

**Public Works and Buildings Committee**  
**City Hall Council Chambers**  
**Meeting Minutes**  
**November 19, 2020**

**MEMBERS PRESENT**

Councilor David Walker, Chairman  
Councilor Jim Gray- Vice Chairman  
Councilor Don Hamann  
Councilor Chris Rice

**MEMBERS ABSENT**

Councilor Doug Lachance

**OTHERS PRESENT**

Mayor Caroline McCarley  
Peter C. Nourse PE, Director of City Service  
Daniel Camara, GIS / Asset Management  
Nathan Cote, Unitil Natural Gas Corporation  
Michael Dunn, Unitil Natural Gas Corporation  
Dave Hoage, Unitil Natural Gas Corporation

**MINUTES**

Councilor Walker read the following statement:

Good Evening, as Chairperson of the Public Works Committee, I am declaring that an emergency exists and I am invoking the provisions of RSA 91-A:2, III (b). Federal, state, and local officials have determined that gatherings of 10 or more people pose a substantial risk to our community in its continuing efforts to combat the spread of COVID-19. In concurring with their determination, I also find that this meeting is imperative to the continued operation of City government and services, which are vital to public safety and confidence during this emergency. As such, this meeting may be conducted without a quorum of this body physically present in the same location.

a.) **Public Input:** Due to the ongoing situation with COVID-19, the City of Rochester will be taking extra steps to allow for public input, while still ensuring participant safety and social distancing. In lieu of attending the meeting, those wishing to share comments, when permitted, with the Public Works Committee (Public Hearing and/or Workshop settings) are encouraged to do so by the following methods:

- **Mail:** Public Works Committee, Rochester DPW 45 Old Dover Road Rochester, NH 03867 (*must be received at least three full days prior to the anticipated meeting date*)
- **Email:** [lisa.clark@rochesternh.net](mailto:lisa.clark@rochesternh.net) (*must be received no later than 4:00 pm of meeting date*)
- **Voicemail:** 603-335-7572 (*must be received no later than 12:00 pm on said meeting date in order to be transcribed*)

Please include with your correspondence the intended meeting date for which you are submitting. *All correspondence will be included with the corresponding meeting packet (Addendum).*

In addition to the above listed public access information, **the City Council will be allowing the public to enter Council Chambers and speak in person during the Public Input portion of this meeting.** In an effort to adhere to CDC guidelines: enter only at the front Wakefield Street entrance and exit on the side closest to the police department and adhere to 6-foot social distancing while inside. Hand sanitizer and facemasks will be available at the Wakefield Street entrance. Participants will be admitted into Council Chambers one at a time to speak, and will exit directly thereafter. Please note; the seating in Council Chambers will not be available for the public during meetings.

At this time, I also welcome members of the public accessing this meeting by phone. The public can call-in to the below number using the conference code. This meeting will be set to allow the public to “listen-in” only, and there will be no public comment taken via conference line during the meeting.

Phone number: 857-444-0744      Conference code: 843095

b.) **Roll Call:** Please note that all votes that are taken during this meeting shall be done by Roll Call vote.

Let’s start the meeting by taking a Roll Call attendance. When each member states their name (and/or ward), also please state whether there is anyone in the room with you during this meeting, which is required under the Right-to-Know law. (Additionally, Council members are required to state their name and ward each time they wish to speak.)

The roll call:

<b><i>Councilor Rice</i></b>	<b><i>Ward 5</i></b>	<b><i>Present</i></b>
<b><i>Councilor Hamann</i></b>	<b><i>Ward 5</i></b>	<b><i>Present</i></b>
<b><i>Councilor Gray</i></b>	<b><i>Ward 6</i></b>	<b><i>Present</i></b>
<b><i>Councilor Walker</i></b>	<b><i>Ward 3</i></b>	<b><i>Present</i></b>

***Councilor Lachance*** ***Ward 1***      ***Not Present / excused in advance***

**1. Public Input**

Councilor Walker asked if there were any members at City Hall waiting to speak. There were none.

**2. DPW Update:**

Mr. Nourse stated the New DPW Facility is approximately 23% completed. He displayed several pictures of construction in progress. See Attached (4). He mentioned steel is being erected, the salt shed is complete, the concrete slabs are completed, the underground utilities are completed and base pavement is in. He stated that contractors are beginning to frame out the interior of the building. Mr. Nourse stated that there have been some delays with deliveries and we are currently awaiting the delivery of exterior wall panels and the roof. Mr. Nourse stated that there have been 4 change orders to date with contingency available of 82%. Mr. Nourse stated that the DPW Committee met on

site for a tour on October 21, 2020. Councilor Walker suggested another site walk in early December. The Committee agreed on a site walk / tour meeting on Thursday December 3, 2020 at 8:30 AM.

**3. Engineering Request For Qualifications (RFQ) – RFQ# 21-19 – Capital Improvement Projects**

Mr. Nourse explained the extensive process that the DPW Staff goes through to obtain its on-call engineers and architectural consultants. He explained that this process is necessary to meet City Purchasing Procedures, State of NH DOT Federal Guidelines for Funding and for the State of NH State Revolving Fund Loan Programs. He stated that the DPW had last undergone this process in 2014. Mr. Nourse stated that the solicitation or RFQ had received a total fifteen submissions for review in eight different functional areas or categories. These categories include Highway & Bridges, Traffic Management, Stormwater, Water, Wastewater, Dams, Construction Engineering and Utility Work Force Management. He stated many of these firms submitted for several categories and that this results in review of 43 submissions. Mr. Nourse stated that it is important to note that this is required by the Brooks Act to be a qualifications based process and that fees schedules are not looked at until the short list has been determined by the panel completing these reviews. He stated that he brought this to the Committee to make them aware of the process and to inform the Committee that this lengthy undertaking as it involves approximately 300 hours of staff time.

**4. Unitil Natural Gas Corporation – Regulator Station**

Mr. Nourse stated that representatives from the Unitil Gas Company are here to give a brief presentation on Unitil's multi-year project to bring a high pressure gas main into Rochester. He stated that currently there is a low pressure main that serves the existing Rochester system. Michael Dunn stated that he is here to explain Unitil's plans to support Rochester's current and future customer growth. He stated that Unitil has been working with Rochester for the past 5 year to determine where the most growth has and will continue to occur. Mr. Dunn stated that the existing 45lb system is supplied from one pipeline from Somersworth. He discussed projects completed to date and future planned projects to install a high pressure system to supply the existing system and for future development and give the additional security of a redundant system. He stated that with these two systems Unitil will have the ability to supply Rochester with a sufficient supply of gas for the foreseeable future. Nathan Cote from Unitil discussed his project to provide a secondary gas feed to the City of Rochester. He explained that the current system is fed via High Street in Somersworth to Whitehouse Road and Old Dover Road. The second system would be a loop system going down Route 108. He stated that this second feed would provide system reliability for Rochester's customers. Mr. Cote stated that this would be a high pressure line and that it would require a regulator station to reduce the pressure prior to feeding the existing 45lb system. He stated Unitil is still looking for a site for the regulator station and he mentioned previous discussions to utilize the park area near Franklin Street for this regulator station. Mr. Nourse stated that when discussed back in June of 2020, the Public Works Committee had concerns for the aesthetics of the examples shown to them. Mr. Nourse stated that the recently installed

regulator station on Rt. 125 went through the planning board process and looks significantly different than the one shown to the Committee in June. Mr. Dunn stated that Unutil designs stations based on the location. He stated that sometimes they look like the previously shown station and sometimes they are below ground. Mr. Dunn stated that Unutil would likely follow the same process of going through the Planning Board and the City of Rochester would have input to the design. Mr. Cotes stated that they will continue to look for the appropriate site for the regulator station and that it would likely be a project to be constructed in 2023. Councilor Gray asked if the regulator station could be positioned on the same property as the Wastewater Pump Station on the other side of Axe Handle Brook. Mr. Nourse stated that it could be looked at but stated that the property the pump station is on is small. Mr. Hoage stated that the survey of the area is underway and once completed Unutil will be prepared to answer any additional questions that might come up regarding the installation locations in the project area.

**5. Water Audit & Demand Analysis Presentation by Wright Pierce Engineer**

Mr. Nourse stated that Wright Pierce Engineers has been working with City Staff to complete a Water Audit. He stated that the audit is not required but is conducted approximately every 10 years. This is considered best practice by the American Water Works Association and the NH Department of Environmental Services (NHDES). Mr. Nourse stated that Audits were completed last in 2010 and in 2000. He explained that this year's audit was expanded to include a demand analysis and watershed supply capacity analysis. Mr. Nourse introduced Rick Davee from Wright Pierce. Mr. Davee displayed a Powerpoint presentation (**attached to these minutes**). Mr. Davee stated that the Water Audit is a way of looking at the water system holistically. He explained the Audit assists in understanding the current usage vs supplied water and it identifies the natural inefficiencies. The Audit also makes recommendation for areas where there is room for improvement. Mr. Davee explained that the demand analysis looks at Rochester's current water supply and the demand based on the current population and consumption, and looks at the anticipated City growth and future demands, as well as the system's capacity to meet that future demand. Mr. Davee explained the need to look 40 years into the future. He stated that the process of increasing capacity is a long process that includes planning, possible property acquisitions, environmental objectives and funding. Mr. Nourse suggested that this presentation be given to the full City Council. Councilor Gray asked that the Council presentation include slides and statements on the property acquisitions and other things that have been done already in preparation for increasing the system capacity. Mr. Nourse stated that it could be included and he will look to have the presentation at the next City Council.

**6. Other**

**Sanitary Sewer System and Wipes Disposal** – Mr. Nourse displayed photos regarding clogged sewer system pipes. He had a picture of a clogged check valve and of an article that showed what a large clog may look like. He stated that in early 2020 we had posted

information on the web requesting residents to stop flushing wipes or personal care products of any kind down the toilets. He explained that these types of products cannot be processed by the system and they cause clogs as well as system overflows. Mr. Nourse explained that there is proposed legislation authored by NHDES to regulate the proper labeling and disposal of the non-flushable non-woven products and they are looking for sponsors of this legislation. Mr. Nourse stated that he had discussed it with the City Attorney and that the Attorney suggested asking the Committee for a recommendation for a full City Council Resolution in support of the legislative efforts.

***Councilor Hamann made a motion to recommend a full City Council resolution to support legislative efforts for the proper labeling and disposal of non-woven sanitary wipe products. Councilor Rice seconded the motion.***

***A roll call vote was taken:***

<b><i>Councilor Rice</i></b>	<b><i>Ward 5</i></b>	<b><i>Yes</i></b>
<b><i>Councilor Hamann</i></b>	<b><i>Ward 5</i></b>	<b><i>Yes</i></b>
<b><i>Councilor Gray</i></b>	<b><i>Ward 6</i></b>	<b><i>Yes</i></b>
<b><i>Councilor Walker</i></b>	<b><i>Ward 3</i></b>	<b><i>Yes</i></b>

The Committee suggested that Director Nourse put information on the City Website and the Public Access Channel 26.

**Request for Information Traffic Beacon** - Mr. Nourse stated that Councilor Gray had asked about a double red/yellow flashing four way beacon in regards to the Tebbetts Road Intersection. He stated that he had made inquiries about that type of beacon with NHDOT and that it is no longer a supported device. Mr. Nourse mentioned that City Staff had recently met on site with NHDOT and that NH DOT is putting this intersection into their future plans for a Highway Safety Improvement Program which would be a 90/10 split between the State of NH program and the City of Rochester.

**Request for Information on Possible Covid-19 Impacts on Paving Costs** – Mr. Nourse stated Councilor Gray had inquired about possible impact to paving prices based on the Covid-19 Pandemic. Mr. Nourse stated that he had checked into this with the City Contracted supplier and there have been no impacts to date.

***Councilor Hamann made a motion to adjourn at 8:31 pm. Councilor Rice seconded the motion.***

**A Roll Call Vote was taken:**

<b><i>Councilor Rice</i></b>	<b><i>Ward 5</i></b>	<b><i>Yes</i></b>
<b><i>Councilor Hamann</i></b>	<b><i>Ward 5</i></b>	<b><i>Yes</i></b>
<b><i>Councilor Gray</i></b>	<b><i>Ward 6</i></b>	<b><i>Yes</i></b>
<b><i>Councilor Walker</i></b>	<b><i>Ward 5</i></b>	<b><i>Yes</i></b>

Minutes respectfully submitted by Lisa J. Clark, City of Rochester Administration and Utility Billing Supervisor.







# Drinking Water Supply and Demand Study

Rochester, NH

NOVEMBER 2020

Rick Davee, PE





# Key Issues

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1

**Water Audit – understanding current usage, natural inefficiencies, and where room for improvement**

2

**Supply Capacity – existing and how it can be improved**

3

**Demand/Consumption – now and in the future**

# Why are we doing this?

- **Previous studies:**
  - Existing supply impoundment reservoirs will be insufficient to supply future need.
  - Raising water elevation of Round Pond Reservoir will help meet area's need for drinking water.
- **Ground water has been used to augment supply, but drawbacks:**
  - Use during high demand season is not allowed.
  - Additional well exploration has not been productive.
- **Looking 40 years out to 2060**
  - Large infrastructure needs advance planning.

## What we've seen...

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- **Firm Yield (drought-resilient) capacity of water supply reservoir system will be exceeded in 10 years.**
- **Population growth is forecast to create higher demand and per capita usage**
- **It is difficult to track data for supply-demand system evaluation (vs billing) purposes.**

# Water Audit – a component of Demand Analysis



- Examines Consumption
- How water is used
- You can't control what you don't measure



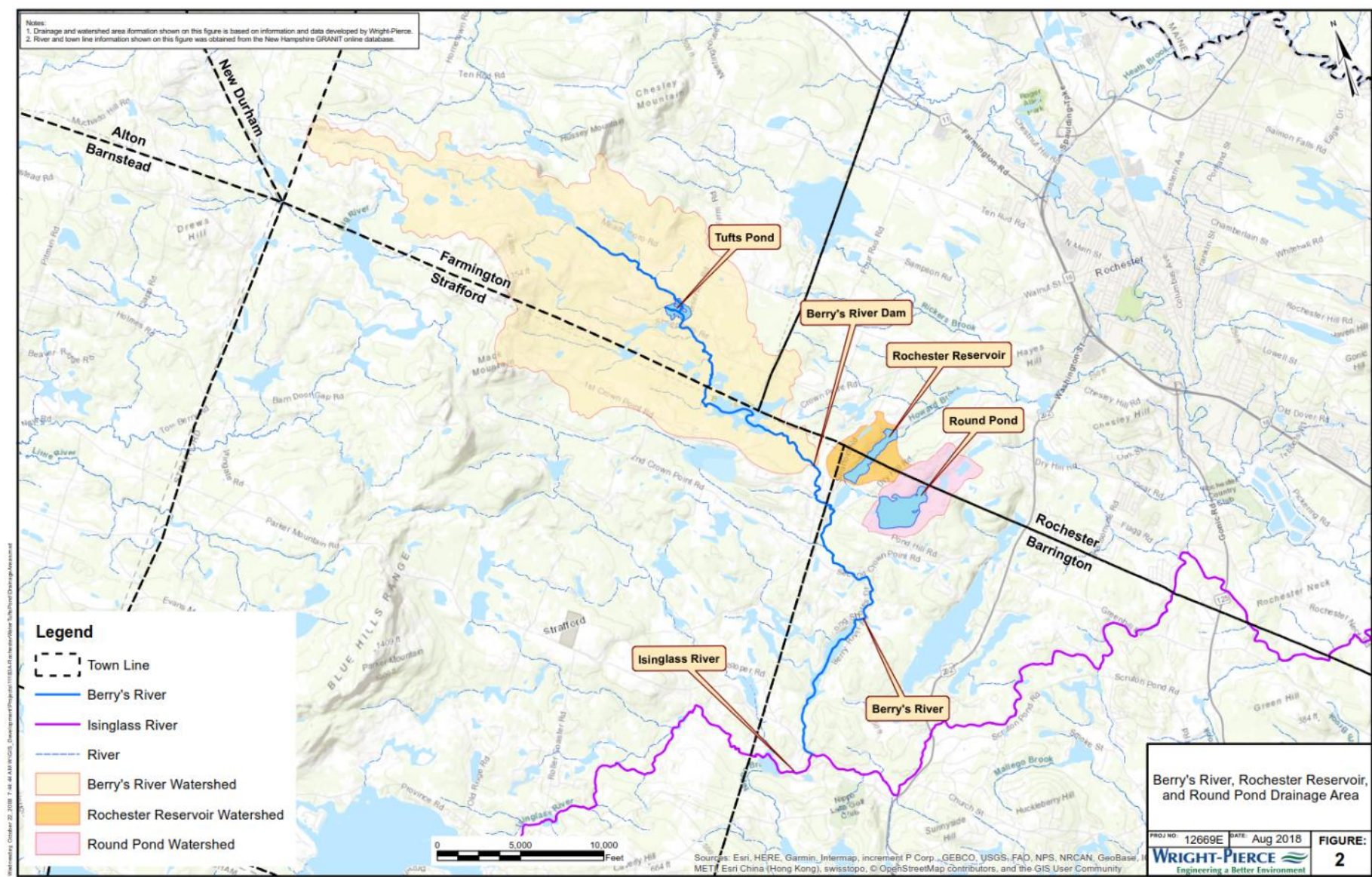
AWWA Water Audit Results

<div>System Input Volume (Corrected for Known Master Meter Errors)</div> <div>772.068 100%</div>	Authorized Consumption  629.605 82%	Billed Authorized	Billed Metered Consumption 576.050, 75%	Revenue Water  576.050 75%
		576.050 75%	Billed Unmetered Consumption 0.000 0%	
		Unbilled Authorized  (53.555) 7%	Unbilled Metered Consumption (15.390), 2%	Non-Revenue Water  (196.018) 25%
			Unbilled Unmetered Consumption (38.165), 5%	
	Water Losses  (142.463) 18%	Apparent Losses  (7.111) 0.9%	Unauthorized Consumption (1.930), -0.25%	
			Customer Metering Inaccuracies (3.740), 0.48%	
			Systematic Data Handling Errors (1.440), 0.19%	
		Losses Unavoidable Real Loss: (59.16) (8%) + Real Loss: ( 76.192) (10%)  = (135.352) 18%	Main Line Leakage	
			Storage Tank Overflow	
			Service Line Leakage up to Service Meter	

# Audit Results Comparisons: Rochester 2011 & 2020, and Other Audits

Category	2011 Rochester Audit Result		2020 Rochester Audit Result		Example AW Audits (3 examples)
	Vol. (MG/Year)	% of Water Supplied	Vol. (MG/Year)	% of Water Supplied	% of Water Supplied
<u>Water Supplied</u> (adjusted for meter error and import/export)	780.04	99.6%	772.068	99.6%	89.5% - 96.1%
<u>Authorized Consumption</u> (metered & unmetered, billed & unbilled)	652.05	83.6%	629.60	81.5%	68.5% - 79.2%
<u>Water Losses</u> (water supplied – authorized consumption = apparent losses + real losses)	127.99	16.4%	142.46	18.5%	20.8% - 31.5%
Apparent Losses	17.27	2.2%	7.11	0.9%	1.2% - 8.2%
Real Losses	110.72	14.2%	135.35	17.5%	19.6% - 27.7%
<u>Non-Revenue Water</u> (unbilled metered + unbilled unmetered)water	163.02	20.9%	196.02	25.4%	21.8% - 32.4%
The water supplied in 2020 is < 2011 most likely based on water conservation fixtures and leak detection. The higher percentage of Real Losses in 2020 is most likely attributed to increased water distribution flushing needed to maintain water distribution quality (disinfection by-products)					

# Berry's River Watershed



# Surface water supplies

- **Berry's River Dam Reservoir System:**
  - Rochester Reservoir (and water treatment plant).
  - Round Pond Reservoir feeds into Rochester Reservoir when water elevation drops.
  - Limited by minimum in-stream flow requirements, 1.3 MGD (2 cfs)
  - Supply Capacity (Firm Yield) – maximum amount of water that can be drawn to its lowest practical yield during the drought of record.
    - Meteorological, USGS stream flow data, watershed slope, soil characteristics, reservoir properties
    - Droughts becoming more frequent.
    - Droughts of record were 1964-1966, 1980, and 2002
    - Longest duration drought in NH lasted 47 weeks from 6/7/16 - 4/25/17.
    - An intense period of drought occurred the week of 10/6/20 affecting 21.99% of New Hampshire land.



# Ground water supply

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- **Cocheco River Well:**
  - Use not allowed during warm weather months when demand for water is high
  - Not considered for this study

# Supply Capacities (Firm Yield) of Rochester's Reservoirs – Existing Elevations

- Firm yields of Rochester's existing reservoirs (existing elevations) subject to minimum stream flow requirements

Reservoir	Full Pond Elevation	Firm Yield (mgd)
Tufts Pond Reservoir	482 ft.	1 mgd (no change)
Berry River Dam Impoundment	401 ft.	-0-
Rochester Reservoir	375 ft.	0.25 mgd
Round Pond Reservoir	390 ft.	1.0 mgd
TOTAL		2.25 mgd

# Supply Capacity (Firm Yields) of Rochester's Reservoirs – Round Pond Reservoir Elevation Increased

- Firm yields of Rochester's reservoirs (Round Pond Reservoir elevation increased to 398 ft) subject to minimum stream flow requirements
- Increasing the water elevation Round Pond Reservoir to El 398 brings the Firm Yield of the surface Water Supply close to Firm Yield (4.40 MGD) w/out minimum stream flow requirements

Reservoir	Full Pond Elevation	Firm Yield (mgd)
Tufts Pond Reservoir	482 ft.	1 mgd (no change)
Berry River Dam Impoundment	401 ft.	-0-
Rochester Reservoir	375 ft.	0.25 mgd
Round Pond Reservoir	398 ft.	2.64 mgd
TOTAL		3.89 mgd

# Elements of Demand

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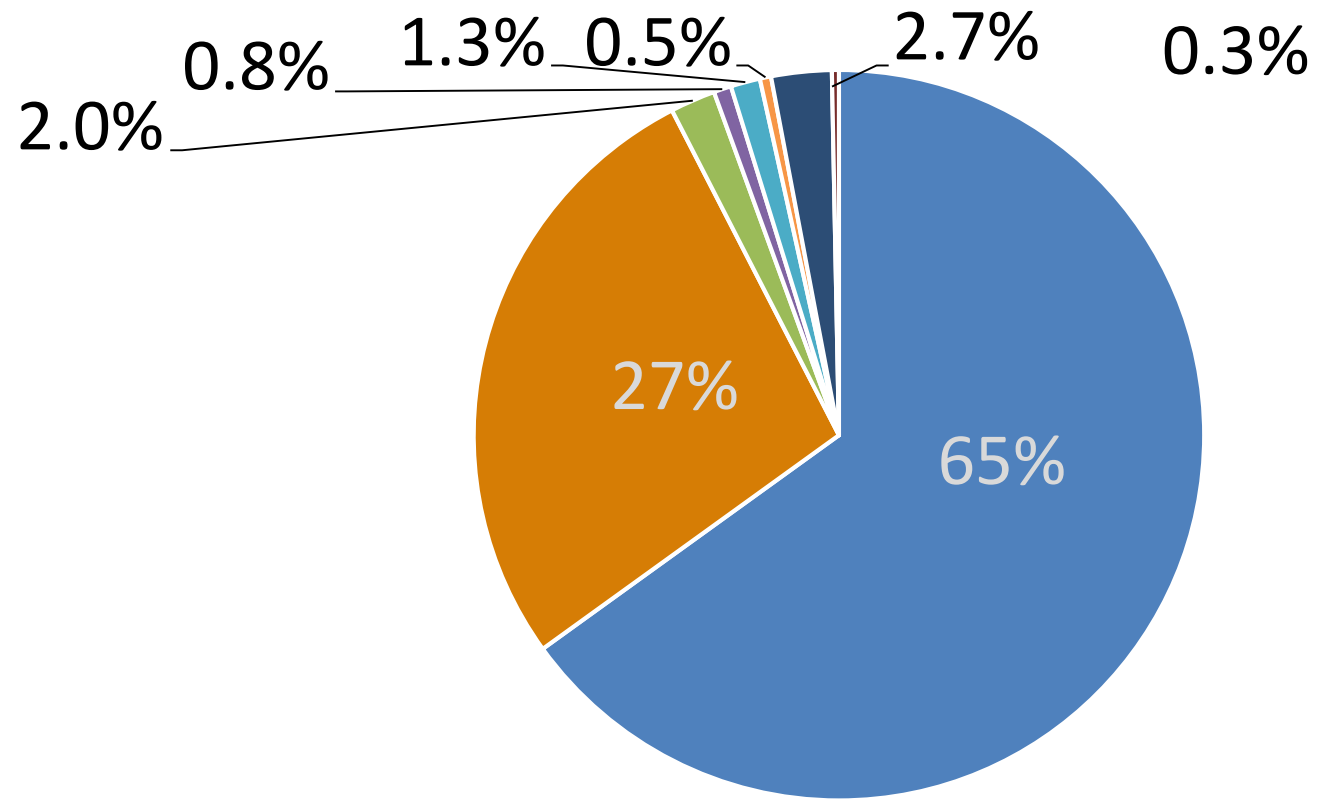


Population and Economic Conditions

Efficiency of Water Usage - Audit



# 2019 Percent Usage By Customer Classification



■ Residential (65%)

■ Commercial (27%)

■ Industrial (2%)

■ Elderly (0.8%)

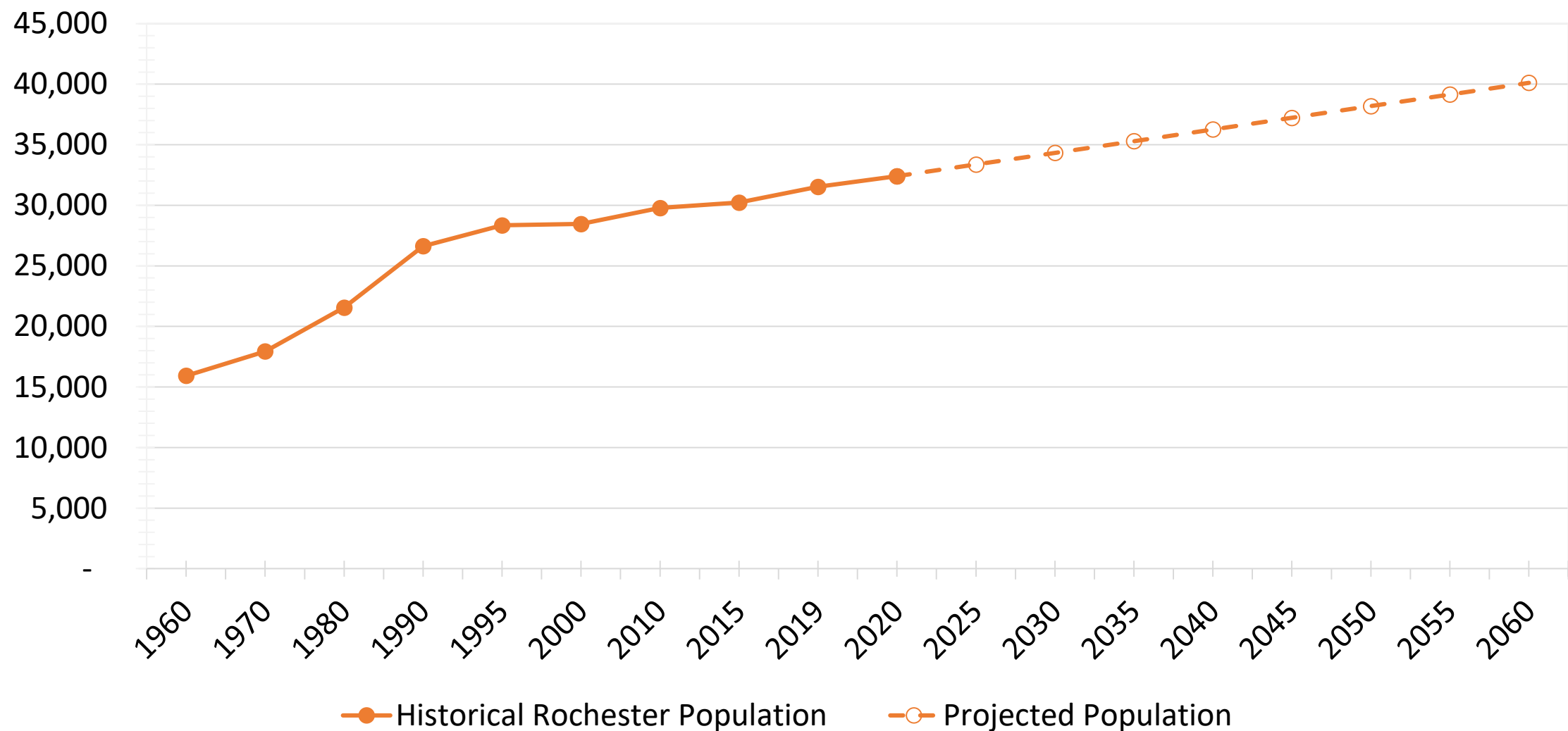
■ School (1.3%)

■ Governmental (0.5%)

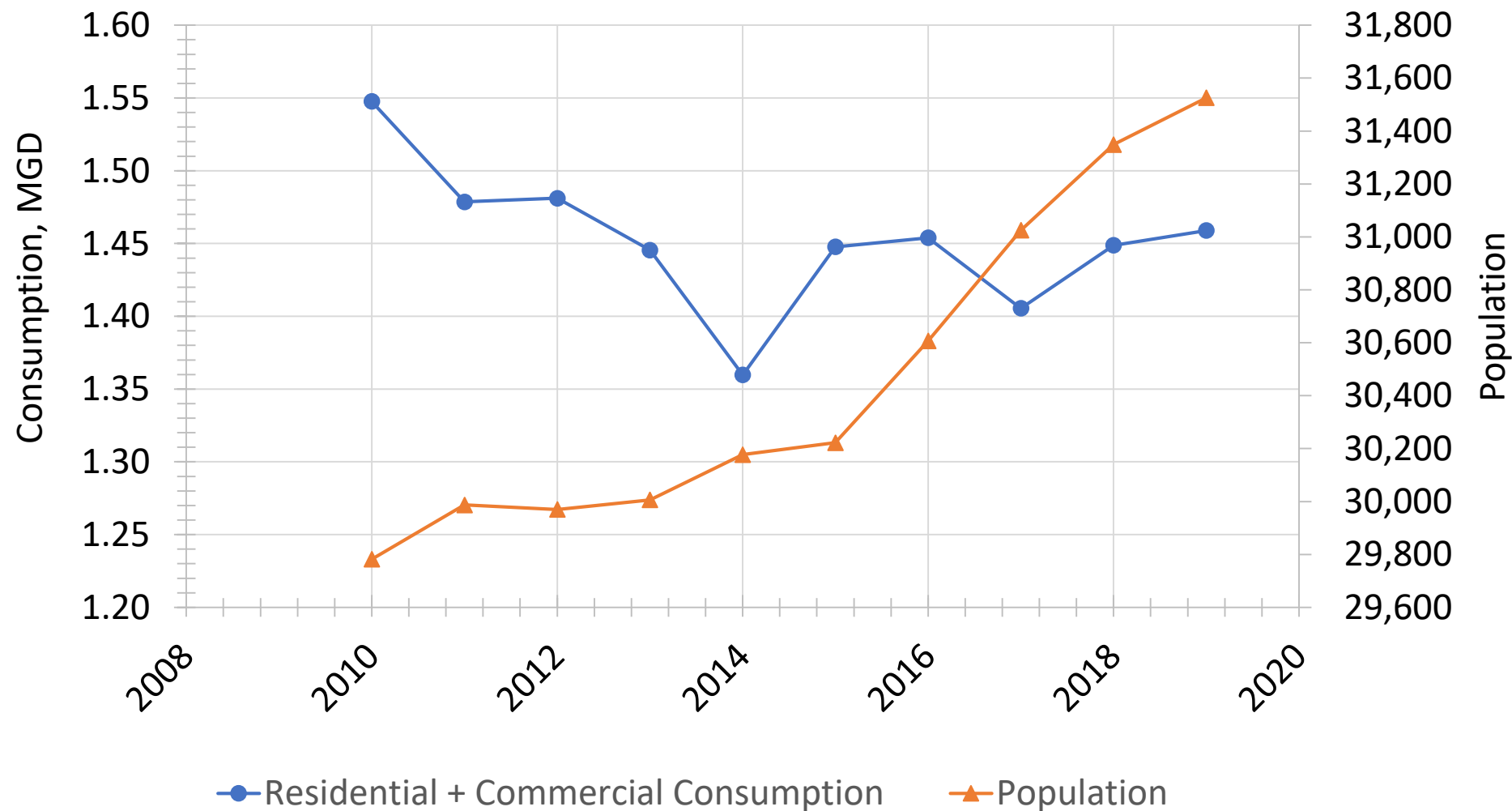
■ Non-Billed (2.7%)

■ Non-Profit (0.3%)

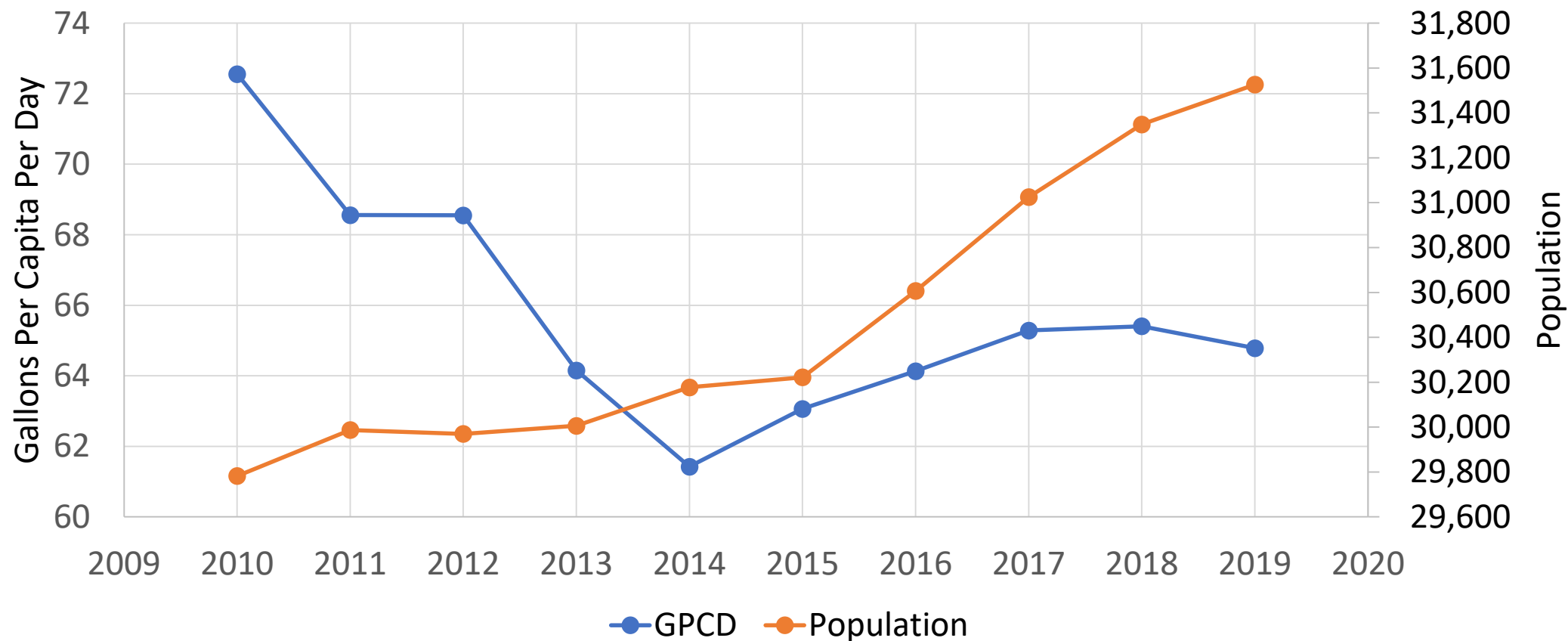
# Rochester Historical Population Trend and Projection to Year 2060



# Population & Residential + Commercial Consumption Over 10 Years



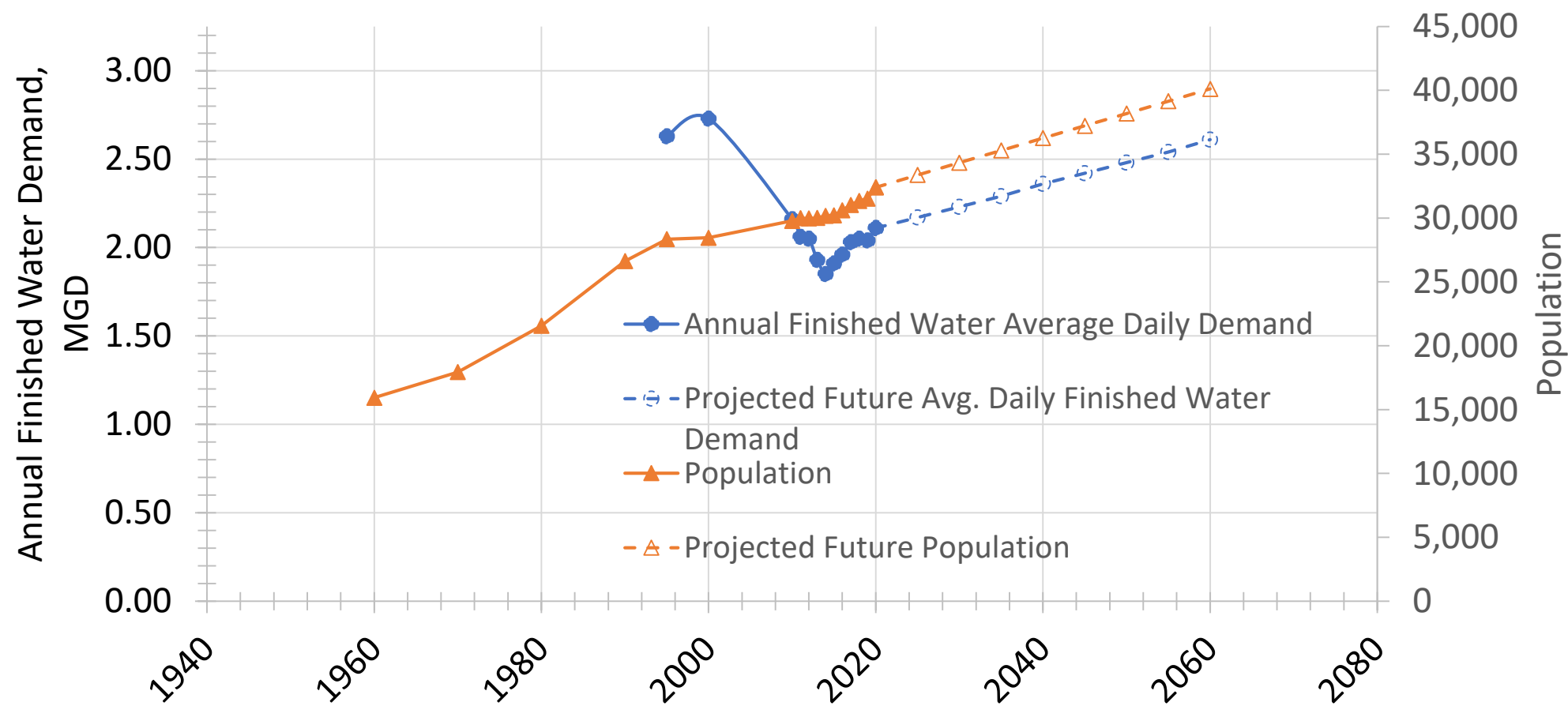
# 1995-2019 Trend of Gallons per Capita per Day (GPCD)



Steep reduction in gallons per capita per day is related to conservation fixtures and continued Leak Detection

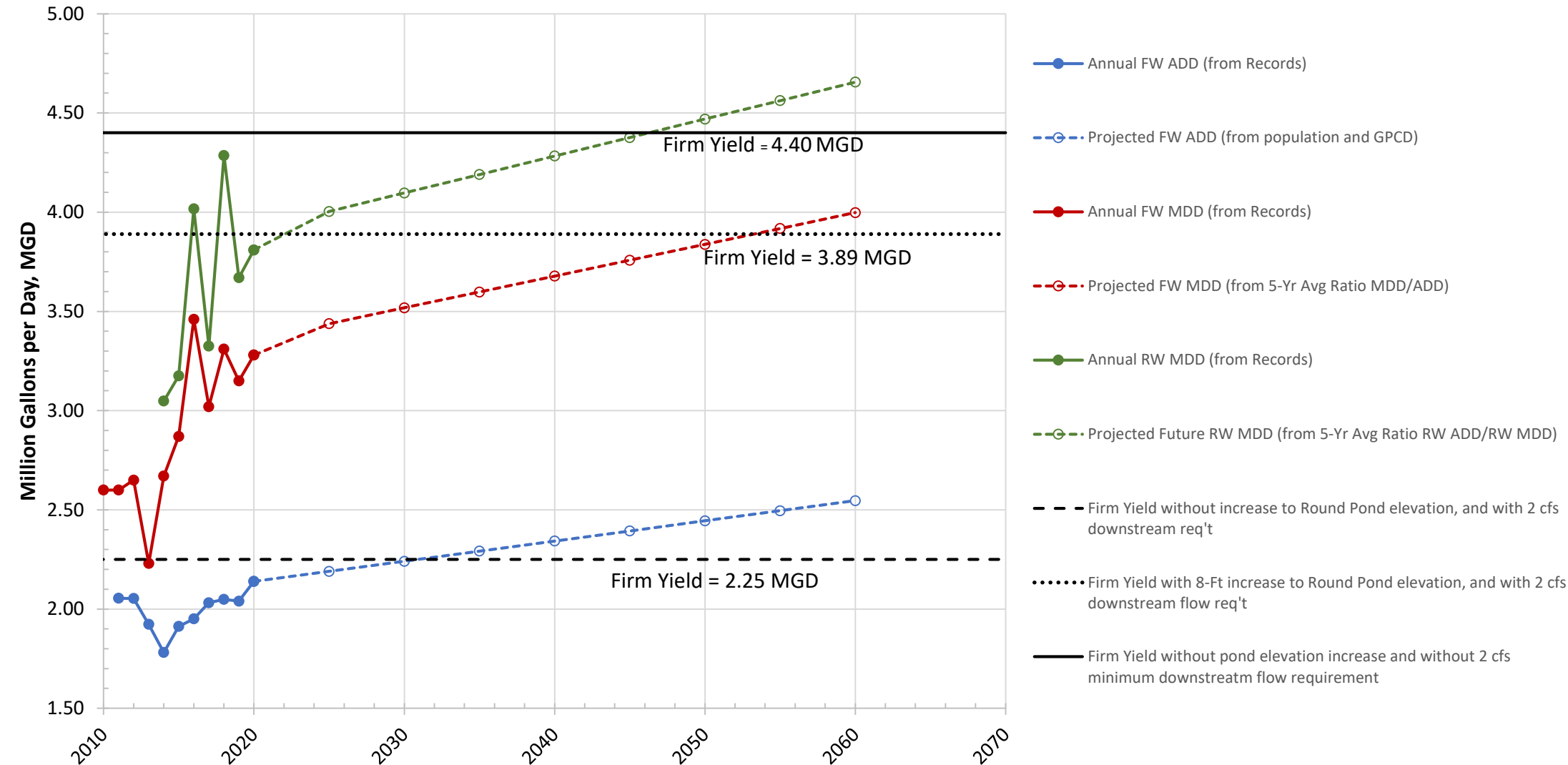


# Population and Production Trends with Projections



Water use will continue to increase based on population growth, yet at a lower rate because of conservation fixtures and leak detection

# Existing & Projected 40-Year Demands with Alternative Firm Yields



# Round Pond Reservoir - Useable Storage by Dam Elevation

- Round Pond Reservoir

Full Pond Elevation	Useable Storage
390 ft. (existing)	320 MG
395 ft.	512 MG
398 ft.	642 MG
400 ft.	728 MG

# Recommendations

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## Supply Recommendations

- **Raise level of Round Pond Reservoir**
- **Replace WTP Master Meter**
- **Conduct Master Meter Verifications for WTP and Cocheco Master Meters**

## Demand (Consumption) Recommendations

- **Improve on-going program of estimating Authorized Unmetered Unbilled Water**
- **Continue leak detection/repair program**
- **Continue replacing older, mechanical service meters**
- **Bench test several meters that are operating in good condition every year**
- **Radio read billing, monthly billing if feasible**
- **Investigate zero/ultra low usage accounts**

# THANK YOU

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