



PUBLIC NOTICE POSTING REQUEST TO OFFICE OF THE LEICESTER TOWN CLERK

TIME STAMP

ORGANIZATION: **Moose Hill Water
Commission**

XX MEETING PUBLIC HEARING (Please circle appropriately)

DATE: Thursday 5/6/21 TIME: 6:00p.m.

LOCATION: <https://global.gotomeeting.com/join/187422685>

You can also dial in using your phone.
United States (Toll Free): 1 866 899 4679

Access Code: 187-422-685

SIGNATURE or

Requested by: Michael J. Shivick, Chair

ALL MEETING NOTICES MUST BE FILED AND TIME STAMPED IN THE TOWN CLERK'S OFFICE AND POSTED ON THE MUNICIPAL BULLETIN BOARD 48 HOURS PRIOR TO THE MEETING. (in accordance with Chapter 303 Acts of 1975)

- Call to Order
- Pledge of Allegiance
- Approval of Minutes of 1/7/21, 2/25/21, and 4/1/21
- Correspondence
- 2003 Intermunicipal Agreement – M.G.L. c. 40 s.4A
- Initial Report from Weston & Sampson
- General Discussion With Invited Guest(s)
- DEP Steps and Funding
- Adjournment

“The listings of matters are those reasonably anticipated by the chair 48 hours before said meeting, which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may also be brought up for discussion to the extent permitted by law.”

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MOOSE HILL WATER COMMISSION**MEETING MINUTES**

Thursday, April 1, 2021

Virtual Meeting: The meeting was held in the “go to meeting” app, licensed to the Town.

Members Present: Jay Powell, Michael Shivick

Members Absent: Kurt Parliment

Others Present: Director of Inspectional Services Michelle Buck

Call to Order

Chair Shivick called the meeting to Order at 6:00pm and lead the meeting in the Pledge of Allegiance.

Correspondence

Mr. Shivick noted receipt of a March 2021 response letter from the Town of Spencer regarding drinking water supply and appurtenant matters. He noted that Spencer was amenable to keeping their options open and at least discussing a regionalized agreement on water. They noted that Shaw Pond belonged to the Town of Spencer outright and is a certified public water supply, although it had been taken off line in 1998 because federal regulations required pretreatment of surface water. They noted that it was kept in reserve for use by the Town for emergency circumstances and that they had no immediate need for water supply. They sought more information and Mr. Shivick noted he would engage in additional correspondence with the Spencer Board of Water Commissioners.

Mr. Powell noted he had commenced discussions with the City of Worcester and anticipated a positive response regarding working together to help Leicester on water. He noted further he hoped the project continued to head in the right direction.

MOTION: Mr. Powell Moved that Mr. Shivick be permitted to draft and transmit a press release regarding the Commission’s optimism regarding the Moose Hill Reservoir project. Mr. Shivick seconded. Under discussion Mr. Powell noted the importance of keeping the media informed of the situation. Mr. Shivick noted media outlets have shown interest in human interest stories related to the serious matters surrounding our underlying the water issues and the solution of Moose Hill.

Roll Call: Powell AYE – Shivick AYE – Parliment ABSENT – Motion passes 2-0-0.

Moose Hill Water Commission

Rule and Regulations: Mr. Shivick illustrated some reasons for having rules and regulations for the Commission. Past elected officials had a penchant for using their position to possibly curtail protected first amendment speech. The need to avoid this type of problem is paramount, as other meetings have devolved into groups of angry citizens swarming and taking over meetings in ways that were not productive.

MOOSE HILL WATER COMMISSION

MEETING MINUTES

Thursday, April 1, 2021

MOTION: Mr. Powell moved the Commission adopt the amended draft rules and regulations. Mr. Shivick seconded. Under discussion, Mr. Shivick noted the helpfulness of having adopted rules and regulations, which appear to never have been adopted by the Commission.

Roll Call. Powell Yea – Shivick Yea – Parliament Absent. Motion Passed 2-0-0.

Water Subscriber Bill of Rights: Mr. Shivick discussed a Water Subscriber's Bill of Rights. He elaborated that he sought input from the Commission on a list of about 10 Rights each water subscriber in Leicester should enjoy without infringement. Mr. Powell gave input that the endeavor could be productive. Mr. Shivick iterated that, although largely symbolic in adoption by the Commission, it would be an adopted resolution of the Commission that others could reference or adopt.

Water Study: Mr. Shivick stated there had been no follow up on the subsequent draft averred to be en route from town administration. There had been a retraction of a prior draft by Weston and Sampson as incomplete and inaccurate. The Commission was promised a subsequent, completed, draft of the initial report to vote on and approve as part of the ongoing "water study" funded by the state and federal grants. There has been no update to date, but the Commission anticipated updates forthcoming.

Mr. Shivick noted that the Leicester Water Supply District was bound by the 2003 IMA and M.G.L. c. 40 s.4A to make it their goal to develop Moose Hill and/or Shaw Pond as a public water supply for the town of Leicester. He noted in his legal research and public records requests that the LWSD was subject to a possible hostile takeover by the Town. The enabling acts of the LWSD specifically state that the Town can take over the LWSD by force, on filing suit at the Supreme Judicial Court and compensating the LWSD at fair market value for their assets. He stated it appeared that the LWSD was no longer serving the interests of the Town of Leicester, and therefore the legal standard to commence a hostile takeover was met and must be immediately be sought.

Adjournment

MOTION to adjourn: **UNANIMOUS.**

The meeting was adjourned at approximately

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Town of Leicester
Moose Hill Water Commission

3 Washburn Square
Leicester, Massachusetts 01524
508.892.7007 (p)
508.892.7070 (f)

April 20, 2021

President Joseph R. Biden
The White House
1600 Pennsylvania Avenue, N.W.
Washington, DC 20500

RE: Leicester, Massachusetts - Moose Hill Reservoir

Dear Mr. President,

It is with great optimism that I write on behalf of the Moose Hill Water Commission, Town of Leicester, as the newly elected Chair.

The Town of Leicester's water and sewer is currently provided by a number of private/public water and sewer districts, as you know. Some of the said districts are facing dire straights. In one district, they have retrofitted a water supply pipe built and intended to supply the City of Worcester, Massachusetts, with emergency water supply from Henshaw Pond – in order to import water *from* Worcester rather than supply it as intended. In that case, our residents in that district were paying 350% of the base Worcester citizen water rate for water being pumped from Kettlebrook through Worcester and back to Leicester. This unconscionable scenario has spurred a soup to nuts review of the solutions available to the Town of Leicester and the said districts contained therein, in the form of a study funded by the state and federal government through Congressman Jim McGovern and state senator Michael O. Moore.

It appears the Town of Leicester and Leicester Water Supply District have made it their legal goal to bring Moose Hill Reservoir online as a public water supply, per a 2003 Intermunicipal Agreement that expires in 2028. Based on prior studies, Moose Hill is rated to supply 1.5mil gallons of water per day – before even sinking a well in an area with a reasonably high water table.

The time has never been more ripe for Moose Hill's consummation, Mr. President. The residents of Leicester, Róchdale, and Cherry Valley are desperately in need of assistance.

In my opinion, the \$30mil it would cost to build an “end all be all” water treatment facility would not only alleviate our water problems for the next 100 years – it would allow us to facilitate the Route 9 Business corridor, and related contracts, for the purposes

they were intended. The Town of Spencer, Massachusetts, next door to us is stable and selling water to other entities, yet here we are still stuck in 1987, water planning wise.

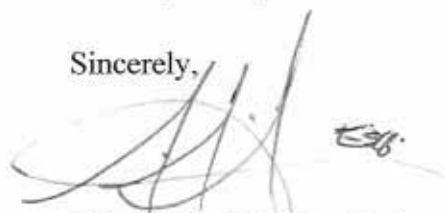
I am wondering what solutions might be available to the Town of Leicester, President's Office, to utilize the full capacity of the Leicester water supply? We need money allotted for a water treatment facility and associated infrastructure, so we can Build Back Better.

This is certainly a challenging situation facing the Town of Leicester – and the region – from an infrastructure and water supply standpoint. Please don't pass over this important infrastructure issue: water supply and filtration.

Why are my neighbors and I paying millions collectively for water districts that are failing from all objective measures - and also have to buy Poland Springs bottled water to drink?

Thank you for your consideration.

Sincerely,

A handwritten signature in dark ink, appearing to read "M. Shivick", with a small "KJB" written to its right.

**Michael J. Shivick, Chair
Moose Hill Water Commission
Town of Leicester, Massachusetts**

Enc: 2003 Intermunicipal Agreement; Correspondence from Town of Spencer;

Cc: Town of Leicester;

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AGREEMENT FOR EXPANSION OF WATER AND SEWER SERVICE ALONG ROUTE 9
BETWEEN
LEICESTER WATER SUPPLY DISTRICT
AND
TOWN OF LEICESTER

THIS AGREEMENT made and entered into this 13th day of May, 2003, by and between the Leicester Water Supply District ("District"), a body corporate established under Chapter 171 of the Acts of 1887, as amended, and Chapter 181 of the Acts of 1893, as amended, acting by and through its duly constituted Board of Commissioners, having principal offices at 124 Pine Street, Leicester, Massachusetts 01524, and the Town of Leicester, a municipal corporation with a usual place of business at Washburn Square, Leicester, Massachusetts 01524, as it is acting through its Board of Selectmen and referenced as the "Town."

The immediate intent of this Agreement the Town and the District are mutually entering into is to provide an interim water supply and sewer connection for the rezoned portion of Route 9 West recently accepted by the District to be included within its boundaries. This Agreement will assist the Town in promoting the rezoned Route 9 West corridor for business activities.

It is understood that current District plant capacities for water and sewer are limited and will only provide an interim solution. Therefore, the long-range goal of the Town and the District shall be the development of the Moose Hill Reservoir and/or Shaw Pond as a primary water source for the entire Town. The water transmission main being installed under this Agreement would then become a key component for the distribution of these water sources.

In consideration of the mutual promises herein contained, the Town and the District agree as follows:


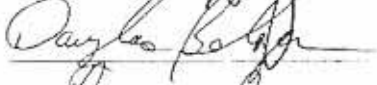
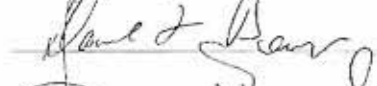


1. The Town and the District have been duly authorized to enter into this Agreement by a vote of the Town Meeting for the Town of Leicester and a vote of the District Meeting for the Leicester Water Supply District, attested copies of which are attached hereto as "Exhibit 1" as to the Town vote, and "Exhibit 2" as to the District vote.
2. The District has expanded the District limits to include all the properties that are adjacent to and that abut Route 9 from the expanded District limits at Mt. Pleasant Drive to the Spencer Town line including the West Main Street section.
3. The Town has rezoned Route 9 from Residential to Business Industrial Zoning.
4. The Town shall construct a Water Line in Route 9 and West Main Street and Water Booster Station on property purchased by the District in the vicinity of 1340 Main Street also known as Mt. Pleasant. The Water Line shall be financed and paid for by the town and constructed under Massachusetts Highway Project 600858-02. The Water Booster Station shall be financed and paid for by the town and constructed as part of a joint Town/District construction project.

5. The District shall construct a Sewer Line in Route 9 and West Main Street and Sewer Pump Station on or adjacent to Town Beach Road. The Sewer Line shall be financed and paid for by the District and constructed under Massachusetts Highway Project 600858-02. The Sewer Pump Station shall be constructed by the District.
6. The District shall provide water to the water transmission line from the intersection of Route 9 and Route 56 to the extension on West Main Street. The connection to the water booster station shall be built by the Town on Route 9 on property purchased by the District in the vicinity of 1340 Main Street also known as Mt. Pleasant. The water line from Route 56 to the pump station shall be utilized as the feed line to the booster station until the Moose Hill Reservoir facility is in operation.
7. The District shall provide sewer service to the existing residential properties and to all current and future commercial and industrial properties within the District.
8. The District shall provide water service and limited fire protection service west to Spencer Town Line including West Main Street through the water main from the booster station until such time as Moose Hill Reservoir facility pumps water from the reservoir.
9. Ownership of the water mains and Water Booster Station, after construction and acceptance by the Town, shall be relinquished to the District with the perpetual rights reserved to the Town to transmit water through the water mains from the Moose Hill facility to the distribution points at Route 9 and Route 56. The connection to the District system shall remain and shall be used as a distribution connection between the new water transmission main and the existing distribution main of the District for metering purposes from the Moose Hill Reservoir facility. The District shall meter any water usage at the District's expense once water is supplied from Moose Hill Reservoir, for payment to the Town at a rate and method of payment to be mutually agreed upon by the Town and the District.
10. The District shall construct and own a water storage tank at the District's expense at a later date to provide fire flow storage and future water storage from the Moose Hill Reservoir facility. Once the Town utilizes said tank for water storage, any maintenance and/or use costs shall be negotiated between the Town and the District.
11. All connections made to the newly installed water mains in the Route 9 West corridor shall be serviced by the District. All connection/entrance fees shall be determined by and belong to the District.
12. All operational and maintenance costs related to the water mains and water booster station installed shall be the responsibility of the District.

13. Once Moose Hill Reservoir facility water is provided to the water mains, the water mains shall also become a distribution/transmission main from the Moose Hill Reservoir facility. The booster pump station shall become a standby station in the event the Moose Hill Reservoir facility is taken off line or placed out of service. Any connections made to the water main between the facility and the Route 9/Route 56 intersection shall be metered for water and the District shall compensate the Town for the water used. The rate for water so metered shall be determined by the formula described on "Exhibit 3" attached hereto.
14. Connections to the water transmission mains, which shall include metering devices, structures, and appurtenances at the Route 9--Route 56 termination for the Cherry Valley and Rochdale District and the Hillcrest District shall be the responsibility of each District. No water shall be provided to these Districts until Moose Hill Reservoir facility is supplying water unless otherwise agreed to by the Leicester Water Supply District.
15. This agreement is entered into under the authority of Mass. General Laws Chapter 40, Section 4A, shall be governed by the terms of said Chapter 40, section 4A, and shall have a term of twenty-five years beginning on the date of the execution of this Agreement.
16. Annually during construction, the Town and the District shall cooperate in conducting an audit of the funds so expended under this Agreement and will provide a consolidated financial statement in a form approved by the Treasurer of the District and the Accountant of the Town setting forth all funds received by the project and expended together with such other pertinent financial information as may be deemed necessary by the respective officers of each party. Upon completion of the project, the Town and District shall prepare a final audit report for the project.
17. The financial liability of each party shall not exceed the amount appropriated by the Town at its town meetings, either annual or special, and by the District at its district meetings, either annual or special.
18. Annually, the Town, represented by a member of the Board of Selectmen, a member of the Moose Hill Water Commission and the Town Administrator, shall meet with the District Commissioners to review and discuss the current water and sewer capacities and water distribution system of the District. Information shared through this meeting will be utilized by all parties to promote the development of Moose Hill Reservoir and/or Shaw Pond as a primary water source and to market the Route 9 West corridor for business development.

IN WITNESS WHEREOF, the Town and the District have executed this document in the name of the inhabitants of the Town of Leicester and the Leicester Water Supply District, this 13th day of May, 2003.


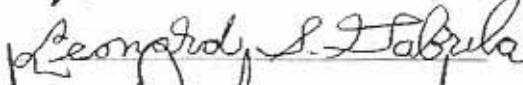
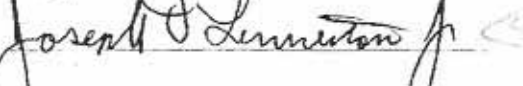

TOWN OF LEICESTER
By its Board of Selectmen:

Approved as to form:


 Town Counsel

LEICESTER WATER SUPPLY DISTRICT
By its District Commissioners:


 District Counsel

**TOWN OF SPENCER, MASSACHUSETTS
OFFICE OF THE
WATER DEPARTMENT**

NORMAN C. LETENDRE, JR.
EBEN J. BUTLER
STEVEN J. TYLER



WILLIAM J. CUNDIFF, P.E.,
SUPERINTENDENT

3 OLD MEADOW ROAD
SPENCER, MA. 01562

TEL. 508-885-7525
FAX: 508-885-9416
TTY: 508-885-7525

March 23, 2021

Mr. Michael J. Shivick, Chair
Moose Hill Water Commission
3 Washburn Square
Leicester, MA 01524

RE: Moose Hill Reservoir and Shaw Pond

Dear Chairman Shivick,

The Spencer Board of Water Commissioners (SWC) met on March 3, 2021 and at that time reviewed and discussed your letter dated January 27, 2021. The following responses correspond to the questions raised in the aforementioned letter.

Sugden Reservoir / Moose Hill Reservoir

Question: According to the Moose Hill Water Commission, based upon a 2011 Moose Hill Commission written report, an issue was raised regarding impacts to the Sugden Reservoir because of the lack of use of the Moose Hill Reservoir.

Response: The Commissioners felt that they need to review a copy of the 2011 written report in order to better understand the scope and extent of the issues raised. Knowing the context of the matter may provide some insight into the issue and allow the Commissioners to better respond to your question. If you could forward a copy of the report to my attention, I will make certain the Commissioners have it before their next meeting.

Shaw Pond

Question: What license or other grant of rights to the Town of Spencer regarding Shaw Pond?

Response: The Town of Spencer owns Shaw Pond in its entirety, which is registered as Public Water Supply (PWS) Source ID # 2280000-01S with the Massachusetts Department of Environmental Protection (DEP). It is also the Spencer Water Commissions understanding that the Shaw Pond watershed, and water rights in their entirety, are also owned by the Spencer Water Department as the Outstanding Resource Water (ORW) PWS Watershed for our public water supply rights at Shaw Pond. All of Shaw Pond and its entire watershed are listed as PWS Source ID # 2280000-01S, which is the Town of Spencer's registered Emergency PWS. The PWS was in regular use until 1998 until it became regulated under the Safe Drinking Water Act, which required pre-treatment of surface water supplies. As a result, the Spencer Water Department has transitioned to groundwater wells as our currently active PWS source and maintains the rights to using Shaw Pond as needed.

Leicester – Spencer Partnership

Question: Is there any need for additional water supply within the Town of Spencer?

Response: The Town of Spencer does not have immediate water supply needs, but we do like to keep our options open. As such we are always willing to discuss and explore mutually beneficial scenarios.

One Centralized Water Commission

Question: Having one water (or water/sewer) district within a Town, as I am sure you know, may have pros and cons. Obviously a single larger district may have more resources readily available and can consolidate manpower and equipment. This may result in an overall savings to the users. Conversely, if a district has difficulties such as the 350% markup from other sources, the remaining districts (users) are not burdened with that expense. However, speaking in generalities probably will not answer specific questions or issues faced by Leicester with regard to their water supply issues.

Response: We only know the perspective of a single source PWS for the community we serve. We can imagine the difficulties of having multiple districts, different rates, treatments, staff, etc. for multiple districts and their customers, respectively. It is recommended that the Leicester Districts explore their pros and cons jointly, much like you have reached out the Spencer Water Commission, to see if there is an interest. Assuming there is, whether partially or in whole, it seems like it would be a good conversation to have for your users.

I hope this answers some of your questions. We look forward to continuing our discussion on Moose Hill Reservoir after we receive the 2011 Report. If you have any other questions or comments, do not hesitate to contact me.

Very truly yours,
Utilities & Facilities Department

William J. Cundiff, P.E.
Superintendent



TOWN OF LEICESTER

Office of Development & Inspectional Services

3 Washburn Square

Leicester, MA 01524



FOREVER / USA



FOREVER / USA

President Joseph R. Biden
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Town of Leicester
Moose Hill Water Commission
3 Washburn Square
Leicester, Massachusetts 01524
508.892.7007 (p)
508.892.7070 (f)

April 23, 2021

Town of Spencer
Board of Water Commissioners
3 Old Meadow Road
Spencer, Massachusetts 01562
Attn: Norman C. Letendre, Chair
RE: Moose Hill Reservoir & Shaw Pond

Dear Mr. Chairman,

Thank you and the Board of Water Commissioners for taking the time to discuss and respond to my letter of 1/27/21. I have attached the information regarding Sugden Reservoir. Thank you for your anticipated input.

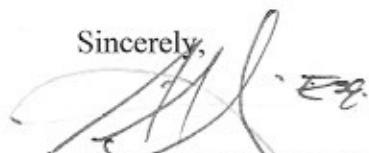
I would also like to cordially invite you to a joint public meeting of the Moose Hill Water Commission and Spencer Board of Water Commissioners. We meet on the last Thursday of the month and would like your Board to attend the virtual meeting with our Board on *Thursday, May 27, 2021 at 6pm*. The purpose would be to engage in a general discussion of any mutually beneficial scenarios for Spencer and Leicester regarding water supply and filtration, as well as the undeniable geographic connection between our towns. If so, I can forward the link and answer any questions you may have.

Also, could you please forward a map or other information regarding Shaw Pond and its related infrastructure? I am trying to determine its accessibility and relation to the 16" water main the Town installed in Route 9 West in the 2000s and is intended to supply our town water from Moose Hill and/or Shaw Pond.

Finally, see the enclosed 2003 Intermunicipal Agreement. Did anyone ever contact the Town of Spencer regarding this contract and/or about use of Shaw Pond by the Town of Leicester? If so, what is the history of that matter?

Thank you for your consideration and input.

Sincerely,



Michael J. Shivick, Chair

Moose Hill Water Commission
Town of Leicester

Enc: report on sugden; report of kaminski, MHWC minutes; 2003 IMA;

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Created near the top of Turkey Hill, the Sugden Reservoir Dam impounds the waters of Shaw Brook and Turkey Hill Creek creating the Sugden Reservoir for waterpower storage. This waterpower supplied industry in both the Upper and Lower Wire Village, sections of North Spencer, Massachusetts.^[1] The first wire-making industry in the country used this watershed for waterpower. Owned first by the Prouty Brothers (a famous Spencer Family), a wire mill that became Wickwire-Spencer, was purchased by Richard Sugden who improved the mills by creating the Sugden Reservoir in 1882. At one time, Spencer had eleven factories and twenty-six buildings for wire drawing along Turkey Hill Creek and the Seven Mile River^[2]. Never used for potable water, this reservoir provided only industrial waterpower storage. The energy storage was considerable because of the high elevation of this reservoir relative to the mouth of Turkey Creek where it enters the Seven Mile River.

Sugden Reservoir



Location

Surface area	85.3 acres (34.5 ha)
Average depth	11 ft (3.4 m)
Max. depth	22 ft (6.7 m)
Shore length¹	2 mi (3.2 km)
Surface elevation	840 ft (256 m) MSL

Settlements



As everyone can see, we are losing a considerable amount of water this year. There are two reasons for this. The first is that we have not had any substantial rains in June or July. The second is that we are still letting out a little more than is coming in. The dam gate is broken and will not seal all the way.

We have asked for help through the town and have received good support so far. They have brought in engineers and dive

crews to assess the situation. We should have a report back for the annual meeting.

There has been a temporary plug put on the inlet side to slow the water flow going through. This is just a small patch to help out for now. It has slowed the flow going out a lot. We will be looking into a permanent solution should this situation arise again.

We will also be sending out letters to our representatives, which will include a demand to have Moose Hill opened up to allow more water to come through. In 1980 when the dam was built as a flood zone protection, Sugden Reservoir was suppose to get enough water to maintain our levels. This is not happened and we need to get to the bottom of this.

For now let's hope for the best and check back for the latest updates.

_Al Stolarczyk

MOOSE HILL UPDATE, LETTER TO OUR REPS

**Moose Hill request rejected by DEP
LEICESTER SELECTMEN**

By Betty Lilyestrom CORRESPONDENT

LEICESTER — Selectmen have learned that the Massachusetts Department of Environmental Protection has rejected the request of the Moose Hill Water Commission for conditional approval of the unused Moose Hill Reservoir as a potential surface water source.

The board is upset that it took the DEP seven months to reply to the request.

In the letter the commission received on July 21, the DEP said it would not approve the request until all the steps outlined for the commission last year have been completed.

Selectmen and Town Administrator Robert Reed said, however, that what the town had been seeking was to have some of the steps pointed out as sufficient for conditional approval.

They said they had been told to work with a consultant to determine which steps they should follow to do this, and had been working with Jon Beekman of SEA Consultants since December on the project.

"After talking with Mr. Beekman, we have asked the DEP to give us a couple of manageable steps we could take to at least get conditional approval of the project," said Mr. Reed. "Now, after leaving us waiting for a full seven months, they're saying that it's not going to happen."

Mr. Reed described the action as "a huge step backward" and said he had talked with Mr. Beekman, who said he doesn't know what to do next.

Chairman of the Board of Selectmen Thomas V. Brennan Jr. directed that the DEP letter be copied to the town's state representative and senator as well as to Lt. Gov. Timothy P. Murray, who was interested in the project because he felt it could benefit Worcester, where he was formerly mayor, as well as Leicester, Mr. Brennan said.

Selectman Stanley Zagorski wanted to determine the cost of following all the required steps.

Mr. Reed estimated that would take "multiple six figures and a couple of years to complete."

"And we would then have to go before DEP for approval, which we might not get, and we would have spent all that money and time for nothing," he said.

SUDGEN BOARD MEMBERS

Alan Stolarczyk - President 508-868-4437

Gordon Clogston - VP 508-885-9050

Diane Krosocska - Interim Secretary

Joanne Seymour - Treasurer 508-885-4145

Board of Directors: Jonathan & Caroline Ely; Tom Flannery; Charlie Bromage; Lynda Hafner; Jenny Colella; Bonnie Lindberg; Mercy Vinton; Diane Krosocska



Ruth L. Kaminski
 P.O. Box 479
 25 Moose Hill Road
 Leicester MA 01524
 508-873-2363
kaminskik@charter.net

Report to the Moose Hill Water Commission 3/14/11

The 85 acre Sugden Reservoir in Spencer immediately down gradient of the Moose Hill Reservoir has an active Lake Association. This body of water/dam though surrounded by residential homes is owned by the Town of Spencer.

During the summer of 2010 when most recreational water bodies in Massachusetts were experiencing considerable drought conditions. The Sugden Lake dam gate is letting out more water than is coming in as evidenced in the Sugden Lake Association (SLA) web site which in part reads:

There has been a temporary plug put on the inlet side to slow the water flow going through. This is just a small patch to help out for now. It has slowed the flow going out a lot. We will be looking into a permanent solution should this situation arise again.

The SLA put together a letter in August 2010 to a number of local, state and federal officials soliciting assistance in controlling the water flow into Sugden from Moose Hill Reservoir. SLA claims that this was "guaranteed" by correspondence in 1980. The SLA letter in part stated:

SUDGEN LAKE ASSOCIATION OFFICERS AND DIRECTORS:

Alan Stolarczyk - President 508-868-4437

Gordon Clogston -VP 508-885-9050

Diane Krosocska - Interim Secretary

Joanne Seymour- Treasurer 508-885-4145

Board of Directors: Jonathan & Caroline Ely; Tom Flannery; Charlie Bromage; Lynda Hafner; Jenny Colella; Bonnie Lindberg; Mercy Vinton; Diane Krosocska

As stated on the web SLA site "the Sugden Lake dam gate is letting out more water than is coming in" and this was due in 2010 to drought conditions as well as Sugden dam gate problems that have been temporarily repaired. I do not feel that the burden of keeping the lake at certain levels should be the sole responsibility of the DCR in keeping Moose Hill down when Sugden needs water. Normal conditions would allow that Moose Hill respond to dropping water levels to maintain a normal water flow in consideration of weather conditions. But to say that Moose Hill should be lowered for purposes of maintaining the levels of the Sugden recreational water body if their dam is leaking is in my opinion not in the best interest of the Moose Hill Reservoir ecosystem in an attempt to save another. Mother Nature generally does not like that kind of agreement.

Frankly, I am not promoting Moose Hill in these comments in any way as a water supply or even potential water supply. What I am doing is asking that the Moose Hill Water Commission and thus the Town of Leicester take an active part in the water rights that they in fact own.

I also tried to find in any correspondence that the SLA tried to contact anyone on the Moose Hill Water Commission or the Town of Leicester and could not find any said attempt to contact.

For many years I was President of the Massachusetts Congress of Lake and Pond Associations. I am currently an Honorary Member due to my years of service to the 3500 lakes and pond in the Commonwealth. So it is known that I am an advocate for recreational water bodies in Massachusetts and beyond.

However, Moose Hill Reservoir to me currently is just that, a recreational water body. With the DEP determining that there is much to do before the state would even consider this a water supply reservoir, we have no choice but to actively pursue our position as a community that values this water body possesses recreationally.

To that end we should establish the following goals and objectives as the Moose Hill Water Commission.

- To seek a cooperative agreement with the State of Massachusetts, owners of the land abutting the Moose Hill Reservoir that establishes the ground rules for local authority of said land use.
- Establish printed and published rules and regulations for the land use that include but not limited to:
 - Picnicking
 - Hiking (particularly in light of the fact that the Massachusetts Mid State Trail is evident)
 - Biking and/or Horse Back Riding
 - Hunting and fishing
 - Motorized vehicle use; parking
 - Skating
 - Educational; historic interests; and outdoor classrooms
 - Litter control; Vandalism and breach of peace control
 - Woodland; stone wall; grassland maintenance
 - Interaction with the local police authority for enforcement
- It is evident that the dwindling state budget is not conducive to maintaining the land around Moose Hill Reservoir for the agency involved, DCR.
- Said Agency, DCR, has in the past received funds to fix the swales along the roadway but it appears that their primary purpose is the dam and the dam structure. There are 30 plus Federal flood dams not counting state

owned dams that need to be maintained. Moose Hill historically has not been at the top of the list for land maintenance and understandably so. 21

- Moose Hill Water Commission should work with citizens who are concerned about the area around Moose Hill due to the enormous tax revenue that went into this reservoir area creation, and support the efforts of the "Friends of Moose Hill" group that will help to raise funds for general maintenance, education and beautification as continued upkeep of the area.
- Moose Hill Water Commission will work with the Town to establish a gift account for purposes of maintaining the land in and around Moose Hill Reservoir with these purposes in mind.
- Said expenditure of funds do not stop at the Leicester town line however. A good example of this is the need for roadwork at the Spencer outlet of Moose Hill where jersey barriers have been evident for too many years. A solid bridge should be placed appropriately through the proper political channels in Spencer. As a result of this multi town effort Moose Hill Water Commission will seek assistance from Town Administrator Bob Reed in working this out legally and solidly for the future of the entire area regardless of which town maintenance is needed.
- If State and Town partnership in this endeavor does not come to fruition the Moose Hill Commission will open active discussions to seek legislation to take the land from the State to accomplish the goals as mentioned.
- It is recognized that the town of Leicester due to it's size and composition is not suited to maintain the huge flood control dam structure. It is not the intent of the Moose Hill Commission to take over this function which is appropriately placed with the dam inspectors and engineers with the State DCR.
(Dan Mortel, Dave Burns, Bill Saloma)

I on behalf of the Moose Hill Water Commission is working with Larry Boutiette who was the original USAD SCS engineer with the Moose Hill Reservoir production. Mr. Boutiette is very knowledgeable of the creation of this reservoir and its intended use etc. I too have history with the creation of this reservoir.

It should not be the intent of the Moose Hill Water Commission to work in a counter productive way toward the Sudgen Lake Association. It should always be the goal to work together for the best interest of all concerned.

For purposes of discussion the 1st draft of sample like regulations is attached hereto which we fully realize will not come to fruition until some agreement with the State DCR can be reached or legislation is filed and passed along with town meeting action.

The goal of the commission should be to protect the land for the future of the inhabitants of this area of Central Massachusetts. Protecting the land is part and parcel to protecting the water as a resource for whatever reason be it recreational or water supply.

Thank you for your time and consideration.

Written into the record.

General Rules and Regulations for the Protection of Watersheds and the Watershed System within the Moose Hill Reservoir in Leicester Massachusetts.

(a) General Regulations adopted by the Moose Hill Water Commission.

1. Entrance on and exit from land of the Watershed System shall be made through gates or other designated areas.
2. No Person is allowed within any land of the Watershed System, except from one hour before sunrise to one hour after sunset, unless authorized by a written permit from the Commission or its designee.
3. Powered boats are prohibited within the Waters of the Watershed System.
4. All acts which pollute or may pollute the water supply are prohibited. No litter or refuse of any sort may be thrown or left in or on any land or water within any Watershed System.
5. All acts which injure the property of the Town of Leicester are prohibited. No Person shall injure, deface, destroy, remove or carry off any property, real or personal, under the care and control of the Commission, including but not limited to, all historic artifacts and natural materials. The removal of gravel, topsoil, stones, boulders, or other earthen material is prohibited from the Watershed System except for removal for official use for land management purposes by Commission approved parties. No Person shall build or construct any object or structure of the property of the Town of Leicester except with the written permission of the Commission or its designee.
6. Cooking and all fires are prohibited within the Watershed System.
7. No Person shall wade or swim in any reservoir.
8. No Person shall wade or swim in any Tributary or Surface Waters on or within the watershed property of the Town of Leicester except at areas designated by the Commission or its designee.
9. Organized sports activities are prohibited in the Watershed System except by written permit from the Commission or its designee.
10. Any violation of these regulations will be deemed sufficient cause for seeking revocation of fishing privileges for a period of time. The Commission is not responsible for any damage to or loss of property sustained by fishermen, or for any injury or loss of life which may be incurred in connection with public use of the reservoirs and Watershed System.
11. Breach of peace, profanity or other disorderly conduct offensive to the general public is strictly prohibited within the Watershed system. Possession of and drinking of alcoholic beverages is prohibited within said System.
12. No Person shall drive a motorized vehicle within the Watershed System. Recreational vehicles are prohibited on all Watershed System property except the use of snowmobiles in areas designated by the Commission or its designee. Motor vehicles shall be parked only in areas designated by the Commission or its designee. Operators of motor vehicles shall obey all regulatory signs unless otherwise directed by a police officer or person in charge. Vehicle access for official use may be granted by the Commission or its designee.
13. No Person shall bring any animal within any Watershed System property except for areas designated by the Commission or its designee.
14. The use of bicycles, skis and other means of non-motorized transportation within the Watershed system shall be permitted only in areas designated by the Commission or its designee.
15. No Person, except in an emergency, shall bring, land or cause to descend within any Watershed System property any aircraft.

- 23
16. Parades, games, fairs, carnivals, fishing derbies, bazaars, gifts or solicitations for raising or collecting funds shall not be permitted within the Watershed System without written approval of the Commission or its designee.
17. Lotteries, raffles, gambling and games of chance are prohibited; and no Person shall have possession of machinery, instruments or equipment of any kind for use of same in the Watershed System.
18. Public assemblies of more than 25 persons shall not be allowed within the Watershed System without a written permit from the Commission or its designee.
19. No Person shall engage in any business, sale or display of goods or wares within the Watershed System without a written permit from the Commission or its designee.
20. Commercial signs and advertising are prohibited in the Watershed System.
21. No Person shall have possession of or discharge any weapon, firearm, fireworks, or other explosive on or within the Watershed System except at times and areas designated by the Commission or its designee. All forms of target shooting are prohibited on or within the Watershed System.
22. No Person may hunt, shoot or trap animals on or within any Watershed System property except at times and in areas designated by the Commission or its designee.
23. All Persons within the Watershed System shall obey the lawful directions of regulatory signs, police officers or persons in charge, or of Federal or Commonwealth wardens or enforcement officers.
24. The Watershed System or parts thereof may be closed for public access at the discretion of the Commission or its designee when necessary to protect the lands and waters under the care and control of the Commission.
25. The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed System property.

draft

PUBLIC ACCESS SUMMARY
FOR THE MOOSE HILL WATERSHED LEICESTER MASSACHUSETTS

ACTIVITY ALLOWED/NOT ALLOWED
VEHICLE ACCESS:

Off-Road Driving(ORVs, ATVs)

Snowmobiling

Bicycling

FOOT ACCESS:

Hiking ✓ ✓ ☆

Dog Walking

Cross-Country Skiing ✓ ☆

Shoreline Fishing ✓ ✓ ☆

Horseback Riding

Hunting

WATER ACCESS:

Boating - non -motorized

Boating – motorized (including “jet-skis”)

Swimming

Ice Skating/Ice Fishing

OTHER ACTIVITIES:

Camping

Picnicking ✓ ✓ ☆

Fires & Cooking

Collecting/Metal Detecting



— Public access is allowed in designated areas only

— Activity prohibited

Public access is allowed in designated areas only.

Any activity which injures or defaces the property of the Town of Leicester is strictly prohibited.

All alcoholic beverages are prohibited.

Night access is prohibited on Town of Leicester land in the Moose Hill Reservoir watershed.

**Moose Hill Water Commission
Meeting Minutes**

25

Minutes of March 14, 2011

Members present: Kurt Parliment, Chairman; Frank Rigiero, Jr., Ruth Kaminski

Meeting called to order at 6:10PM

Approval of Minutes:

1/10/11

MOTION: Ms. Kaminski moved to approve the minutes of January 10, 2011

SECONDED: Mr. Rigiero – Discussion: None

Vote: All in Favor

Discussion:

Land Use Regulations/Sugden Reservoir Assoc.

Ms. Kaminski submitted a report to the Moose Hill Water Commission dated 3/14/11 for discussion.

The report read as follows:

The 85-acre Sugden Reservoir in Spencer, immediately down gradient of the Moose Hill Reservoir, has an active Lake Association. This body of water/dam though surrounded by residential homes, is owned by the Town of Spencer.

During the summer of 2010, when most recreational water bodies in Massachusetts were experiencing considerable drought conditions, the Sugden Lake dam gate was letting out more water than was coming in as evidenced in the Sugden Lake Association (SLA) web site which in part reads:

There has been a temporary plug put on the inlet side to slow the water flow going through. This is just a small patch to help out for now. It has slowed the flow going out a lot. We will be looking into a permanent solution should this situation arise again.

The Sugden Lake Association (SLA) put together a letter in August 2010 to a number of local, state and federal officials soliciting assistance in controlling the water flow into Sugden from Moose Hill Reservoir. SLA claims that this was “guaranteed” by correspondence in 1980. The SLA letter in part stated:

SUGDEN LAKE ASSOCIATION OFFICERS AND DIRECTORS:

Alan Stolarczyk - President 508-868-4437

Gordon Clogston - VP 508-885-9050

Diane Krosocska - Interim Secretary

Joanne Seymour- Treasurer 508-885-4145

Board of Directors: Jonathan & Caroline Ely; Tom Flannery; Charlie Bromage; Lynda Hafner; Jenny Colella; Bonnie Lindberg; Mercy Vinton; Diane Krosocska

As stated on the web SLA site "the Sugden Lake dam gate is letting out more water than is coming in" and this was due in 2010 to drought conditions, as well as, Sugden dam gate problems that have been temporarily repaired. The Commissioners do not feel that the burden of keeping the lake at certain levels should be the sole responsibility of the DCR in keeping Moose Hill down when Sugden needs water. Normal conditions would allow that Moose Hill respond to dropping water levels to maintain a normal water flow in consideration of weather conditions. But to say that Moose Hill should be lowered for purposes of maintaining the levels of the Sugden recreational water body if their dam is leaking is not in the best interest of the Moose Hill Reservoir ecosystem in an attempt to save another. Mother Nature generally does not like that kind of agreement.

These comments are not promoting, in any way, Moose Hill as a water supply or even potential water supply. The Moose Hill Water Commission and the Town of Leicester will need to take an active part in the water rights that they in fact own.

Also there has not been any correspondence found showing that the SLA tried to contact anyone on the Moose Hill Water Commission or the Town of Leicester and there have been no attempt to contact either party.

Ms. Kaminski noted that for many years she was President of the Massachusetts Congress of Lake and Pond Associations and currently an Honorary Member due to her years of service to the 3500 lakes and pond in the Commonwealth. So it is known that she is an advocate for recreational water bodies in Massachusetts and beyond.

However, Moose Hill Reservoir is currently considered a recreational water body. With the DEP determining that there is much to do before the state would even consider this a water supply reservoir, we have no choice but to actively pursue our position as a community that values this water body possesses recreationally.

To that end the Commissioners should establish the following goals and objectives as the Moose Hill Water Commission.

- To seek a cooperative agreement with the State of Massachusetts, owners of the land abutting the Moose Hill Reservoir that establishes the ground rules for local authority of said land use.
- Establish printed and published rules and regulations for the land use that include but not limited to:
 - Picnicking
 - Hiking (particularly in light of the fact that the Massachusetts Mid State Trail is evident)
 - Biking and/or Horse Back Riding
 - Hunting and fishing

- Motorized vehicle use; parking
 - Skating
 - Educational; historic interests; and outdoor classrooms
 - Litter control; Vandalism and breach of peace control
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 - Said Agency, DCR, has in the past received funds to fix the swales along the roadway but it appears that their primary purpose is the dam and the dam structure. There are 30 plus Federal flood dams not counting state owned dams that need to be maintained. Moose Hill historically has not been at the top of the list for land maintenance and understandably so.
 - Moose Hill Water Commission should work with citizens who are concerned about the area around Moose Hill due to the enormous tax revenue that went into this reservoir area creation, and support the efforts of the "Friends of Moose Hill" group that will help to raise funds for general maintenance, education and beautification as continued upkeep of the area.
 - Moose Hill Water Commission will work with the Town to establish a gift account for purposes of maintaining the land in and around Moose Hill Reservoir with these purposes in mind.
 - Said expenditure of funds do not stop at the Leicester town line however. A good example of this is the need for roadwork at the Spencer outlet of Moose Hill where jersey barriers have been evident for too many years. A solid bridge should be placed appropriately through the proper political channels in Spencer. As a result of this multi town effort Moose Hill Water Commission will seek assistance from Town Administrator Bob Reed in working this out legally and solidly for the future of the entire area regardless of which town maintenance is needed.
 - If State and Town partnership in this endeavor does not come to fruition, the Moose Hill Commission will open active discussions to seek legislation to take the land from the State to accomplish the goals as mentioned.
 - It is recognized that the Town of Leicester, due to its size and composition, is not suited to maintain the huge flood control dam structure. It is not the intent of the Moose Hill Commission to take over this function which is appropriately placed with the dam inspectors and engineers with the State DCR.
- (Dan Mortel, Dave Burns, Bill Saloma)

Ms. Kaminski, on behalf of the Moose Hill Water Commission, is working with Larry Boutiette, who was the original USAD SCS engineer with the Moose Hill Reservoir production. Mr. Boutiette is very knowledgeable of the creation of this reservoir and its intended use etc.

It should not be the intent of the Moose Hill Water Commission to work in a counter productive way toward the Sugden Lake Association. It should always be the goal to work together for the best interest of all concerned.

For purposes of discussion the 1st draft of sample like regulations is attached hereto, which we fully realize will not come to fruition until some agreement with the State DCR can be reached or legislation is filed and passed along with Town Meeting action.

The goal of the Commission is to protect the land for the future of the inhabitants of this area of Central Massachusetts. Protecting the land is part and parcel to protecting the water as a resource for whatever reason be it recreational or water supply.

Ms. Kaminski proposed contacting DCR suggesting that the Town, i.e. Moose Hill Commission, resume the responsibility of maintaining the reservoir property. With the financial restraints currently facing most communities, she felt that the State would be willing to work with the Commissioners on taking over the maintenance. A copy of the maintenance agreement between the Commonwealth and Town will be sent to each Commissioner for review. Mr. Parliment agreed to get clarification from DCR on whom to contact within their agency when questions and issues come up, as well as what the process would be on taking over the maintenance program. Also, to find out who has the "turn-table", i.e., key to the dam. 28

Ms. Kaminski will also pursue speaking with Larry Boutiette and getting him to attend a Commissioner's meeting to help guide and answer questions.

Ms. Kaminski proposed writing into the rules & regulations a statement that says "No Release of Water from the Moose Hill Reservoir unless the Commissioners allow". All agreed.

Budget/Financial Reports

Payroll; Jan-Feb (11 hours) - voted and approved

Budget Reports for October, November & December 2010 - reviewed

E-mail memo dated 1/27/11 from Ms. Kaminski regarding FY12 budget estimate request to cut budgets by 20%

Mr. Parliment informed the Commission that a cover letter was submitted along with the FY12 Budget estimate request to Advisory & Town Administrator, stating that a 20% budget cut would make it impossible for the Moose Hill Commission to function.

Correspondence:

Memorandum from the Office of the Selectmen regarding Annual Town Meeting Warrant now opened and will close on March 29th.

The Commission was recently informed that SEA Consultants had been consolidated with another Engineering Firm and is now operating under a different name. The new name was not known at this time.

A copy of the Special Town Meeting Warrant for March 8, 2011 received from the Town Clerk's Office

Article Request Form for the Annual Town Meeting received from the Office of the Board of Selectmen

A copy of a letter from the US Environmental Protection Agency regarding that agency being in complete support of the comments forwarded by the Leicester Stormwater Committee

Budget reports for October, November & December 2010

Mr. Rigiero said because he will not be re-running for re-election, suggested waiting until after the Town Election in June before meeting with Larry Boutiette.

All agreed to set the next Moose Hill meeting for Monday June 13, 2011, 6PM.

Looking long term, the Commissioner will need to monitor the Sudgen Lake Association, because the Sudgen Association wants to try and take control of the Moose Hill Water. The Commissioners want to try and work harmoniously with the Sudgen Association because all agreed that they do not want Sudgen to get control of the Moose Hill Water.

MOTION: Mr. Rigiero moved to adjourn meeting

SECONDED: Ms. Kaminski – Discussion: None

Vote: All in Favor

Respectfully submitted:

Barbara Knox

Barbara Knox

draft

General Rules and Regulations for the Protection of Watersheds and the Watershed System within the Moose Hill Reservoir in Leicester Massachusetts.

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draft

PUBLIC ACCESS SUMMARY
FOR THE MOOSE HILL WATERSHED LEICESTER MASSACHUSETTS

ACTIVITY ALLOWED/NOT ALLOWED
VEHICLE ACCESS:

Off-Road Driving(ORVs, ATVs)

Snowmobiling

Bicycling

FOOT ACCESS:

Hiking ✓ ✓ ☆

Dog Walking

Cross-Country Skiing ✓ ☆

Shoreline Fishing ✓ ✓ ☆

Horseback Riding

Hunting

WATER ACCESS:

Boating - non –motorized

Boating – motorized (including “jet-skis”)

Swimming

Ice Skating/Ice Fishing

OTHER ACTIVITIES:

Camping

Picnicking ✓ ✓ ☆

Fires & Cooking

Collecting/Metal Detecting



– Public access is allowed in designated areas only

– Activity prohibited

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Any activity which injures or defaces the property of the Town of Leicester is strictly prohibited.

All alcoholic beverages are prohibited.

Night access is prohibited on Town of Leicester land in the Moose Hill Reservoir watershed.

AGREEMENT FOR EXPANSION OF WATER AND SEWER SERVICE ALONG ROUTE 9
BETWEEN
LEICESTER WATER SUPPLY DISTRICT
AND
TOWN OF LEICESTER

THIS AGREEMENT made and entered into this 13th day of May, 2003, by and between the Leicester Water Supply District ("District"), a body corporate established under Chapter 171 of the Acts of 1887, as amended, and Chapter 181 of the Acts of 1893, as amended, acting by and through its duly constituted Board of Commissioners, having principal offices at 124 Pine Street, Leicester, Massachusetts 01524, and the Town of Leicester, a municipal corporation with a usual place of business at Washburn Square, Leicester, Massachusetts 01524, as it is acting through its Board of Selectmen and referenced as the "Town."

The immediate intent of this Agreement the Town and the District are mutually entering into is to provide an interim water supply and sewer connection for the rezoned portion of Route 9 West recently accepted by the District to be included within its boundaries. This Agreement will assist the Town in promoting the rezoned Route 9 West corridor for business activities.

It is understood that current District plant capacities for water and sewer are limited and will only provide an interim solution. Therefore, the long-range goal of the Town and the District shall be the development of the Moose Hill Reservoir and/or Shaw Pond as a primary water source for the entire Town. The water transmission main being installed under this Agreement would then become a key component for the distribution of these water sources.

In consideration of the mutual promises herein contained, the Town and the District agree as follows:






1. The Town and the District have been duly authorized to enter into this Agreement by a vote of the Town Meeting for the Town of Leicester and a vote of the District Meeting for the Leicester Water Supply District, attested copies of which are attached hereto as "Exhibit 1" as to the Town vote, and "Exhibit 2" as to the District vote.
2. The District has expanded the District limits to include all the properties that are adjacent to and that abut Route 9 from the expanded District limits at Mt. Pleasant Drive to the Spencer Town line including the West Main Street section.
3. The Town has rezoned Route 9 from Residential to Business Industrial Zoning.
4. The Town shall construct a Water Line in Route 9 and West Main Street and Water Booster Station on property purchased by the District in the vicinity of 1340 Main Street also known as Mt. Pleasant. The Water Line shall be financed and paid for by the town and constructed under Massachusetts Highway Project 600858-02. The Water Booster Station shall be financed and paid for by the town and constructed as part of a joint Town/District construction project.

5. The District shall construct a Sewer Line in Route 9 and West Main Street and Sewer Pump Station on or adjacent to Town Beach Road. The Sewer Line shall be financed and paid for by the District and constructed under Massachusetts Highway Project 600858-02. The Sewer Pump Station shall be constructed by the District.
6. The District shall provide water to the water transmission line from the intersection of Route 9 and Route 56 to the extension on West Main Street. The connection to the water booster station shall be built by the Town on Route 9 on property purchased by the District in the vicinity of 1340 Main Street also known as Mt. Pleasant. The water line from Route 56 to the pump station shall be utilized as the feed line to the booster station until the Moose Hill Reservoir facility is in operation.
7. The District shall provide sewer service to the existing residential properties and to all current and future commercial and industrial properties within the District.
8. The District shall provide water service and limited fire protection service west to Spencer Town Line including West Main Street through the water main from the booster station until such time as Moose Hill Reservoir facility pumps water from the reservoir.
9. Ownership of the water mains and Water Booster Station, after construction and acceptance by the Town, shall be relinquished to the District with the perpetual rights reserved to the Town to transmit water through the water mains from the Moose Hill facility to the distribution points at Route 9 and Route 56. The connection to the District system shall remain and shall be used as a distribution connection between the new water transmission main and the existing distribution main of the District for metering purposes from the Moose Hill Reservoir facility. The District shall meter any water usage at the District's expense once water is supplied from Moose Hill Reservoir, for payment to the Town at a rate and method of payment to be mutually agreed upon by the Town and the District.
10. The District shall construct and own a water storage tank at the District's expense at a later date to provide fire flow storage and future water storage from the Moose Hill Reservoir facility. Once the Town utilizes said tank for water storage, any maintenance and/or use costs shall be negotiated between the Town and the District.
11. All connections made to the newly installed water mains in the Route 9 West corridor shall be serviced by the District. All connection/entrance fees shall be determined by and belong to the District.
12. All operational and maintenance costs related to the water mains and water booster station installed shall be the responsibility of the District.

13. Once Moose Hill Reservoir facility water is provided to the water mains, the water mains shall also become a distribution/transmission main from the Moose Hill Reservoir facility. The booster pump station shall become a standby station in the event the Moose Hill Reservoir facility is taken off line or placed out of service. Any connections made to the water main between the facility and the Route 9/Route 56 intersection shall be metered for water and the District shall compensate the Town for the water used. The rate for water so metered shall be determined by the formula described on "Exhibit 3" attached hereto.
14. Connections to the water transmission mains, which shall include metering devices, structures, and appurtenances at the Route 9--Route 56 termination for the Cherry Valley and Rochdale District and the Hillcrest District shall be the responsibility of each District. No water shall be provided to these Districts until Moose Hill Reservoir facility is supplying water unless otherwise agreed to by the Leicester Water Supply District.
15. This agreement is entered into under the authority of Mass. General Laws Chapter 40, Section 4A, shall be governed by the terms of said Chapter 40, section 4A, and shall have a term of twenty-five years beginning on the date of the execution of this Agreement.
16. Annually during construction, the Town and the District shall cooperate in conducting an audit of the funds so expended under this Agreement and will provide a consolidated financial statement in a form approved by the Treasurer of the District and the Accountant of the Town setting forth all funds received by the project and expended together with such other pertinent financial information as may be deemed necessary by the respective officers of each party. Upon completion of the project, the Town and District shall prepare a final audit report for the project.
17. The financial liability of each party shall not exceed the amount appropriated by the Town at its town meetings, either annual or special, and by the District at its district meetings, either annual or special.
18. Annually, the Town, represented by a member of the Board of Selectmen, a member of the Moose Hill Water Commission and the Town Administrator, shall meet with the District Commissioners to review and discuss the current water and sewer capacities and water distribution system of the District. Information shared through this meeting will be utilized by all parties to promote the development of Moose Hill Reservoir and/or Shaw Pond as a primary water source and to market the Route 9 West corridor for business development.

IN WITNESS WHEREOF, the Town and the District have executed this document in the name of the inhabitants of the Town of Leicester and the Leicester Water Supply District, this 13th day of May, 2003.

TOWN OF LEICESTER
By its Board of Selectmen:

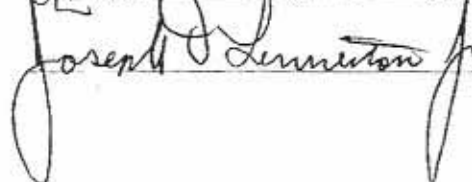
Approved as to form:



Town Counsel

LEICESTER WATER SUPPLY DISTRICT
By its District Commissioners:







District Counsel



TOWN OF LEICESTER

Office of Development & Inspectional Services
3 Washburn Square
Leicester, MA 01524



FOREVER / USA



FOREVER / USA



FOREVER / USA

Town of Spencer
Board of Water Commissioners
3 Old Meadow Road
Spencer, MA 01562
Attn: Norman C. Gendron, Chair

Town of Leicester
Moose Hill Water Commission

3 Washburn Square
Leicester, Massachusetts 01524
508.892.7007 (p)
508.892.7070 (f)

April 22, 2021

City of Worcester
Philip D. Guerin
Director of Water & Sewer Operations
18 East Worcester Street
Worcester, Massachusetts 01604
RE: Correspondence from City of Worcester of April 12, 2021

Dear Director Guerin,

It is with continued optimism that I write on behalf of the Moose Hill Water Commission, Town of Leicester. First, let me sincerely thank you for your consideration and input in regard to my letter of January 27, 2021. I have included two documents, comprised of the a) Intermunicipal Agreement between the Town of Leicester and Leicester Water Supply District, as well as b) recent correspondence from the Town of Spencer regarding Shaw Pond and related matters. I have also included c) correspondence from the DEP declaring Moose Hill as a certified PWS.

Second, I have some follow up questions regarding your current supplies of water. Are you still drawing water from Kettlebrook Reservoirs in Leicester and Paxton, otherwise known as the Asnebumskit region? Is there any problem you are aware of in regard to the quality of the water you are drawing from that area, if any?

How many times has the City of Worcester been required to use its own emergency water reserves, since 2016? Where does it draw its reserve water supply from?

What kind of water treatment facilities are you using, and what percentage of your water is produced from surface water? Which surface water sources are in use and in reserve, if any?

Is the City amenable to renegotiating the City's right to use of water supplies that are within the borders of the Town of Leicester?

Why did the City of Worcester originally build an interconnection with the Cherry Valley Rochdale Water District, in or around 1980? Are there any interconnections with any other entity that supply the city with water? If so, which entities and which connections?

Would your office be willing to discuss any other scenario besides the status quo, in regard to water supply and filtration for the region, including Leicester and Spencer?

I greatly appreciate you playing the devil's advocate in regard to the possible quality of some water districts within the state. I agree that the Town of Spencer is a phenomenal example of great water resource planning and stability. Sadly, the DEP took the Cherry Valley Water Supply District's main PWS offline in perpetuity during 2016. Henshaw Pond was supposed to supply the city with emergency water supply. Then there is the Cherry Valley Sewer District who, with just a few hundred subscribers showed an almost \$2mil shortfall in their accounting. They share space and staff with the CVRWD and appear to have no firewall between the two entities, despite their respective legal and financial issues. Leicester Water Supply District has remained obstinate in the face of an intermunicipal agreement pursuant to M.G.L. c.40 s.4A, which has left our town in short supply of water for supply and fire suppression. This has a negative impact on development of our Route 9 West Business corridor.

It is also well-taken your comment that running a water and sewer district is a complicated endeavor. That is exactly why I am reaching out to regional players, included the City of Worcester, since we obviously cannot keep handing the keys to the same people who crashed out metaphorical car so, so many times already.

Thank you for keeping the channels of communications open, as I try to dig out from what appears to be decades of my predecessors trying to bury the Town of Leicester to the benefit of other interests.

Sincerely,



Michael J. Shivick, Chair
Moose Hill Water Commission

###



The Commonwealth of Massachusetts

*Executive Office of Environmental Affairs
Department of Environmental Quality Engineering
Central Region
75 Grove Street, Worcester, Massachusetts 01605*

S. RUSSELL SYLVA
Commissioner

November 9, 1987

Moose Hill Water Commission
Town Hall
Leicester, MA 01524

RE: LEICESTER - Public Water Supply
Moose Hill Reservoir

Gentlemen:

Engineers from this office have completed the review and evaluation of a report submitted in your behalf by SEA Consultants, Inc. of Cambridge. This report is titled, "Preliminary Design Report, Moose Hill Reservoir Water Treatment Facility, March 1986" by SEA Consultants, Cambridge, Massachusetts.

This report discusses the use of Moose Hill Reservoir as a source of public water supply. It describes the amount of water available from this reservoir, its quality, and a method of treatment of this water to enable it to meet drinking water regulations. The report also characterizes the watershed tributary to the reservoir and indicates several potential sources of pollution. None of these sources is considered a major impediment to the ultimate use of this water as a public water supply.

Based on this report, this office approves the Moose Hill Reservoir as a source for a public water supply. Plans and specifications of treatment facilities to address drinking water regulations, as described in this report, are required to be submitted and approved by this office prior to use of this supply and prior to construction of the treatment facilities.

We would also like to point out that several other approvals and procedures may be required prior to construction of the treatment facilities. These include requirements of the interbasin transfer act (MGL Chapter 21, Section 38B-8D), the Water Management Act (MGL Chapter 21G) and 310 CMR 11.00 MEPA Regulations concerning Environmental Notification Forms.

Further, the Moose Hill Reservoir presently does not service any customers. Steps should then be taken to enter into agreements with any or all of the three water districts in the Town of Leicester to provide them with this water.

If you have any questions on this please telephone the undersigned at 792-7650.

Very truly yours,

James R. Fuller
James R. Fuller
Deputy Regional Environmental Engineer

JRF/jag

cc's Page 2

**TOWN OF SPENCER, MASSACHUSETTS
OFFICE OF THE
WATER DEPARTMENT**

NORMAN C. LETENDRE, JR.
EBEN J. BUTLER
STEVEN J. TYLER



WILLIAM J. CUNDIFF, P.E.,
SUPERINTENDENT

3 OLD MEADOW ROAD
SPENCER, MA. 01562

TEL. 508-885-7525
FAX: 508-885-9416
TTY: 508-885-7525

March 23, 2021

Mr. Michael J. Shivick, Chair
Moose Hill Water Commission
3 Washburn Square
Leicester, MA 01524

RE: Moose Hill Reservoir and Shaw Pond

Dear Chairman Shivick,

The Spencer Board of Water Commissioners (SWC) met on March 3, 2021 and at that time reviewed and discussed your letter dated January 27, 2021. The following responses correspond to the questions raised in the aforementioned letter.

Sugden Reservoir / Moose Hill Reservoir

Question: According to the Moose Hill Water Commission, based upon a 2011 Moose Hill Commission written report, an issue was raised regarding impacts to the Sugden Reservoir because of the lack of use of the Moose Hill Reservoir.

Response: The Commissioners felt that they need to review a copy of the 2011 written report in order to better understand the scope and extent of the issues raised. Knowing the context of the matter may provide some insight into the issue and allow the Commissioners to better respond to your question. If you could forward a copy of the report to my attention, I will make certain the Commissioners have it before their next meeting.

Shaw Pond

Question: What license or other grant of rights to the Town of Spencer regarding Shaw Pond?

Response: The Town of Spencer owns Shaw Pond in its entirety, which is registered as Public Water Supply (PWS) Source ID # 2280000-01S with the Massachusetts Department of Environmental Protection (DEP). It is also the Spencer Water Commissions understanding that the Shaw Pond watershed, and water rights in their entirety, are also owned by the Spencer Water Department as the Outstanding Resource Water (ORW) PWS Watershed for our public water supply rights at Shaw Pond. All of Shaw Pond and its entire watershed are listed as PWS Source ID # 2280000-01S, which is the Town of Spencer's registered Emergency PWS. The PWS was in regular use until 1998 until it became regulated under the Safe Drinking Water Act, which required pre-treatment of surface water supplies. As a result, the Spencer Water Department has transitioned to groundwater wells as our currently active PWS source and maintains the rights to using Shaw Pond as needed.

Leicester – Spencer Partnership

Question: Is there any need for additional water supply within the Town of Spencer?

Response: The Town of Spencer does not have immediate water supply needs, but we do like to keep our options open. As such we are always willing to discuss and explore mutually beneficial scenarios.

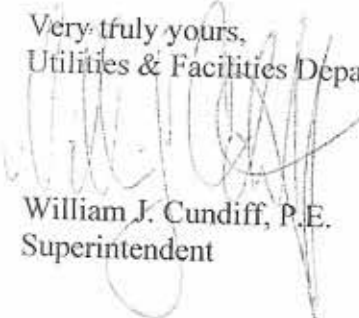
One Centralized Water Commission

Question: Having one water (or water/sewer) district within a Town, as I am sure you know, may have pros and cons. Obviously a single larger district may have more resources readily available and can consolidate manpower and equipment. This may result in an overall savings to the users. Conversely, if a district has difficulties such as the 350% markup from other sources, the remaining districts (users) are not burdened with that expense. However, speaking in generalities probably will not answer specific questions or issues faced by Leicester with regard to their water supply issues.

Response: We only know the perspective of a single source PWS for the community we serve. We can imagine the difficulties of having multiple districts, different rates, treatments, staff, etc. for multiple districts and their customers, respectively. It is recommended that the Leicester Districts explore their pros and cons jointly, much like you have reached out the Spencer Water Commission, to see if there is an interest. Assuming there is, whether partially or in whole, it seems like it would be a good conversation to have for your users.

I hope this answers some of your questions. We look forward to continuing our discussion on Moose Hill Reservoir after we receive the 2011 Report. If you have any other questions or comments, do not hesitate to contact me.

Very truly yours,
Utilities & Facilities Department


William J. Cundiff, P.E.
Superintendent

AGREEMENT FOR EXPANSION OF WATER AND SEWER SERVICE ALONG ROUTE 9
BETWEEN
LEICESTER WATER SUPPLY DISTRICT
AND
TOWN OF LEICESTER

THIS AGREEMENT made and entered into this 13th day of May, 2003, by and between the Leicester Water Supply District ("District"), a body corporate established under Chapter 171 of the Acts of 1887, as amended, and Chapter 181 of the Acts of 1893, as amended, acting by and through its duly constituted Board of Commissioners, having principal offices at 124 Pine Street, Leicester, Massachusetts 01524, and the Town of Leicester, a municipal corporation with a usual place of business at Washburn Square, Leicester, Massachusetts 01524, as it is acting through its Board of Selectmen and referenced as the "Town."

The immediate intent of this Agreement the Town and the District are mutually entering into is to provide an interim water supply and sewer connection for the rezoned portion of Route 9 West recently accepted by the District to be included within its boundaries. This Agreement will assist the Town in promoting the rezoned Route 9 West corridor for business activities.

It is understood that current District plant capacities for water and sewer are limited and will only provide an interim solution. Therefore, the long-range goal of the Town and the District shall be the development of the Moose Hill Reservoir and/or Shaw Pond as a primary water source for the entire Town. The water transmission main being installed under this Agreement would then become a key component for the distribution of these water sources.

In consideration of the mutual promises herein contained, the Town and the District agree as follows:

1. The Town and the District have been duly authorized to enter into this Agreement by a vote of the Town Meeting for the Town of Leicester and a vote of the District Meeting for the Leicester Water Supply District, attested copies of which are attached hereto as "Exhibit 1" as to the Town vote, and "Exhibit 2" as to the District vote.
2. The District has expanded the District limits to include all the properties that are adjacent to and that abut Route 9 from the expanded District limits at Mt. Pleasant Drive to the Spencer Town line including the West Main Street section.
3. The Town has rezoned Route 9 from Residential to Business Industrial Zoning.
4. The Town shall construct a Water Line in Route 9 and West Main Street and Water Booster Station on property purchased by the District in the vicinity of 1340 Main Street also known as Mt. Pleasant. The Water Line shall be financed and paid for by the town and constructed under Massachusetts Highway Project 600858-02. The Water Booster Station shall be financed and paid for by the town and constructed as part of a joint Town/District construction project.

5. The District shall construct a Sewer Line in Route 9 and West Main Street and Sewer Pump Station on or adjacent to Town Beach Road. The Sewer Line shall be financed and paid for by the District and constructed under Massachusetts Highway Project 600858-02. The Sewer Pump Station shall be constructed by the District.
6. The District shall provide water to the water transmission line from the intersection of Route 9 and Route 56 to the extension on West Main Street. The connection to the water booster station shall be built by the Town on Route 9 on property purchased by the District in the vicinity of 1340 Main Street also known as Mt. Pleasant. The water line from Route 56 to the pump station shall be utilized as the feed line to the booster station until the Moose Hill Reservoir facility is in operation.
7. The District shall provide sewer service to the existing residential properties and to all current and future commercial and industrial properties within the District.
8. The District shall provide water service and limited fire protection service west to Spencer Town Line including West Main Street through the water main from the booster station until such time as Moose Hill Reservoir facility pumps water from the reservoir.
- 9. Ownership of the water mains and Water Booster Station, after construction and acceptance by the Town, shall be relinquished to the District with the perpetual rights reserved to the Town to transmit water through the water mains from the Moose Hill facility to the distribution points at Route 9 and Route 56. The connection to the District system shall remain and shall be used as a distribution connection between the new water transmission main and the existing distribution main of the District for metering purposes from the Moose Hill Reservoir facility. The District shall meter any water usage at the District's expense once water is supplied from Moose Hill Reservoir, for payment to the Town at a rate and method of payment to be mutually agreed upon by the Town and the District.
- 10. The District shall construct and own a water storage tank at the District's expense at a later date to provide fire flow storage and future water storage from the Moose Hill Reservoir facility. Once the Town utilizes said tank for water storage, any maintenance and/or use costs shall be negotiated between the Town and the District.
11. All connections made to the newly installed water mains in the Route 9 West corridor shall be serviced by the District. All connection/entrance fees shall be determined by and belong to the District.
12. All operational and maintenance costs related to the water mains and water booster station installed shall be the responsibility of the District.

13. Once Moose Hill Reservoir facility water is provided to the water mains, the water mains shall also become a distribution/transmission main from the Moose Hill Reservoir facility. The booster pump station shall become a standby station in the event the Moose Hill Reservoir facility is taken off line or placed out of service. Any connections made to the water main between the facility and the Route 9/Route 56 intersection shall be metered for water and the District shall compensate the Town for the water used. The rate for water so metered shall be determined by the formula described on "Exhibit 3" attached hereto.
14. Connections to the water transmission mains, which shall include metering devices, structures, and appurtenances at the Route 9--Route 56 termination for the Cherry Valley and Rochdale District and the Hillcrest District shall be the responsibility of each District. No water shall be provided to these Districts until Moose Hill Reservoir facility is supplying water unless otherwise agreed to by the Leicester Water Supply District.
15. This agreement is entered into under the authority of Mass. General Laws Chapter 40, Section 4A, shall be governed by the terms of said Chapter 40, section 4A, and shall have a term of twenty-five years beginning on the date of the execution of this Agreement.
16. Annually during construction, the Town and the District shall cooperate in conducting an audit of the funds so expended under this Agreement and will provide a consolidated financial statement in a form approved by the Treasurer of the District and the Accountant of the Town setting forth all funds received by the project and expended together with such other pertinent financial information as may be deemed necessary by the respective officers of each party. Upon completion of the project, the Town and District shall prepare a final audit report for the project.
17. The financial liability of each party shall not exceed the amount appropriated by the Town at its town meetings, either annual or special, and by the District at its district meetings, either annual or special.
18. Annually, the Town, represented by a member of the Board of Selectmen, a member of the Moose Hill Water Commission and the Town Administrator, shall meet with the District Commissioners to review and discuss the current water and sewer capacities and water distribution system of the District. Information shared through this meeting will be utilized by all parties to promote the development of Moose Hill Reservoir and/or Shaw Pond as a primary water source and to market the Route 9 West corridor for business development.

IN WITNESS WHEREOF, the Town and the District have executed this document in the name of the inhabitants of the Town of Leicester and the Leicester Water Supply District, this 13th day of May, 2003.

TOWN OF LEICESTER

By its Board of Selectmen:

Mark E. Smith
Paula Baker
Paul J. Davis
David J. Smith

Approved as to form:

[Signature]
 Town Counsel

LEICESTER WATER SUPPLY DISTRICT

By its District Commissioners:

Robert F. Wilson
Leonard S. Tabula
Joseph J. Lemmon

Suzanne D. Blawie
 District Counsel



TOWN OF LEICESTER

Office of Development & Inspectional Services
3 Washburn Square
Leicester, MA 01524



FOREVER / USA



FOREVER / USA

City of Worcester
Philip D. Guerin
Director of Water & Sewer Operations
18 East Worcester Street
Worcester, MA 01604

AGREEMENT FOR EXPANSION OF WATER AND SEWER SERVICE ALONG ROUTE 9
BETWEEN
LEICESTER WATER SUPPLY DISTRICT
AND
TOWN OF LEICESTER

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TOWN OF LEICESTER

By its Board of Selectmen:

→ Mark E. Smith
Charles Smith
Paul J. Davis
James Smith

Approved as to form:

[Signature]
 Town Counsel

LEICESTER WATER SUPPLY DISTRICT

By its District Commissioners:

Robert F. Wilson ✓
Leonard S. Tabula
Joseph J. Lemington ←

Suzanne D. Blawie
 District Counsel

LEICESTER WATER SUPPLY DISTRICT

124 Pine Street - P.O. Box 86
LEICESTER, MASSACHUSETTS 01524

April 27, 2000

TRUE COPY ⁵¹ ~~ATTEST~~
Franklyn Clark
SH3103

Minutes of the 114th Annual Meeting
Leicester Water Supply District
April 24, 2001

In accordance with the warrant legally served and posted, the legal voters of the Leicester Water Supply District met in the Town of Leicester Town Hall, 3 Washburn Square, in the Town of Leicester on Tuesday April 24, 2001 at half past seven in the evening and acted on the following Articles, viz::

The meeting was called to order at 7:45 p.m. by the District Moderator Leonard S. Gabrila after being moved from Room 3 of the town offices to the main Auditorium of the Town Hall because the wasn't enough seating to accommodate all the voters. A Quorum was declared with 77 signed in voting residence.

A Motion was made by the Moderator to dispense with the reading of the Articles as everyone present had a copy of the Warrant. A second was made and voted in the affirmative. None opposed.

ARTICLE 1 A motion to was made to dispense with the reading of the Officers Reports as copies of the 113 th Annual Report were present and that the reports of the District Officers be accepted with the exception of any typographical errors. A second was made and voted. None opposed,

ARTICLE 2 Robert F. Wilson nominate Frank W. Lyon for Clerk for a term of one year. Motion was seconded and nominations were closed. Motion was made and seconded that the Moderator cast one ballot for Frank W. Lyon, Clerk, None opposed.

J. Donald Lennerton nominate Lillian A. Dorr for Treasurer for a term of one year. Motion was seconded and nominations were closed. Motion was made and seconded that the Clerk cast one ballot for Lillian A. Dorr Treasurer. None opposed.

Robert F. Wilson nominated Kellie A. Tyndall for District Auditor for a term of one year. Motion was seconded and nominations were closed . Motion was made and seconded that the Clerk cast one ballot for Kellie A. Tyndall for Auditor. None opposed.

ARTICLE 3 Robert F. Wilson nominated Leonard S. Gabrila for Water Commissioner for a term of three years. Motion was seconded.
Giacono Ferraro nominated Robert J. Meyers for Water Commissioner for a term of 3 years. Motion was seconded.

The Clerk reported that both candidates had met the by-law requirement of a written three day notice prior to the meeting date and time. Ballots were distributed to the registered confirmed District members.

To transfer from the Lake Sargent Drive Paxton Street Lateral Account

To Maturing Debt (Principal).....	\$ 7,960.00
To Interest on Debt (Interest).....	11,940.00
TOTAL	\$ 19,900.00

An overview was presented by Frank W. Lyon, Superintendent, for the 2001 budget with an explanation to the special transfers from the 4 different Sewer Lateral projects.

The motion was seconded and voted: None opposed

ARTICLE 6 J. Donald Lennerton made the motion that he District vote to authorize the Treasurer with the approval of the Commissioners to borrow in anticipation of the revenue for the fiscal year beginning July 1, 2001, in accordance with the General Laws, Chapter 44, Section 4 and Acts in amendment thereon and including in addition thereto, Chapter 849 of the Acts of 1969, as amended, by issuing a note or notes payable within one year and to renew any note or notes as may be given for a period of less than one year, in accordance with the General Laws, Chapter 44, Section 17.

The motion was seconded and voted: None opposed:

ARTICLE 7 Frank W. Lyon made the motion that the District vote to transfer from Available Funds the sum of Thirty Thousand Dollars (\$38,000.00) for the purchase of a 2001 1Ton Dump Truck as per the Bid and specifications in the Hands of the Commissioners and to allow the Commissioners to advertise and sell the 1987 Ford 1 Ton Dump truck to the highest Bidder.

The motion was seconded and voted: None opposed:

ARTICLE 8 Robert F. Wilson made the motion that he District vote to transfer from Available Funds the Sum of Thirty Thousand Dollars (\$30,000.00) to construct an office for the District at the existing Garage at 124 Pine Street.

Mr. Wilson gave a brief explanation of the need to provide separate office space for the Treasurer and the Commissioners outside of the Wastewater Treatment Plant. Some of the voters verbally agreed.

The motion was seconded and voted: None opposed:

ARTICLE 9 J. Donald Lennerton made the motion that the District vote to authorize the Board of Water Commissioners to enter into an Intermunicipal Agreement with the Hillcrest Sewer District in the town of Leicester for the purpose of treating sewerage flow and maintaining the sewer system of the Hillcrest Sewer District.

Summary of Changes

EXPENSES	FY16 ACTUAL	FY17 BUDGET	FY18 DEPT REQ.	FY18 TOWN ADMIN	\$ CHANGE	% CHANGE
01-710-5900-020 WATER POLL ABATE-LOAN 1	9,953	9,953	9,953	9,953	0	0.0%
01-710-5900-021 POLICE LAND PURCHASE-PRINCIPAL	18,356	20,274	20,000	20,000	-274	-1.4%
01-710-5900-022 RTE 9 WATER PROJECT-PRINCIPAL	95,000	100,000	100,000	100,000	0	0.0%
01-710-5900-023 POLICE STATION-PRINCIPAL	160,616	177,398	175,000	175,000	-2,398	-1.4%
01-710-5900-024 RTE 9 PUMP STATION-PRINCIPAL	9,178	10,137	10,000	10,000	-137	-1.4%
01-710-5900-025 HILLCREST CC PURCHASE-PRINCIPAL	146,849	162,192	160,000	160,000	-2,192	-1.4%
01-710-5900-027 WATER POLL ABATE-LOAN 2	3,380	3,380	3,380	3,380	0	0.0%
01-710-5900-029 06 ROOF REPLACEMENTS-PRINCIPAL	40,000	40,000	40,000	40,000	0	0.0%
01-710-5900-031 WATER POLL ABATE-LOAN 3	6,611	6,611	6,611	6,611	0	0.0%
01-710-5900-032 USDA SCH. ROOF & BOILER-PRINCIPAL	9,069	9,376	9,693	9,693	317	3.4%
01-710-5900-XXX ENERGY INFRASTRUCTURE PROJECT	0	105,573	69,848	69,848	-35,725	-33.8%
01-710-5900-XXX FIRE AND EMS HEADQUARTERS	0	175,000	315,000	315,000	140,000	80.0%
TOWN HALL				1,500	1,500	
TOTAL	499,013	819,894	919,485	920,985	101,091	12.3%
DEPARTMENTAL TOTAL	499,013	819,894	919,485	920,985	101,091	12.3%

Draft



Town of Leicester - Fiscal Year 2018 Budget

MATURING DEBT INTEREST

The funding allocated to this department covers the interest portion of all Town's annual debt service obligations.

Summary of Changes

EXPENSES	FY16 ACTUAL	FY17 BUDGET	FY18 DEPT REQ	FY18 TOWN ADMIN	\$ CHANGE	% CHANGE
01-751-5900-021 POLICE-LAND PURCHASE-INTEREST	4,687	2,654	2,050	2,050	-604	-22.8%
01-751-5900-022 RTE 9 WEST WATER PROJECT-INT	19,012	13,050	10,050	10,050	-3,000	-23.0%
01-751-5900-023 POLICE STATION-INTEREST	61,311	37,088	31,802	31,802	-5,286	-14.3%
01-751-5900-024 RTE 9 PUMP STATION-INTEREST	3,562	2,160	1,858	1,858	-302	-14.0%
01-751-5900-025 HILLCREST CC PURCHASE-INTEREST	55,759	33,700	28,867	28,867	-4,833	-14.3%
01-751-5900-029 06 ROOF REPLACEMENTS-INTEREST	8,610	6,930	5,250	5,250	-1,680	-24.2%
01-751-5900-032 USDA SCH. ROOF & BOILER-INTEREST	13,147	12,842	12,525	12,525	-317	-2.5%
01-751-5900-XXX ENERGY INFRASTRUCTURE PROJECT	0	45,185	59,384	59,384	14,199	31.4%
01-751-5900-XXX FIRE AND EMS HEADQUARTERS	0	65,596	154,242	154,242	88,646	135.1%
TOTAL	166,087	219,205	306,027	306,027	86,822	39.6%
DEPARTMENTAL TOTAL	166,087	219,205	306,027	306,027	86,822	39.6%

TEMPORARY LOAN INTEREST

The Town has the option to enter into temporary short term borrowing agreements to phase the borrowing on a project to reduce the overall impact on the budget or for small projects that could be paid off in the near term. Temporary borrowings are normally for a term of one year and only obligate the Town to pay interest. Short term borrowings can be reissued two times for any single project.

Summary of Changes

EXPENSES	FY16 ACTUAL	FY17 BUDGET	FY18 DEPT REQ	FY18 TOWN ADMIN	\$ CHANGE	% CHANGE
01-752-5900-000 TEMPORARY LOAN INTEREST	731	11,200	18,583	18,933	7,733	69.0%
TOTAL	731	11,200	18,583	18,933	7,733	69.0%
DEPARTMENTAL TOTAL	731	11,200	18,583	18,933	7,733	69.0%



restore

enhance

sustain

maintain

REVISED DRAFT

TASK 1 REPORT

April 2021

TOWN OF
Leicester
MASSACHUSETTSComprehensive Analysis of Current
Conditions of Six Water & Sewer
Districts, Leicester, MassachusettsWeston & SampsonSM

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W&S INFRASTRUCTURE REVIEW

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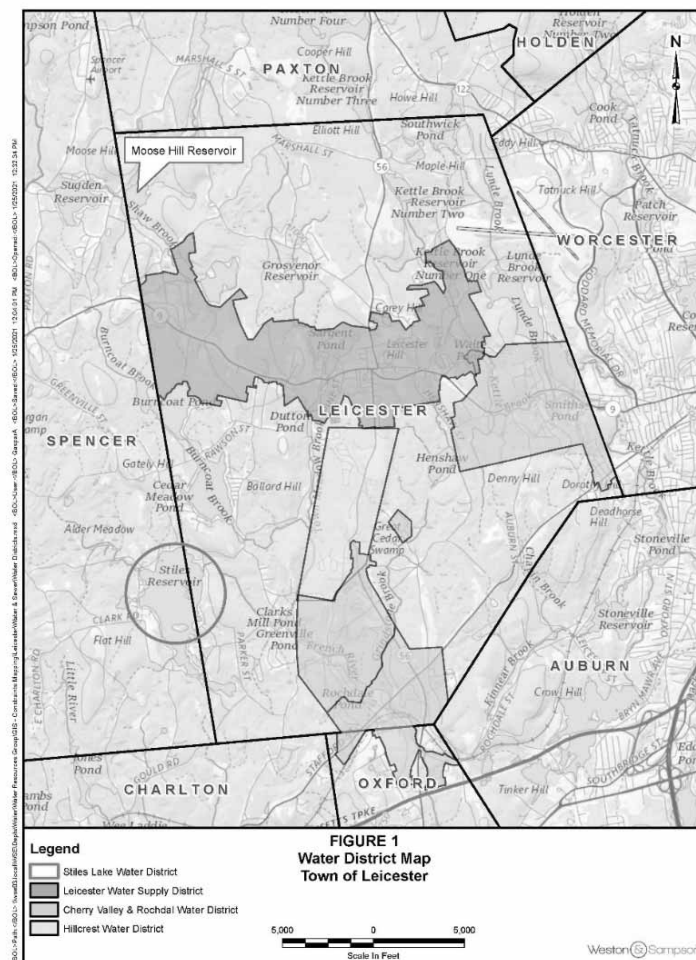
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1.0 INTRODUCTION / OVERVIEW

The Town of Leicester engaged the consulting team comprised of Weston & Sampson, Resilient Civil Engineering, Raftelis Financial Consultants, and the Collins Center to prepare a comprehensive study of the operational and fiscal condition of the seven water and sewer districts in the town and to evaluate potential consolidation alternatives for these districts. The following report documents our findings.

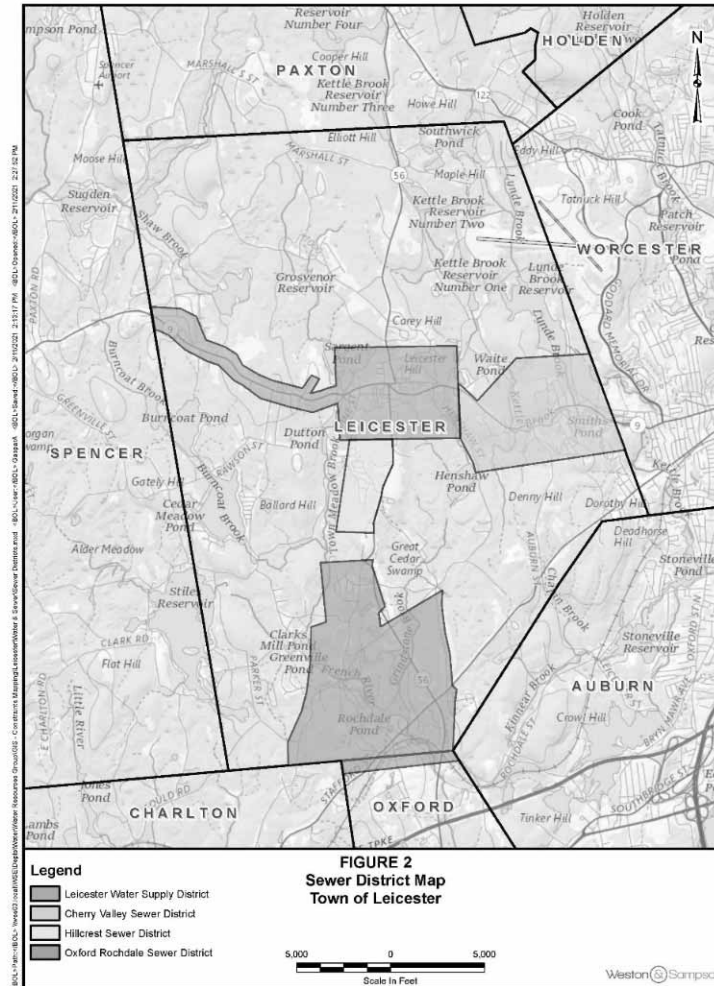
A detailed review of the current technical design and operational conditions of the water and sewer districts was conducted to provide a baseline for the evaluation of potential future organizational options available to the Town of Leicester and the water and sewer districts currently providing services within their respective District boundaries. Other sections of this report will discuss the legal and institutional organizations of each of the water and sewer districts. This section deals with the technical and operational aspects of each of the water and sewer districts as they are presently constituted and operated.

The three Water Districts currently operating within specified areas in Leicester include the Cherry Valley-Rochdale Water District (CV-RWD); the Leicester Water Supply District (LWSD) and the Hillcrest Water District (HWD). Figure 1 shows the approximate service areas of each water district.



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There are four sewer districts operating within designated service areas in Leicester including the Cherry Valley Sewer District (CVSD); the sewer district operated by the LWSD; the Hillcrest Sewer District and the Oxford-Rochdale Sewer District (ORSF). Figure 2 shows the approximate service areas of each sewer district.



This section is further broken down into three subsections including:

- Water Districts
- Sewer Districts
- Moose Hill Reservoir – Potential for Development as a Public Water Supply

1.1 Assessment Process

A Request for Information was distributed to each district for response covering a wide range of information including technical data, historical demand and flow data, treatment operations, permitting status and compliance, past five years of Annual Statistical Reports (Water Districts) and Massachusetts

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Department of Environmental Protection (MassDEP) Wastewater Reports called Discharge Monitoring Reports (DMRs) asset management reports, emergency response plans, capital improvement plans and overall financial information (O&M budgets, rates, debt service). Additional information was also requested for enabling legislation, governance, and related management operations which are discussed elsewhere in this report.

Based on the technical information received from each district, System Summaries were compiled and are presented for both Water and Sewer Systems in the following sections of this Technical Assessment. The following section provides a summary of the pertinent information common to each water district. This Summary section is intended to serve as a baseline from which combinations of districts can be evaluated under future organizational options. A similar summary section is also presented for the sewer districts in advance of the sewer system summaries.

In addition to the data and related information provided by the Districts in response to the Information Request, meetings were convened with members of the Project Team and the staff and officers of each respective District. Any apparent gaps in the information base were resolved through the meeting process and any follow-up that took place. Annual reports such as the Annual Statistical Report (ASR) required to be updated and submitted annually by all community water systems in Massachusetts were obtained from the MassDEP Central Regional Office (MassDEP CERO). Other MassDEP documents reviewed included the most recent Sanitary Surveys, Administrative Consent Orders (ACO's) or other Enforcement Actions currently on file and in effect through the MassDEP CERO.

2.0 STAKEHOLDER CHARACTERIZATIONS

Overview

Each district was established by a separate special act of the Massachusetts Legislature over a 118-year period beginning in 1888 with the creation of the Leicester Water Supply District.¹ See table 2.1 for a list of the primary enabling legislation for each district. All of the districts are governed in a manner similar to the open town meeting form of government in Massachusetts with an elected executive (i.e., Board of Commissioners) and legislative body that is open to all voters residing in the district. Initially, managing officers for most of the districts were elected by the annual meeting but recent changes to by-laws allow the appointment of clerk, treasurer, and superintendent by the Board of Commissioners. Some of the districts have executed inter-agency agreements providing for shared management and operation.

The Board of Commissioners convene an annual meeting. A Moderator selected by the voters present at that meeting presides over the annual meeting. Annual meetings are generally not well-attended, which is typical of water and sewer districts in Massachusetts. Membership on the boards of each district is characterized by low turn-over with little or no competition for positions and the same is true for most managing officers. None of the districts formally plan for succession of Commissioners or other officers.

Each district has adopted by-laws and rules and regulations. The most recently revised rules and regulations are 7 years old (ORSD); the most recently adopted by-laws are 6 years old (LWSD). By-laws are essential to the administration of the districts while rules and regulations are essential to the proper operation of the systems. Both should undergo periodic review to ensure consistency with law, regulation, and actual practice. See Table 2.2 for a list of bylaws and regulations by date of adoption¹. Although there is no standard timeframe for review, rules and regulations should be reviewed every 5 years and anytime a significant regulation or permit condition is changed by federal or state authorities. By-laws are less likely to require revision and can be reviewed less often.

While the districts have taken steps towards professional management of their finances by appointing rather than electing treasurers, none appear to have job descriptions that adequately describe the necessary skills, education, experience, and work performance for these positions. Specifically, two districts (CV-RWSD and ORSD) have provided job descriptions. In the case of ORSD, there is no job description for Treasurer and the descriptions for operations personnel are 25 years old. CV-RWSD's Treasurers job description includes a fairly extensive list of duties, but lacks mention of educational and experiential qualifications, required training or certification, needed skills or abilities, and other factors such as the level of confidentiality that the job requires. Complete job descriptions are an important management tool as they set forth the standards for the job, the expectations of the organization and help meet legal requirements established in, for example, anti-discrimination and fair labor statutes.

Along with moving to appointed treasurers, many of the districts share Treasurers to improve efficiency. However, it is not clear what the recruitment and selection process has looked like in the past for these positions. The project team noted that although there is no certification process that is entirely applicable to district treasurers, certification, and professional development through the Massachusetts Collectors & Treasurers Association (MCTA) is likely relevant. Although there are portions of the program that are not relevant, e.g., Collectors, the MCTA Treasurer certification program covers many beneficial topics,

¹ See Appendix A for copies of by-laws and rules and regulations.

such as, cash control procedures, short and long term borrowing, municipal finance law, ethics, capital budgeting and financing, and procurement. The districts would likely benefit from further professionalization of these positions through job descriptions, a rigorous recruitment and selection process as vacancies occur, and more support for training and ongoing professional development of individuals holding the position.

In general, the districts have seen a great deal of longevity in leadership positions. The stability that comes from successfully retaining competent leadership should not be understated. All organizations will eventually experience turn-over in key positions. The loss of institutional knowledge when this turn-over occurs can be substantial. Having basic human resources (HR) and financial management structures in place will help ensure smooth transitions. For example, it appears that only one district has formal HR policies and another an employee handbook a third reports conducting employee performance evaluations. However, none appear to have formal, written financial policies and procedures and while this may be typical of similar water and sewer districts in Massachusetts, these are worthy endeavors. Additionally, some of the districts do not have a debt management plan or a robust capital planning process. The project team recognizes that many of these occur, but that they rely on individual knowledge and habit rather than being established or documented in the management structure.

Table 2.1: Primary Enabling Legislation

District	Enabling Legislation	Notes
Cherry Valley-Rochdale Water Supply	Chapter 105 of 1996	Replaces c.381 of 1910 and amended by c. 112 of 2006.
Cherry Valley Sewer	Chapter 33 of 1998	Replaces c.729 of 1963
Hillcrest Sewer District	Chapter 612 of 1954	
Hillcrest Water District	Chapter 358 Acts of 1950	
Leicester Water Supply	Chapter 171 Acts of 1888-water Chapter 181 of 1893-sewer	amended by c.230 of 1895.
Oxford-Rochdale Sewer	Chapter 250 acts of 1957	

Table 2.2: Date of Adoption of By-laws and Rules

District	By-laws	Rules and Regulations	Notes
Cherry Valley-Rochdale Water Supply	2014	1989	
Cherry Valley Sewer	Date Unknown	Date Unknown	By-laws refer to chapter 729 of the Acts of 1963 which was repealed in 1998.
Hillcrest Sewer District	2004	2003	
Hillcrest Water District	2000	2000	
Leicester Water Supply	2015	2001	
Oxford-Rochdale Sewer	1997	2014	

2.1 Water Districts

Table 1 presents a summary of the relevant technical measures of each of the three water districts operating within specified portions of the town of Leicester. The provision of the information for each district in this table provides a helpful reference for considering possible combinations of district systems in a variety of future organizational options.

For example, since a consolidation of the LWSD with the HWD is already in the process of a contemplated merger, based on the information summarized in Table 1, the merged district would serve 1100 service connections with a service population of 2,900 people. The combined water system would include about 31.65 miles of water mains.

DESCRIPTION	CV-R WD	LEICESTER WSD	HILLCREST WD
# OF SERVICE CONNECTIONS	1244	707	393
% METERED	100	100	100
Sources of Supply	Worcester	6 wells, not all operational	1 well and LWSD to supplement
Available Design Supply Capacity with currently operating wells (MGD)		0.387	0.086
Available Supply Capacity with wells at current reduced pumping rates (MGD)		0.288	0.086
Available Supply with Largest Source off-line (MGD)		0.243	Get water from LWSD if well offline
Storage Capacity (MG)	1.02	1.2	0.37
Usable Storage (MG)	0.924	1.1	0.135
Miles of Water Main	19	25.15	6.5
Winter Population	N/R	3200	1500
Summer Population	N/R	2700	1250
Residential Service Connections	1167	608	387
Residential Institutional Service Connections	4	32	1
Commercial/Business Service Connections	60	59	2
Municipal Service Connections	10	8	3

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Table 2.3. Water District Comparison Table			
Other Service Connections	3		
Total Service Connections	1244	707	393
Residential Gallons per Capita per Day	33	47	75 (est.)
Population Served	3,685	1,900	1,000
Unaccounted for Water in 2019	13.50%	3%	N/R
WMA Registered Volume (MGD)*	0.27	0.19	Below WMA threshold
WMA Permitted Volume (MGD)*	0	0	Below WMA threshold
WMA Authorized Volume (MGD)*	0.27	0.19	Below WMA threshold
*Note Registration is for wells in Blackstone Basin, District has additional wells in French Basin not large enough to trigger WMA thresholds			
Average Daily Use (MGD)	0.205	0.11	0.08
Maximum Day Demand (MGD)		0.27	0.097
Able to meet Maximum Day Demand with Largest Source Off-line (DEP requirement)	Yes, supplied by Worcester	No	No
Comments	100% of demand is supplied by connection with the City of Worcester	LWSD struggles to meet maximum day demand with available supply. LWSD is pursuing interconnection with Worcester to supplement wells and potentially replace wells located in Paxton.	HWD gets water from LWSD to supplement demand routinely.
Capital Projects Planned for next 5 Years	\$3,000,000 - \$6,000,000	\$5,010,000 to \$6,767,000	\$884,000 to \$1,122,000
Capital Projects Planned for the 6 to 20 Year Schedule	\$2,500,000 - \$5,000,000	\$2,569,000 to \$3,092,000	\$1,505,000 to \$1,835,000

The complete water system summaries for the Cherry Valley-Rochdale, Leicester Water Supply and Hillcrest Water Supply Districts are presented in the following sections.

2.1.1 Cherry Valley-Rochdale Water District

The Cherry Valley and Rochdale Water District (CV-RWD) is currently enabled by Chapter 105 of the Acts of 1996 as amended by Chapter 112 of the Acts of 2006 (the CV-RWD Act). The CV-RWD Act provides for a three-member Board of Water Commissioners to be elected at the annual meeting to three-year staggered terms. The Board is responsible for creating a warrant for the annual meeting and appointing a district clerk and district treasurer who hold office for one year or until a successor is chosen. The meeting Moderator is elected at the beginning of each annual meeting.

The CV-RWD manages all “physical and administrative” aspects of the Cherry Valley Sewer District (CVSD) under an agreement last executed in 2015 which can be terminated only after a 2/3rds vote of both Boards. The districts’ officers and staff are fully integrated; they share a Treasurer, Clerk, Superintendent, and operations staff. The CVRWD continues to operate independently in all other respects and holds an annual meeting to approve appropriations and take other action.

Originally to service the Cherry Valley and Rochdale villages within the Town of Leicester. The CV-RWD supplies water to approximately 1244 customers and 3685 residents.

The existing water system includes two permitted water sources including Henshaw Pond and the Grindstone Well. Due to water quality concerns, CV-RWD was ordered by the Massachusetts Department of Environmental Protection (MassDEP) to stop using the Henshaw Pond surface water supply. As of October 2016, CV-RWD stopped all operation of both sources and began purchasing water from the City of Worcester.

The water distribution system has three water storage facilities, one permanent interconnection with Worcester, two emergency interconnections, and includes approximately 19 miles of water mains ranging in diameter from 1 inch to 12-inch.

Water Sources

The CV-RWD owns two permitted sources, the Grindstone Well (bedrock well) and Henshaw Pond (surface water supply) neither of which are currently utilized as all water supply is purchased from the City of Worcester.

The Grindstone Well is an 8-inch diameter bedrock well-constructed to a depth of approximately 483 feet that is located adjacent to the western edge of Henshaw Pond. The well has a MassDEP approved pumping rate of 80 gallons per minute (gpm) or 0.11 mgd. The well was activated in June 2005 and is equipped with a 10 HP submersible pump capable of pumping 80 gpm. When in service, the well is pumped through the treatment facility for the removal of arsenic, uranium, and radon. Water quality from this well meets all other state and federal requirements with the exception of pH, which is adjusted prior to its entry into the distribution system. The Grindstone Well is currently an inactive source. CV-RWD is in the process of requesting approval from MassDEP to return the well to active status. CV-RWD would also need to review the operating and maintenance cost to produce and treat the water from this source to determine if it is cost effective to operate this well versus purchasing the 0.11 mgd from the City of Worcester.

Henshaw Pond had been the primary source of potable water for the CV-RWD since 1912. It has a storage capacity of 97 mg and a safe yield of 0.375 mgd. When in use, the reservoir was pumped through a slow sand filtration system prior to entering a 0.1 mg water storage clearwell. As stated, this

supply is currently not in service and the CV-RWD would have to construct a new water treatment facility to utilize the pond as a water supply source.

CV-RWD currently purchases all potable water from the City of Worcester through a metered interconnection. The water purchase agreement allows for a maximum of an annual average day of 270,000 gallons.

Treatment

The CV-RWD has two water treatment facilities. The Grindstone Well Treatment Plant (Grindstone WTP) and Henshaw Pond Treatment Plant (Henshaw WTP) are located adjacent to each other on the North side of Henshaw Pond.

Untreated water from the Grindstone Well was pumped to the treatment building through approximately 1,000 feet of 6-inch ductile iron transmission main. The treatment train consists of a granular ferric hydroxide ion exchange filter for the removal of arsenic, followed by an ion exchange filter for the removal of uranium, and a low-profile bubble aeration unit for radon reduction. Treated water was blended with treated water from Henshaw Pond.

When in service, a 7.5 HP, 500 gpm low lift pump transferred water from Henshaw Pond through slow sand filter into a clearwell. High- and low-level sensors in both the sand filters and the clearwell control the pump. Chlorine dioxide was injected into the water prior to filtration to meet the contact time requirement of the Surface Water Treatment Rule by utilizing the designed detention time of the filtration process. The filter effluent flowed through under drains into the underground clearwell. The finished water from the Henshaw WTP was combined with the treated well water from the Grindstone WTP prior to high lift distribution pumps. The 30 HP, 500 gpm high lift pump would draw the combined water from the Henshaw WTP clearwell and the Grindstone WTP 6-inch pipe and deliver it to the distribution system through an 8-inch transmission main. The distribution water was treated with chemicals after the high lift pumps. The pH of the water was increased through the use of potassium hydroxide. Chlorine gas was added for disinfection, and corrosion control was provided through the use of zinc orthophosphate. The chemicals were housed in the existing pump house and were flow paced from the 500 gpm high lift pumps. The system was equipped with continuous pH and chlorine monitoring, high and low pH and chlorine alarms, and an interlock with the high lift pumps.

Storage

The CV-RWD has three water storage tanks including the Greenville Tank and two West Street Tanks. The Greenville Tank, located in the southwestern portion of the system off Pleasant Street in Rochdale, was constructed in 1971 and is a 0.5 MG concrete tank 60 feet diameter and about 24.5 feet high with an overflow elevation of approximately 911 feet. The West Street Tanks, located in the northeastern portion of the system off West Street in Cherry Valley, were constructed in 1994 and are 0.212 MG steel tanks each 42.5 feet diameter and 20 feet high with overflow elevations of approximately 911 feet.

Booster Pumping

A booster pumping system housed at the Henshaw Pond Treatment Plant boosts water from the West Street Tanks to the Greenville Tanks.

Worcester Interconnection

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One hundred (100%) percent of the water system demands of the CV-RWD are currently met by the purchase of treated finished water from the City of Worcester. A number of improvements were necessary to enable CV-RWD to receive and distribute finished water from Worcester. Improvements included meter installation, pumping station improvements and water main installation.

Table 2.4. Cherry Valley Water District Finished Water Distribution 2015 – 2019 (MG)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2015	7.6	7.419	8.312	7.951	9.815	8.595	8.065	8.101	7.511	7.237	6.578	6.688	93.601
2016	6.956	7.128	7.889	7.951	9.43	9.745	9.378	9.103	8.732	8.893	6.635	8.554	100.344
2017	10.771	5.884	9.263	5.546	6.519	6.413	6.413	5.743	5.558	5.743	5.558	5.743	79.153
2018	6.045	6	6.045	5.85	6.045	5.85	6.045	6.045	5.85	6.229	6.631	6.627	73.263
2019	5.801	5.791	5.952	5.809	6.75	6.508	6.571	6.834	6.427	6.071	6.071	6.219	74.71

Staffing

The CV-RWD includes a Superintendent who serves as the operations head over both the Water and Sewer Districts. He meets the DEP requirements for a Grade 2T Treatment license and a 2D Distribution license.

In addition to the Superintendent there are two distribution operators who also hold 2D Operators licenses.

The operations staff divide their time between the water district and sewer districts with about 80% of their time devoted to water operations and the remaining 20% focused on sewer system operations.

It is important to note that there is a considerable commitment to mutual support shared by each of the districts in their respective day to day operations, even in the absence of formal mutual aid agreements. This has been a long-standing practice which the districts confirm remains firmly embedded in the informal established working relationships among the various Districts serving Leicester water and sewer customers.

The district staffing also includes a Treasurer and a Clerk both of whose time is also generally split in a similar division as the operations staff between the water district and the sewer district functions. The Clerk also serves as the Billing Clerk and Secretary to the District Boards of Directors.

The Directors are each paid a stipend.

Capital Improvement Plans

A "Water Distribution System Study" was prepared for the CV-RWD by Tata & Howard dated September 2018 which included recommendations for two phases of hydraulic system improvements. Phase 1

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included seven specific recommended improvements with a total estimated cost of \$6,742,000. Phase 2 included six action items with a total estimated cost of \$3,421,000.

2.1.2 Hillcrest Water District

The Hillcrest Water District (HWD) is enabled by Chapter 358 of the Acts of 1950 (the HWD Act). The HWD Act provides for a three-member Board of Water Commissioners to be elected at the annual meeting to three-year staggered terms. The Board is responsible for creating a warrant for the annual meeting and appointing a district clerk and district treasurer who hold office until a successor is chosen. The meeting Moderator is elected at the beginning of each annual meeting.

The HWD is supplied water through an inter-agency agreement with the LWSD and has no operational staff of its own. The Board of Commissioners continues to meet and select a clerk and treasurer. Although it has elected the LWSD treasurer as its treasurer, there is no requirement that it do so.

For all intents and purposes, the HWD is managed and operated by the LWSD. The district pays the equivalent of 8 hours per week of the LWSD superintendent's salary for "monitoring of the system; response to after-hours emergencies; monthly, quarterly and annual reports to the Massachusetts Department of Environmental Protection (DEP). However, the agreement does not provide for maintenance and repair of the HWD distribution system. Therefore, our characterization of the adequacy of its staff and state of its management is as described for the LWSD.

The Hillcrest Water District (HWD) supplies water to 393 customers and approximately 1,000 residents. Since the system serves a population less than 3,300 people, it is defined as a Small System. Average day demand is approximately 67,000 gallons per day (gpd) and the maximum day demand is approximately 116,400 gpd.

The existing water system includes one active water supply well, one inactive water supply well, one water treatment facility, one water storage tank, an interconnection with Leicester Water Supply District (LWSD) and about 6.5 miles of water main ranging in size from 1-inch to 8-inches diameter.

Water Sources

The HWD has two ground water supply wells including Rock Well No. 1 (Well 01G) and Rock Well No. 2 (Well 02G). Rock Well No. 1 is the only well currently active. Any additional water supply is purchased from the LWSD via an interconnection.

Figure 3. Rock Well No. 1 Pump Station



Rock Well No. 1, located at Pleasant St. and Lehigh Road, supplies the majority of the drinking water to the HWD. Rock Well No. 1 is a bedrock well drilled to a total depth of 550 feet. It was originally constructed in 1955 to a depth of 400 feet and deepened in 1984 to its current depth. The well has an approved pumping volume of 86,000 gpd and is equipped with a submersible pump rated for 60 gpm. The Zone 1 radius for Rock Well No. 1 is 389 feet. The HWD does not currently have complete control over the Zone 1 area which includes portions of Rte. 56, local roads, residential areas, and parking areas.

Rock Well No. 2 is located just west of Rock Well No. 1 and has not been used as a source of supply since 2001 because it greatly impacts the available water in Well No. 1. Currently the submersible pump and steel column pipe have been removed from this well. **Table 2.5** provides information on these two water supply sources.

Figure 4. Rock Well No. 2 Pump Station



Table 2-5. Water Supply Sources

Source	Rock Well #1	Rock Well #2
DEP ID	2151002-01G	2151002-02G
Status	Active	Inactive*
Location	Leicester	Leicester
Basin	French	French
Type	Bedrock Well	Bedrock Well
Date Installed	1955	1975
Maximum Pump Rate	60 gpm	--
Approved Pumping Volume	86,000 GPD	--
Well Depth	550 ft	592 ft
Pump Setting Depth	504 ft	No pump
Pump Type	Submersible	
Pump Motor Size	20 HP	
VFD	Yes	

*Well has been offline since 2001 because it is interconnected with the aquifer that supplies water to Well No. 1.

Treatment

Figure 5. Water Treatment Facility



The HWD has one water treatment facility for treatment of the water pumped from Rock Well No. 1. The treatment Facility (2151002-01T) is located adjacent to the Rock Well No. 1 near the intersection of Pleasant Street and Lehigh Road. The treatment facility was approved for operation on March 13, 2009 and has a design capacity of 86,000 gallons per day (gpd). Treatment is provided for the removal of iron, manganese, arsenic, uranium, and hydrogen sulfide.

Figure 6. Treatment Systems



Flow is directed to the water treatment facility from Rock Well No. 1 through a 6-inch ductile iron pipe. Raw water is first filtered through a 50-micron Harmsco cartridge filter. Filtered water is then treated with sodium hypochlorite and directed through two Greensand Pressure Filters (SOM's) operated in parallel. Iron and manganese are removed by oxidation with sodium hypochlorite, filtration, and absorption to GreensandPlus media. The addition of sodium hypochlorite also oxidizes any Arsenic III in the raw water to the Arsenic V precipitated state which can then be co-precipitated

and filtered out in further treatment processes. Filtered water then flows through two AIX treatment vessels. Each is operated in parallel. They contain Purolite A300E media, an anion exchange resin that is used to remove arsenic and uranium from the raw water. The A300E resin is periodically regenerated on-site with a supersaturated sodium chloride (salt) brine solution. Before discharging to a 3000-gallon precast concrete clearwell below the facility floor, treated water is polished by passing through a vessel with Purolite A33E media. The intent of the Purolite A33E media is to remove any traces of arsenic that might have made it past the previous processes. The A33E media is not backwashed and is regenerated off site at a Purolite facility in Philadelphia, PA. The facility finished water is disinfected with sodium hypochlorite before it flows by gravity into the clearwell. Water is withdrawn from the clearwell and routed to the distribution system using a vertical turbine High Lift Pump.

Storage

The HWD has one water storage tank located at the north end of Lehigh Road adjacent to the Leicester Memorial School. The original 1964 tank was a welded steel standpipe tank with a diameter of 24 feet and a sidewall height of 110 feet. This tank was replaced with a glass fused steel Aquastore tank in 2019. The tank is about 25 feet in diameter and 111 feet straight shell. Overflow elevation is approximately 1048 feet above Mean Sea Level (MSL).

Distribution

The HWD water system is operated as a single pressure zone with normal pressures generally ranging from 35 psi to 110 psi depending upon the specific geographical location. The distribution system is comprised of approximately 6.5 miles of water main ranging in size from 1-inch to 8-inches in diameter.

Interconnections

The HWD has one interconnection with the LWSD equipped with a meter and pressure reducing valve. They are located in a vault just off the pavement at the corner of Pleasant Street and Newfield Street. There is a 3-inch meter in the interconnection vault that is used for measuring LWSD water that is transferred to the HWD distribution system. The piping to and from the interconnection vault is 6-inch ductile iron pipe. The pressure reducing valve between the two systems is currently inoperable, therefore flows are directed to the HWD system by manually throttling a 6-inch gate valve just after the interconnection vault. Currently, the gate valve is opened or closed depending on water needs of the HWD.

The interconnection is only used seasonally to supplement water supplied by Rock Well No. 1.

Operations

The hydraulics of the HWD is primarily controlled by the water level in the storage tank. Levels typically fluctuate between 100 feet and 110 feet. The tank water level controls the operation of the well and the water treatment plant. The facilities are programmed to turn on when the water level in the tank reaches 103 feet and turn off when the water level reaches 108 feet to 110 feet.

Table 2.5. Hillcrest Water District Finished Water Distribution 2015 – 2019 (MG)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2015	1.773	1.755	1.921	1.745	1.882	1.757	2.121	2.772	2.49	2.132	2.008	2.122	24.481
2016	2.239	2.216	2.327	2.197	2.478	2.819	2.533	2.179	2.056	2.075	2.092	2.267	27.478
2017	2.413	2.284	2.557	2.405	2.532	2.61	2.413	2.43	2.304	2.347	2.209	2.295	28.801
2018	2.573	2.278	2.518	2.455	2.509	2.455	2.133	1.931	1.854	1.905	1.87	2.427	26.908
2019	2.517	2.348	2.618	2.375	2.421	2.511	2.565	2.309	2.457	2.33	2.325	2.581	29.357

Staffing

MassDEP allows the same operators that work for the LWSD to conduct operations of the HWD. MassDEP has classified LWSD as a 2T and 1D system and HW-D as a 1T and Very Small System (VSS) D system. Acknowledging that the LWSD operators maintain the HWD system, MassDEP allows a minimum of 2 full time drinking water licensed operators for treatment and distribution of both systems. The LWSD staff keep track of their hours worked on the HWD system to bill the HWD accordingly.

The HWD has a part-time treasurer and billing position that averages about 25 hours per month (note more hours during the billing months and less during non-billing months so 25 hours per month is an average). The HWD has a part-time clerk position that is a stipend position for recording meeting minutes. Additionally, HWD pays LWSD about \$200 per month toward the LWSD for their clerk to answer phones, deposit checks, etc. for HWD. Finally, the HWD has three Commissioners, separate from the LWSD commissioners, which are also stipend positions.

2.1.3 Leicester Water Supply District

The Leicester Water Supply District (LWSD) provides both water and sewer service and is enabled by Chapter 171 of the Acts of 1888 and Chapter 181 of the Acts of 1893 (the LWSD Acts) for water and sewer, respectively. The LWSD Acts provide for a three-member Board of Commissioners to be elected at the annual meeting to three-year staggered terms. The LWSD Acts do not identify specific officers instead granting the Commissioners the power to appoint officers, as necessary. The District by-laws grant the Commissioners the responsibility for appointing "...The Treasurer; Assistant Treasurer; Clerk; Moderator and Auditor..." for a term not exceeding three years.

Chapter 171 of the Acts of 1888 contains provisions that are unique to the LWSD amongst all the Leicester districts. First, section 5 states that the LWSD "...may make such contract with individuals, corporations, and the town of Leicester for supplying water as may be agreed upon, and (sic) may extend

its pipes for that purpose subject to the direction of the selectmen of the town of Leicester, through the streets and highways of said town lying outside the corporate limits of said district." This seems to enable the LWSD, with the consent of the Leicester selectmen to expand to any other portion of the town.³ Second, section 13 states, in part, *"The said town of Leicester shall (emphasis added) have the right at any time to take, by purchase or otherwise, the franchise, corporate property and all rights and privileges of said district on payment to said district of the total cost of its franchise, works and property of any kind..."*. Section 13 goes on in some detail including a provision requiring approval by a 2/3rds vote of Town Meeting. Taken together and provided they withstand legal scrutiny these provisions indicate that the creation of a town-wide water district is contemplated by the Act and creates a path for doing so. It is unclear whether this provision extends to the sewer district created by chapter 181. This provision of the LWSD act will be explored further later in this report.

Both administrative and operational staff appears to be adequate, but as is the case in the Cherry Valley districts, Superintendent splits time between the office and the field which is standard practice for small and some medium size systems. However, it requires relying on members of the Board of Commissioners and consultants to assist with planning improvements to the system, financial planning, or organizational management. For example, a master plan and asset management plan have been completed and implemented. As discussed in Section 2.0, efforts should also be put toward organizational management needs that require attention from the district personnel or retained consultants. For example, LWSD would likely benefit from additional field personnel to free-up the superintendent to address unmet needs.

The LWSD supplies water to the Hillcrest Water District and provides wastewater treatment for a portion of the Hillcrest Sewer District. The details of these inter-agency agreements are discussed in subsequent sections of this report.

The Leicester Water Supply District (LWSD) was established in 1888 to service the central village of Leicester. Components of that early system, including Pierce Spring and the Jim Dandy Well. Sections of cast-iron water mains are still in service today. The system at that time was a gravity system with water flowing from the dug wells and springs in Paxton to an open reservoir (30 feet diameter and 40 feet high) located on Carey Hill just north of the central village of Leicester.

Today the LWSD supplies water to approximately 683 customers and 1,900 residents. Since the system serves a population less than 3,300 the system is defined as a Small System. Average day demands are about 0.23 mgd and maximum day demands are about 0.3 mgd. Note that the LWSD does not experience as much change from winter to summer demands as other systems since they provide water to Becker College, increasing their winter demands. Becker College's water use decreases in the summer when other customer's demand increases.

The existing water system includes six water supply wells, five MassDEP designated water treatment facilities, a transmission main booster pump station, two water storage tanks, one system booster pump station and about 25 miles of water main ranging in size from 2-inch to 16-inch diameter. The LWSD is classified as a Treatment T-2 and Distribution D-2 system.

Wells

The LWSD has six groundwater supply wells as listed in **Table 2.6**. The oldest sources (Jim Dandy Well and Pierce Spring) date to the time of the founding of the water system. The actively used sources include Paxton Wells No. 2 and 3 and Rawson Well.

Paxton Well No. 1 is located off of Grove Street in Paxton. This well can only be pumped in the summer since the well pump discharge exits the building above grade, is exposed for about five linear feet of pipe and then continues below grade to Pierce Spring. Currently, Paxton Well No. 1 is off-line since this well pumps directly to the Pierce Spring Reservoir, bypassing disinfection treatment.

Paxton Wells No. 2 and No. 3 are also located off of Grove Street in Paxton. Both wells receive treatment for the removal of arsenic.

Jim Dandy Well is located 550 feet north of Well 3. This well is a 9-foot hand dug well and is classified as groundwater under the direct influence (GWUDI) of surface water. It requires treatment in compliance with the Surface Water Treatment Rule (SWTR) and is currently off-line.

Whittemore Street Rock Well No. 4 is located off Whittemore Street in Leicester and is currently off-line due to elevated levels of arsenic, uranium, radium, and radon.

Rawson Rock Well No. 5 is located off Rawson Street in Leicester and receives treatment for the removal of manganese, arsenic, uranium, and radon.

Pierce Spring is located at the Grove Street well field. It acts as a water storage reservoir for the wells in Paxton. The spring is octagonal in shape, the walls are constructed of stone laid in cement and covered with a wooden structure and shingled roof. With a storage volume of approximately 60,000 gallons, the spring is about 30 ft diameter and 12 ft deep. Water from Paxton Well No. 1 discharges directly to the spring before flowing to the distribution system. Water from Paxton Wells No. 2, No. 3 and Jim Dandy Well each discharge to the 12-inch transmission main that routes water from the Paxton well fields to the water tanks in Leicester. The transmission main is also connected to Pierce Spring. Finished well water can either fill Pierce Spring or fill the water tanks at Carey Hill in Leicester.

The water level in Pierce Spring controls the operation of the Paxton Wells. The bottom of the spring is not watertight so in times of high groundwater, a small amount groundwater can flow into the spring, while in times of low groundwater, a small amount of water can be lost to the surrounding ground.

There are no standby power facilities at the Paxton well field. The LWSD uses a trailer mounted portable generator to service the well field if there is an extended power outage. The main power panel adjacent to Pierce Spring has a three-phase weatherproof receptacle to connect the stand-by generator to the power feed for the wells. The generator has been successfully used during several storm events. The most memorable time was the ice storm in 2012.

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Table 2.6. Water Supply Sources

Source	Paxton Rock Well No. 1	Paxton Rock Well No. 2	Paxton Rock Well No. 3	Jim Dandy Well	Whittemore Street Rock Well No. 4	Rawson Rock Well No. 5	Pierce Spring
DEP ID	2151000-01G	2151000-02G	2151000-03G	2151000-04G	2151000-05G	2151000-06G	2151000-07G
Status	Not currently pumped*	Active	Active	Not currently pumped*	Not currently pumped*	Active	Active
Location	Paxton	Paxton	Paxton	Paxton	Leicester	Leicester	Paxton
Basin	Blackstone	Blackstone	Blackstone	Blackstone	French	French	Blackstone
Type	Bedrock Well	Bedrock Well	Bedrock Well	Dug Well	Bedrock Well	Bedrock Well	Covered Stone Lined Reservoir
Date Installed	1908	1948	1955	1908	1961	1981	1888
Maximum Pump Rate	50 gpm	86 gpm	100 gpm	66 gpm	50 gpm	201 gpm	--
Safe Yield	0.072 MGD	0.10 MGD	0.072 MGD	0.104 MGD	0.072 MGD	0.274 MGD	0.023 MGD
Well Depth	127 ft	537 ft	700 ft	9 ft	1,000 ft	200 ft	--
Pump Setting Depth	120 ft	315 ft	315 ft	--	315	170 ft	--
Pump Type	Submersible	Submersible	Submersible	Centrifugal End Suction	Submersible	Submersible	--
Pump Motor Size	5 HP	5 HP	5 HP	7-1/2 HP	10 HP	20 HP	--
VFD	Yes	Yes	Yes	Yes	No	Yes	

*Wells not currently pumped for water quality purposes.

Treatment

The LWSD has five MassDEP identified treatment facilities. They range from simple chemical feed facilities to more complex treatment plants for removal of arsenic, uranium, and radon.

Treatment Facility 01T is located at the Paxton Street Booster Station which is located adjacent to water storage tanks on Carey Hill. At this location polyphosphate is added to assist in achieving corrosion control. Sodium hypochlorite is added for disinfection coupled with a 4-log disinfection pipe loop at the end of the Paxton Well transmission main before the water enters the storage tanks.

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Treatment Facility 02T is located at the Whittemore Street Rock Well Pump Station. Previously, this facility housed chemical feed equipment for the addition of polyphosphate for corrosion control. At present, the chemical feed equipment has been removed and this facility is off-line.

Treatment Facility 03T is the Rawson Street Water Treatment Facility located adjacent to the Rawson Street Rock Well Pump Station. This facility provides treatment for the removal of manganese, arsenic, uranium, and radon along with disinfection. The following treatment processes are in use at this facility:

- Chemical feed systems are provided for addition of sodium hypochlorite ahead of the greensand filters and for post treatment disinfection. Polyphosphate is also added for corrosion control.
- Manganese is removed using pressure filtration with manganese oxide coated media, (GreensandPlus by Inversand). Three filters are provided, each rated for 67 gpm. All three filters operate in parallel. Raw well water flows are automatically reduced to less than 140 gpm when a filter is backwashing.
- Uranium and arsenic are removed using Purolite's A300E resin, a strongly basic gel anion exchange resin designed for the removal of alkalinity, uranium, arsenic, and nitrate. This resin is regenerated on-site with a sodium chloride (salt) brine solution. Two 4-ft diameter x 6-ft side wall vessels are provided. There are two treatment trains each with a rated capacity of 100 gpm.
- Each A300E vessel is followed by vessels containing A33E resin. A33E resin is a highly porous hybrid anion ion exchange resin infused with iron oxide, making the media selective for arsenic. Since there is almost no arsenic that leaves the A300E vessels, it is anticipated that the A33E media will last over 10 years before it will need to be removed for regeneration offsite. Vessels containing A33E media are 4-ft diameter with a 6 ft side wall. There are two vessels: one for each 100-gpm treatment train.
- Radon is removed at the WTP through aeration using the Lowry Fine Bubble Aeration Unit. Outside air is used for aeration of the finished water and radon gases are also exhausted outside the north side of the WTP building.
- Disinfection is achieved through the addition of sodium hypochlorite just after the Lowry aerator. Finished water is stored in a below grade 6,000 gallon clearwell at the treatment facility.
- Finished water from the clearwell is pumped into the distribution system via a 200-gpm vertical turbine water pump operating at 250 feet of total dynamic head.
- The operation of the Rawson facilities are controlled by the level of the water in the water tanks at Carey hill.

Treatment Facility 04T is the Jim Dandy Water Treatment Facility located at the Jim Dandy Pump Station. In 2002, cartridge filters and sodium hypochlorite feed equipment were installed since the source is designated as GWUDI of surface water. Three cartridge filters are provided in series to provide filtration from 5-micron, 1 micron to 0.35-micron pore sizes. When in operation, sodium hypochlorite was injected before the filters. A turbidimeter and residual chlorine analyzer are also provided for this facility. The turbidimeter is physically located at the Paxton Rock Well No. 3 Pump Station. This source and treatment facility are currently off-line.

Treatment Facility 05T is the Grove Street Water Treatment Facility. The WTP treats water from Paxton Rock Wells No. 2 and No. 3. This facility is located as an addition to the Paxton Rock Well No. 3 Pump Station. This facility provides treatment for the removal of arsenic along with disinfection. The following treatment processes are in use at this facility:

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- Arsenic is removed using Purolite's FerriX A33E resin which is a highly porous hybrid anion ion exchange resin infused with iron oxide, making the media selective for arsenic. There are two sets of vessels that service each well. Each vessel is 42-inches in diameter with a 6'-0" sidewall. The vessels operate in a lead lag fashion. Arsenic water quality is monitored between the lead and lag vessels. When the treated water arsenic levels after the lead vessel reach 8 ug/l, the media in the lead vessel is removed and sent off site for regeneration. If Wells 2 & 3 continue to be used on an 18 hour per day basis, media regeneration is required for each lead vessel once per year. Piping at the facility allows for interchanging which vessel is in the lead position. Therefore, when media is sent out for regeneration, the lag vessel can act as the lead and the wells can continue to operate until the media is reinstalled.
- Disinfection is achieved through the addition of sodium hypochlorite. The finished water from both treatment trains are routed to the transmission main just before they leave the building. Sodium hypochlorite is added at this point using a peristaltic chemical metering pump.

Storage

The LWSD has two water storage tanks located on Carey Hill off of Paxton Street (Route 56), just north of the Leicester High School. These tanks are welded steel standpipes. Tank 1 (north tank) was constructed in 1940 and Tank 2 (south tank) was constructed in 1961. More information about each tank is presented in Table 2.7.

Table 2.7. Water Storage Tank Characteristics

Characteristic	Tank 1 (North Tank)	Tank 2 (South Tank)
Date Constructed	1940	1961
Manufacturer	CBI	PDM
Type	Welded Steel Standpipe	Welded Steel Standpipe
Capacity	600,000 gallons	600,000 gallons
Diameter	50 feet	51 feet
Height	40 feet	40 feet
Base Elevation	El. 1074 feet	El. 1074 feet
Overflow	El. 1114 feet	El. 1114 feet
Typical Operating Levels	37.5-39.0 feet	37.5-39.0 feet
Mixing	None	None
Altitude Valve	None	None

Water flows directly from the Paxton wells and Pierce Spring to these tanks through an 8-inch and 12-inch diameter cast iron water main together approximately 5 miles in length. Water District records indicate the transmission main was installed in 1886. There are no customers connected to the transmission main.

Paxton Street Booster Station

Adjacent to the water storage tanks is the Paxton Street Booster Station constructed in the 1960s. This facility houses the booster pumps that are used to increase transmission main flows to 130 gpm to assist in keeping the water tanks full. Two constant speed end suction centrifugal pumps are provided. Each pump is a Goulds Model 3656 pump with 3 HP WEG motor. Only one pump operates at a time. Finished Paxton well water flows through either of the booster pumps when on. When the pumps are off, water flows through a silent check valve and by-pass piping to the booster pump discharge piping and on to the water tanks at a flow of approximately 40 gpm, depending on the water level in Pierce Spring. The booster pumps operate on a lead and stand-by basis.

The Booster Station houses a residual chlorine analyzer to monitor the chlorine residual in the water from Pierce Spring and Paxton Rock Wells after the water has traveled through the 8 & 12-inch diameter water transmission main and disinfection pipe loop. The water from Paxton is treated with sodium hypochlorite at the Paxton Water Booster Station. In 2016 a new water main loop line was constructed at the water storage tanks just before the Booster Station. The loop line is 500 linear feet and constructed of 12-inch diameter Class 52 cement lined ductile iron pipe. The purpose of the loop is to provide 4-log disinfection for viruses for the water from the Paxton wells prior to entry into the distribution system.

Disinfection 4-log certification monitoring and alarm requirements are achieved through use of residual chlorine analyzers and SCADA programming. Residual chlorine analyzers continuously monitor chlorine to verify levels remain above the minimum needed to achieve 4-log compliance (greater than 0.3 mg/L) and below high levels that would indicate an overfeed event. The chemical feed pump rates are paced by the Paxton Booster Station flow meter. Should the residual chlorine level decrease below 0.3 mg/L, the chemical pump rate would be increased by the operator. Note that the current low-level alarm is set for 0.5 mg/L. High level alarms are also provided to notify operators of a potential overfeed event; a high high-level alarm will trigger an alarm and shut down the facility.

Chemical feed equipment is also provided for the addition of polyphosphate for corrosion control.

The Hyland Booster Pump skid is in a room adjacent to the main booster pump room. The booster pump provides domestic water to the Carey Hill Estates Subdivision. This booster pump skid has four vertically oriented centrifugal pumps. Two pumps are variable speed with 2 HP motors and two pumps are variable speed with 15 HP motors. This system can pump from 0 to 290 gpm. Flows from the booster station are controlled by discharge system pressure. Insufficient pressure is alarmed by the SCADA system.

The Booster Station also houses an emergency generator and transfer switch. The generator is capable of supplying emergency power for operation of both booster pump systems.

Mount Pleasant Booster Station

The Mount Pleasant Booster Station is located at 1350 Main Street (Rte. 9) just east of Tractor Supply Co. Constructed in 2004, this station has three pumps, two for domestic flows and one for fire flows. These pumps boost water pressure to the west end of the system to keep pressures between 60 to 100 psi. The domestic pumps are Grundfos CR 16 Model vertical multi-stage pumps capable of approximately 85 gpm at 112 feet of head. They have 5 HP motors and variable frequency drives (VFDs). The pumps operate lead-lag, with the lead pump starting when the pressure decreases to 50 psi and

the lag pump starting if the pressure cannot be maintained at 50 psi. The fire pump is an end suction centrifugal pump with a 25 HP WEG motor. Two Wessels Model FXA-800L hydropneumatic (bladder) tanks are provided. Each tank has a volume of 211 gallons, which equates to about 80 gallons usable storage. This facility is also equipped with an emergency generator.

Distribution System

The LWSD water system is operated under one pressure zone with normal pressures generally ranging from 35 psi to 110 psi depending upon the specific geographical location. The distribution system is comprised of approximately 25 miles of water mains ranging in size from 2-inch to 16-inch diameter. The distribution mains range in age and material. The oldest main is cast iron installed at the creation of the water system in 1888, such as the 5 mile long 8-inch & 12-inch diameter transmission main from Pierce Spring to the Paxton Street Water Storage Tanks.

Interconnections

The LWSD has interconnections with the neighboring Paxton Water Department, Cherry Valley & Rochdale Water District and Hillcrest Water District. Currently the LWSD supplies water to the Hillcrest Water District (HWD) through a metered interconnection with pressure reducing valve located in a vault just off Pleasant Street at Newfield Street. This supply is used by HWD to supplement its own single source water supply. The LWSD operators operate the Hillcrest system. The LWSD controls the amount of water supplied to the Hillcrest Water District, based on HWD water demands & the ability of LWSD to keep their water tanks full. There is a 3-inch meter in the interconnection vault that is used for measuring HWD system use. The piping to and from the interconnection vault is 6-inch ductile iron pipe. Since the pressure reducing valve between the two systems is currently inoperable, flows are directed to the HWD system by throttling a 6-inch valve just after the interconnection vault.

Emergency hydrant to hydrant connections are available to connect Leicester's system to the Paxton water system and the Cherry Valley Rochdale system. The Paxton interconnection is located on Route 56 at the intersection with Asnebumskit Road. The Cherry Valley interconnection is located on Route 9 on the east end of the District. At each location, the respective systems have hydrants at the location that can be connected using 2-inch diameter fire hose. Water from the Paxton system must be reduced in pressure before connecting to the LWSD transmission main. Water from Cherry Valley must be pumped to the LWSD system at the interconnection.

The LWSD is currently pursuing a permanent interconnection with the City of Worcester to provide supplemental water supply. The intent is to have this facility operational by 2023. Additional details regarding the interconnection project include the following:

- Waters from the Paxton Wells (currently on-line) and Jim Dandy Well (currently off-line) are piped to the District's water system through a 5-mile-long transmission main that was constructed in 1888. The Massachusetts Department of Environmental Protection (MassDEP) is requiring water treatment improvements to continue using the wells located in Paxton. Additionally, there are significant questions and concerns about the integrity and condition of the transmission main. The size and scope of infrastructure improvements required to continue using these supplies makes the purchase of water from the City of Worcester a viable alternative to help maintain the fiscal sustainability of the District.
- When the District was formed in 1888, the enabling Act (Chapter 171, Acts of 1888) allowed the District to take and hold the waters of Rawson Brook and the waters of Kettle Brook in the Town of Paxton, provided the water taken from Kettle Brook not exceed an average daily quantity of

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200,000 gallons per day (gpd) or 0.2 million gallons per day (mgd). Note that the District currently holds a water withdrawal registration amount of 0.19 mgd for the supplies located in Paxton.

- Subsequently, c. 230 of the Acts of 1895 authorized the District to take and hold the waters of Asnebumskit Pond in the Town of Paxton and water sources connected therewith, subject to the conditions and restrictions named in the enabling, c. 171, Acts of 1888.
- In a July 19, 2019 letter to the Office of Water Resources, Department of Conservation and Recreation (DCR), a request was made for a streamlined and expedited permitting process for the proposed purchase of water from the City of Worcester. On September 9, 2019, Ms. Michele Drury confirmed that the DCR legal counsel had reviewed the July 19, 2019 request and the supporting documents and concluded that there would be no increase in the interbasin transfer so that an interbasin transfer permit application would not be required. Additionally, legal counsel had determined that based on the enabling acts the District had rights to 0.2 mgd from the Blackstone Basin and no restrictions on the amount from the Nashua Basin.
- The District's request was formally presented and discussed at the October 10, 2019 Water Resources Commission (WRC) meeting. The WRC determined that the Interbasin Transfer Act does not apply to the proposed water purchase from the City of Worcester since there is no increase in the present rate of interbasin transfer. These findings were documented by DCR in a letter dated October 16, 2019.
- The District is in communications with the City of Worcester to purchase 0.3 mgd from the City. The District proposes to convey treated water from the City's water system to the District's water system through the construction of an interconnection at Bailey Street/Mulberry Street with a metered booster pumping station and approximately 2 miles of 8 or 12-inch diameter water main. This infrastructure would be installed within existing disturbed areas (i.e., along/within paved roadways).
- The District's intent is for the interconnection to serve as a supplemental source with flow rates similar to those obtained from the Paxton Wells. The interconnection supply and Rawson Wells will be used to fill the water storage tanks. The water from the storage tanks will be used for domestic, fire and emergency demands.
- A flow test was conducted by the City on their system at Bailey Road near Fox Meadow Drive using hydrants located near 92 Bailey Road and 126 Bailey Road. The results of the flow test indicate that flows of approximately 600 – 650 gallons per minute (gpm) have a pressure drop of 0 – 2 pounds per square inch (psi), a negligible pressure drop that would not impact the pressure within the City's system.
- Once the interconnection is operational, the District will remove the Paxton Wells from its operations. The interconnection supply Rawson Well and Whittemore Well (currently off-line well) will be used to fill the District's water storage tanks. The water from the storage tanks will be used for domestic, fire and emergency demands. Conceptually, the booster pumping system will be designed to withdraw flows in the range of 100 – 600 gpm from the City's system which would have no impact on the City's water pressures on the suction side of the pump. The design flow rates will be determined during the conceptual design process including evaluation of the number of pumps and if a fire pump should be included.
- The District is proceeding with the design of the proposed interconnection as described concurrently to efforts with the City to formalize a water purchase agreement during 2021.

System Operations

The LWSD water system is equipped with a Supervisory Control and Data Acquisition (SCADA) system. The main SCADA computer is located at the LWSD Wastewater Treatment Plant. Communications with remote sites are through a radio telemetry system with the exception of the Rawson Well and Treatment Facility which are connected to the SCADA system via fiber optic cables. For the Paxton well field, the radio antenna is located on the Jim Dandy Well Pump Station. Fiber optic cables connect the Jim Dandy Well Pump Station with the Rock Wells and Pierce Spring. On occasion, the SCADA system experiences communications failures. However, all facilities except those at Rawson Street will operate on their own without the supervision of the SCADA system.

The operation of the Paxton Rock Wells are controlled by the water level in the Pierce Spring by a pressure transducer. Pierce Spring is typically maintained between 8 ft to 10 ft. Water levels can drop to 3 feet if system demands require additional water at the water tanks in Leicester. The SCADA system alarms if the level in the spring falls below 3 feet. Historically, the Paxton Rock Wells No. 1 and No. 2 were not operated simultaneously since pumping Well No. 1 will cause the water level in Well No. 2 to decrease. Therefore, Well No. 1 is only operated alone or with Well No. 3. Well No. 1 is presently off-line, so current operations call for Well No. 2 and Well No. 3 to operate concurrently depending on system demands.

Rawson Rock Well No. 5 and Treatment Facility operate based on the water level in the Paxton Street Tanks. The well pump is activated when the water level drops to 37.6 feet and stops when the water level reaches 39.0 feet. When the Rawson Street facilities are called to operate, the well pump initially pumps to waste for about 90 seconds and then water is directed to the WTP and operations there start. The treatment facility finished water pump is activated based on the water level in the clearwell. This pump starts at 3.8 feet and stops at 3.0 feet. The controls at the water plant regulate the speed of the finish water pump to maintain 3.5 feet of water in the clearwell.

The Paxton Street Booster Pump Station pumps normally operate based on the water level in the Paxton Street Tanks. They can be manually started or stopped by an operator if system conditions require this condition. When in automatic, the booster pumps will start when the water level in the water tanks is at 37.5 feet and stop when the water level reaches 39.0 feet.

The operators have the ability to operate the system in Hand Mode. This allows them to over-ride the automatic triggers if needed. For example, when the water level in Pierce Spring is low (less than 4 feet), the operators normally would turn the tank booster pumps off, until the water level in the spring recovers to greater than 5 feet. Often times the operators override the SCADA controls and place the Paxton Booster Pump(s) in Hand in an effort to maintain 0.2 mg/l residual chlorine levels in the water coming from Paxton. The thought is that higher flows from Paxton (135 gpm) mean the Paxton well pumps (Wells No. 2 and No. 3) and Paxton Water Treatment Facility are operational feeding chlorine into the transmission main, which helps maintain chlorine levels at the water tanks.

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Table 2.8. Leicester District Finished Water Distribution 2015 – 2019 (MG)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2015	5.710	5.595	6.292	6.094	6.801	6.084	6.093	6.195	6.271	5.824	5.284	5.234	71.478
2016	5.501	5.473	5.600	5.616	5.714	5.287	5.149	5.214	5.192	5.290	4.915	4.776	63.727
2017	4.832	4.671	5.073	5.152	4.914	4.778	4.772	4.844	4.726	5.031	4.786	4.502	58.082
2018	4.668	4.072	4.511	4.712	4.986	5.002	4.749	4.619	4.476	4.537	4.240	4.300	54.873
2019	4.400	4.035	4.278	4.300	4.768	4.437	4.510	4.671	4.340	4.570	4.262	4.093	52.662

Staffing

District required to have a minimum of 4 fully licensed operators (2 wastewater and 2 drinking water) for both the LWSD and HWSD. The licensed operators are cross trained to cover for water/wastewater in an emergency. Refer to the MassDEP letter dated August 26, 2015 for the minimum requirements.

The LWSD has one full-time Superintendent who manages both water and wastewater operations and holds operator licenses that are higher grades of the other operator licenses since this position has responsible charge of operations. The Superintendent divides time between water and wastewater to support both since 4 operators is the minimum required. The Superintendent spends more time supporting wastewater operators than drinking water operators due to the complexity of the WWTP. The LWSD has two full-time licensed wastewater operators and two full-time licensed drinking water operators (one handles treatment and the other distribution) and both service the LWSD and HWD systems.

The LWSD employs a part-time treasurer and billing position with duties averaging about 21.5 hours per week. Currently the treasurer is at the LWSD office from 9:30 am to 2 pm Monday through Thursday and 9:30 am to 1 pm on Friday. The LWSD employs a clerk position with duties averaging about 24 hours per week. The LWSD also has three Commissioners which are stipend positions.

2.2 Sewer Districts

Information common to all four sewer districts is presented in Table 2.9. Table 2.10 provides a summary of the monthly and annual sewage flows reported for each sewer district from 2016 thru 2019. Note that the monthly data for the CVSD is reported in terms of Total Flow in Million Gallons (MG). The annual totals for the CVSD were divided by 365 to derive the daily flow in Million Gallons Per Day (MGD) for demonstrating the comparative information across all district flow reporting.

Presenting the information for each district provides a helpful reference for considering possible combinations of systems in any of a variety of future organizational options. Average daily flows for example can be added to estimate the total flows from any proposed combination of sewer districts that might be considered under alternative district or town consolidation options.

Table 2.9. Sewer District Summary Table

	LWSD - Sewer	HSD	ORSD	CVSD
Number of Customers	683	260	1021	437
Wastewater discharge point	LWSD WWTF	LWSD and ORSD	ORSD WWTF	Worcester/Upper Blackstone
WWTF Construction Date	1900	(system constructed in 2003)	1971	NA
WWTF Major Upgrade Date	1988	NA	1996, 2010	NA
WWTF design capacity (MGD)	0.35	NA	0.5	NA
WWTF Discharge point	Town Meadow Brook	NA	French River	NA
NPDES Permit issued	2005	NA	2005	NA
NPDES Permit number	MA0101796	NA	MA0100170	NA
Gravity main (miles)	15	4.5	15	9.8
Force main (miles)	3.2	0.25	1.7	
Number of pump stations	8	3	4	5
Dry weather flows (MGD)	0.14	*	0.32	0.1
Estimated I/I	42%			
Capital projects planned	WWTF upgrade required but waiting for renewed NPDES to properly design facility	Planning to dissolve HSD into LWSD and ORSD	WWTF upgrade required but waiting for renewed NPDES to properly design facility	
Additional comments	CWMP recommended WWTF upgrade to 0.732 MGD	Flows split b/w LWSD * ORSD		

Table 2.10. Comparison of Sewer District Flows 2016 - 2019 (mgd)

YEAR	Leicester Sewer District	Oxford-Rochdale Sewer District	Cherry Valley Sewer District
2016	0.119	0.224	0.095
2017	0.126	0.27	0.152
2018	0.15	0.346	0.142
2019	0.138	0.319	0.089

The complete sewer system summaries for the Cherry Valley, Leicester, Hillcrest and Oxford-Rochdale Sewer District are presented in the following sections.

2.2.1 Cherry Valley Sewer District

The Cherry Valley Sewer District (CVSD) is currently enabled by Chapter 33 of the Acts of 1998 (the CVSD Act). The CVSD Act provides for a three-member Board of Sewer Commissioners to be elected at the annual meeting to three-year staggered terms. The Board is responsible for creating a warrant for the annual meeting and appointing a district clerk and district treasurer who hold office until a successor is chosen. The meeting Moderator is elected at the beginning of each annual meeting.

The by-laws for the district are out of date as they refer to enabling legislation that was repealed by the CVSD Act, however the Board has adopted a comprehensive set of rules and regulations.

The CVSD is managed in all "physical and administrative" aspects by the CVRWD under an agreement last executed in 2015 which can be terminated only after a 2/3rds vote of both Boards. The districts' officers and staff are fully integrated; they share a Treasurer, Clerk, Superintendent, and operations staff. The CVSD continues to operate independently in all other respects and holds an annual meeting to approve appropriations and take other action.

The Superintendent indicated that the administrative staff is adequate, but that the operations are understaffed. The project team concurs but points out that the Superintendent splits time between the office and the field leaving little time for planning improvements to the system, financial planning, or organizational management. For example, there is little in the way of capital planning, financial policies, or written job descriptions.

The Cherry Valley Sewer District (CVSD) was officially formed in 1963 through Chapter 729 of the Acts of 1963. In 1995, as part of the reconstruction of Route 9, the Commissioners obtained funding for the Route 9 Interceptor Sewer which would anchor the full build-out of the sewer system. In 1998 the District successfully amended chapter 729 as amended and was replaced by Chapter 33 of the Acts of 1998.

The main provision of chapter 729 was the revision of the District boundaries which led to the reduction in the size of the District to its current configuration. In 1999 the District was successful in securing USDA-RD for the funding of the full build-out of the District. The build-out would include three Phases spanning from 2000 through 2004.

In Phase I, the project included the design and construction of sanitary sewer service to 573 dwelling units connecting this system to the existing Route 9 Interceptor Sewer.

In Phase II, the project included the design and construction of the McCarthy Avenue pump station, Redfield Road Pump Station, and the connection of the associated streets in the McCarthy Avenue neighborhood.

In Phase III, the project included the design and construction of the following pump stations: McCarthy Avenue, Church Street and Willow Hill Road and the connection of the remainder of the streets within the Cherry Valley Sewer District.

Currently the District has 5 pump stations and 9.8 miles of collection pipe. The District currently services 437 homes.

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Sewage is discharged to the City of Worcester sewer system and transported to the Upper Blackstone Water Pollution Abatement District (UBWPAD) for treatment. Treated wastewater is discharged to the Blackstone River.

The District headquarters are located at 148 Henshaw Street, Leicester, MA 01524.

Table 2.11. Cherry Valley Sewer District - Sewage Flow Summary Table (MG)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Avg Monthly Flow (mg)	Total Annual Flow (mg)	Avg Daily Flow (mgd)
2016	2.28	3.02	3.645	3.154	2.335	1.926	1.579	1.596	2.308	3.811	4.047	4.99	2.891	34.691	0.095
2017	5.417	5.143	5.239	6.239	5.494	4.978	3.047	3.398	3.472	3.971	4.2	4.774	4.614	55.372	0.152
2018	5.157	5.773	6.609	6.619	5.026	3.091	1.826	2.317	2.547	2.968	5.509	4.817	4.355	52.259	0.143
2019	4.381	3.022	3.389	4.3	3.258	1.812	1.841	1.581	1.375	1.923	2.331	3.347	2.713	32.560	0.089
2020	3.094	2.703	3.039	4.131	4.256	1.949							3.195	38.344	0.105
AVG	4.066	3.932	4.384	4.889	4.074	2.751	2.073	2.223	2.426	3.168	4.022	4.482	3.541	42.490	0.116

Staffing

Refer to discussion of Staffing in Section 2.1.1. The same staff also operate the sewer system. The Superintendent estimates that about 80% of staff time is spent on Water System operations while the remaining 20% of staff time is devoted to sewer system operations.

2.2.2 Leicester Water Supply District – Sewer District

The Leicester Water Supply District (LWSD) provides both water and sewer service and is enabled by Chapter 171 of the Acts of 1888 and Chapter 181 of the Acts of 1893 (the LWSD Acts) for water and sewer, respectively. The LWSD Acts provide for a three-member Board of Commissioners to be elected at the annual meeting to three-year staggered terms. The LWSD Acts do not identify specific officers instead granting the Commissioners the power to appoint officers, as necessary. The District by-laws grant the Commissioners the responsibility for appointing "...The Treasurer; Assistant Treasurer; Clerk; Moderator and Auditor..." for a term not exceeding three years.

Chapter 171 of the Acts of 1888 contains provisions that are unique to the LWSD amongst all the Leicester districts. First, section 5 states that the LWSD "...may make such contract with individuals, corporations, and the town of Leicester for supplying water as may be agreed upon and may extend its pipes for that purpose subject to the direction of the selectmen of the town of Leicester, through the streets and highways of said town lying outside the corporate limits of said district." This seems to enable the LWSD, with the consent of the Leicester selectmen to expand to any other portion of the town.³ Second, section 13 states, in part, "The said town of Leicester *shall* (emphasis added) have the right at any time to take, by purchase or otherwise, the franchise, corporate property and all rights and privileges of said district on payment to said district of the total cost of its franchise, works and property of any kind...". Section 13 goes on in some detail including a provision requiring approval by a 2/3rds vote of Town Meeting. Taken together and provided they withstand legal scrutiny these provisions indicate that the creation of a town-wide water district is contemplated by the Act and creates a path for doing so. It

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is unclear whether this provision extends to the sewer district created by chapter 181. This provision of the LWSD will be discussed in greater detail later in this report.

Both administrative and operational staff appears to be adequate, but as is the case in the Cherry Valley districts, Superintendent splits time between the office and the field which is standard practice for small and some medium systems. However, this requires that members of the Board or retained consultants assist with planning improvements to the system, financial planning, or organizational management. For example, an asset management plan has been completed and implemented. As discussed in Section 2.0, efforts should also be put toward organizational management needs that require attention from the district personnel or retained consultants. For example, LWSD would likely benefit from additional field personnel to free-up the superintendent to address unmet needs.

The LWSD provides wastewater treatment to a portion of the Hillcrest Sewer District. The details of inter-agency agreements are discussed in subsequent sections of this report.

The LWSD operates a sewer collection and treatment system which serves approximately 683 customers. The LWSD accepts flow from an additional 131 customers within the Hillcrest Sewer District (HSD). Flow from both the LWSD and HSD customers is treated at the LWSD wastewater treatment facility (WWTF).

The LWSD sewer system consists of about 15 miles of gravity sewer, 3.2 miles of force main, 8 pump stations and a 0.35 MGD wastewater treatment facility. The LWSD WWTF was originally constructed in the early 1900's. The plant has been upgraded several times with the last major upgrade completed in 1988. The 2011 average daily flows to the facility were estimated to be 0.24 MGD during dry weather conditions. The plant discharges to nearby Town Meadow Brook.

LWSD is permitted (NPDES permit issued 2010, MA0101796) to discharge 0.35 MGD (average monthly) of treated municipal wastewater via outfall 001 to the French River (Note: the outfall previously discharged to Dutton Pond (Segment MA42015) but was relocated to Town Meadow Brook -- downstream from Dutton Pond Dam. The permit incorrectly states the discharge is to the French River.)

The facility is required to monitor acute whole effluent toxicity and chronic whole effluent toxicity twice a year using *Ceriodaphnia dubia*. The facility's maximum daily permit limits for whole effluent toxicity are $LC50 \geq 100\%$ and $CNOEC > 62\%$.

A wastewater treatment facility upgrade is being planned for the facility according to an Environmental Notification Form (ENF) filed in December 2008. The ENF (#14352) indicates that a draft CWMP has been developed and an expansion and upgrade of the facility was recommended (0.732 MGD). I/I estimates at the facility were estimated to account for 42% of the total flow. The permit includes seasonal limits on BOD, total suspended solids (TSS), fecal coliform bacteria, total residual chlorine, total ammonia-nitrogen (NH₃-N), total phosphorus (TP), as well as limits on total copper. This permit has expired, and the District is waiting for EPA to issue a revised NPDES permit. The District has held off on WWTP upgrades until the permit is revised and discharge limits identified.

The LWSD currently owns and operates eight (8) Wastewater Pump Stations (WWPS) for the LWSD and operates three (3) WWPS Pump Stations for the Hillcrest Sewer District. The 8 sewer pumping stations within the district were constructed from the mid 1990's to early 2000's.

The LWSD sewer system generally consists of the following components:

1. Wastewater Treatment Facility with 0.35 MGD approved flows, located at 124 Pine Street, Leicester
2. Holcomb Street Sewer Pump Station
3. Homestead Lane Sewer Pump Station
4. Main Street Sewer Pump Station
5. Manville Street Sewer Pump Station
6. Paxton Street Sewer Pump Station
7. Rawson Street Pump Station
8. Town Beach Sewer Pump Station
9. Waite Street Sewer Pump Station
10. Approximately 520 manholes
11. About 15 miles of gravity sewer ranging in size from 6-inch to 16-inches diameter.
12. About 3.2 miles of force main ranging from 2-inch to 8-inches diameter.
13. Main Office with associated equipment.

Leicester Water Supply District (LWSD) Wastewater Treatment Facility (WWTF)

This facility (conventional activated sludge with advanced treatment) was constructed in 1985 and has seen no major upgrades since completion. The facility operated well but is mostly the result of efforts associated with the operations staff. Equipment has been repaired and/or replaced to the point that a modernization project is needed. We visited that facility on December 9, 2020 and were notified that the facility was having operational issues related to a failure of the belt filter press and a clarifier drive failure. This facility is operating under an old NPDES permit which expired in 2015. The current facility utilizes chemical for phosphorous precipitation to meet a seasonal permit limit of 0.2 mg/l. There has been no word from regulators on when a Draft and Final permit for the facility will be issued. The operator knows that a modernization is needed for many aspects of the facility but is hesitant to move forward with upgrades until a new NPDES permit is issued.

It is our belief that within the next 2-3 permit cycles that a Total Nitrogen Limit will be implemented, as the flow is discharged to the French River and ultimately ends up in Long Island Sound. We would expect the Total Nitrogen limit to range from 3-8 mg/l. This will result in the need for a future project to add some sort of denitrification process, typically a de-nite filter or anoxic zones. A budget of about \$1M-\$2M should be set aside for this project alone. The operators also expressed concern with a potential reduction in the seasonal phosphorous limit to 0.1 mg/l. Should this occur, we would expect the facility to need to optimize chemical addition and to continue with their use of a polishing filter for the effluent prior to discharge. The filtration system may also need to be optimized. A budget of \$0.5M to \$1M should be allocated for future potential phosphorous reduction upgrades.

Discussions with the operator indicated that they were uncertain as to the type of treatment facility that is envisioned for the future. Options discussed with various engineers have focused on the continuation of conventional activated sludge treatment or a conversion to a Sequencing Batch Reactor (SBR). The latest engineer assisting the LWSD seemed to be on-board with a continuation of the conventional activated sludge approach, and an interim expansion to 0.575 mgd. The options for improving the facility included the following:

1. New Headworks Facility
2. Two new larger diameter clarifiers
3. Aeration Basin Rehab,
4. Additional Biological Treatment
5. Upgrade to Sludge Handling Capabilities
6. Rehabilitation of the Sand Filter, and
7. Increase in the size of the Chlorine Contact Tank.

Per the WWTF operator, the engineer that envisioned the above changes estimated the project to cost approximately \$10M, ten years ago. ENR projections alone would drive this project cost up to \$14M to \$15M (in 2025 dollars). Additionally, these costs do not include the significant increase in O&M costs that a new facility with more stringent treatment goals and greater treatment capacity/volume may have.

During the brief tour of the facility, the following observations/potential projects were identified:

- The headworks facility is tight and does not do a good job removing rags. A new larger headworks facility with mechanical screening and improved grit removal should be provided. - \$2M+/- to \$2.5M+/-,
- Mechanical surface aerators should be replaced with diffused aeration - \$1.5M+/-,
- New larger diameter (40-foot) clarifiers are desired for improved surface overflow rates - \$2M+/- to \$3M+/-
- Improved solids dewatering and conveying should be provided - \$1.5M+/- to \$2M+/-,
- Underground fuel storage tank needs to be replaced with compliant dual walled UST or AST - \$0.1M+/-
- Blast and Re-Coat structural elements on ABW Sand Filter - \$0.1M+/-
- Provide Containment for Ferric Chloride (may require modifications to shed roof) - \$0.05M+/-
- Future Total Nitrogen Upgrade - \$1.5M+/- to \$3M+/-
- Future Phosphorous Removal upgrades - \$0.5M+/- to \$1.0M+/-
- Unscheduled Repair Allowance and Contingency (20%) - \$1.8M+/- to \$2.6M+/-
- **Total - \$11M+/- to \$15.8M+/-**

Any project moving forward should have established goals with respect to the ability to handle increases in flow in a phased approach. Tankage should be designed for ultimate flow projections, while equipment that may be in use for 20+ years prior to an ultimate flow increase can be replaced as part of a larger upgrade project in the future.

It should be noted that data from an Asset Management Plan for the LWSD contained 103 items related to Treatment which are recommended for completion over a 30-year period. The Total Value assigned to these improvements was \$5,154,000. Additionally, as part of a Draft CWMP completed by SEA Consultants, Inc. in 2007, the LWSD WWTF was recommended to be expanded to 0.732 mgd of capacity and converted to a Sequencing Batch Reactor (SBR) facility over a five (5) phase project. Back in 2007, SEA estimated the project to cost \$12,800,000 (inclusive of 35% engineering and contingencies). With an ENR projection of the 2007 cost to 2025 costs, it is estimated that this project could cost on the order of \$20M-\$25M. The review completed on 12/9/20 cannot be viewed to be as comprehensive and complete as other previously completed studies, including the Asset Management planning.

Table 2.12. Leicester Sewer District Monthly Flow Summary - Average Daily Flows (mgd)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
2016	0.168	0.177	0.162	0.153	0.109	0.084	0.071	0.102	0.075	0.091	0.102	0.13	0.119
2017	0.163	0.142	0.141	0.234	0.144	0.129	0.088	0.074	0.08	0.099	0.115	0.104	0.126
2018	0.136	0.176	0.177	0.194	0.122	0.078	0.088	0.129	0.127	0.143	0.157	0.168	0.141
2019	0.157	0.132	0.156	0.238	0.155	0.095	0.092	0.087	0.092	0.115	0.138	0.198	0.138
2020	0.165	0.153	0.151	0.193	0.129	0.081	0.08	0.073	0.079				
AVG	0.158	0.156	0.157	0.202	0.132	0.093	0.084	0.093	0.091	0.112	0.128	0.15	

Staffing

Refer to LWSD Staffing summary included in Section 2.1.3.

2.2.3 Hillcrest Sewer District

The Hillcrest Sewer District (HSD) is enabled by Chapter 612 of 1954 (the HSD Act). However, the HSD was not active until about 1999 when the Board was elected, district boundaries expanded and voted to build the collection system. The HSD Act provides for a three-member Board of Commissioners to be elected at the annual meeting to three-year staggered terms. The Board is responsible for creating a warrant for the annual meeting and appointing a district clerk and district treasurer who hold office until a successor is chosen. The meeting Moderator is elected at the beginning of each annual meeting.

Wastewater generated by the HSD is conveyed in part to the LWSD and in part to the Oxford-Rochdale Sewer District (ORS). There are Inter-governmental agreements in place between HSD and both ORSD and LWSD. These agreements provide only for the treatment of wastewater. The project team could locate no agreement for operation and maintenance of the collection system. As is the case with the HWD, the HSD has no staff or officers and is managed by the LWSD with no written agreement to do so.

As authorized under the provisions of Chapter 612 of the Acts of 1954, the HSD boundaries are coterminous with the HWD delineation. The HSD and HWD have separate Boards of Commissioners and clerks. The HSD and HWD share a common Superintendent and operations staff.

The HSD sewer system generally consists of the following components:

1. Pine Street Pump Station
2. Laurelwood Avenue Pump Station
3. Sterling Street Pump Station
4. About 4.5 miles of 8-inch gravity sewer.
5. About 0.25 miles of 4-inch force main.

The 3 pump stations were all constructed in 2002-2003.

HSD has approximately 260 customer connections. Flow from about 131 customers discharges to the LWSD for treatment at the LWSD WWTP. Flow from remaining customers discharges to the ORSD for treatment at the ORSD WWTP. As sewer flows are not metered at the source, the flows from the HSD customers are reflected in the flows reported for the LWSD and ORSD, respectively.

The HSD is headquartered at the LWSD office located at 124 Pine Street, Leicester, MA.

Staffing

Operations for the HSD are handled by the LWSD. The LWSD staff keep track of their hours worked on the HSD system to bill the HSD accordingly. The HSD has a part-time treasurer and billing position averaging about 15 hours per month (note more hours during the billing months and less during non-billing months so 15 hours per month is an average). The HSD pays the ORSD \$4,500 per year to complete the billing for HSD. The HSD clerk is an annual elected, stipend position for recording meeting minutes. The HSD has Three Commissioners, separate from the LWSD commissioners which are also stipend positions.

2.2.4 Oxford Rochdale Sewer District

The Oxford Rochdale Sewer District (ORSDD) is enabled by Chapter 250 of the Acts of 1957 (the ORSD Act). The ORSD Act provides for a three-member Board of Water Commissioners to be elected at the annual meeting to three-year staggered terms. The Board is responsible for creating a warrant for the annual meeting and appointing a district clerk and district treasurer who hold office for one year or until a successor is chosen. The meeting Moderator is elected at the beginning of each annual meeting.

Oxford-Rochdale Sewer District (ORSDD) currently serves 1,021 customer connections. The ORSD owns, operates, and maintains approximately 15 miles of gravity sewer, 1.7 miles of sewer force main, 4 pump stations, and a 0.50 MGD wastewater treatment facility. The system serves about 3% of the Town of Oxford's population or approximately 300 residents who discharge wastewater flows to the treatment facility along with about 79 customers within the Hillcrest Sewer District (HSD). The ORSD is operated in an office building located at the wastewater treatment facility at 28 Comins Road, North Oxford, MA

The ORSD system includes a wastewater treatment plant (WWTP), 4 sanitary sewer pump stations and 14.5 miles of sewer pipe with approximately 381 manholes.

The original wastewater treatment facility was built in 1971 and has been upgraded in 1996 and 2010 to increase plant capacity. The WWTP is an aerated lagoon WWTP with advanced treatment, mechanical screen, two lined 180,000-gallon lagoons with floating aerators, two 45-foot diameter final clarifiers, 180

square foot ABW filter, chlorine gas; chlorine contact tank; discharges to French River and permitted for 0.50 MGD. The WWTP has chemical feed systems for PAC, sodium aluminate, chlorine gas and bisulfite. There are rotary lobe pumps for RAS and WAS and three 10,000-gallon sludge holding tanks. The WWTP also includes an Admin Building with offices and conference room, storage under with garage doors, a laboratory and 20 ft x 20 ft RAS/WAS pump building.

Oxford-Rochdale Sewer District is permitted (permit issued 6/22/05, MA0100170) to discharge 0.5 MGD (average monthly) of treated municipal wastewater via outfall 001 to the French River. The facility is required under the current permit to conduct quarterly whole effluent toxicity tests using *Ceriodaphnia dubia*. The facility's maximum daily permit limits for whole effluent toxicity are $LC50 \geq 100\%$ and $CNOEC \geq 17\%$. The permit includes seasonal limits on CBOD, total suspended solids (TSS), fecal coliform bacteria, total residual chlorine, total ammonia-nitrogen (NH_3-N), total phosphorus (TP), as well as limits on total copper. This permit has expired, and the District is waiting for EPA to issue a revised NPDES permit. The District has held off on WWTP upgrades until the permit is revised and discharge limits identified.

For the four sanitary sewer pump station, three stations have duplex 100 gpm Gorman Rupp pumps (Virginia Drive, Park Lane, Pleasant Street) and 1 station (Clark Street Station) has two 350 gpm Gorman Rupp pumps that serve Hillcrest Sewer District and upper parts of collection system. All the pump stations have buildings, and the Clark Street Pump Station has standby power.

The sewer collection system has about 15 miles of sewer (6-inch to 21-inch) including 21-inch RCP to the WWTP from Comins Road, 18-inch pipe up Mill Street to Stafford St, with the majority of the remaining 8-inch ACP and PVC pipe. The system includes about 1.7 miles of low-pressure sewers (1.5-inch to 6-inch) equipped with E1 pumps.

Oxford Rochdale Sewer District (ORSDD) WWTF

This facility (aerated lagoon with advanced treatment) appears to be very well run and in decent shape. The facility was upgraded in 1995 and included an increase in capacity from 184,000 gpd to 500,000 gpd. The operator noted that a NPDES permit renewal application was submitted in 2014, and to date they have not seen a Draft or Final permit issued. The facility started enhanced chemical treatment for phosphorous removal in the late 1990s (seasonal limit of 0.2 mg/l). The operator is hesitant to move forward with any upgrades to the facility until they have a permit in hand, and due to the fact that the facility is running well. Recent upgrades/additions to the WWTF include a mechanical bar screen and RAS pumps. The operator noted that there is approximately \$780,000 set aside as a WWTF stabilization fund that will be used to offset some of the costs of future upgrades. The operator noted that upgrade projects are typically funded through USDA loans rather than SRF loans.

It is our belief that within the next 2-3 permit cycles that a Total Nitrogen Limit will be required, as the flow is discharged to the French River and ultimately ends up in Long Island Sound. We would expect the Total Nitrogen limit to range from 3-8 mg/l. This will result in the need for a future project to add some sort of denitrification process, typically a de-nite filter or anoxic zones. A budget of about \$1M-\$2M should be set aside for this project alone. The operators also expressed concern with a potential reduction in the seasonal phosphorous limit to 0.1 mg/l. Should this occur, we would expect the facility to need to optimize chemical addition and optimize effluent filtration. This could add \$0.5M to \$1M should this be required.

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During the brief tour of the facility, the following observations/potential projects were identified:

- SC #2 – Steel Weirs/Baffles are deteriorating and should be replaced with FRP units – \$50,000 +/-
- SC #2 – Corrosion was noted on the clarifier mechanism. Recommend blasting and re-coating – \$60,000 +/-
- MCCs in RAS Building – The MCCs in the RAS Building are outdated and difficult to service. Replace with newer technology - \$150,000 +/-
-
- Future Total Nitrogen Upgrade - \$1.5M +/- to \$3M +/-
- Future Phosphorous Removal upgrades - \$0.5M +/- to \$1M +/-
- Unscheduled Repair Allowance and Contingency (20%) - \$0.5M +/- to \$0.9M +/-
- **TOTAL - \$2.75M +/- to \$5.2M +/-**

It should be noted that data from an Asset Management Plan for the ORSD contained 89 items related to Treatment which are recommended for completion over a 50+ year period. The Total Value assigned to these improvements was \$2,614,500. The review completed on 12/9/20 cannot be viewed to be as comprehensive and complete as other previously completed studies, including the Asset Management planning.

Table 2.13. 2014 – 2019 ORSD Flow Data (Total Flow Treated (MG/MGD))

Month	2014	2015	2016	2017	2018	2019
January	9.905 / .320	7.686 / .248	7.656 / .247	10.220 / .330	9.670 / .312	12.950 / .418
February	7.002 / .250	5.188 / .185	9.304 / .321	8.443 / .302	10.58 / .378	10.12 / .361
March	11.870 / .383	8.968 / .289	10.450 / .337	9.150 / .295	12.320 / .397	11.460 / .370
April	11.460 / .382	11.620 / .387	9.565 / .319	13.570 / .452	12.670 / .422	14.150 / .472
May	9.044 / .292	6.200 / .200	7.314 / .236	10.240 / .330	9.749 / .314	11.950 / .385
June	5.369 / .192	6.683 / .239	5.044 / .168	8.429 / .281	6.102 / .204	7.735 / .258
July	4.265 / .138	5.49 / .177	4.204 / .136	6.531 / .211	6.935 / .224	6.636 / .214
August	3.877 / .125	4.170 / .135	4.563 / .147	5.114 / .165	9.573 / .309	6.246 / .201
September	3.952 / .132	4.072 / .136	4.224 / .141	4.855 / .162	9.765 / .329	5.573 / .191
October	5.061 / .163	4.738 / .153	5.514 / .178	5.514 / .178	11.350 / .366	7.299 / .235
November	5.4564 / .182	4.876 / .163	5.825 / .194	8.147 / .272	14.250 / .475	9.089 / .303
December	10.800 / .348	6.140 / .198	8.095 / .261	8.247 / .266	13.160 / .424	13.370 / .431
TOTAL	88.059	75.831	81.758	98.460	126.124	116.578
Daily Avg	.241	.208	.224	.270	.346	.319

Staffing

The ORSD is required to have a minimum of 2 fully licensed wastewater operators work full time Monday through Friday. On the weekends, the ORSD is allowed to have one operator stop by the WWTP for 2 hours on Saturday and 2 hours on Sunday. When an operator takes vacation, they are allowed to have one operator working. Should emergencies occur, they call the LWSD to provide operators to assist.

The ORSD has a full-time Superintendent who maintains a current wastewater operator license. The Superintendent swaps weekends with the other wastewater operator. The ORSD employs one full-time licensed wastewater operator. The ORSD is a Grade 4 system. The superintendent is the chief operator and holds a Grade 5 license. The assistant operator holds a Grade 4 license. The ORSD employs a treasurer and billing position which averages about 15 hours per week. Currently the treasurer is in office at ORSD in the afternoons after the LWSD office hours (the same person fulfills LWSD, HWSD, HSD and ORSD treasurer positions). The ORSD clerk is a stipend position as are the three commissioner positions.

2.3 Moose Hill Reservoir and Moose Hill Water Commission

Moose Hill Reservoir was authorized under the provisions of Public Law 566 Small Watershed Program administered by the US Department of Agriculture Soil Conservation Service. The dam was constructed in 1966 impounding Shaw Brook for the purposes of flood control storage capacity, water supply and low flow augmentation. Sponsoring Local Organizations signed on to the Watershed Work Plan Agreement dated September 28, 1962; the Supplemental Watershed Work Plan Agreement No. 1 dated June 29, 1962 and Supplemental Watershed Work Plan Agreement No. 2 dated April 1968. Sponsoring Local Organizations included the Southern Worcester County Conservation District, Northern Worcester County Conservation District, Town of East Brookfield, Town of Leicester, and the Massachusetts Water Resources Commission. An Agreement was then executed between the Commonwealth of Massachusetts and the Town of Leicester dated December 12, 1972 for the purpose of construction of the Moose Hill Reservoir as a multi-purpose floodwater retarding and municipal water supply structure. An Operation and Maintenance Agreement was executed between the Soil Conservation Service, the Massachusetts Water Resources Commission and the Town of Leicester dated September 22, 1978.

The Moose Hill Reservoir Dam is currently owned and controlled by the Massachusetts Department of Conservation & Recreation (DCR), as successor to the Water Resources Commission referenced as a signatory Sponsoring Local Organization in the agreements listed above. The Town of Leicester continues to share in the costs of operation and maintenance in accordance with the 1978 Operation and Maintenance Agreement. The Town's share of the annual costs is 33.2%.

The Moose Hill Water Commission is the designated department of the Town of Leicester which is responsible for coordination of payments for the town's share of the costs of operation and maintenance of the reservoir and for coordination of any plans for the development of the reservoir as a source of public water supply. The Commission is administratively within the Leicester Planning & Economic Development Department.

The agreements referenced above are included in Appendix B-1.

W&S INFRASTRUCTURE REVIEW

An Intermunicipal Agreement (IMA) was executed between the Leicester Water Supply District (LWSD) and the Town of Leicester dated May 13, 2003 to provide an interim water supply and sewer connection for the rezoned portion of Route 9 West to assist the Town in promoting the rezoned Route 9 West corridor for business activities. The IMA goes on to state that: "It is understood that current District plant capacities for water and sewer are limited and will only provide an interim solution. Therefore, the long-range goal of the Town and the District shall be the development of the Moose Hill Reservoir and/or Shaw Pond as a primary water source for the entire Town."

The IMA includes 18 numbered paragraphs describing the actions taken or to be taken by the District and the Town, respectively. Specific water and sewer lines listed to be financed by the Town and constructed under a Massachusetts Highway Project 600858-02 include a water line in Route 9 and water booster station as part of a joint Town/District construction project; a sewer line in Route 9 and West Main Street and Sewer Pump Station on or adjacent to Town Beach Road (IMA paragraphs 4 and 5). Paragraph 10 calls for the District to construct and own a water storage tank at the District's expense "at a later date to provide fire flow storage and future water storage from the Moose Hill Reservoir facility."

Paragraph 13 states: "Once Moose Hill Reservoir facility water is provided to the water mains; the water mains shall also become a distribution/transmission main from the Moose Hill Reservoir facility. The booster pump station shall become a standby station in the event the Moose Hill Reservoir facility is taken offline or place out of service. Any connections made to the water main between the facility and the Route 9/Route 56 intersection shall be metered for water and the District shall compensate the Town for the water used. The rate for water so metered shall be determined by the formula described on "Exhibit 3" attached hereto." A file search has been unable to locate a copy of the referenced Exhibit 3. It remains unclear as to whether the Town or the District initially drafted the referenced formula which presumably describes the basis of compensation from the District to the Town for the purchase of the water delivered to the District from the Moose Hill Reservoir facility. The complete Agreement for Expansion of Water and Sewer Service Along Route 9 Between Leicester Water Supply District and Town of Leicester is included in Appendix B-3.

Feasibility Studies

Subsequent to the execution of the IMA between the Town and LWSD, LWSD engaged the services of SEA Consultants, Inc. to produce the first of two studies to evaluate the feasibility and costs required to develop Moose Hill as a source of public water supply.

Two studies were conducted to evaluate the feasibility and costs to develop Moose Hill as a source of public water supply. The first of these was prepared by SEA Consultants, Inc. (SEA) dated June 2008. This study considered that Moose Hill was capable of supplying up to 1.5 Million Gallons per Day (MGD) based on the reliable watershed yield of the reservoir. This would be subject to review and approval of the MassDEP and treatment requirements under the Safe Drinking Water Act and the actual yield could be less than 1.5 MGD. The study estimated the cost for development of a drinking water supply at Moose Hill Reservoir at \$8,886,000 (in 2008 dollars), including costs for the following listed items:

W&S INFRASTRUCTURE REVIEW

1A 1.5 MGD Surface Water Treatment Plant	\$4,500,000 (2008 dollars)
1B Land Acquisition/Site Development	Not Specified
2 Transmission Main (16" DI Pipe)	\$1,375,000 (2008 dollars)
3 0.50 MGD Elevated Storage Tank	\$1,530,000 (2008 dollars)
4 Surface Water Intake	Not Included
5 Residuals Force Main & PS	Not Included
Sub-Total	\$7,405,000 (2008 dollars)
Engineering Services (Design, Procurement, Construction Svc.)	\$1,481,000 (2008 dollars)
Permitting	Not Included
TOTAL	\$8,886,000 (2008 dollars)

The second study was conducted in 2017 by Whitewater Consultants and their project partner Environmental Partners Group. This study focused on developing:

1. Planning level capital and operation and maintenance cost estimates for the potential water system infrastructure improvements associated with a new surface water treatment plant at the Moose Hill Reservoir and connection to the Town's existing water system, and
2. A forecast of the implementation schedule for the project, starting with a more detailed feasibility study through design, permitting and construction completion.

Table 2, Summary of Typical New England Surface Water Quality provided the only water quality information specific to Moose Hill Reservoir, dated 1996. Water quality reported on included Turbidity (0.5 – 1.5 NTU); Color (50 – 130 CU); pH (5.5 – 7.0 SU); Iron (0.07 – 0.7 mg/L); and Manganese (0.03 – 0.3 mg/L). Hardness, Coliform and Organics were listed in Table 2, but no data was included for these parameters.

Table 3 – Draft Capital Cost Estimate of Water Treatment Plant and Distribution System Improvements substantially updated the 2008 cost estimates producing a total capital cost estimate of \$20,173,681 (in 2017 dollars), estimated as follows:

1A 1.5 MGD SW Treatment Plant	\$10,233,945 (2017 dollars)
1B Land Acquisition/Site Development	Not Included
2 Finished Water Transmission Main	\$1,787,5000 (2017 dollars)
3 0.50 MG Water Storage Tank	\$2,065,500 (2017 dollars)

W&S INFRASTRUCTURE REVIEW

4 Surface Water Intake	\$600,750 (2017 dollars)
5 Residuals Force Main & PS	\$1,451,250 (2017 dollars)*
Sub-Total	\$16,138,945 (2017 dollars)
Engineering Services	\$4,034,736 (2017 dollars)
Public Outreach & Permitting	\$750,000 (2017 dollars)
TOTAL	\$20,173,681 (2017 dollars)

*Not including discharge treatment costs. For example, if residuals are discharged to the LWSD, the WWTF requires expansion to accept this flow since the existing WWTF does not have the capacity to accept this additional volume. An alternative would be to discharge to the Spencer WWTF; however, it is understood that this facility does not have the capacity to accept the additional flow either. Another alternative would involve trucking of residuals to a treatment facility with the capacity to accept such materials. A line item should be included in the above costs for WWTF expansion and upgrade due to the significant burden the existing nearby WWTFs would have for receiving residuals from the surface water treatment facility.

The study also included a projected cost forecast for 2025 of \$27,609,076.

Table 5 of this study also estimated the annual operation and maintenance costs for a 1.5 MGD water treatment plant at \$796,072 (2017 dollars).

The referenced feasibility studies are provided as Appendices B-4 and B-5, respectively.

Water Supply Approval Process – Massachusetts Department of Environmental Protection (MassDEP)
MassDEP has provided the Moose Hill Water Commission with two letters providing documentation of the process required for Leicester to develop Moose Hill Reservoir as a source of public drinking water. The first such letter is dated November 9, 1987 from James Fuller, then Deputy Regional Environmental Engineer for the Department of Environmental Quality Engineering (DEQE), forerunner to MassDEP. Mr. Fuller indicates that engineers from his office completed a review of the SEA report “Preliminary Design Report, Moose Hill Reservoir Water Treatment Facility, March 1986” and states that: “Based on this report, this office approves the Moose Hill Reservoir as a source for a public water supply.”

The letter goes on to require that plans and specifications of treatment facilities to address drinking water regulations are required to be submitted and approved by this office prior to use of this supply and prior to construction of the treatment facilities. The letter further points out the obligation of other required permits and approvals including the Interbasin Transfer Act, Water Management Act and MEPA. Finally, the letter indicates that “the Moose Hill Reservoir presently does not serve any customers. Steps should then be taken to enter into agreements with any or all of the three water districts in the Town of Leicester to provide them with this water.”

The second correspondence from DEP to the Moose Hill Commission is dated November 3, 2008, from Marielle Stone, Section Chief of the Central Regional Office Drinking Water Program of the MassDEP. This letter outlines in detail the process and procedures required to be met in order to establish a new drinking water source and treatment facility in order for the Moose Hill Reservoir to be used as a source of public drinking water. Included among an extensive list of studies and reports is a Preliminary Report

and Site Examination for a Source Greater than 70 GPM (BRP WS 17). The Preliminary Report must include:

1. Details of the proposed location of the intake structure.
2. A bathymetric map of Moose Hill Reservoir.
3. Mapping of the watershed, the reservoir and its tributaries, DEP Zones A, B and C, and proposed sampling locations.
4. Mapping of land use, ownership, and potential sources of contamination within the watershed.
5. Mapping of the potential water supply service areas, water and sewer districts, and possible service interconnections.
6. Population projections to be served by Moose Hill Reservoir for use in developing Water Needs Forecasts by DCR.
7. Detailed estimates of capital, operation and maintenance costs and the method(s) to finance capital charges and operational expenses.
8. Completion of relevant portions of the Site Screening package, including:
 - a. Early Notice of the Proposed Project in the Environmental Monitor.
 - b. Water Conservation Plan for Public Water Suppliers; and
 - c. Alternatives Analysis.

MassDEP specifies that it must conduct a Site Examination which will include an evaluation of the proposed water quality sampling program covering a minimum of one year of sampling for some eleven categories of water quality parameters.

MassDEP letters are included in Appendix B-6

Current Status

Since the submission of the Draft Final Moose Hill Reservoir Feasibility Study Update, dated July 27, 2017, no specific actions have been taken to recognize Moose Hill Reservoir as an approved source of public water supply as specified by MassDEP. The watershed and bathymetric mapping specified in the MassDEP correspondence referenced above has not been developed as of this time. The water quality sampling of the reservoir specified by MassDEP has not been initiated. No specific budget requests appear to have been made or acted upon in the context of town meeting actions with reference to determining the suitability of Moose Hill Reservoir as a new water source or how water drawn from Moose Hill Reservoir would be made available to the Districts providing drinking water within their respective service areas. While the IMA between the Town and the LWSD appears to remain in effect, initiation of new discussions between the Town and all of the water districts would be prudent with regard to the future use of Moose Hill Reservoir as a possible town-wide source of public water supply.

For the purposes of the current assignment to evaluate the potential options for restructuring the delivery of water and sewer services within the Town of Leicester, Moose Hill Reservoir continues to represent a potential source of drinking water, subject to the approval of MassDEP and determination of treatment and distribution system requirements in the amount of 1.5 MGD. The current average daily demand total for the three current water districts is about 1.2 MGD. As such, it is possible to envision a future scenario in which Moose Hill could be developed as a source of public water supply capable of meeting the present-day water demands of the existing service areas of the existing water districts.

As a first step towards determining whether the development of Moose Hill as a drinking water supply would be cost-effective an analysis was conducted to compare the potential costs to develop and then

operate a treatment facility meeting DEP requirements from Moose Hill Reservoir to the costs of purchasing treated water from the City of Worcester. This analysis used the current purchase price per ccf from Worcester applied to the 1.5 mgd design basis for a water supply developed using Moose Hill Reservoir as its source of supply. Purchase of a daily volume of 1.5 million gallons per day (~ 732,000 ccf per year) of water from Worcester at \$3.63 per ccf produces an annual cost of \$2,656,800. Estimating the costs to develop a water supply at Moose Hill including treatment facility, intake, storage tank and additional water mains and related costs resulted in estimated total capital costs of approximately \$30 Million. In addition, the costs of annual operation and maintenance costs were estimated in the range of from \$860,000 to \$1.5 Million.

Assuming an issuance cost of 1% of the total capital cost results in a total principal cost of \$30,300,000. Bond costs were estimated based on an interest rate of 4.0% over a 30-year return period results in an annualized debt service cost of \$1,752,252. Adding the range of annual O&M costs to the annual debt service cost results in total annual costs that range from \$2,612,252 to \$3,252,252. This preliminary cost comparison does not make any assumptions regarding possible changes in Worcester's charge basis over time. At this stage, it would not appear that development of Moose Hill to meet the demands of the service areas associated with the water districts as presently constituted would result in rate reductions for the short-term. However, it is necessary when evaluating new water supply sources to look out longer than 10 to 20-years.

In evaluating the potential development of Moose Hill for future water supply use, it would also be prudent to consider the future water demands, both for the water districts presently in place and for any plans to extend water service to any other areas within the Town of Leicester. It would be critical to consider whether the ability to provide 1.5 MGD will prove sufficient against future demand projections (which are beyond the scope of the current study) or expansion of water service to areas of town which are currently unserved by any of the existing water districts. Finally, it would also be prudent to consider whether the City of Worcester supply may become limited in its ability to meet the demands of the Leicester service areas at any point in the future.

2.4 Stiles Lake Water District

The Stiles Lake Water District was established in 1976 pursuant to chapter 476 of the Acts of 1976. Although the provisions of this enabling act mirror the description of a water district established for the purpose of providing water supply and distribution services within the boundaries established, the sole purpose for the creation of this water district was to provide an organizational framework for residents abutting Stiles Lake to be able to manage the finances and regulatory obligations as owners of the dam at the outlet of the lake. These purposes have been confirmed in discussions with the Chair of the Stiles Lake Water District. At present, there are no public water supply services provided by this district; nor are there plans to do so in the foreseeable future. All residents within the defined district boundary as described in the enabling act rely on private wells for their water supply purposes. For these reasons, no further assessment is required in relation to the Stiles Lake Water District. Future consideration may be given to the activation of this district giving due regard to the language of its enabling act which does in fact describe a typical water district, similar to the enabling act legislation for each of the other water districts operating within the town of Leicester.

3.0 CURRENT ASSESSMENT OF DISTRICT CONDITIONS - SUMMARY

3.1 Financial

In addition to current technical and regulatory assessments of each of the Districts it is important to understand their current financial conditions. These financial condition assessments are important to paint a full picture of the Districts currently but are critical to understanding the financial and customer impacts associated with the consideration and analysis of any future consolidation options. In order to perform an initial financial assessment, the following information was requested of and reviewed for each District.

- Historical and current operating budgets, in as much detail as possible for categorization and planning purposes.
- Annual debt service schedules for outstanding debt.
- Historical comprehensive annual financial reports or other audited or unaudited annual financial reporting documents.
- Annual reserve fund balances, restricted and unrestricted, and any policed sources and uses.
- Future capital expenditures and any know sources of funding.
- Existing rates, user charges, and miscellaneous fees; and
- Detailed historical customer and billing information.

The following sections present an existing snapshot of the rate and financials of each of the Districts.

3.1.1. Cherry Valley – Rochdale Water District

The Cherry Valley – Rochdale Water District (CVRWD) has an annual operating budget of approximately \$1.3 million. The CVRWD's largest cost drivers currently include payroll and related expenses, an intermunicipal agreement payment to the City of Worcester, and annual debt service payments. These three annual cost items alone account for almost two-thirds of the CVRWD's current annual revenue requirements.

The CVRWD's total annual revenue is currently \$1.3 million; made up predominantly by user charges to customers through monthly water rates. The District currently employs a four-tier inclining block rate structure along with a monthly fixed charge. Other miscellaneous, and comparatively small, sources of revenue for the CVRWD include customer penalties, tower rental payments, interest income, etc.

The CVRWD is currently operating in a structural cash surplus. This means that on an annual basis, currently, the CVRWD is collecting more from revenues than it is spending. The District also has a healthy unrestricted fund balance of \$300,000. Although CVRWD will most likely be required to implement rate increases in the future to generate the additional revenues needed to adequately support future capital expenditures, which are presented in Section 2 of this report, those rate increases should be moderate and reasonable.

W&S INFRASTRUCTURE REVIEW

In order to understand on a deeper level, the financial, rate, and customer impact situation currently faced by the CVRWD and its customers, the following metrics have been compiled in tabular format. These data will be relied upon as needed for comparison purposes as consolidation options are considered. To provide context, the following definitions can be referred to for purposes of understanding each metric. These definitions carry through the remainder of this section for each of the Districts.

- **Typical Annual Bill** – Represents an annual water or sewer bill for a residential customer with a 5/8" meter and using 60 hundred cubic feet (Ccf) or 45,000 gallons of water annually.
- **Annual Cost per Connection** – Instead of calculating an actual bill defined by an assumed amount of consumption, as presented by the Typical Annual Bill, this metric simply takes each District's total annual revenue requirements and divides by the total amount of connections.
- **Cost per Billable Unit** – This is another metric utilized to portray total annual revenue requirements in a comparative manner. Total annual revenue requirements are divided by the total annual billable units by District. Billable units are typically in the format of Ccf or thousand gallons.
- **Annual Revenue Requirements** – The total annual cash needs of each District, currently. Please note that these revenue requirements will change over time to reflect inflationary adjustments as well as additional capital expenditures.
- **MHI Burden** – MHI, or Median Household Income, has historically been used in the water and sewer industry as a comparative metric for purposes of defining whether water and sewer bills are affordable for customers. MHI Burden takes the Typical Annual Bill and divides it into the service areas' MHI. Historically, any MHI Burden in excess of 2.0% for water or sewer bills individually, would be considered unaffordable. There have been opponents of this metric in the industry, pointing to the fact that MHI income levels do not necessarily represent the income of the most economically disadvantaged customers. To reflect this, lower income levels are utilized for comparison purposes, which will be presented utilizing the LQI Burden below.
- **% of HH Living in Poverty** – Represents the percent of households in the service area which are currently living in poverty. This is a good metric for understanding the general affordability issue at hand.
- **Total Annual Revenue** – The total annual revenue currently being collected by each respective District. This reflects all revenue sources, not just user charges. This value does not reflect future rate increases, no matter how necessary they are.
- **LQI Burden** – As discussed in the definition for MHI Burden, this metric operates in the same manner, but utilizes the upper limit income of the lowest quintile of households for purposes of comparing a Typical Annual Bill to. This is thought to be more indicative of the burden water or sewer bills place on a truly economically disadvantaged household.
- **Bills in Hours of Min. Wage** – Represents the number of hours someone would have to work, earning minimum wage, to pay for the Typical Annual Bill. This is assuming Massachusetts' existing minimum wage of \$12.75.

Table 3.1. CV RWD Key Financial Metrics

Typical Annual Bill \$998	Annual Cost per Connection \$1,415	Cost per Billable Unit \$16.57
Annual Revenue Requirements \$1,303,956	MHI Burden 1.64%	% of HH Living in Poverty 4.1%
Total Annual Revenue \$1,350,000	LQI Burden 2.12%	Bill in Hours of Min. Wage 74.0

Table Note: MHI = Median Household Income; LQI = Lowest Quintile Income; HH = Households

3.1.2. Hillcrest Water District

The Hillcrest Water District (HWD) has an annual operating budget of approximately \$299 thousand. The HWD's largest cost drivers currently include payroll and related expenses, annual professional services, and debt service. These three annual cost items account for almost half of the HWD's current annual revenue requirements.

The HWD's annual revenue is currently \$296 thousand; made up predominantly by user charges to customers through quarterly water rates. The District currently employs a two-tier inclining block rate structure along with a quarterly minimum charge which includes 2 hundred cubic feet (Ccf) of usage. The HWD has other miscellaneous revenue sources, such as other charges and interest income, but are negligible in its grand total of revenue.

The HWD is currently operating an about break-even operation from a revenue versus costs standpoint. The District has a healthy unrestricted fund balance of about 40% of its annual revenue stream. Assuming adequate financing of the HWD's future capital expenditure needs, future rate increases will be required, albeit to a manageable degree.

In order to understand on a deeper level, the financial and rate situation currently faced by the HWD and its customers, the following metrics have been compiled in tabular format. These data will be relied upon as needed for comparison purposes as consolidation options are considered.

Table 3.2. HWD Key Financial Metrics

Typical Annual Bill \$480	Annual Cost per Connection \$761	Cost per Billable Unit \$13.46
Annual Revenue Requirements \$298,950	MHI Burden 0.79%	% of HH Living in Poverty 4.1%

W&S INFRASTRUCTURE REVIEW

Total Annual Revenue \$295,811	LQI Burden 1.02%	Bill in Hours of Min. Wage 35.6
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Table Note: MHI = Median Household Income; LQI = Lowest Quintile Income; HH = Households

3.1.3. Leicester Water Supply District - Water

The Leicester Water Supply District's water operations (LWSD-W) has an annual operating budget of approximately \$777 thousand. Its largest cost drivers currently include payroll and related expenses, engineering and capital related costs, and debt service.

The LWSD-W's annual revenue is currently \$787 thousand; made up predominantly by user charges to customers through quarterly water rates. The District currently employs a three-tier inclining block rate structure along with a quarterly fixed charge. The LWSD-W has other miscellaneous revenue sources, such as interest income, connection fees, , and annual rental fees.

The LWSD-W is currently operating a structural cash surplus with a healthy unrestricted fund balance of over 20% of its annual revenue stream. Assuming adequate financing of the LWSD-W's future capital expenditure needs, future rate increases will be required, albeit to a manageable degree.

In order to understand on a deeper level, the financial and rate situation currently faced by the LWSD-W and its customers, the following metrics have been compiled in tabular format. These data will be relied upon as needed for comparison purposes as consolidation options are considered.

Table 3.3. LWSD-W Key Financial Metrics		
Typical Annual Bill \$574	Annual Cost per Connection \$990	Cost per Billable Unit \$12.37
Annual Revenue Requirements \$777,042	MHI Burden 0.94%	% of HH Living in Poverty 4.1%
Total Annual Revenue \$787,452	LQI Burden 1.22%	Bill in Hours of Min. Wage 42.5

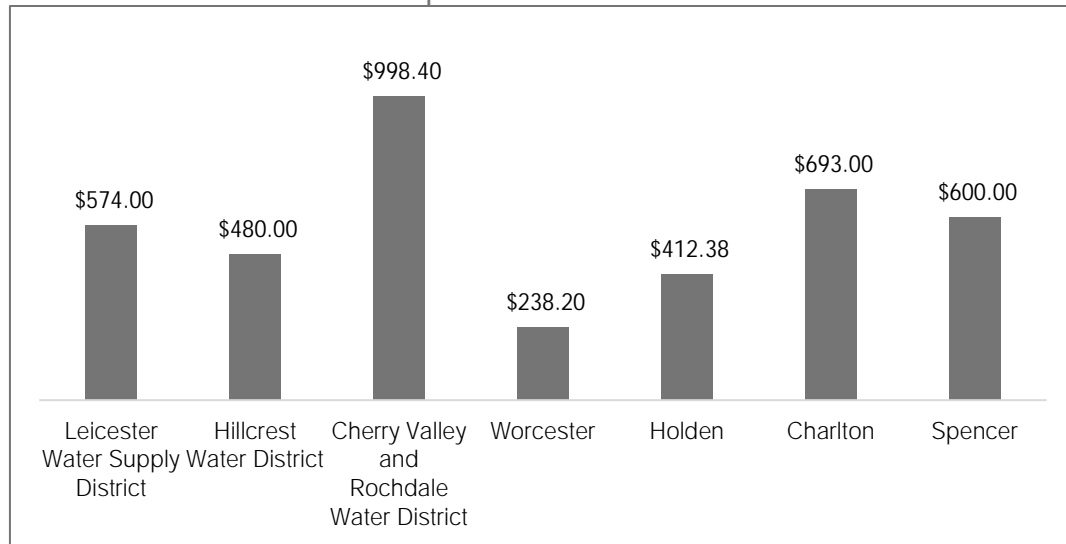
Table Note: MHI = Median Household Income; LQI = Lowest Quintile Income; HH = Households

3.1.4. Summary of Water District's Key Financial Metrics

The graphic in Appendix C provides side-by-side comparisons of the various water districts. At this time, the Weston and Sampson project team are drawing no firm conclusions as to the importance in the magnitude of differences between the comparative metrics between districts and are instead presented for information purposes only at this time. As the project proceeds as planned, and various consolidation options are considered, these comparative metrics will be utilized to help formulate and compare options over structure and time. Included in Appendix C, but also worthy of being presented here in the body of this report is a comparison of an annual water bill, presented for all 3 water districts, as well as 4 neighboring municipal water utilities. Bills are presented on an annual basis and assume a residential

customer with 60 Ccf of annual consumption and a 5/8" meter, where applicable and rates differentiate by meter size.

Table 3.4. Annual Water Bill Comparison based on Current Rates



3.1.5. Cherry Valley Sewer District

The Cherry Valley Sewer District (CVSD) has an annual operating budget of approximately \$894 thousand. CVSD's largest cost drivers currently include payroll and related expenses, wholesale wastewater costs, and debt service. These three annual cost items account for over 80% of the CVSD's current annual revenue requirements. Cherry Valley's annual debt service requirements alone account for almost half of its annual revenue requirement.

The CVSD's annual revenue is currently \$760 thousand; made up predominantly by user charges to customers through monthly sewer rates. The District currently employs a four-tier inclining block rate structure along with a monthly fixed charge. Other miscellaneous, and comparatively small, sources of revenue for the CVSD include liens and interest income.

The CVSD is currently operating in a structural cash deficit. In addition, the District also has a current unrestricted fund balance which is negative. In order to remove CVSD's existing structural deficit, an almost 18% rate increase would be required. This would be on top of recent rate increases of significant magnitudes, as well as future required rate increases to support inflationary changes, capital expenditures, and replenishing of the District's unrestricted fund balance, bringing the District's bills even more significantly higher than comparative customer bills as other surrounding sewer utilities. Please see section 3.1.9, Table 3.9 for a chart of comparisons.

In order to understand on a deeper level, the financial and rate situation currently faced by the CVSD and its customers, the following metrics have been compiled in tabular format. These data will be relied upon as needed for comparison purposes as consolidation options are considered.

W&S INFRASTRUCTURE REVIEW

Table 3.5. CVSD Key Financial Metrics

Typical Annual Bill \$1,929	Annual Cost per Connection \$1,909	Cost per Billable Unit \$38.63
Annual Revenue Requirements \$893,505	MHI Burden 3.17%	% of HH Living in Poverty 4.1%
Total Annual Revenue \$760,071	LQI Burden 4.10%	Bill in Hours of Min. Wage 142.9

Table Note: MHI = Median Household Income; LQI = Lowest Quintile Income; HH = Households

3.1.6. Hillcrest Sewer District

The Hillcrest Sewer District (HSD) has an annual operating budget of approximately \$338 thousand. The HSD's largest cost drivers currently include outside services, treatment related costs, and annual debt service.

The HSD's annual revenue is currently \$300 thousand; made up predominantly by user charges to customers through quarterly rates. The District currently employs a flat rate per customer, irrespective of water usage, meter size, or customer classification. The HSD receives other revenue sources, in addition to its flat fees, of other charges and investment earnings.

The HSD is currently operating an about break-even operation from a revenue versus costs standpoint. The District has a healthy unrestricted fund balance of about 60% of its annual revenue stream. Assuming adequate financing of the HSD's future capital expenditure needs, future rate increases will be required, albeit to a manageable degree.

In order to understand on a deeper level, the financial and rate situation currently faced by the HSD and its customers, the following metrics have been compiled in tabular format. These data will be relied upon as needed for comparison purposes as consolidation options are considered.

Table 3.6. HSD Key Financial Metrics

Typical Annual Bill \$540	Annual Cost per Connection \$861	Cost per Billable Unit \$15.23
Annual Revenue Requirements \$338,240	MHI Burden 0.89%	% of HH Living in Poverty 4.1%
Total Annual Revenue \$299,577	LQI Burden 1.15%	Bill in Hours of Min. Wage 40.0

W&S INFRASTRUCTURE REVIEW

Table Note: MHI = Median Household Income; LQI = Lowest Quintile Income; HH = Households

3.1.7. Leicester Water Supply District - Sewer

The Leicester Water Supply District's sewer operations (LWSD-S) has an annual operating budget of approximately \$657 thousand. Its largest cost drivers currently include payroll and related expenses, and engineering and capital related costs.

The LWSD-S's annual revenue is currently \$671 thousand; made up predominantly by user charges to customers through quarterly sewer rates. The District currently employs a two-tier inclining block rate structure along with a quarterly fixed charge. The LWSD-S has other miscellaneous revenue sources, such as interest income, connection fees, and assessments and betterments.

The LWSD-S is currently operating a structural cash surplus with a healthy unrestricted fund balance of over 20% of its annual revenue stream. Assuming adequate financing of the LWSD-S's future capital expenditure needs, future rate increases will be required, albeit to a manageable degree.

In order to understand on a deeper level, the financial and rate situation currently faced by the LWSD-S and its customers, the following metrics have been compiled in tabular format. These data will be relied upon as needed for comparison purposes as consolidation options are considered.

Typical Annual Bill \$551	Annual Cost per Connection \$837	Cost per Billable Unit \$10.46
Annual Revenue Requirements \$657,042	MHI Burden 0.91%	% of HH Living in Poverty 4.1%
Total Annual Revenue \$671,706	LQI Burden 1.17%	Bill in Hours of Min. Wage 40.8

Table Note: MHI = Median Household Income; LQI = Lowest Quintile Income; HH = Households

3.1.8. Oxford-Rochdale Sewer District

The Oxford-Rochdale Sewer District (ORSD) has an annual operating budget of approximately \$546 thousand. The ORSD's largest cost drivers currently include payroll and capital related investments and maintenance.

The ORSD's annual revenue is currently \$610 thousand; made up predominantly by sewer user charge revenue. The District currently employs a flat annual charge for sewer, irrespective of the amount of water a customer uses, or its meter size or customer classification. The ORSD has other miscellaneous revenue sources but are negligible in its grand total of revenue.

The ORSD is currently operating a structural cash surplus with a healthy unrestricted fund balance of approximately 50% of its annual revenue stream. Assuming adequate financing of the ORSD's future capital expenditure needs, future rate increases will be required, albeit to a manageable degree.

W&S INFRASTRUCTURE REVIEW

In order to understand on a deeper level, the financial and rate situation currently faced by the ORSD and its customers, the following metrics have been compiled in tabular format. These data will be relied upon as needed for comparison purposes as consolidation options are considered.

Table 3.8. ORSD Key Financial Metrics

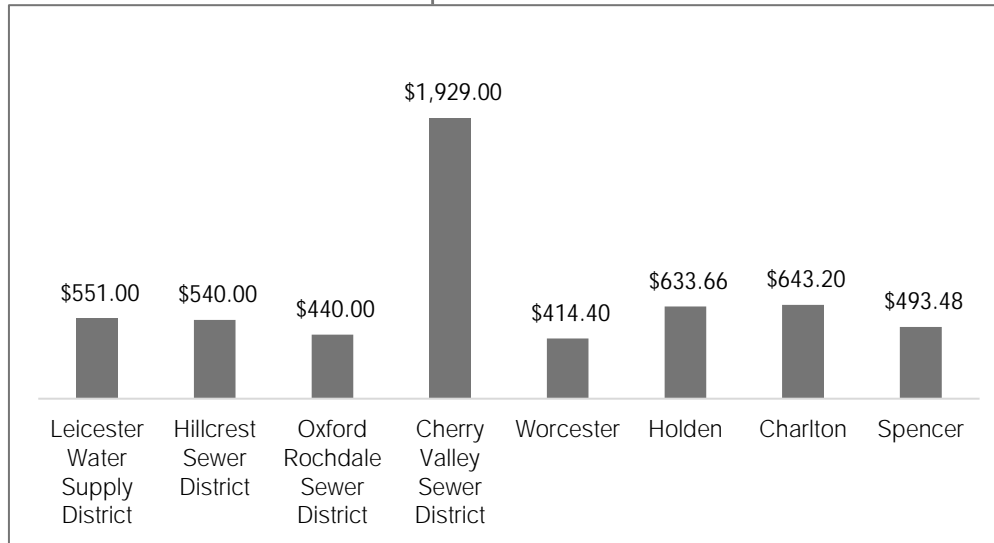
Typical Annual Bill \$440	Annual Cost per Connection \$511	Cost per Billable Unit \$3.58
Annual Revenue Requirements \$544,587	MHI Burden 0.72%	% of HH Living in Poverty 4.1%
Total Annual Revenue \$610,227	LQI Burden 0.94%	Bill in Hours of Min. Wage 32.6

Table Note: MHI = Median Household Income; LQI = Lowest Quintile Income; HH = Households

3.1.9. Summary of Sewer District's Key Financial Metrics

Table 3.9 provides side-by-side comparisons of the various sewer districts. At this time, the Weston and Sampson project team are drawing no firm conclusions as to the importance in the magnitude of differences between the comparative metrics between districts and are instead presented for information purposes only at this time. As the project proceeds as planned, and various consolidation options are considered, these comparative metrics will be utilized to help formulate and compare options over structure and time. Included in Appendix D, but also worthy of being presented here in the body of this report is a comparison of an annual sewer bill, presented for all 4 sewer districts, as well as 4 neighboring municipal sewer utilities. Bills are presented on an annual basis and assume a residential customer with 60 Ccf of annual water consumption and a 5/8" meter, where applicable and rates differentiate by meter size.

Table 3.9. Annual Sewer Bill Comparison based on Current Rates



3.2 Structure and Organization

Each of the 6 districts were established by separate special acts of the Massachusetts Legislature over a 118-year period beginning in 1888 with the creation of the Leicester Water Supply District.^[1] All of the districts are governed in a manner similar to the open town meeting government in Massachusetts with an elected executive (i.e. Board of Commissioners) and legislative body that is open to all voters residing in the district. Initially, managing officers for most of the districts were elected by the annual meeting but recent changes to by-laws allow the appointment of clerk, treasurer, and superintendent by the Board of Commissioners. Some of the districts have executed inter-agency agreements providing for shared management and operation.

The Board of Commissioners convene an annual meeting. A Moderator selected by the voters present at that meeting presides over the annual meeting. Annual meetings are generally not well-attended. Membership on the boards of each district is characterized by low turn-over with little or no competition for positions and the same is true for most managing officers. None of the districts formally plan for succession of Commissioners or other officers.

Each district has adopted by-laws and rules and regulations. The most recently revised rules and regulations are 7 years old (ORSD); the most recently adopted by-laws are 6 years old (LWSD). By-laws are essential to the administration of the districts while rules and regulations are essential to the proper operation of the systems. Both should undergo periodic review to ensure consistency with law, regulation, and actual practice. See Table 2.2 for a list of bylaws and regulations by date of adoption^[1]. Although there is no standard timeframe for review, rules and regulations should be reviewed every 5 years and anytime a significant regulation or permit condition is changed by federal or state authorities. By-laws are less likely to require revision and can be reviewed less often.

While the districts have taken steps towards professional management of their finances by appointing rather than electing treasurers, none appear to have job descriptions that adequately describe the necessary skills, education, experience, and work performance for these positions. Specifically, two

W&S INFRASTRUCTURE REVIEW

districts (CV-RWSD and ORSD) have provided job descriptions. In the case of ORSD, there is no job description for Treasurer and the descriptions for operations personnel are 25 years old. CV-RWSD the Treasurers job description is a fairly extensive list of duties, but lacks mention of educational and experiential qualifications, required training or certification, needed skills or abilities, and other factors such as the level of confidentiality that the job requires. Complete job descriptions are an important management tool as they set forth the standards for the job, the expectations of the organization and help meet legal requirements established in, for example, anti-discrimination and fair labor statutes.

Along with moving to appointed treasurers, many of the districts share Treasurers to improve efficiency. However, it is not clear what the recruitment and selection process has looked like in the past for these positions. The project team noted that although there is no certification process that is entirely applicable to district treasurers, certification, and professional development through the Massachusetts Collectors & Treasurers Association (MCTA) is likely relevant. Although there are portions of the program that are not relevant, the MCTA Treasurer certification program covers many beneficial topics, such as, cash control procedures-, short- and long-term borrowing, municipal finance law, ethics, capital budgeting and financing, and procurement. The districts would likely benefit from further professionalization of these positions through job descriptions, a rigorous recruitment and selection process as vacancies occur, and more support for training and ongoing professional development of individuals holding the position.

In general, the districts have seen a great deal of longevity in leadership positions. The stability that comes from successfully retaining competent leadership should not be understated. All organizations will eventually experience turn-over in key positions. The loss of institutional knowledge when this turn-over occurs can be substantial. Having basic human resources and financial management structures in place will help ensure smooth transitions. For example, it appears that only one district has formal HR policies and another an employee handbook. There are no formal employee performance evaluations or written financial policies and procedures. While this may be typical of similar water and sewer districts in Massachusetts, these are worthy endeavors. Additionally, some of the districts do not have a debt management plan or a robust capital planning process. The project team recognizes that many of these occur, but in many cases, they rely on individual knowledge and habit rather than being established or documented in the management structure.

^[1] See Appendix A for copies of by-laws and rules and regulations.

4.0 ORGANIZATIONAL & MANAGERIAL STRENGTHS & WEAKNESSES (LEICESTER)

The strengths of the districts are rooted in the involvement of a core group of leaders who have devoted their careers to the success of these organizations. Each district has enjoyed a great deal of stability in their management as commissioners tend to stay on for extended periods. They have employed qualified, capable, and appropriately licensed superintendents to manage the operations. Administratively they are in the hands of dedicated and hands-on treasurers and staff who juggle the needs of multiple districts and provide customer service that is highly responsive to their customers. They appear to take seriously their fiduciary responsibilities and ensure that there are periodic external financial audits.

There is also a great deal of cooperation among the districts. Several inter-agency agreements are in place providing joint management of districts and districts appear to cooperate very well ad hoc. For example, there are two treasurers in place to oversee the finances of 6 districts and three superintendents who oversee their operation. Although formal inter-agency agreements exist between some of the districts, they do not cover all of the financial and operational relationships, nor do they cover every aspect of the formalized relationships.

Organizationally, the districts are challenged by being small, and facing increasing costs and extensive regulation. On the other hand, the districts have mitigated these challenges through stability in leadership, strong technical ability, and well-established long-term relationships.

The districts essentially operate as independent “towns” organized to provide water and/or sewer services to discrete geographic areas. Governed by voters in attendance at an annual meeting and an elected Board of Commissioners the districts most resemble Massachusetts Open Town Meeting in its most elementary form. State and federal laws and regulations governing the spectrum of management functions from human resources to finance to the environment have developed and evolved as to require increased specialization and greater technical skill from municipal officials. In response, towns have adapted the original Open Town Meeting form through special acts, charters, and extensive by-laws to professionalize management to one degree or another.

In the 20th century some towns began to absorb the various water districts that existed within their boundaries. They benefitted from being subject to the full panoply of town policy, the oversight of various committees, and financial infrastructure. Perhaps most important is the ability of the town to pledge its full faith and credit towards the construction and improvement of water and sewer facilities. In this way, the per capita cost of improvements was minimized as they were spread over the property base of the entire town. After the adoption of proposition 2 ½ the trend towards enterprise funds accelerated. Separating water and sewer revenues from the town property tax base strengthened the ability to finance improvements. .

None-the-less, many small districts continue to successfully provide water and sewer service in Massachusetts. These districts benefit from being separate entities from towns by having greater rate-payer control of finances, access to financing through the US Department of Agriculture which provides grant dollars to small systems as compared with medium or large systems that tend to receive funding in the form of loans, and a high degree of customer service.

The size of the districts tends to exacerbate any structural weakness that may exist by making them less efficient. Small districts, by definition, have a limited base upon which to recover their costs. Naturally, they will seek to minimize overhead, and administrative costs as demonstrated by the Districts sharing of administrative and operational staff. They will train their focus on the cost to meet the minimum technical standards for the provision of service. Left with few resources to devote to non-operational costs, the districts lack the means to develop and implement policies, procedures, and instruments without relying on retained consultants. Imagine for a moment that every town department had to develop its own financial and human resources infrastructure and the inefficiency becomes apparent.

The project team has noted that current efforts to consolidate, for example LWSD and HWD, have the effect of mitigating these apparent inefficiencies. In effect, these districts recognize some of the limitations and have taken positive steps.

These challenges are evidenced by a lack of formal financial or personnel policies, few written job descriptions or qualifications, and limited strategic planning. Even the smallest organizations need to concern themselves with a myriad of personnel policies from access to communication technology to workplace violence prevention. Financial policies are also of paramount importance in assuring accuracy and accountability. Appendix A contains lists of recommended financial and personnel policies. The districts should conduct audits of the extent to which they meet the recommendations.

The size of the districts can also lead to financial stress. The provision of water and sewer service is highly regulated with increasingly stringent standards. Capital improvements and replacements bring significant cost of construction and financing. Wastewater and drinking water treatment facilities, for example, are made up of a system of components that are necessary whether the facility is large or small. In this way, the costs are, to a degree, fixed. Systems must spread these costs over time and their base of customers. High fixed costs spread over a small customer base will result in higher per unit user fees, as demonstrated by the recent experience of the Cherry Valley Sewer District.

5.0 MANAGEMENT OPTIONS

- 5.1 Maintain Status Quo w/ Recommended Improvements
- 5.2 Merger / Consolidation Options & Challenges
- 5.3 Town Department Options
- 5.4 Acquisition by Private Utility Company

DRAFT

6.0 RECOMMENDATIONS FOR LONG-TERM MANAGEMENT OF WATER & SEWER SERVICES

DRAFT



APPENDIX A

Organization Materials



APPENDIX A-1

Enabling Acts

APPENDIX A-2

Bylaws

APPENDIX A-3

Regulations



APPENDIX A-4

HR Policies



APPENDIX A-5

Financial Policies

APPENDIX B

Moose Hill Documents



APPENDIX B-1

Authorizing Agreements

APPENDIX B-2

Leicester-SCS-WRC O&M Agreement

APPENDIX B-3

Leicester-LWSD IMA

APPENDIX B-4

Feasibility Study, SEA, 2008

APPENDIX B-5

Feasibility Study, Whitewater Consultants, 2017

APPENDIX B-6

DEP Correspondence



APPENDIX C

Financial Metrics

Tax ID No: 04-2601194

INVOICE**PLEASE MAKE CHECKS PAYABLE TO:**

Weston & Sampson Engineers, Inc.

Weston & SampsonSM
ENGINEERS, INC.55 Walkers Brook Drive, Suite 100, Reading, MA 01867
westonandsampson.com Tel: 978.532.1900David Genereux
Town Administrator
LEICESTER, TOWN OF
3 Washburn Square
Leicester, MA 01524

September 1, 2020

Project No: ENG20-0716

Invoice No: 9200891

Project ENG20-0716 LEICESTER-WATER & SEWER CONSULTING SERVICES
CONTRACT #CON-21-01Professional Services through August 21, 2020

Phase A PHASE A-BACKGROUND & DATA COLLECTION

Professional Personnel

	Hours	Rate	Amount	
PRINCIPAL				
Stanton, Leah	3.50	255.00	892.50	
TEAM LEADER				
McClure, Jeffrey	1.75	205.00	358.75	
PROGRAM MANAGER				
McGinn, Joseph	12.00	170.00	2,040.00	
Totals	17.25		3,291.25	
Total Labor				3,291.25
		Total this Phase		\$3,291.25
		TOTAL THIS INVOICE		\$3,291.25

Tax ID No: 04-2601194

INVOICE**PLEASE MAKE CHECKS PAYABLE TO:**

Weston & Sampson Engineers, Inc.

Weston & Sampson
ENGINEERS, INC.55 Walkers Brook Drive, Suite 100, Reading, MA 01867
westonandsampson.com Tel: 978.532.1900

November 3, 2020

Project No: ENG20-0716

Invoice No: 11200546

David Genereux
Town Administrator
LEICESTER, TOWN OF
3 Washburn Square
Leicester, MA 01524Project ENG20-0716 LEICESTER-WATER & SEWER CONSULTING SERVICES
CONTRACT #CON-21-01Professional Services through October 23, 2020**Fee**

Description	Contract Amount	% Work To Date	Amount Billed To Date	Previously Billed	This Inv. Billed
PHASE A-BACKGROUND & DATA COLLECTION	79,420.00	20.00	15,884.00	0.00	15,884.00
PHASE B-DRAFT REPORT	65,673.00	0.00	0.00	0.00	0.00
PHASE C-DISTRICT & TOWN PRESENTATIONS	34,605.00	0.00	0.00	0.00	0.00
PHASE D-FINAL PRESENTATIONS & FINAL REPO	20,165.00	0.00	0.00	0.00	0.00
Total Fee	199,863.00		15,884.00	0.00	15,884.00
Total Fee					15,884.00
TOTAL THIS INVOICE					\$15,884.00

Tax ID No: 04-2601194

INVOICE**PLEASE MAKE CHECKS PAYABLE TO:**

Weston & Sampson Engineers, Inc.

Weston & SampsonSM
ENGINEERS, INC.55 Walkers Brook Drive, Suite 100, Reading, MA 01867
westonandsampson.com Tel: 978.532.1900

December 16, 2020

Project No: ENG20-0716

Invoice No: 12200627

David Genereux
Town Administrator
LEICESTER, TOWN OF
3 Washburn Square
Leicester, MA 01524Project ENG20-0716 LEICESTER-WATER & SEWER CONSULTING SERVICES
CONTRACT #CON-21-01Professional Services through November 20, 2020**Fee**

Description	Contract Amount	% Work To Date	Amount Billed To Date	Previously Billed	This Inv. Billed
PHASE A-BACKGROUND & DATA COLLECTION	79,420.00	50.00	39,710.00	15,884.00	23,826.00
PHASE B-DRAFT REPORT	65,673.00	0.00	0.00	0.00	0.00
PHASE C-DISTRICT & TOWN PRESENTATIONS	34,605.00	0.00	0.00	0.00	0.00
PHASE D-FINAL PRESENTATIONS & FINAL REPO	20,165.00	0.00	0.00	0.00	0.00
Total Fee	199,863.00		39,710.00	15,884.00	23,826.00
Total Fee					23,826.00
TOTAL THIS INVOICE					\$23,826.00

Outstanding Invoices

Number	Date	Balance
11200546	11/3/2020	15,884.00
Total		15,884.00

Tax ID No: 04-2601194

INVOICE

PLEASE MAKE CHECKS PAYABLE TO:
Weston & Sampson Engineers, Inc.

Weston & Sampson
 ENGINEERS, INC.

55 Walkers Brook Drive, Suite 100, Reading, MA 01867
 westonandsampson.com Tel: 978.532.1900

January 14, 2021

Project No: ENG20-0716

Invoice No: 1210603

David Genereux
 Town Administrator
 LEICESTER, TOWN OF
 3 Washburn Square
 Leicester, MA 01524

Project ENG20-0716 LEICESTER-WATER & SEWER CONSULTING SERVICES
 CONTRACT #CON-21-01

Professional Services through December 25, 2020

Fee

Description	Contract % Work Amount To Date	Amount Billed To Date	Previously Billed	This Inv. Billed
PHASE A-BACKGROUND & DATA COLLECTION	76,128.75 95.00	72,322.31	39,710.00	32,612.31
PHASE B-DRAFT REPORT	65,673.00 0.00	0.00	0.00	0.00
PHASE C-DISTRICT & TOWN PRESENTATIONS	34,605.00 0.00	0.00	0.00	0.00
PHASE D-FINAL PRESENTATIONS & FINAL REPO	20,165.00 0.00	0.00	0.00	0.00
Total Fee	196,571.75	72,322.31	39,710.00	32,612.31
Total Fee				32,612.31

Billing Limits	Current	Prior	To-Date
Total Billings	32,612.31	43,001.25	75,613.56
Limit			199,863.00
Remaining			124,249.44

TOTAL THIS INVOICE \$32,612.31

Outstanding Invoices

Number	Date	Balance
11200546	11/3/2020	15,884.00
12200627	12/16/2020	23,826.00
Total		39,710.00

Tax ID No: 04-2601194

INVOICE

PLEASE MAKE CHECKS PAYABLE TO:
Weston & Sampson Engineers, Inc.

Weston & Sampson
 ENGINEERS, INC.

55 Walkers Brook Drive, Suite 100, Reading, MA 01867
 westonandsampson.com Tel: 978.532.1900

February 23, 2021

Project No: ENG20-0716

Invoice No: 2210590

David Genereux
 Town Administrator
 LEICESTER, TOWN OF
 3 Washburn Square
 Leicester, MA 01524

Project ENG20-0716 LEICESTER-WATER & SEWER CONSULTING SERVICES
 CONTRACT #CON-21-01

Professional Services through January 29, 2021

Fee

Description	Contract % Work Amount To Date	Amount Billed To Date	Previously Billed	This Inv. Billed
PHASE A-BACKGROUND & DATA COLLECTION	76,128.75 100.00	76,128.75	72,322.31	3,806.44
PHASE B-DRAFT REPORT	65,673.00 30.00	19,701.90	0.00	19,701.90
PHASE C-DISTRICT & TOWN PRESENTATIONS	34,605.00 0.00	0.00	0.00	0.00
PHASE D-FINAL PRESENTATIONS & FINAL REPO	20,165.00 0.00	0.00	0.00	0.00
Total Fee	196,571.75	95,830.65	72,322.31	23,508.34
Total Fee				23,508.34
Billing Limits	Current	Prior	To-Date	
Total Billings	23,508.34	75,613.56	99,121.90	
Limit			199,863.00	
Remaining			100,741.10	
TOTAL THIS INVOICE				\$23,508.34

Outstanding Invoices

Number	Date	Balance
1210603	1/14/2021	32,612.31
Total		32,612.31

Tax ID No: 04-2601194

INVOICE**PLEASE MAKE CHECKS PAYABLE TO:**

Weston & Sampson Engineers, Inc.

Weston & Sampson
ENGINEERS, INC.55 Walkers Brook Drive, Suite 100, Reading, MA 01867
westonandsampson.com Tel: 978.532.1900

March 10, 2021

Project No: ENG20-0716

Invoice No: 3210533

David Genereux
Town Administrator
LEICESTER, TOWN OF
3 Washburn Square
Leicester, MA 01524Project ENG20-0716 LEICESTER-WATER & SEWER CONSULTING SERVICES
CONTRACT #CON-21-01Professional Services through February 26, 2021**Fee**

Description	Contract % Work Amount To Date	Amount Billed To Date	Previously Billed	This Inv. Billed
PHASE A-BACKGROUND & DATA COLLECTION	76,128.75 100.00	76,128.75	76,128.75	0.00
PHASE B-DRAFT REPORT	65,673.00 75.00	49,254.75	19,701.90	29,552.85
PHASE C-DISTRICT & TOWN PRESENTATIONS	34,605.00 0.00	0.00	0.00	0.00
PHASE D-FINAL PRESENTATIONS & FINAL REPO	20,165.00 0.00	0.00	0.00	0.00
Total Fee	196,571.75	125,383.50	95,830.65	29,552.85
Total Fee				29,552.85

Billing Limits	Current	Prior	To-Date
Total Billings	29,552.85	99,121.90	128,674.75
Limit			199,863.00
Remaining			71,188.25

TOTAL THIS INVOICE \$29,552.85**Outstanding Invoices**

Number	Date	Balance
2210590	2/23/2021	23,508.34
Total		23,508.34

Tax ID No: 04-2601194

INVOICE**PLEASE MAKE CHECKS PAYABLE TO:**

Weston & Sampson Engineers, Inc.

Weston & Sampson
ENGINEERS, INC.55 Walkers Brook Drive, Suite 100, Reading, MA 01867
westonandsampson.com Tel: 978.532.1900David Genereux
Town Administrator
LEICESTER, TOWN OF
3 Washburn Square
Leicester, MA 01524

April 27, 2021

Project No: ENG20-0716

Invoice No: 4210642

Project ENG20-0716 LEICESTER-WATER & SEWER CONSULTING SERVICES
CONTRACT #CON-21-01Professional Services through April 2, 2021**Fee**

Description	Contract Amount	% Work To Date	Amount Billed To Date	Previously Billed	This Inv. Billed
PHASE A-BACKGROUND & DATA COLLECTION	76,128.75	100.00	76,128.75	76,128.75	0.00
PHASE B-DRAFT REPORT	65,673.00	100.00	65,673.00	49,254.75	16,418.25
PHASE C-DISTRICT & TOWN PRESENTATIONS	34,605.00	0.00	0.00	0.00	0.00
PHASE D-FINAL PRESENTATIONS & FINAL REPO	20,165.00	0.00	0.00	0.00	0.00
Total Fee	196,571.75		141,801.75	125,383.50	16,418.25
Total Fee					16,418.25

Billing Limits

	Current	Prior	To-Date
Total Billings	16,418.25	128,674.75	145,093.00
Limit			199,863.00
Remaining			54,770.00

TOTAL THIS INVOICE \$16,418.25

Kleinfelder's (formerly S E A Consultants, Inc.) History with the Moose Hill Commission and Reservoir

Kleinfelder's specific history with the Moose Hill Reservoir dates back to the mid-1970s. Kleinfelder worked with the U.S. Department of Agriculture to investigate, permit, design and administer the construction of the Moose Hill Reservoir. Originally conceived as a flood control structure, Kleinfelder worked with the U.S. Department of Agriculture and the Town of Leicester to modify the design so that it had a dual purpose for both flood protection and potable water supply source. This innovative approach yielded a pristine source of supply with a safe yield of approximately 1,000,000 gallons per day.

Following completion of the construction of the Moose Hill Reservoir and dam, the supply reservoir was filled in the early 1980s. Shortly thereafter, Kleinfelder worked with the Town of Leicester and the Moose Hill Water Commission to develop a Master Plan for the Moose Hill Reservoir including a Conceptual Design Report outlining the requirements for water treatment, a water storage tank, and a finished water transmission main to be constructed in Watson Street and then easterly on Route 9 to the center of Leicester where the supply of water would be metered to the Leicester Water Supply District, the Hillcrest Water Supply District, and the Cherry Valley Water Supply District. At that time, the environmental permitting strategy to move the project to the implementation stage was also outlined.

Owing to the fact that each of the above-referenced water supply districts had adequate water supply to meet current and reasonably foreseeable needs at that time (early 1980s), the project did not move forward for a number of years.

In 1996, the next significant milestone to be completed on this project was a two-season pilot testing program to determine the most feasible means of filtering the raw water supply of the Moose Hill Reservoir. The Moose Hill Reservoir drains extensive areas of treating imparting a noticeable and unacceptable, naturally occurring color to the water. The challenge of the pilot testing program was to determine the most cost-effective means of treatment to remove the naturally occurring color and moderate levels of iron and manganese in the water supply. That report was completed and approved by the Department of Environmental Protection at that time.

Following completion of the pilot testing program, the project once again was essentially stalled as a result of the fact that the Capital and O&M costs to construct and operate the reservoir, an attendant water treatment facility, storage tank, and finished water transmission mains, yielded costs that ranged from approximately 2 to 3 times the then current water rates experienced by the three water districts. Also, during this time, the Town of Spencer and the City of Worcester expressed interest in purchasing some or all of the safe yield of the Moose Hill Reservoir. However, the Town of Leicester rejected those expressions of interest in order to preserve the asset for the future water supply needs of the Town of Leicester.

In the late 1990s, as demands of each of the three water districts continued to increase, Kleinfelder was commissioned by the Moose Hill Water Commission and the Town of Leicester to update financial costs associated with the project. Capital and operation and maintenance costs were updated and once again rate projections suggested that the cost of the project still exceeded individual water district rates by as much as 100%. Therefore, the Hillcrest, Cherry Valley and Leicester Water Supply Districts continued to rely on their respective "local" sources and pursued development of supplemental local sources which were less costly at the time to develop and meet near-term demands.

In the late 1990s, Kleinfelder also worked with representatives of the Town's administration and the Moose Hill Water Commission to secure easements at the site of the proposed water

treatment facility in order to construct a multi-level intake into the Moose Hill Reservoir. The parcel of land owned by the Town of Leicester does not abut the shoreline, and therefore, an easement will be required with the Department of Conservation and Recreation (formerly the Department of Environmental Management), which controls the shoreline of the reservoir.

Beginning in 2001, Kleinfelder worked with the Town of Leicester and of the Leicester Water Supply District on the jointly funded Route 9 Water Transmission Main Project. Kleinfelder was responsible for the design, permitting, and construction administration of the water transmission main running from approximately the Town's center to the Spencer Town line. This transmission main will eventually become the finished water transmission main from the proposed water treatment facility delivering water to the three Water Supply Districts roughly at the point of the Town center. This particular project is one of the major elements of the Moose Hill Reservoir Master Plan developed by Kleinfelder in the early 1980's. The overall program will include a water storage tank and the water treatment facility and the remaining connecting transmission main from Route 9 running down Watson Street to the reservoir where the water treatment facility will be sited.

It is also noted that Kleinfelder worked with the Town on rezoning issues in the so called "Route 9 West" corridor to direct commercial development to this area and developed the final design of the water storage tank to be located off Route 9 on Blueberry Lane.

For Further Information Contact: Mark J. Thompson, P.E. (mthompson@kleinfelder.com)



COMMONWEALTH OF MASSACHUSETTS
 EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 Central Regional Office, 627 Main Street, Worcester, MA 01608

DEVAL L. PATRICK
 Governor

TIMOTHY P. MURRAY
 Lieutenant Governor

IAN A. BOWLES
 Secretary

LAURIE BURT
 Commissioner

November 3, 2008

Moose Hill Reservoir Commission
 3 Washburn Square
 Leicester, MA 01524
 Attention: Mr. Kurt Parliament

RE: DWP/Leicester
 New Source Approval Process
 Moose Hill Reservoir

Dear Mr. Parliament:

MassDEP is in receipt of the report prepared by SEA Consultants, Inc., entitled "*Moose Hill Reservoir Feasibility Evaluation*" dated June 8, 2008. Planning and development of Moose Hill Reservoir as a public water supply began in 1980s, and sporadic work towards this goal has occurred since that time. In 1986, SEA Consultants submitted "*Preliminary Design Report for Moose Hill Reservoir Water Treatment Facility*".

New Source Approval permitting for a Surface Water Reservoir is outlined in Chapter 3 of *Guidelines and Policies for Public Water Systems (Guidelines)*. The Guidelines are available for review at <http://www.mass.gov/dep/water/laws/policies.htm#dwguid>. Additional site specific work will be requested as appropriate. This letter is not intended to provide you with a complete listing of each data requirement to permit your Public Drinking Water System reservoir, but is intended to provide guidance, and help you understand the scope of the work that this project will involve.

The first step in the permitting process includes the Preliminary Report which you have provided to MassDEP in the form of the two reports listed above. Some of the information you submitted requires updating, and/or submission of additional information.

Step 1 Preliminary Report and Site Examination for a Source Greater Than 70 gpm (BRP WS 17)

Submit a BRP WS 17 permit application to MassDEP and provide the following information with your permit application:



1. Provide greater details of the proposed location of the multi-port intake structure, including a profile that indicates the depths of the various intakes.
2. A bathymetric map of Moose Hill Reservoir
3. Map of appropriate scale depicting the Moose Hill Reservoir, its tributaries, and the associated Zones A, B, and C as described in the Definitions section of the Guidelines. Map should also identify proposed locations for water quality monitoring, per item 3 in Step 4 below
4. Provide an update in the identification of land uses in the Moose Hill Reservoir watershed, identification of the land owned or controlled by the public water supplier, and potential sources of contamination. What changes have occurred since the 1986 summary provided? What lands have you identified for possible purchase by the Commission for watershed protection?
5. Provide maps indicating the extent of the Moose Hill Reservoir's possible service area for the water district, as well as, maps of Leicester's sewer districts. Include areas outside municipal boundaries and any possible interconnections to other Public Water System districts. This information is necessary to determine applicability of the Interbasin Transfer Act
6. Provide information on the projected population to be served by the Moose Hill Reservoir for use by the Department of Conservation and Recreation (DCR) in developing Water Needs Forecasts for your system
7. Detailed estimated cost of operations, maintenance, and operation expenses as well as a method to finance capital charges and operation expenses
8. Complete relevant portions of the Site Screening package which includes:
 - a. Early Notice in the Environmental Monitor of the proposed project. Information to be included in the Notice may be found at:
<http://www.mass.gov/dep/water/laws/enotice.htm>
 - b. Water Conservation Plan for Public Water Suppliers:
<http://www.mass.gov/dep/water/con-wrc.doc>
 - c. Alternatives Analysis: <http://www.mass.gov/dep/water/laws/altana.htm>

Step 2. Site Exam

MassDEP will conduct a Site Exam after the water supplier has gathered the proper information from the property owners and obtained any necessary approvals for visiting the site. At the Site Exam, MassDEP will evaluate the proposed water quality sampling locations and schedule to be followed during the development of the source. MassDEP will conduct a separate site visit for

the purpose of preparing your Watershed Protection Plan and field verification of the Zones A, B, and C provided in Step 1.

Step 3. Coordination Meeting

Attend a meeting arranged by MassDEP with the programs whose approval may be required. The primary goal of this meeting is to establish a schedule for obtaining the necessary approvals from all programs involved. The participants may include:

1. Department of Conservation and Recreation (DCR) for Water Needs Forecasts, dam safety, and Inter Basin Transfer Act concerns
2. MassDEP Water Management Act Program
3. MassDEP Wetlands Program
4. Massachusetts Department of Fish and Game which includes MassWildlife, Riverways, and the Natural Heritage and Endangered Species Program
5. Army Corps of Engineers
6. MEPA Office

Step 4. Formal Documentation and Final Report for a Source Greater than 70 gpm (BRP WS 19) Permit Process

After successful completion of the BRP WS 17 process, the applicant will be required to submit a permit application for BRP WS 19 Final Report for a Source Greater than 70 gpm which needs to include the following information:

1. Firm Yield must be completed by the applicant. The proponent must contact MassDEP to discuss an acceptable Firm Yield assessment approach. An on-line version of the Firm Yield estimator for *stream* dominated reservoirs may be found at:
<http://www.mass.gov/dep/water/resources/firmyild.htm>
Firm yield estimates for *groundwater* dominated reservoirs may be calculated through the use of Firm Yield II. Alternative methods of calculating the firm yield of your reservoir are acceptable with prior review and approval by MassDEP. To establish the firm yield, at a minimum, you must provide:
 - a. Bathymetric map of Moose Hill Reservoir;
 - b. Estimate of the water needs demand pattern of your service population (average and peak, daily and monthly water use).
2. Hydrogeologic Report – Provide a description of the hydrogeologic system providing recharge to the reservoir and include delineation of the drainage basin
3. Water Quality Monitoring Report – Extensive water quality data must be collected over the course of one year. The specific sampling plan (frequency and analyses) will be prepared by MassDEP after review of the Site Examination application, site visits, and discussions with the proponent concerning potential treatment plans. The monitoring will

be conducted as close as possible to the proposed intake(s), and at other locations on the reservoir as deemed necessary. At a minimum, the sampling plan is likely to include the following:

- a. Total Coliform and E. Coli – Weekly for 1 year;
 - b. Turbidity, Color, Odor, Temperature, Suspended and Total Dissolved Solids – Weekly for one year;
 - c. Secondary Contaminants, as listed in Appendix A, to address reservoir turnover – Spring and Fall;
 - d. Safe Drinking Water Act Contaminants – During Spring turnover;
 - e. Total Organic Carbon – Seasonally
 - f. Giardia and Cryptosporidium – Every other month for one year
 - g. Nitrogen (nitrite, nitrate, ammonia) – Monthly;
 - h. Total Trihalomethane Formation Potential – Monthly in July, August, and September;
 - i. Algae – Monthly throughout the year at intake, major tributaries and at one or more locations in the reservoir;
 - j. Perchlorate – One sample collected during low flow conditions in August, September, or October.
 - k. Analyses needed to demonstrate the proposed treatment system will comply with the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) and the Stage 2 Disinfection Byproducts Rule (DBPR)
4. Watershed Resource Protection Plan – Guidance can be found in the document “Developing a Local Surface Water Supply Protection Plan”, MassDEP, 2000.
 5. Zone A Surface Water Protection Zoning and Non-Zoning Controls – You must demonstrate compliance with the Surface Water Supply Protection requirements of the Drinking Water Regulations (310 CMR 20.20C)
 6. Proposed Treatment Plan – Surface water suppliers are subject to the Surface Water Treatment Rule (SWTR), as written in the Drinking Water Regulations (310 CMR 22.20A). Treatment of the source must be determined through piloting according to Policy 90-04, Pilot Study Requirements for Proposed Treatment.
 7. Water Supply Business Plan – Demonstrate the public water system has the technical, financial, and managerial ability to operate in compliance with 310 CMR 22.00, the Department’s “Guidelines and Policies for Public Water System” and each National Primary Drinking Water Regulation in effect at the time of such approval and in the foreseeable future.
 8. MEPA – Demonstrate compliance with the MEPA requirements. At a minimum, you will be required to file an Environmental Notification Form (ENF) for public review and comment.
 9. Water Management Act Permit Application (OWM WM03).

Step 5. Construction and Final Approvals

1. Permit Application BRP WS 20 – Approval to Construct a Source Greater than 70 gpm
2. Permit Application BRP WS 21 – Treatment System Pilot Study Proposal
3. Permit Application BRP WS22 – Treatment System Pilot Study Final Report
4. Permit Application BRP WS 24 – Construct a Treatment Facility Greater than 1 million gallons per day.
5. Regulatory revision to 314 CMR 4.00 – Massachusetts Surface Water Quality Standards to designate the approved surface water body and its tributaries as Class A water bodies.

This letter is intended to provide you with the extent of the permitting and data collection needed to permit Moose Hill Reservoir as a Public Drinking Water System. After you have had the opportunity to review the information, please feel free to contact us to arrange a meeting to discuss the details.

Thank you, and if you have any immediate questions, feel free to call Barbara Kickham at (508) 767-2724, Purna Rao at (508) 767-2784, or myself at (508) 767-2827.

Sincerely,



Marielle Stone
Section Chief
Drinking Water Program

CC: Robert Reed, Town Administrator-Leicester
Paul Blain, MassDEP-DWP-Boston
Duane LeVangie, MassDEP-WMA-Boston
MassDEP DWP Program File Copy
MassDEP DWP Correspondence Copy

Moose Hill Water Commission – Approved Rules and Regulations

Adopted February 2021

TOWN OF LEICESTER**MOOSE HILL WATER COMMISSION****RULES AND REGULATIONS****I. MOOSE HILL WATER COMMISSION**

- A. **OBJECTIVE:** The objective of the Moose Hill Water Commission is to actively work to certify Moose Hill Reservoir as a public water supply for the benefit of the Town of Leicester, while complying with all applicable laws, regulations, and contractual obligations.

II. ORGANIZATION OF MOOSE HILL WATER COMMISSION

- A. **PURPOSE:** To define the duties of, and process for electing, a Chairperson of the Moose Hill Water Commission.
- B. **POLICY:** For purposes of organizing, the Moose Hill Water Commission (hereinafter “Commission”), at its first regular meetings following the Town of Leicester Annual Elections, will elect from its membership a Chairperson. The Chairperson shall also act as the Clerk, and who shall hold the respective office for a term of one year or until a successor is elected.

1. Organizational Meeting

- a. The Organizational Meeting shall be called to Order by the existing Chair, or in its absence, the longest serving Commissioner measured by overall years elected to the Commission, who shall preside during and until the election of the new Chairperson.
- b. Nominations for the new Chairperson will be made by the members of the Committee will be made, after opening the nominations. The Chair shall be elected by voice vote of the Commissioners in attendance and voting. If no nominee receives a majority vote, the election will be declared null and void and nominations will be reopened.
- c. No member may serve as Chair for more than 2 consecutive years.
- d. Any vacancy of the Chair occurring between Organizational Meetings will be filled by the appointment of the Chair in its sole discretion.

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Adopted February 2021

- e. Following the election of a Chair at its organizational meeting, the Commission may then proceed onto such business as is scheduled on the agenda.
- 2. **Duties of the Chairperson:** The Chairperson of the Moose Hill Water Commission shall have the same powers as any other member of the Commission to vote on any measures before it, to offer resolutions, and to discuss questions. She or he will perform those duties that are consistent with the office and those prescribed by applicable laws and regulations. In carrying out these responsibilities, the Chair will:
 - a. Sign the instruments, acts and orders approved by the Commission in its name and on its behalf;
 - b. Consult with the Director of Inspectional Services and/or Town Administrator in planning the Commission's meeting agendas, where necessary;
 - c. Confer with the Director of Inspectional Services and/or Town Administrator on matters that may occur between meetings;
 - d. Appoint subcommittees subject to Commission approval;
 - e. Call special meetings of the Commission as found necessary or requested in writing by members of the Commission;
 - f. Be public spokesperson for the Commission at all times except as delegated by the Chair specifically to others;
 - g. Preside at all Commission meetings;
 - h. Verify with the Director of Inspectional Services and/or Town Administrator that the Town of Leicester is at all times in compliance with its legal and contractual obligations in relation to development of Moose Hill Reservoir as a public water supply for the Town of Leicester.
 - i. If the Chair becomes incapacitated or infirm, then the longest serving Commissioner measured by overall years elected to the Commission shall call an Organizational meeting within 30 days to elect a new Chair.

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Adopted February 2021

3. **Duties of the Clerk:** Clerk shall be responsible to draft and submit draft minutes of each meeting to the Commission for approval at a subsequent meeting. Minutes shall include:
 - a. a statement of the nature of the meeting,
 - b. the time and place of the meeting,
 - c. names of members present and absent,
 - d. names of any Town employee(s) or other elected official(s) in attendance
 - e. A record of any official action taken by the Commission; resolutions and motions shall be given their exact wording, accompanied by the names of the members moving and seconding and a record of the results of the vote;
 - f. Notation of formal adjournment.
 - g. Copies of all minutes will be sent to each Commission member at least 24 hours prior to the meeting at which they are scheduled on the agenda for approval.
 - h. All minutes approved by the Commission will become the permanent records of the Commission.
 - i. All approved minutes shall be in the custody and control of the Town Administrator or her/his designee, who will make them available to interested citizens upon request, as well as make sure all approved minutes are available to the public in a manner that is convenient to access for member of the public.

- III. **WATER COMMISSION-TOWN ADMINISTRATION RELATIONSHIP:** The Commission will leave to the Town Administration all matters of decision and administration that come within its scope of operations for the Town of Leicester. The Commission retains the right to make policy as it decides and it should normally proceed in making such decisions after receiving recommendations from the town's chief operating officer and/or Director of Inspectional Services. Further,
 - a. The Town Administration shall have the privilege of asking guidance Commission with respect to matters of operation whenever appropriate. If it is necessary to

Moose Hill Water Commission – Approved Rules and Regulations

Adopted February 2021

make exception to an established policy, he or she will submit the matter to the Commission for advice and direction.

- b. The Town Administration will assist the Commission in reaching sound judgments and establishing policies, and will place before the Commission all relevant facts, information, and reports necessary to keep the Commission adequately informed of information and business at hand.

IV. CONDUCT OF MOOSE HILL WATER COMMISSION MEETINGS

1. The Commission shall meet at least once monthly from September to June. Meeting(s) will be held outside of regular Town business hours, and which shall be called “regular meetings.”
2. Where circumstances warrant, the Chair may choose to call additional meetings, which shall be called “special meeting(s).”
3. Every meeting of the Commission will be open to the public in a manner compliant with the Massachusetts Open Meeting Law.
4. The Commission shall use consensus as the primary method to resolve issues and to formulate recommendations. Votes by the majority may be taken at the discretion of the Chair and the most recent edition Robert’s Rules of Order shall prevail if there are questions of procedure.
5. Any Commission member or resident of Leicester may suggest an item for inclusion in the meeting agenda. However, the inclusion or exclusion of any suggested agenda item will be at the discretion of the Chair. A resident who wishes to suggest an agenda item or wishes to submit a question or other information to the Commission is required to submit the suggestion through the Town Administrator.
6. There will be no specific “public comment period” designated at any meeting of the Commission.
7. Residents or other members of the public who wish to provide input regarding a given agenda item are encouraged to contact the Commission members prior to the meeting by email, mail, or phone, in order to provide the said input.

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8. The meeting agenda will be distributed to the Commission members and Town Administrator at least 48 hours prior to the start of a given meeting.
9. The materials accompanying the agenda for a given meeting will be distributed to Commissioners no less than 24 hours prior to a given meeting.

V. PUBLIC PARTICIPATION IN COMMISSION MEETINGS

1. All meetings of the Moose Hill Water Commission shall be open to the public.
2. The Commission desires members of the Town of Leicester to attend Commission meetings so they may become better acquainted with the operations of the Commission and Town.
3. The Commission expressly desires to hear the wishes and ideas of the members of the Leicester community on matters within the scope of their authority.
4. Members of the Leicester community who wish to have their ideas and expressions heard may submit questions, input, or expressions to the Commissioners prior to or subsequent to any Commission meeting, via email, mail, or by phone.
5. The Chair in his discretion may designate at times for the Commission to solicit and receive verbal comments from members of the public during the conduct of a meeting.
 1. Rules and Regulations for any such designated time will be adopted on an *ad hoc* basis.
 2. Any time so designated will be listed as a specific agenda item, if at all.

###END###