


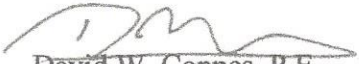
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: April 14, 2021
SUBJECT: 2020 Annual Update on New Connections to the MWRA System

COMMITTEE: Administration, Finance and Audit

X INFORMATION
 VOTE

Beth Card, Director, Environmental and Regulatory Affairs
Katie Ronan, Environmental Analyst
Preparer/Title


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

For information only. This 2020 Annual Update on New Connections to the MWRA System has been prepared pursuant to the "Annual Update" requirements of MWRA's system expansion policies.

DISCUSSION:

MWRA's system expansion policies require an annual update on the status of any new connections (connection approved within the preceding five years) to MWRA from outside the water and sewer service areas. Calendar year 2002 was the first year that MWRA system expansion policies prescribed update requirements. This 2020 Annual Update addresses post-2002 connections to MWRA. A summary of each connection's compliance with requirements as stipulated in its water supply or sewer use agreement is provided. For water connections, requirements include compliance with water withdrawal limits and entrance payments due to MWRA. For wastewater connections, requirements address inflow removal, ongoing stipulations regarding management of wet weather flows, compliance with discharge limits, and entrance payments due to MWRA. An update on inquiries from potential applicants for admission and other system expansion considerations is also included.

The MWRA operating policies listed below govern system expansion. A more detailed summary of each policy is provided in Attachment A.

- OP.04, Sewer Connections Serving Property Partially Located in a Non-MWRA Community (the "Sewer Straddle" policy);
 - OP.05, Emergency Water Supply Withdrawals;
 - OP.09, Water Connections Serving Property Partially Located in a Non-MWRA community (the "Water Straddle" policy);
 - OP.10, Admission of New Community to MWRA Water System; and
 - OP.11, Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area.
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Summary of Approved Connections to the MWRA System

Water

In 2020, the Executive Office of Energy and Environmental Affairs and its agencies, through the Massachusetts Drought Management Task Force, continued to assess hydrologic conditions throughout the Commonwealth. According to monthly DCR Hydrologic Conditions Reports, low precipitation began abruptly in May and was followed quickly by low groundwater and streamflow conditions. In June, a *Level 2 – Significant Drought* was declared in the Western, Connecticut River Valley, Central and Northeastern regions of the state. Especially alarming was the sudden and rapid deterioration of conditions, which led to use of the term “Flash Drought” to describe the combination of lack of precipitation and the sudden onset of high temperatures. In September, a *Level 2 – Significant Drought* was declared in all seven regions of the Commonwealth. Dry conditions persisted through the early fall, though recovery began towards the end of the year. All regions improved to a *Level 1 – Mild Drought* in December and returned to normal in January 2021. Despite drought conditions, Quabbin Reservoir was well within the normal operating band throughout the year and spilled a total 4.49 billion gallons over 73 days. In addition to following water quantity issues related to drought, MWRA continues to see an uptick in inquiries as a result of communities finding elevated PFAS in their water supplies.

In early June, Lynnfield Center Water District (LCWD) requested emergency withdrawals pursuant to OP.05 *Emergency Water Supply Withdrawals* for up to six months and was authorized by the Board of Director to withdraw up to 0.144 mgd from the MWRA water system. LCWD was experiencing increased demand as a result of impacts from COVID-19 stay at home advisories, which was compounded by restricted use of local sources due to water quality concerns. In the end, LCWD did not utilize the approved emergency connection. LCWD is not presently a member of the MWRA water system, though it can connect via temporary bypass to the Lynnfield Water District, which is a partially supplied MWRA community. As discussed in more detail later in this report, LCWD has inquired about admission to the MWRA water system and is evaluating options.

Burlington requested emergency withdrawals from MWRA on three occasions in 2020 due to operational issues and necessary maintenance within the local system resulting in inability to meet local demand. In July and August respectively, Burlington was authorized pursuant to OP.05 by MWRA’s Chief Operating Officer for short-term withdrawal (less than thirty days). In October, Burlington was authorized pursuant to OP.05 by the MWRA Board of Directors for a long-term emergency withdrawal of up to six months, for up to 0.7 mgd. In total, during 2020 Burlington withdrew 5,528,200 gallons from the MWRA water system pursuant to OP.05.

In 2020, MWRA received two formal applications under OP.10 *Admission of New Community to MWRA Water System* from the towns of Burlington and Ashland. Both communities were approved for admission to MWRA by the Board of Directors on December 16, 2020. Burlington was approved under MEPA and the state Water Resources Commission to withdraw up to 6.5 mgd from MWRA; however, presently only intends to withdraw an average of up to 0.886 mgd via a connection to the town of Lexington water system. The Town is in the process of designing and constructing a direct connection to the MWRA water system, which will allow the community to withdraw up to 6.5 mgd. Ashland was approved under MEPA and the state Water Resources Commission to withdraw up to 32.8 million gallons annually from MWRA via a connection to the town of Southborough water system. Ashland intends to utilize the connection primarily as supplemental water supply between the months of October and January, when use of local sources is restricted. Water Supply Contracts for both communities will be executed in 2021 and associated

entrance fees will be collected pursuant to MWRA's 25-year, interest fee payment plan. MWRA expects that as communities across the Commonwealth are working to address concerns related to PFAS levels, additional inquiries about admission may be received in coming months.

Since 2002, Stoughton, Reading, the Dedham-Westwood Water District, Wilmington, Ashland and Burlington have become MWRA water supplied communities. (Bedford was admitted into the MWRA system prior to 2002, before firm water withdrawal limits were established for new communities.) There have also been two "straddle connections" since 2002: Avalon in Peabody/Danvers (now called 14 North), and the YMCA in Marblehead/Salem. The connections are shown on the map in Figure 1 and information pertaining to these connections is provided in Table 1.

Figure 1: New Water Connections Since 2002 and Communities Pursuing Admission

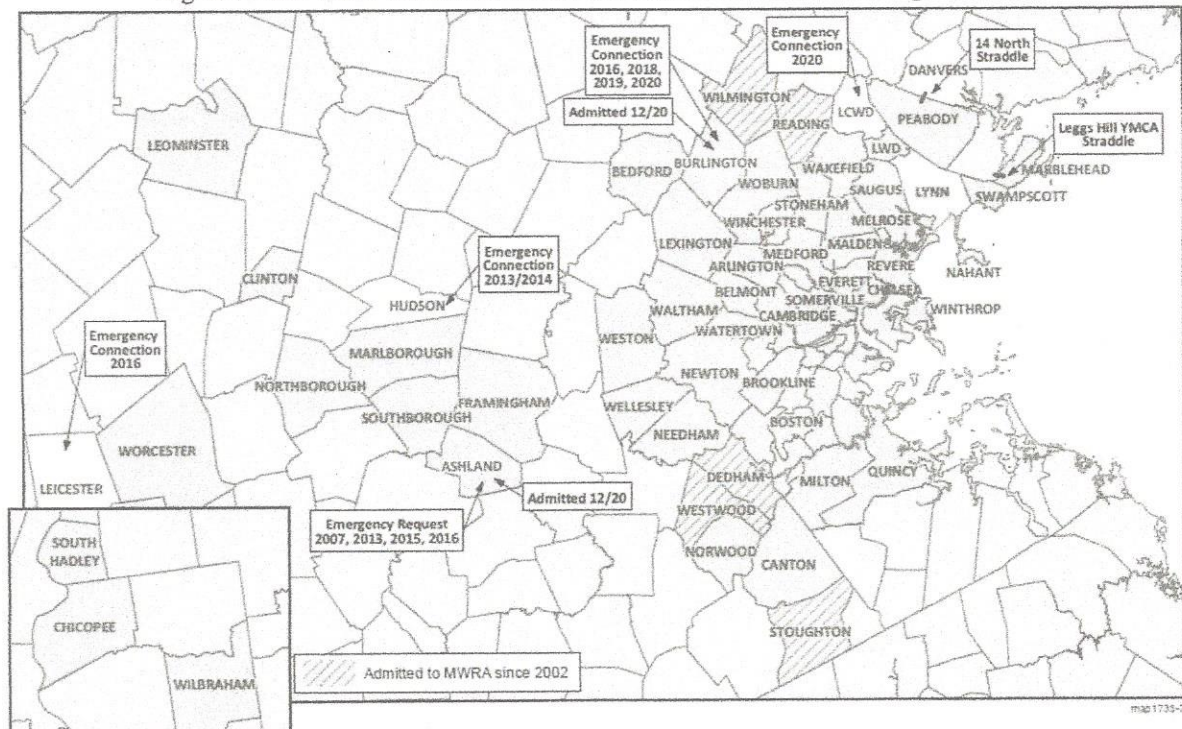


Table 1 - Approved Connections to MWRA Water System Since 2002

Applicant	Applicable MWRA Policy	Approval Date or Emergency Period	Entrance Fee or Payment of Charges Under the Emergency Policy	MWRA Approved withdrawal	2020 MWRA Withdrawal
Burlington (OP.10 admission approved 12/20)	OP.05 Emergency	9/30/16-3/29/17 1/18 7/18 12/18 3/19 5/19 10/19 7/20 8/20 10/20	Prior to 2020, MWRA has received a total of \$263,388. For 2020, MWRA received a total of \$41,565.83 prior to admission.	0.7 mgd	5,528,200 mg prior to admission

Applicant	Applicable MWRA Policy	Approval Date or Emergency Period	Entrance Fee or Payment of Charges Under the Emergency Policy	MWRA Approved withdrawal	2020 MWRA Withdrawal
Cherry Valley Rochdale Water District	OP.05 Emergency	10/27/16-4/6/17	0	N/A	0
Ashland (OP.10 admission approved 12/20)	OP.05 Emergency	12/07-5/07 12/13-6/14 12/15-6/16 8/22/16-2/22/17	For 4 six-month emergency withdrawal periods, MWRA received \$14,078.	.75 mgd	0
Hudson	OP.05 Emergency	6/13 12/13 6/14	For 3 six-month emergency withdrawal periods, MWRA received a total of \$1,033,787.	N/A	0
Dedham/Westwood W.D (partially supplied)	OP.10, New	12/05 12/14 10/18	Entrance fee \$548,748 for first .1 mgd paid in full. Fee of \$566,727 for additional 0.1 mgd paid in full.	0.2 mgd 150 mg (1 mgd for 5 months)	.386mgd*
Wilmington (partially supplied)	OP.10, New	5/09 10/20	Net Entrance Fee of \$2,809,320 w/ 20-year payment schedule. On-time payments.	0.6 mgd 219 mg	.686mgd *
Reading	OP.10, New	11/05 10/07	\$3,285,242 (first 0.6 mgd) \$7,799,606 (for additional 1.5 mgd). Paid in full	2.1 mgd	1.79mgd
YMCA Salem/Marblehead	OP.09, Straddle	11/06	\$70,823 paid in full	0.0127 mgd	0.004164mgd
14 North Danvers/Peabody	OP.09 Straddle	05/03	\$64,063 paid in full	0.012 mgd	0.006107 mgd
Stoughton (partially supplied)	OP.10, New	6/02	\$5,657,117 paid in full	1.15 mgd	.104mgd

* Approved for temporary increase beyond Water Supply Agreement withdrawal limit.

The highlights of Table 1 include:

- In May 2020, Dedham-Westwood (DWWD) completed work on its treatment plant. DWWD had been approved in 2018 to temporarily increase withdrawals by 150 million gallons (one mgd for five months); however, the work was delayed and began in 2019. The existing MWRA Water Supply Agreement has a provision for a temporary increase in volumes beyond two MGD and 73 million gallons on an annual basis without a written amendment to that agreement. MWRA expects water usage to return back to normal and within approved limits, now that this work is complete.
- In October 2020, Wilmington formally requested approval from the MWRA and the MWRA Advisory Board to temporarily increase withdrawal volumes beyond the Town's approved 219 mg limit. Wilmington noted that declining groundwater levels had caused a substantial drop in the production capabilities of the municipal groundwater wells. MWRA

approved the temporary increase in withdrawals on October 7, 2020, noting that emergency conditions were present as evident from the Secretary of Energy and Environmental Affairs September 2, 2020 declaration of significant drought. The existing MWRA Water Supply Agreement has a provision for temporary increase without a written amendment to that agreement.

- All other water supply withdrawals are below their MWRA Water Supply Agreement limits.
- For permanent connections made prior to 2020, all entrance fees have been paid pursuant to agreed-upon schedules of payments included in MWRA Water Supply Agreements.
- At Burlington's request on two occasions in the summer of 2020, MWRA authorized the temporary use of an emergency connection (up to thirty days) as a result of maintenance and mechanical issues within the local system. Also at Burlington's request, on October 14, 2020 pursuant to OP.05, the MWRA's Board of Directors voted to authorize long-term use of the emergency connection (up to six months) to perform necessary maintenance at the local Mill Pond Water Treatment Plant; however, the six-month agreement was unnecessary. On December 16, 2020, the Board of the Directors approved Burlington for admission into the MWRA water system.
- The YMCA, located on the Salam/Marblehead municipal boundary, experienced a decrease in water usage in 2020 from 2019. Communications with the property manager indicate that this decrease was likely related to impacts of COVID-19, as the facility was closed for a portion of 2020 and subsequently operated at a reduced capacity for the remainder of the year.

Sewer

In 2020, the MWRA Board of Directors voted to approve one request under OP.04, Sewer Connections Serving Property Partially Located in a Non-MWRA Community (the "Sewer Straddle" policy), for The Rivers School, located on the municipal boundary of Weston and Natick with property and buildings in both communities. There were no other new formal applications for admission under OP.11 or OP.4, the "Sewer Straddle" policy; however, several inquiries about admission were received.

Figure 2 shows and Table 2 summarizes connections to the MWRA sewer system since 2002 when annual reporting requirements were established, including the recently approved Rivers School connection.

Figure 2: New or Increased Volume Sewer Connections Since 2002

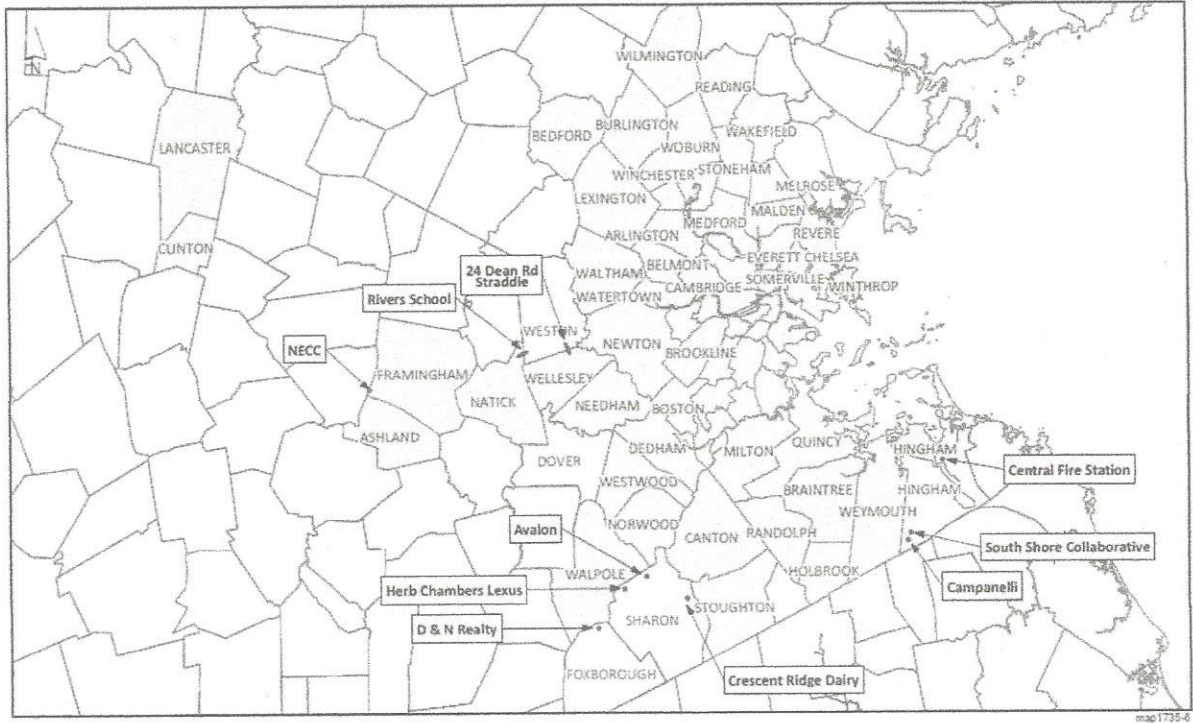


Table 2 - Approved Connections to MWRA Sewer System Since 2002

<i>Applicant</i>	<i>MWRA Policy</i>	<i>Approval Date</i>	<i>Entrance Fee Payment</i>	<i>Status of Inflow Removal/Other Contract Requirements</i>	<i>MWRA Approved discharge</i>	<i>Estimated Discharge to MWRA in 2020*</i>
New England Center for Children, Southborough	OP.11	7/15	\$24,228 Paid in full	Inflow removal completed.	12,500 gpd	4,982 gpd
FoxRock Realty South Shore Collaborative, Hingham	OP.11	4/12	\$9,133 + \$12,750 paid in full	Inflow removal completed.	5,536 gpd	1,220 gpd
24 Dean Road, Weston/Wellesley	OP.04	3/11	\$18,033 paid in full	Inflow removal completed.	575 gpd	386 gpd
D&N Realty, Foxborough Funway	OP.11	6/07	\$168,391 paid in full	Inflow removal completed.	13,000 gpd (average) 22,750 gpd (max day)	2,472 gpd
Avalon Bay, Sharon	OP.11	6/07	\$105,586 paid in full	Inflow removal completed.	16,120 gpd	17,071 gpd
Herb Chambers Lexus, Sharon	OP.11	5/07	\$40,750 paid in full.	Inflow removal completed.	6,400 gpd (average) 10,500 gpd (max)	4,208 gpd**

Table 2 - Approved Connections to MWRA Sewer System Since 2002						
<i>Applicant</i>	<i>MWRA Policy</i>	<i>Approval Date</i>	<i>Entrance Fee Payment</i>	<i>Status of Inflow Removal/Other Contract Requirements</i>	<i>MWRA Approved discharge</i>	<i>Estimated Discharge to MWRA in 2020*</i>
Hingham Fire Station, Hingham	OP.11	4/07	\$8,429 paid in full	Inflow removal completed.	782 gpd	209 gpd
Campanelli, Hingham (now Gill Research Drive, LLC)	OP.11	2/04	\$11,162, paid in full	Inflow removal completed.	2,475 gpd	No reporting requirement in contract
Crescent Ridge Dairy, Sharon	OP.11	5/19	\$33,642 paid in full	Payment of \$200,000 made to Stoughton to complete inflow removal.	10,000 gpd	0
Rivers School, Weston	OP.04	6/20	\$42,086 paid in full	Payment of \$141,600 to Natick to complete inflow removal.	3,000 gpd (average) 12,000 gpd (max)	2,285 gpd
* Wastewater discharges are estimated based on water meter readings.						
**Water consumption figures are adjusted downward by 5% to account for a certain percentage of water that is used by the facility and not returned as wastewater (such as landscaping, water consumed).						

The key findings of Table 2 include:

- Many entities saw a decrease in estimated discharges for 2020. Communications with some property managers indicate that this may be related to impacts of COVID-19. Both the New England Center for Children and the South Shore Collaborative are educational facilities and were either closed or operating at a reduced capacity during much of 2020. D&N Reality confirmed that operation of the function hall and restaurant at Funway in Foxborough was also heavily impacted by COVID-19.
- Avalon Bay, a residential community in Sharon, was over its approved discharge limit in 2020 and up from 2019. The increase in estimated discharges may be due to impacts of COVID-19 and increased teleworking. MWRA will coordinate with Avalon if the issue persists.
- Herb Chambers Lexus-Sharon was within its approved discharge limit after exceeding the limit in 2019.
- All other connections reported that wastewater discharges in 2019 were below their approved agreement limits and entities reported compliance with obligations related to sewer system operations.
- Crescent Ridge Dairy (CRD) was approved by the Board of Directors in 2019 for admission to the MWRA water system pursuant to OP.11 to discharge up to 10,000 gpd to the Stoughton collection system. CRD is expected to begin discharging in 2021 and has committed to pay \$200,000 to Stoughton to conduct work which will result in the removal of 40,000 gpd of inflow from the local collection system. This work has been delayed due to COVID-19 because it requires access to residential sump pumps and will commence as soon as feasible.

- In 2020, Rivers School (Rivers) completed the application process pursuant to OP.04 and on June 24, 2020 the MWRA Board of Directors voted to approve admission to the MWRA wastewater system. Rivers connected to the Natick wastewater system and began discharging on September 1, 2020. Through November 1, 2020, Rivers discharged a total of 210,188 gallons. This is an average of 2,285 gpd and is within the contract limit of 3,000 gpd. Rivers has committed to pay \$141,600 to Natick, which will be used by the Town to repair 96 manholes and will result in the removal of 48,000 gpd of inflow. Natick has executed a contract and is scheduled to perform the inflow removal work in spring of 2021, pursuant to the agreement.

Potential Future Connections and Expansions

In 2020, several communities and other potential applicants inquired about the process and feasibility of connection to the MWRA or expanding existing service volumes.

Communities

Avon: In March 2020, Avon reached out to MWRA staff regarding the possible need for an emergency connection in anticipation of staffing impacts related to COVID-19. MWRA staff reviewed the requirements of OP.05 and logistical considerations of any emergency connection with the community; however, an emergency connection was not needed in 2020. MWRA staff also coordinated with the Town's consultants throughout the year to answer questions related to an interconnection evaluation. MWRA staff provided information regarding the requirements of both emergency connections pursuant to OP.05 and admission to the water system pursuant to OP.10.

Hudson: The Town of Hudson has been evaluating options to remedy local supply issues related to PFAS contamination. In March 2020, the Town reached out to MWRA requesting information about connecting to the MWRA water system. MWRA staff provided OP.10 and other relevant information. In early January of 2021, MWRA staff met with the Town to review the admission process and requirements of OP.10, as well as associated costs and logistic considerations of any potential connection.

Lincoln: In June 2020, a Lincoln Water Commissioner reached out to MWRA staff requesting information about connecting to the MWRA water system, possibly via the town of Lexington. MWRA provided the Commissioner with OP.10 and other relevant information including information on potential costs of connection. In December, MWRA staff met virtually with the Town's consultant to review the admission process and requirements of OP.10, as well as logistic considerations of any potential connection.

Lynnfield Center Water District (LCWD): LCWD has identified connecting to the MWRA water system via Wakefield as the preferred alternative to remedy local contamination issues and increased difficulty meeting demand. Together with the Town of Wakefield, LCWD is evaluating construction of a new water main that would allow LCWD to connect to the Wakefield water system. This scenario would also remedy water quality issues (due to two dead end pipes) in the Wakefield system. As previously discussed, LCWD obtained approval for a long term (up to six month) emergency connection to MWRA via Lynnfield Water District (LWD) in 2020. MWRA staff will continue to coordinate with LCWD and Wakefield to advise on the admission process and requirements of OP.10.

Medfield: The Town of Medfield is in the process of designing a new water treatment plant and evaluating alternatives. In December, MWRA met with the Town and its consultants to discuss the admission process and requirements OP.10, as well as logistic considerations of any potential connection.

Natick: The Town is experiencing water quality issues related to PFAS and has recently inquired about the possibility of using an emergency connection to the MWRA water system. MWRA staff along with the Town and MassDEP have been reviewing water quality compatibility data and infrastructure options for connections.

Ware: In December, MWRA received an inquiry from consultants for the Town of Ware requesting information on the feasibility and requirements of connecting to MWRA's Chicopee Valley Aqueduct (CVA) water system. The Town is currently in the design process of a new water treatment plant. However, the estimated cost of the plant has increased significantly, prompting the preliminary evaluation of other alternatives to meet local demand. MWRA staff discussed the admission process and requirement of OP.10 as well as logistic considerations of a connection to the CVA system.

Wayland: Wayland has been exploring full admission to the MWRA under OP.10. Over the last 12 to 18 months, MWRA has provided detailed information about the benefits of joining and potential connection locations. More recently, Wayland has inquired about the logistics of a potential emergency connection to the MWRA water system. The community is experiencing water quality issues related to PFAS.

Non-Communities

Sherborn Potential Development: Pulte Homes of New England, LLC has been in contact with MWRA regarding a proposed residential development in Sherborn to be located near the Natick and Framingham borders. The developer is interested in options to connect to the sewer in Natick and to purchase water through Framingham. Initial conversations allowed Pulte Homes to understand that while a sewer connection is likely feasible, a water connection is not because it is the development, as opposed to the municipality or a water district, which is seeking to purchase water. In 2019, the developer expressed intentions to create a water district to make connection to MWRA possible. In 2020, MWRA met with Pulte to discuss requirements of admission to MWRA pursuant to both OP.10 and OP.11, as well as costs and logistical considerations of any potential connection. MWRA staff also participated in an interagency coordination meeting regarding the proposed development and potential concerns related to creation of a water district with representatives from the Massachusetts Environmental Policy Act, the Water Resources Commission and MassDEP.

ATTACHMENT:

Attachment A: Policies for Admission to the MWRA

ATTACHMENT A

Policies for Admission to the MWRA

- **OP.04, Sewer Connections Serving Property Partially Located in a Non-MWRA Community.** This policy applies to persons seeking sewer services for buildings/structures that are located partially within an MWRA sewer community and partially outside an MWRA sewer community (the actual structures, not just the parcel of land on which the structure is located, must straddle the municipal boundary). It is also known as the “Sewer Straddle” policy.
- **OP.05. Emergency Water Supply Withdrawals.** This policy applies to communities outside MWRA’s Water Service Area that are seeking MWRA water on an emergency basis. MWRA may approve emergency withdrawals for no more than six months at a time, and typically, the emergency withdrawal period coincides with a DEP Declaration of Emergency for the Community.
- **OP.09, Water Connections Serving Property Partially Located in a Non-MWRA community.** This policy applies to persons seeking to obtain water for a location, building, or structure located on a parcel of land, under single ownership, and which is subject to an integrated plan for use of development that is located partially within an MWRA water community and partially outside an MWRA water community. It is also known as the “Water Straddle” policy.
- **OP.10, Admission of New Community to MWRA Water System.** This policy applies to communities seeking admission to the MWRA water system. OP.10 also applies to any local body, institution, agency or facility of the Commonwealth or federal government seeking MWRA water for a location outside MWRA’s Water Service area. Connections and withdrawals by private entities outside the water service area are prohibited, except for those that are eligible under either the water straddle policy (OP.9), or that are located contiguous to, or in the vicinity of local community-owned water supply pipelines that extend from the MWRA’s Chicopee Valley Aqueduct (CVA) and that receive the appropriate approvals from the CVA, host communities and applicable regulatory bodies.
- **OP.11, Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area.** This policy applies to communities seeking admission to the MWRA sewer system and to all parties seeking sewer service for locations outside the MWRA service area that are not eligible under the Sewer Straddle Policy.

MWRA must approve all extension of service to entities outside the service area pursuant to the applicable policy noted above, with the exception of connections to local community-owned water supply pipelines that extend from the Chicopee Valley Aqueduct. This is the case even when an entity outside the service area is not directly connected to the MWRA, but instead to a community local system that is part of the MWRA service area.