

# Capital Program Update

### Welcome to 2023 – What Can We Expect?



# 2

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January 19, 2023

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# Agenda

- Wakefield/MWRA Interconnection
  - Meter vault design and construction
  - Wakefield distribution system upgrades
  - **MWRA** admission
- Glen Drive Water Treatment Plant
  - Adjusting for PFAS and alternatives analysis
  - Funding successes
  - Next steps and schedule



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### **Capital Program Projects**



### Construction

### Construction

### Interbasin Transfer Act and MWRA Application

### **Capital Program Projects**



### Construction

### Construction

### Interbasin Transfer Act and MWRA Application



### MWRA/Wakefield Meter Vault Design



### MWRA/Wakefield Meter Vault Design



### Meter Vault Project Status

- Project in design 90% submittal January 2023
- Develop bid documents for early Spring 2023 bid
- Coordination with MassDOT for easement
  - Required survey complete
  - Need approval before bidding
- Construction Spring/Summer 2023





### Meter Vault Project Schedule

	2023										
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	No
Design			_					_			
90% Design											
Review by LCWD											
Final Design											
MassDOT Review											
Receive Survey Files											
Submit Permit Package to MassDOT											
Review and Approval by MassDOT					$\bigcirc$						
Bidding and Construction											
Bidding											
Contract Award							- 6				
Construction											





## Joining the MWRA

# A WATER

### What is the process?

LCWD will be taking water from MWRA which withdraws from a different water basin Requires review under the Interbasin Transfer Act (ITA), governed by Water Resources Commission (WRC) for applicability, insignificance and approval

Demonstrate acceptance of admission to MWRA by Board of Commissioners

Obtain approval of the Legislature and Governor



Submit application to the MWRA Advisory Board and Board of Directors community

# WRC Process for ITA

- Determination of Applicability
- **MEPA** 
  - **Expanded Environmental** Notification Form (EENF)
- Single Environmental Impact Report (SEIR)
- EIR as Application to WRC for ITA
- WRC Hearings
- WRC Approval for ITA

Typically:

- Environmental Notification Form (ENF),
- Draft EIR, then **Final EIR**



	20	023												2024							
	J	an	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
MEPA Approval																					
Expanded Environmental Notification Form (EENF)																					
Notice to Proceed	C																				
Prepare EENF																					l i
Reviews by LCWD/MWRA																					l i
Submit EENF to MEPA				Γ			6	3													l i
Publication and Comments Period																					l i
Scoping Session with MEPA																					l i
EEOEA Secretary's Certificate Issued										6	3										l i
Single Environmental Impact Report (SEIR)				•																	
Notice to Proceed										6	3										
Prepare Draft SEIR and Local Water Supply Management Plan											1	_									
Informal Reviews by LCWD and State Agencies																		E	ENF	=/SE	IR v
Submit SEIR to MEPA															€	3				,	
Publication and Comments Period																					
EEOEA Secretary's Certificate Issued																	6				
MWRC Approval										•	•										
Interbasin Transfer Act (IBTA) Approval																					
MWRC Votes to Accept Application																		6			
Public Hearing Process (2)															5						l i
Presentation of MWRC Staff Recommendation																					
Public Hearing																					
MWRC Review and Vote																					
Publication of Decision in Massachusetts Register															<u> </u>						l i
MWRA Approval				•	1					•	•										
Submit Documentation to MWRA Staff														6							
MWRA Staff Review																					
Staff Makes Recommendation to Advisory Committee																					
Advisory Board Staff and Operations Subcommittee Review																					
Advisory Board Executive Committee Vote																					l l
Advisory Board Vote																					l i
Last Date for Legislature/Governor Approvals																					l i
Staff Prenares Staff Summary																					l i
MWRA Board of Directors Vote																					l i
Water Supply Contract Developed																					
Contract Execution and Fee Payment																					
contract inconton and recir dynem.																					
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### Assumptions

1. LCWD and MWRA reviews of draft documents will be simultaneous.

2. EEOEA and MWRC will not require additional studies during their reviews.

3. LCWD meets all water system performance standards in 2022.

4. No wastewater system evaluations are needed.

Notes

 With the submital of an Expanded Environmental Notification Form (EENF) the EIR will be a Single EIR (SEIR).

2. The SEIR constitutes the application for MWRC and MWRA approvals.

3. The SEIR preparation may be shorter or longer depending on the results of the MEPA scoping session.



# MWRA Admission – Phase 1 $\rightarrow$ Phase 2

- Completed to Date:
  - Through the Phase 1 process:
    - Familiarized the stakeholders with the project,
    - Determine a streamlined process through MEPA, and
    - Clearly defined the scope for the EENF process
  - Initial meetings with MWRA under Phase 2, starting to "meeting the requirements"



Interbasin Transfer Act and **MWRA** Application



# LCWD - Balancing Challenges (May 2021)

### Quality

- Iron and manganese Ο
  - Station 4 (Glen Drive)



### Quantity

Challenged to meet summer demands (1.0-1.4 MGD) – no redundancy







# LCWD - Balancing Challenges (September 2021)

### Quality

- Iron and manganese
  - Station 4 (Glen Drive)
- PFAS  $\bigcirc$ 
  - Station 1 (Phillip Rd Tubular)
  - Station 2 (Main Street)



### Quantity

Challenged to meet summer demands (1.0-1.4 MGD) – no redundancy



### **Balancing Challenges - PFAS**





# PFAS Maximum Contaminant Level (MCL)

- Massachusetts Department of Environmental Protection (MassDEP) drinking water standard
- No Federal PFAS drinking water standard – proposed
   EPA MCL expected <del>December</del> January March 2023
  - Possible detection limit for PFOA and PFOS (2 to 4 ppt)





### **Balancing Challenges - PFAS**



# $\triangle$ Station 4 - PFOS

### 2022 – New Quality Challenge - PFAS



### **All Water from LCWD**

**Improvements** to **LCWD** and **Supplemental** Water from MWRA



### **All Water from MWRA**

# Long Term PFAS Capital Project Options

Alternative	Brief Description
1	<ul> <li>No Glen Drive WTP</li> <li>Wakefield MWRA Interconnection at 250 gpm</li> <li>Temp. PFAS treatment at Station 2</li> </ul>
2	<ul> <li>Glen Drive WTP with iron, manganese and PFAS treatment for Station 2</li> <li>Wakefield MWRA Interconnection at 250 gpm</li> </ul>
3	<ul> <li>Glen Drive WTP with iron and manganese treatment for Station 4 only</li> <li>Increase Wakefield MWRA Interconnection to 575 gpm</li> <li>Discontinue use of Station 2</li> </ul>
4	<ul> <li>Increase Wakefield MWRA Interconnection to 575 gpm</li> <li>LWD MWRA Interconnection for 250 gpm</li> <li>Discontinue use of Station 2 and Station 4</li> </ul>
5	<ul> <li>Increase Wakefield MWRA Interconnection to 575 gpm</li> <li>LWD MWRA Interconnections for 650 gpm</li> <li>Discontinue use of all LCWD sources (Stations 1, 2, 3 and 4)</li> </ul>
6	<ul> <li>Direct interconnection to MWRA</li> <li>Discontinue use of all LCWD sources (Stations 1, 2, 3 and 4)</li> </ul>



**LCWD Supply** 

Combined LCWD/MWRA

### **Full MWRA**

### and Station 4

Long T	erm F	PFAS (	Capita	al Pro	iect C	ptior	L S C	.CWD Supply Combined LCWD/	/MWRA
Flow Matrix (gallons per minute)								ull MWRA	
Altorpativo		LCWD	Sources		Μ	WRA Sourc	Total		
Alternative	Station 1	Station 2	Station 3	Station 4	Wakefield	LWD	Direct	Total	
1	0	240	400	335	250	0	0	1225	
2	0	240	400	335	250	0	0	1225	
3	0	0	400	335	575	0	0	1310	
4	0	0	400	0	575	250	0	1225	
5	0	0	0	0	575	650	0	1225	
6	0	0	0	0	0	0	1225	1225	

# Long Term PFAS Capital Project Options

- 30 Year Total Cost
  - Capital investments borrowing rate?
    - 5% for LCWD
    - 0% SRF loan available for PFAS projects
  - **Operating costs** 
    - Labor
    - Utilities
    - Maintenance
    - Equipment

- Periodic replacement costs
- Purchased water
  - Wheeling Wakefield or LWD MWRA + % mark up
  - Direct MWRA



Long <sup>-</sup>		Combined LCWD/MWRA Supply Full MWRA Supply				
Option	1	2	3	4	5	6
	<ul> <li>No Glen Drive WTP</li> <li>Wakefield MWRA Inter. @ 250 gpm</li> </ul>	<ul> <li>Glen Drive WTP Fe, Mn, PFAS St. 2 &amp; St. 4</li> <li>Wakefield MWRA Inter. @ 250 gpm</li> </ul>	<ul> <li>Glen Drive WTP Fe, Mn St. 4 only</li> <li>Wakefield MWRA Inter. @ 575 gpm</li> <li>Retire St. 2</li> </ul>	<ul> <li>Wakefield MWRA Inter. @ 575 gpm</li> <li>LWD MWRA Inter. @ 250 gpm</li> <li>Retire St. 2 &amp; 4</li> </ul>	<ul> <li>Wakefield MWRA Inter. @ 575 gpm</li> <li>LWD MWRA Inter. @ 650 gpm</li> <li>Retire all LCWD sources</li> </ul>	<ul> <li>Retire all LCWD sources</li> <li>Direct connection to MWRA</li> </ul>
Quality	Not Achieved		Partially Achieved			Fully Achieved
Timeframe	1-2 years	2 years	2 - 3 years	3 - 5 years	3 - 5 years	3 - 5 years
Capital Investment	\$2 M	\$18 – 20 M	\$18 – 20 M	\$12 – 14 M	\$18 - 20 M	\$25 - \$30 M
Borrowing	Capital Borrowing (5%)	Capital Borrowing (0% SRF Loan)	Capital Borrowing (5%)	Capital Borrowing (5%)	Capital Borrowing (5%)	Capital Borrowing (5%)
Total 30-year Cost	\$140 M	\$210 M	\$290 M	\$300 M	\$380 M	\$330 M
Water Rates	MWRA+20%20%Local Rates80%	MWRA+20%20%Local Rates80%	MWRA+20%         50%           Local Rates         50%	MWRA+20%67%Local Rates33%	MWRA+20% 100% Local Rates 0%	MWRA100%Local Rates0%
(% of capacity)						

Long <sup>-</sup>	Ferm PFAS Capit	tal Project Optic		ombined CWD/MWRA Supply all MWRA Supply
Option	2	4	5	6
	<ul> <li>Glen Drive WTP Fe, Mn, PFAS St. 2 &amp; St. 4</li> <li>Wakefield MWRA Inter. @ 250 gpm</li> </ul>	<ul> <li>Wakefield MWRA Inter. @ 575 gpm</li> <li>LWD MWRA Inter. @ 250 gpm</li> <li>Retire St. 2 &amp; 4</li> </ul>	<ul> <li>Wakefield MWRA Inter. @ 575 gpm</li> <li>LWD MWRA Inter. @ 650 gpm</li> <li>Retire all LCWD sources</li> </ul>	<ul> <li>Retire all LCWD sources</li> <li>Direct connection to MWRA</li> </ul>
Quality				
Timeframe	2 years	<b>3 - 5 years</b>	3 - 5 years	3 - 5 years
Capital Investment	\$18 – 20 M	\$12 – 14 M	\$18 - 20 M	\$25 - \$30 M
Borrowing	Capital Borrowing (0% SRF Loan)	Capital Borrowing (5%)	Capital Borrowing (5%)	Capital Borrowing (5%)
Total 30-year Cost	\$210 M	\$300 M	\$380 M	\$330 M
Water Rates (% of capacity)	MWRA+20% 20% Local Rates 80%	MWRA+20% 67% Local Rates 33%	MWRA+20% 100% Local Rates 0%	MWRA 100% Local Rates 0%

Long -	Ferm PFAS Capi	tal Proje	ect Optic		ombined CWD/MWRA Supply all MWRA Supply
Option	2	2A	4	5	6
	<ul> <li>Glen Drive WTP Fe, Mn, PFAS St. 2 &amp; St. 4</li> <li>Wakefield MWRA Inter. @ 250 gpm</li> </ul>	<ul> <li>Glen Drive WTP         <ul> <li>Fe, Mn, PFAS St. 2</li> <li>&amp; St. 4</li> </ul> </li> <li>Station 3 PFAS         <ul> <li>WTP</li> </ul> </li> <li>Wakefield MWRA         <ul> <li>Inter. @ 250 gpm</li> </ul> </li> </ul>	<ul> <li>Wakefield MWRA Inter. @ 575 gpm</li> <li>LWD MWRA Inter. @ 250 gpm</li> <li>Retire St. 2 &amp; 4</li> </ul>	<ul> <li>Wakefield MWRA Inter. @ 575 gpm</li> <li>LWD MWRA Inter. @ 650 gpm</li> <li>Retire all LCWD sources</li> </ul>	<ul> <li>Retire all LCWD sources</li> <li>Direct connection to MWRA</li> </ul>
Quality					
Timeframe	2 years	2-3 years	3 - 5 years	3 - 5 years	<b>3 - 5 years</b>
Capital Investment	\$18 – 20 M	\$24 – 26 M	\$12 – 14 M	\$18 - 20 M	\$25 - \$30 M
Borrowing	Capital Borrowing (0% SRF Loan)	Capital Borrowing (0% SRF Loan)	Capital Borrowing (5%)	Capital Borrowing (5%)	Capital Borrowing (5%)
Total 30-year Cost	\$210 M	\$220 M	\$300 M	\$380 M	\$330 M
Water Rates (% of capacity)	MWRA+20% 20% Local Rates 80%	MWRA+20% 20% Local Rates 80%	MWRA+20% 67% Local Rates 33%	MWRA+20% 100% Local Rates 0%	MWRA 100% Local Rates 0%

# Long Term PFAS Capital Project Options

- Path Forward: Maintaining LCWD assets with treatment and MWRA supplemental supply
- Glen Drive WTP and Station 2 Pipeline awarded 0% SRF loan
- **Received earmark** from Commonwealth for PFAS design
- Submitted for WMA Grant to cover cost of MWRA Admission Phase 2 (EENF) and the meter vault design
- Ready to move forward single Glen Drive WTP building for iron, manganese, and PFAS

### **Glen Drive WTP**



60% Design with Separate Buildings

### **Glen Drive WTP**



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Conceptual Design with Single Building

### Glen Drive WTP Then and Now



# Glen Drive WTP Then and Now







- Iron and manganese [greensand]

- carbon (GAC)]



# Glen Drive WTP Schedule

- SRF funding Design documents must be submitted by October 13, 2023 (could be complete as early as August 2023)
- Go to bid October/November 2023
- Award December 2023/January 2024
- Construction through mid to late 2025



# April Board Meeting – Where will we be?

- **Interconnection Meter Vault** designed, MassDOT approval, and ready to bid (or bid!)
- MWRA Admission draft EENF complete for LCWD/MWRA review
- Glen Drive WTP design resumed with combined building, nearing first delivery milestone
- EPA proposed PFAS MCL



