



**NORTH MARIN WATER DISTRICT**  
**AGENDA - SPECIAL MEETING**  
April 26, 2022 – 6:00 p.m.  
Location: Virtual Meeting  
Novato, California

Information about and copies of supporting materials on agenda items are available for public review at 999 Rush Creek Place, Novato, at the Reception Desk, or by calling the District Secretary at (415) 897-4133. A fee may be charged for copies. District facilities and meetings comply with the Americans with Disabilities Act. If special accommodations are needed, please contact the District Secretary as soon as possible, but at least two days prior to the meeting.

**ATTENTION: This will be a virtual meeting of the Board of Directors pursuant to Assembly Bill 361 issued by the Governor of the State of California.**  
There will not be a public location for participating in this meeting, but any interested member of the public can participate telephonically by utilizing the dial-in information printed on this agenda.

**Video Zoom Method**

<p style="text-align: center;"><b><u>CLICK ON LINK BELOW:</u></b></p> <p>Go to: <a href="https://us02web.zoom.us/j/82191971947">https://us02web.zoom.us/j/82191971947</a>    <b>OR</b></p> <p>Password: 466521</p>	<p style="text-align: center;"><b><u>SIGN IN TO ZOOM:</u></b></p> <p>Meeting ID: 821 9197 1947</p> <p>Password: 466521</p>
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**Call in Method:**

Dial:

- +1 669 900 9128
- +1 253 215 8782
- +1 346 248 7799
- +1 301 715 8592
- +1 312 626 6799
- +1 646 558 8656

Meeting ID: 821 9197 1947#

Participant ID: #

Password: 466521#

For clarity of discussion, the Public is requested to MUTE except:

1. During Open Time for public expression item.
2. Public comment period on agenda items.

*Please note: In the event of technical difficulties during the meeting, the District Secretary will adjourn the meeting and the remainder of the agenda will be rescheduled for a future special meeting which shall be open to the public and noticed pursuant to the Brown Act.*

All times are approximate and for reference only.  
The Board of Directors may consider an item at a different time than set forth herein.

<b>Est. Time</b>	<b>Item</b>	<b>Subject</b>
6:00 p.m.		<b>CALL TO ORDER</b>
	1.	<b><i>OPEN TIME: (Please observe a three-minute time limit)</i></b>  This section of the agenda is provided so that the public may express comments on any issues not listed on the agenda that are of interest to the public and within the jurisdiction of the North Marin Water District. When comments are made about matters not on the agenda, Board members can ask questions for clarification, respond to statements or questions from members of the public, refer a matter to staff, or direct staff to place a matter of business on a future agenda. The public may also express comments on agenda items at the time of Board consideration.
	2.	<b>LOCAL WATER SUPPLY ENHANCEMENT STUDY WORKSHOP NO. 2</b>
7:30 p.m.	3.	<b>ADJOURNMENT</b>

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**NORTH MARIN  
WATER DISTRICT**

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Board Workshop:  
Findings and Recommendations  
Local Water Supply Enhancement Study for Novato Water Service Area  
April 26, 2022

# Purpose

- Provide the Board and the Public a preview of the 2022 Local Water Supply Enhancement Study findings and recommendations
- Overview the following:
  - Water Supply Alternatives Evaluation
  - Feasible Projects
  - Next steps



# Project Team Introductions

## **North Marin Water District**

- Project Manager: Tony Williams, Assistant General Manager/Chief Engineer
- Drew McIntyre, General Manager
- Robert Clark, Operations/Maintenance Superintendent

## **West Yost**

- Project Manager: Rhodora Biagtan
- Project Engineer: Megan McWilliams
- Technical Experts:
  - Stormwater: Doug Moore
  - Treatment Plant Optimization: Charles Hardy
  - Funding Strategy: Monique Day





# Local Water Supply Enhancement



# Current and Projected Water Demands

Current and Projected Water Demands, AF						
Water Type	2020	2025	2030	2035	2040	2045
Potable Water	7,992	9,866	10,031	10,245	10,254	10,284
Raw Water	202	218	218	218	218	218
Recycled Water	658	595	508	622	636	650
<b>Total</b>	<b>8,852</b>	<b>10,679</b>	<b>10,757</b>	<b>11,085</b>	<b>11,108</b>	<b>11,152</b>
<i>Source: North Marin Water District. June 2021. 2020 Urban Water Management Plan. Table 4-1, Table 4-4, and Table 4-8.</i>						

- NMWD's water demand expected to increase by 2,300 AF (~26% increase) over the next 25 years
  - Primarily due to the projected increase in population



# Study Objectives

- Enhance NMWD local water supply by 1,000 to 2,000 acre-ft per year\*
- Identify feasible water supply alternatives

\*1 acre-feet  $\approx$  326,000 gallons



# Water Supply Alternatives Developed

- Aquifer Storage Recovery in Novato Basin
- Recycled Water System Expansion
- Indirect Potable Reuse
- Improve Stafford Treatment Plant Process Water Recapture Efficiency
- Divert Captured Stormwater Into Stafford Lake
- Increase Stafford Lake Storage Capacity
- Desalination



# Evaluation Criteria

- Quantitative Criteria:

Criteria	Measure	Units
Cost	Quantitative	\$ per AF
Water Supply Yield	Quantitative	Volume, AF

- Qualitative Criteria:

Criteria	Measure	Low Score (1)	Medium Score (3)	High Score (5)
Reliability	Degree of Reliability	Least Reliable	Moderately Reliable	Most Reliable
Operational Impacts	Operational Demands	Most Impacted	Moderately Impacted	Least Impacted
Regulations and Permitting	Complexity	Most Complex	Moderately Complex	Least Complex
Public and Institutional Considerations	Challenges	Most Challenging	Moderately Challenging	Least Challenging





# Findings and Conclusions

Local Water Supply Alternative		Quantitative Criteria		Qualitative Criteria				Weighted Qualitative Score	
		Unit Cost over 30 Years (\$ per AF)	Annual Yield (AFY)	Water Supply Reliability	Operational Impacts	Regulations and Permitting	Public and Institutional Considerations		
Local ASR <sup>(a)</sup>		11,200	15	3	3	2	2	2.7	
Recycled Water System Expansion <sup>(b)</sup>	Segment N-1	5,300	17	5	4	4	5	4.5	
	Segment N-2	6,600	23	5	4	4	5	4.5	
	Segment C-1	22,000	4	5	4	4	5	4.5	
	Segment C-2	8,600	19	5	4	4	5	4.5	
Local Indirect Potable Reuse <sup>(c)</sup>		3000	1,000 - 3,100	5	1	1	1	2.6	
Improve STP Process Water Recapture Efficiency <sup>(d)</sup>	Pretreatment Modification	70 - 240	20 - 70	4	5	5	5	4.6	
	Pretreatment Modification and Ancillary Improvements <sup>(e)</sup>	1,500 - 5,200	20 - 70	5	5	5	5	5	
Divert Captured Stormwater Into Stafford Lake <sup>(f)</sup>	Without Basin <sup>(g)</sup>	Option 1. Leveroni Canyon	710	245	3	4	2	4	3.2
		Option 2. Bowman Canyon	470	433	3	4	2	4	3.2
		Option 3. Novato Creek	330	628	3	4	2	4	3.2
	With Basin <sup>(g)</sup>	Option 2. Bowman Canyon	960	593	4	3	2	3	3.2
		Option 3. Novato Creek	730	788	4	3	2	3	3.2
	Option 4. Dam at Leveroni Canyon		1,700	175	3	3	2	2	2.7
	Option 5. Dam at Bowman Canyon		800	752	3	3	2	2	2.7
Increase Stafford Lake Storage Capacity <sup>(h)</sup>	Spillway Notch Slide Gate <sup>(i)</sup>	90	726	5	5	2	5	4.4	
	Sediment Removal <sup>(i)</sup>	2,600	551	3	2	2	3	2.5	
Desalination <sup>(h)</sup>		-	-	5	1	1	1	2.6	

# Feasible Local Projects

Local Water Supply Alternative	Estimated Capital Cost	Estimated Implementation Time	NPV of Total Cost (\$ per AF)	Annual Yield (AFY)	Weighted Qualitative Score
Improve Stafford Treatment Plant Process Water Recapture Efficiency - Pretreatment Modification	\$140,000*	~ 2 – 3 years	70 - 240	20 - 70	4.6
Increase Stafford Lake Storage Capacity - Spillway Notch Slide Gate	\$1.238M	2 - 4+ Years	90	726	4.4
Divert Captured Stormwater Into Stafford Lake	\$2.46M - \$13.64M	5+ Years	330 - 960	245 - 788	3.2

\*Includes performance testing

Potential 991 AF to 1,584 AF of additional local water supply



# Potential Regional Collaboration

- *Sonoma Water Regional Water Supply Resiliency Study*
  - Aquifer Storage Recovery (ASR)
  - Indirect Potable Reuse (IPR)
  - Desalination





# Near-Term Drought Management Options

SCWA Regional Study	
Resiliency Option	Current Status
Maximize Delivery of Natural Flows in the Russian River (RR)	<ul style="list-style-type: none"> <li>NMWD purchased available RR water to back feed Stafford Lake</li> </ul>
Kastania Pump Station Rehabilitation	<ul style="list-style-type: none"> <li>MMWD completed construction in January 2022</li> <li>NMWD working closely on start-up/operations and testing</li> </ul>
Increase Groundwater Production	<ul style="list-style-type: none"> <li>SCWA's Santa Rosa Plain Drought Resiliency Project includes 3 wells</li> <li>Todd Rd well online in October 2021</li> <li>1.4 mgd available now</li> <li>Additional 4.1 mgd by year end</li> </ul>
Regulatory Flexibility (through TUCPs)	<ul style="list-style-type: none"> <li>TUCO issued in December 2021 lowering minimum instream flows for RR</li> </ul>
Water Conservation and Water Use Efficiency	<ul style="list-style-type: none"> <li>NMWD Ord No. 41 in place with 20% reductions</li> </ul>











Next Steps

# Next Steps

- Receive feedback
- Finalize Report
- Publish Report for public availability



# Next Steps

Feasible Local Water Supply Alternative	 Conduct Further Studies	 Explore Funding Options	 Outreach to Public and Regional Agencies	 Environmental Review	 Follow Regulations and Permitting Requirements	 Design and Construction
Improve Stafford Treatment Plant Process Water Recapture Efficiency	✓					✓
Increase Stafford Lake Storage Capacity - Spillway Notch Slide Gate	✓	✓	✓	✓	✓	✓
Divert Captured Stormwater Into Stafford Lake	✓	✓	✓	✓	✓	✓



# Funding Strategy

Potential Funding Programs by Project			
Funding Program	Improve STP Process Water Recapture Efficiency	Increase Stafford Lake Storage Capacity	Divert Captured Stormwater into Stafford Lake
<b>State Programs</b>			
DWR IRWM	X	X	X
DWR Drought Relief Funding	X	X	X
<b>SWRCB Water Recycling Funding</b>			
I-Bank (loans only)	X	X	X
<b>Federal Programs</b>			
FEMA BRIC	X	X	X
FEMA HMPG	X	X	X
USBR WaterSMART Drought Response <sup>(c)</sup>	X	X	X
USBR Title XVI Recycled Water			
WIFIA (loans only)	X	X	X



# Acknowledgements

- North Marin Water District Staff

- Drew McIntyre, General Manager
- Tony Williams, Assistant General Manager, Chief Manager, and Project Manager for the Local Water Supply Enhancement Study
- Robert Clark, Operations and Maintenance Superintendent
- Brad Stompe, Distribution & Treatment Plant Supervisor
- Jeff Corda, Senior Water Distribution & Treatment Plant Operator
- Ryan Grisso, Water Conservation Coordinator
- Pablo Ramudo, Recycled Water Quality Supervisor

- Marin County Parks Staff

- Jason Hoorn, Natural Resources Coordinator
- Tara McIntire, Principal Landscape Architect
- Jon Campo, Principal Natural Resources Planner

- Roger Leventhal, Advisor from Marin County Flood Control & Water Conservation District
- Paul Sellier, Advisor from Marin Municipal Water District
- Jay Jasperse, Chief Engineer and Director of Groundwater Management, Sonoma Water



# Discussion and Questions

