



*April 20, 2021*

# Capital Improvement Plan

Lynnfield Center Water District

**CDM  
Smith**

# 2020 Pumping Statistics

*The District produced 240 Million Gallons of Drinking Water in 2020*

2020 Pumping Summary

Stats	Tubular Wellfield	Main Street	Phillips Rd WTP	Glen Drive	Total
Annual Volume (gal)	1,194,700	48,575,430	96,751,170	93,508,355	240,029,655
Max Day (gal/day)	68,519	287,458	349,786	402,811	1,108,574
% of Max Day	5.71	23.95	29.15	33.57	
Ave Rate (gal/day)	29,139	144,570	268,009	256,891	698,609
% of Average Day	4.43	21.98	40.76	39.06	



Calibrated System Demands

Max day	1.2 MGD
Min day	0.5 MGD
Ave day	0.66 MGD



*Demand exceeds supply*

# 2020 Pumping Statistics

*The District produced 240 Million Gallons of Drinking Water in 2020*

2020 Pumping Summary



Stats	Station 1	Station 2	Station 3	Station 4	Total
Annual Volume (gal)	1,194,700	48,575,430	96,751,170	93,508,355	240,029,655
Max Day (gal/day)	68,519	287,458	349,786	402,811	1,108,574
% of Max Day	5.71	23.95	29.15	33.57	
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## *Converting to Gallons / Minute (gpm):*

- *Glen Drive Averages 178 gpm*
- *Glen Drive Max 208 gpm*
- *Design yield is 575 gpm*

# So, how do we meet Max Day Demand?

**Option 1:** Bring in 25% more water to meet max demand  
(rounded to 250 gpm)

**Option 2:** Shut down Glen Drive; replace it's theoretical capacity of  
575 gpm (.8MGD)

## **Noteworthy:**

- For Option 1, Glen Drive must be treated
- For Option 2, LCWD still needs to retain at least .4MGD to meet max day (Sta. 2 & 3 must remain online)
- What is the impact of drought restrictions

# Capital Costs

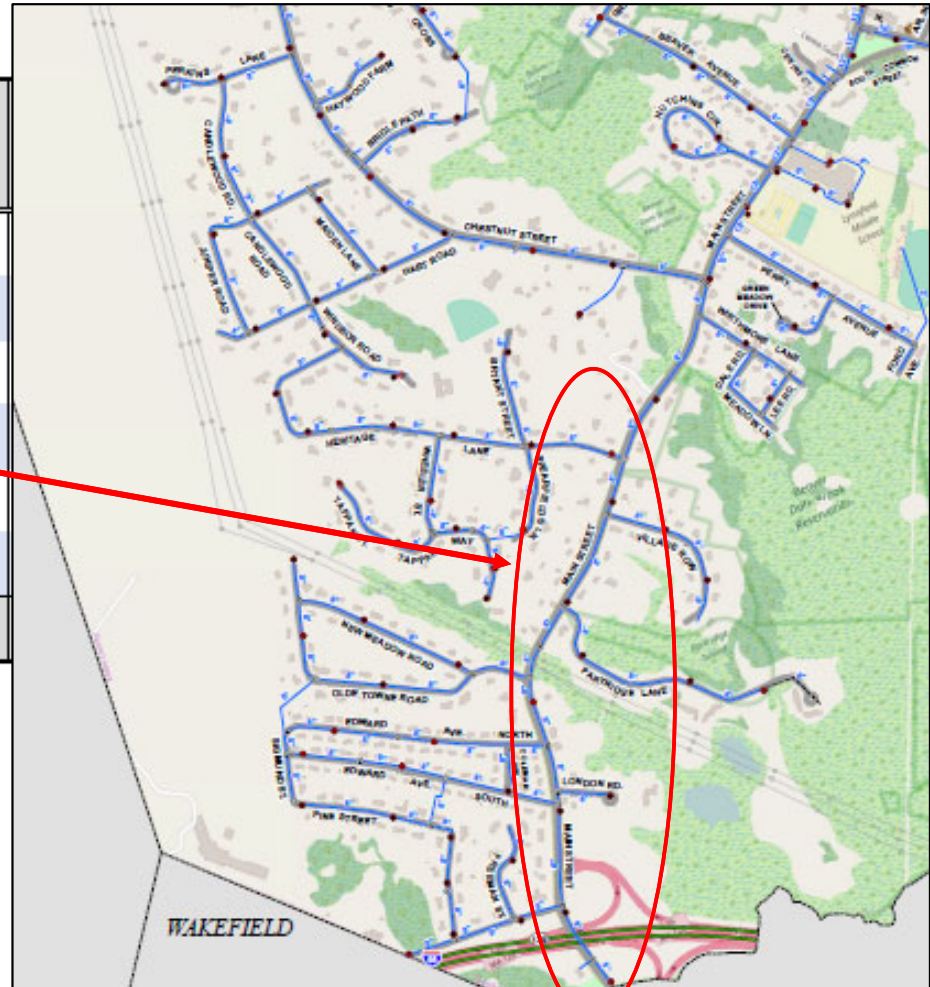
Cost Item	Shut Glen Dr (575 gpm MWRA)	WTP @ Glen Dr (250 gpm MWRA)
MWRA initiation fee*	3,643,200	1,500,000
Glen Drive capital	150,000	6,300,000
Wakefield improvements	3,710,000	915,000
LCWD main improvements	1,400,000	0
Interconnection	500,000	500,000
Permitting	400,000	400,000
<b><i>Capital Improvement Total</i></b>	<b><i>8,903,200</i></b>	<b><i>8,715,000</i></b>

\*fee can be paid over 20 years

# Capital Costs

Cost Item
MWRA initiation fee*
Glen Drive capital
Wakefield improvements
LCWD main improvements
Interconnection
Permitting
<b>Capital Improvement Total</b>

\*fee can be paid over 20 years



# Water Rates

MWRA Water Rates Projected to 2029

Year	MWRA Rate (\$/MG)	Wakefield +20%
FY20	4,021.42	
FY21	4,178.26	5,013.91
FY22	4,341.21	5,209.45
FY23	4,510.51	5,412.62
FY24	4,686.42	5,623.71
FY25	4,869.20	5,843.03
FY26	5,059.09	6,070.91
FY27	5,256.40	6,307.68
FY28	5,461.40	
FY29	5,674.39	

Per million gallons delivered

## Notes:

- MWRA Water rates projected to increase 3.9% per year
- Wakefield Agreement is proposed for 7 years

FY21 LCWD Budget

Item	Expense Amount	Projected Expense w/o Glen Drive
Admin	419,978.40	419,978.40
Insurance & Debt	513,564.44	513,564.44
Treatment	303,500.00	182,100.00
<b>Total</b>	<b>1,237,042.84</b>	<b>1,115,642.84</b>
<b>\$/MG</b>	<b>5,153.71</b>	<b>4,647.94</b>

## Notes:

- The operational expense of Glen Drive is small (\$505/MG)
- Fixed Costs to run LCWD would remain even with MWRA water

# Conclusions

- Capital costs for both options are similar, within 5%
- The recommended plan is less capital cost
- LCWD's cost to produce water will be less than buying MWRA water via Wakefield in the long term
- Abandoning Glen Drive does not result in significant operational cost savings
- Connecting to MWRA provides no relief for existing outdoor water restrictions imposed on the Ipswich

## The Recommended Plan:

- Increases resiliency and further diversifies sources
- Provides flexibility and room for growth
- Maximizes LCWD infrastructure
- **is financially sound**