road just east of Map Area 1. Wells in this area were drilling circa 1992 on average. Even though this area is relatively newer, the wells are already 30 years old; and, recently four wells were drilled in this area – likely rehabilitating or replacing older wells. CT estimates the potential for 25% of homes (68 total) to connect over the next 10 years or so based on when cost of private well rehabilitation/replacement becomes a reality to the homeowners. This percentage would not be high enough to encourage or permit assessment funding to be utilized. In addition, the wells in this area are located near the water rich aquifer that the water treatment plant draws from. This area has been noted in past Water System studies as a potential north to south loop to help reinforce the water distribution system (WDS). Extension of water mains through this area have been recommended, and thus would be appropriate for the water utility to complete as a direct benefit to the overall water system. In this manner, the capital cost for the water mains would be justified as debt service to the overall system. Thus, by reducing the capital cost to the homeowners in the area, potentially more homeowners would be encouraged to connect to City water, given the probable cost of upcoming well system rehabilitation/renewals. Based on EOPPC cost and debt service from Table 3-2 of \$414,790, the debt service would cost \$5.81 per ERU/EMR.
- f. Recommended priorities are for Map Area 5, 4 and 2 due to the projected number of new customers (refer to Table 5-1). Map Area 2 will likely be least overall cost to the majority of users and may be able to proceed the quickest.

APPENDIX A

FUNDING ALTERNATIVES WATER DISTRIBUTION SYSTEM PROJECTS

FUNDING SOURCES WITH A HIGH PROBABILITY OF FUNDING FOR HUDSON:

The following two programs offer the City of Hudson the best options for funding.

1. **WSRLA - Water Supply Revolving Loan Account through OEPA (Administered by OWDA)**

The Water Supply Revolving Loan Account (WSRLA) assists applicants by providing low cost financing and technical assistance to public water systems.

Eligible costs include planning, design, and construction loans. Construction loan nominations Due March 1st (planning and design nominations may be submitted throughout the year) - must have a project plan as well as a comprehensive capability assurance plan, and Asset Management Plan (a written document that demonstrates the managerial, technical and financial capability of a public water system.).

Application and other Documents available here:

<http://epa.ohio.gov/defa/ofa.aspx#1696510030-wsrla>

Capability Assurance Guidance:

http://epa.ohio.gov/portals/28/documents/pws/CAPfactsheet_WSRLAloanapplications.pdf

WSRLA Interest Rates (**effective October 2022**)

Planning and Design Loans - 0% (5 year term)

Planning and Design Loans can be rolled into a Construction Loan.

Construction Standard Entity Rate = 2.41% for a 5 to 20 year term.

With the information currently available, it is anticipated that the discount/principal forgiveness most likely to be available for the five expansion areas would be Regionalization, the combining two or more water systems into one (the larger system). Regionalization would only apply to the Towbridge, Nottingham Gate Estates expansion portion of Map 2.

Regionalization Projects – Projects that consolidate water systems or connect private wells with poor quality or inadequate water supply into larger systems that exhibit capability are eligible for principal forgiveness. Eligible projects **may receive up to 50 percent of project costs as principal forgiveness** or \$4 million, whichever is less. The **remaining project costs are eligible for a 0% interest rate loan.**

Principal forgiveness (“PF”) funding is available for the highest ranking projects based on score and readiness-to-proceed. For projects with the same project score and readiness-to-proceed ranking, regionalization projects will be prioritized. To ensure PF funding is awarded during PY 2023, PF eligible projects other than plant improvements should submit approvable detailed plans by October 31, 2022. Assume similar dates for PY 2024.

Projects are evaluated with respect to the three categories listed below to determine their ranking and selection for funding:

1. Public health issues;
2. System Improvements;
3. Regionalization.

The overall ranking of projects is based on the sum of all points received in each applicable category. For details on how projects are scored: [DWAFF-PMP-Draft.pdf \(ohio.gov\)](#) beginning at page 46.

2. **Ohio Water Development Authority (OWDA) Fresh Water Loan Program**

The Ohio Water Development Authority created the Fresh Water Loan Program to provide financial assistance for planning/design and/or construction of drinking water, wastewater, and storm water projects. For a full list of programs, please see [OWDA Program Summary List](#). Eligible Fresh Water Loan Program projects include but are not limited to: development or acquisition of potable water sources, construction/expansion of water and wastewater treatment facilities, installation or improvement of water distribution and wastewater collection systems, well-head protection planning studies, or storm water management facilities. Land easement acquisition, and legal and inspection fees are also eligible.

Timeline - Due by 1st of each month

Covers design? YES

Loan Term: 5 yr. (min), 30 year (max)

OWDA Market Rate Program *Interest Rates (subject to change month):

Loan Terms 5 to 20 Years: **3.66%**

Loan Terms 21 to 30 Years: **3.82%**

(Period: 10/01/2022 - 10/31/2022)

A discounted interest rate is available for communities who have previously borrowed directly from OWDA, currently 12.5% of the current interest rate offered. Although the City of Hudson has received loan funding through the WPCLF Program, the City has not yet borrowed directly from OWDA, the discount would be available for subsequent loans.

FUNDING SOURCES AVAILABLE TO HUDSON LOW PROBABILITY OF FUNDING FOR NEW CONSTRUCTION PROJECTS

The following programs fund fresh drinking water projects similar to those the City of Hudson is considering. However, based on our analysis, neither program is ideally suited for the kinds of projects the City is interested in constructing.

1. Ohio Public Works Commission (OPWC) - State Capital Improvement Program (SCIP)

The City of Hudson is Located in OPWC District 8; Stephen Knittel serves as the liaison for District 8. OPWC provides several options for a variety of projects including infrastructure funding which includes water supply. The SCIP Program was created in 1987 and has been renewed three times since, and works with eligible counties, cities, villages, townships and water and sanitary districts to improve roads, bridges, culverts, water supply systems, wastewater systems, storm water collection systems and solid waste disposal facilities.

Timeline - District 8 application deadline is typically in September for the following year.

Covers design? Yes.

Competitive Program? Yes.

Grants are available for up to 90% of the total project costs for repair/replacement, and up to 50% for new/expansion. Loans can be provided for up to 100% of the project costs. Grant/loan combinations are also available. There is no minimum or maximum loan amount. The term of the loan cannot exceed the useful life of the project, or thirty years, whichever is less. The minimum term is one year. The District will recommend the rate of interest for each loan in whole percent increments from 0 to 3 percent. For project scoring details, please see [District 8 Methodology](#).

Analysis: In recent cycles, new/expansion projects have not scored high enough to fall within funding range in District 8. While the project is considered eligible and OPWC will accept the application, expectations should be tempered.

2. Building Ohio's Infrastructure Water and Wastewater Infrastructure Grant Program

Funded through American Rescue Plan Act (ARPA) dollars, the State of Ohio created the **Water and Wastewater Infrastructure Grant Program** to provide nearly \$250 million to improve access to clean drinking water and wastewater infrastructure. Grants up to \$250,000 are available for design projects and up to

\$5 million for construction projects. Public entities within a political subdivision with the authority to own and operate public water and sewer systems and nonprofit, non-community public water systems may apply.

Due date: Unknown if a second round will be available.

Covers design? Yes

Analysis: It has been acknowledged by state officials that the program is over-subscribed in the initial application period. Because it was created through a one-time infusion of ARPA funds, the future of this program is unclear.

3. American Rescue Plan Act State and Local Fiscal Recovery Funds (ARPA SLFRF)

The Coronavirus State and Local Fiscal Recovery Funds (SLFRF) program, a part of the American Rescue Plan, delivers \$350 billion to state, local, and Tribal governments across the country to support their response to and recovery from the COVID-19 public health emergency.

The SLFRF program provides governments across the country with the resources needed to fight the pandemic and support families and businesses struggling with its public health and economic impacts; maintain vital public services, even amid declines in revenue resulting from the crisis; and build a strong, resilient, and equitable recovery by making investments that support long-term growth and opportunity.

Recipients may use SLFRF **funds for specific eligible uses** including to **Invest in water, sewer, and broadband infrastructure**, making necessary investments to improve access to clean drinking water, to support vital wastewater and stormwater infrastructure, and to expand affordable access to broadband internet

The Hudson City Council passed a motion on September 21, 2021 to allocate ARPA funding in the amount of \$2,329,349.30 for a transmission line replacement on State Route 303.

Analysis: Both the first and second tranches of funding have been released to local governments. Most communities have selected projects for funding. The City has allocated ARPA funding to the State Route 303 transmission line replacement as stated above. While this project would be considered eligible for funding, all funding may have been programmed for both the City and the County funds.

4. Congressionally Directed Spending (CDS) Appropriation Requests

Proposals requests for CDS funding were accepted by Congressional Representatives in the spring for fiscal years 2022 and 2023. The Senate and House Appropriations Committee consider funding requests through 9 separate Subcommittees. Each subcommittee awards funding from specific accounts, distributed by agencies and offices across the federal government. Each account carries its own unique goals, objectives, and criteria for qualification.

Waterline expansion projects which are eligible for and are listed in the State of Ohio Water Supply Revolving Loan Account Program Management Plan are eligible to submit proposals to the Interior, Environment, and Related Agencies Subcommittee. The Environmental Protection Agency (EPA), State and Tribal Assistance Grants, STAG Infrastructure Account has accepted proposals related to existing funding categories and activities within the STAG account that will result in improvements in environmental quality and/or human health.

Local and/or municipal projects included on a state's recently finalized Clean Water or Drinking Water State Revolving Fund Intended Use Plan (IU) are eligible for funding. In exceptional circumstances, projects that are eligible for funding under State Revolving Loan Fund (SRF) guidelines but are not on the state IUP, may be considered.

For Fiscal Year 2023, there was a minimum of 20% cost sharing requirement for any state or local water infrastructure grant funded through CDS. Only the non-federal portion of assistance provided by the State Revolving Loan Fund could be applied toward a project's matching requirement.

It is anticipated that proposals will be accepted in the spring of 2023 for fiscal year 2024.

Analysis: The City's first step in seeking this funding is to nominate the project for the State of Ohio Water Supply Revolving Loan Fund. Support for the project, whether through surveys, public meetings, etc... would be recommended. Two letters of support are required.

**FUNDING SOURCES AVAILABLE FOR WATER DISTRIBUTION PROJECTS
UNLIKELY PROBABILITY OF FUNDING
BASED ON KNOWN ELIGIBILITY CRITERIA**

The following programs fund fresh drinking water projects similar to those the City of Hudson is considering. However, based on our analysis, the City of Hudson is not eligible based on individual program guidelines.

1. Community Development Block Grant (CDBG)

CDBG Funded projects must meet a national objective. Program guidelines limit drinking water improvements to areas that benefit low to moderate income individuals. Location based activities (infrastructure projects) must be located in designated low to moderate income block group, census tract or service area.

Analysis: Per Summit County Community Development website the City of Hudson has no eligible block groups.

2. United States Dept. of Agriculture (USDA) Water & Sewer Loan Program

This program provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and storm water drainage to households and businesses in eligible rural areas. USDA offers a long-term, low-interest loan and if funds are available, a grant may be combined with a loan if necessary to keep user costs reasonable.

The City of Hudson is not located in an eligible USDA area for this funding.

3. Economic Development Administration (EDA) Public Works Program

EDA's Public Works program helps distressed communities revitalize, expand, and upgrade their physical infrastructure. EDA Public Works program investments help distressed communities become more competitive by developing key public infrastructure.

Analysis: The City of Hudson is not distressed and therefore would not qualify under that criteria. Additionally, the proposed project will primarily benefit residential areas which are not eligible under the program.

4. Appalachian Regional Commission (ARC) Area Development Program

The Appalachian Regional Commission (ARC) is an economic development partnership agency of the federal government and 13 state governments focusing on 423 counties across the Appalachian Region. ARC's mission is to innovate, partner, and invest to build community capacity and strengthen economic growth in Appalachia.

Analysis: The City of Hudson is not located in one of Ohio's designated 32 Appalachian counties.