



# **Kastania Pump Station Rehabilitation Project**

May 18, 2021



# Overview

- Kastania Pump Station Background and History
- Hydraulic Analysis
- Kastania Pump Station Rehabilitation Project
- Recommendation: Approve Resolution

# Kastania Pump Station Background and History

# Background and History

- Constructed in 1977 by MMWD
- Increase flow and pressure in North Marin Aqueduct
- MMWD owned/operated 1977 – 1999

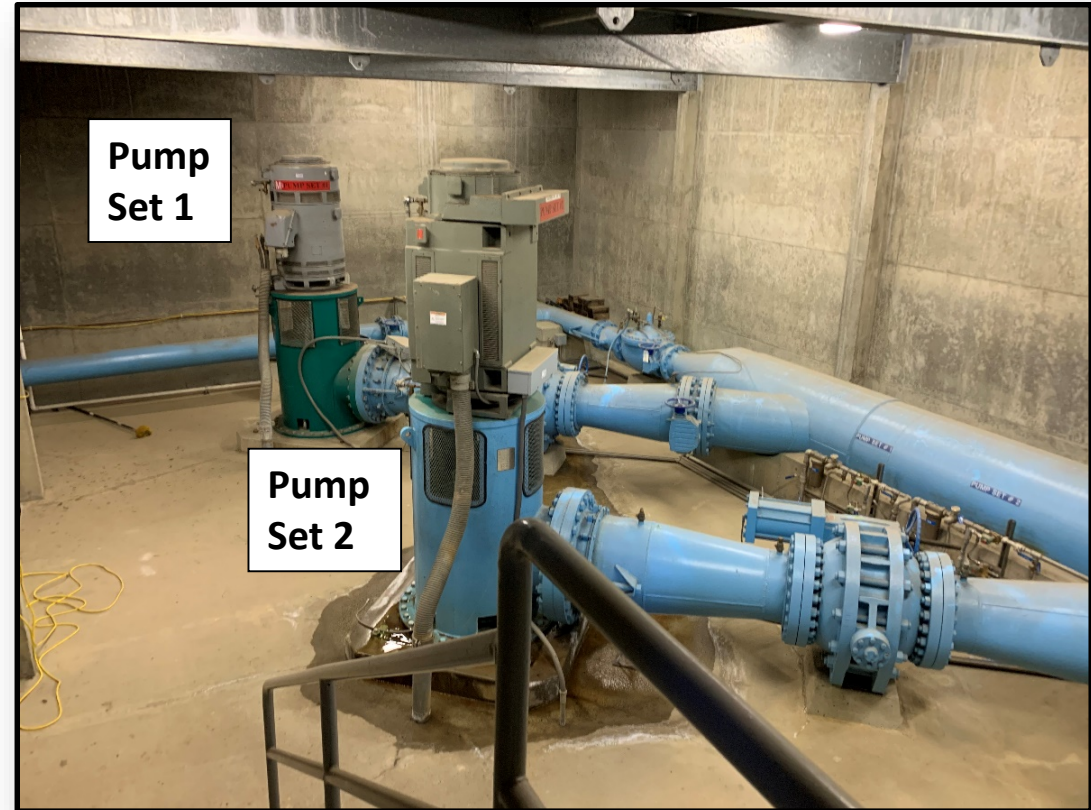


*Kastania Pump Station, Kastania Rd, Petaluma*



# Background and History

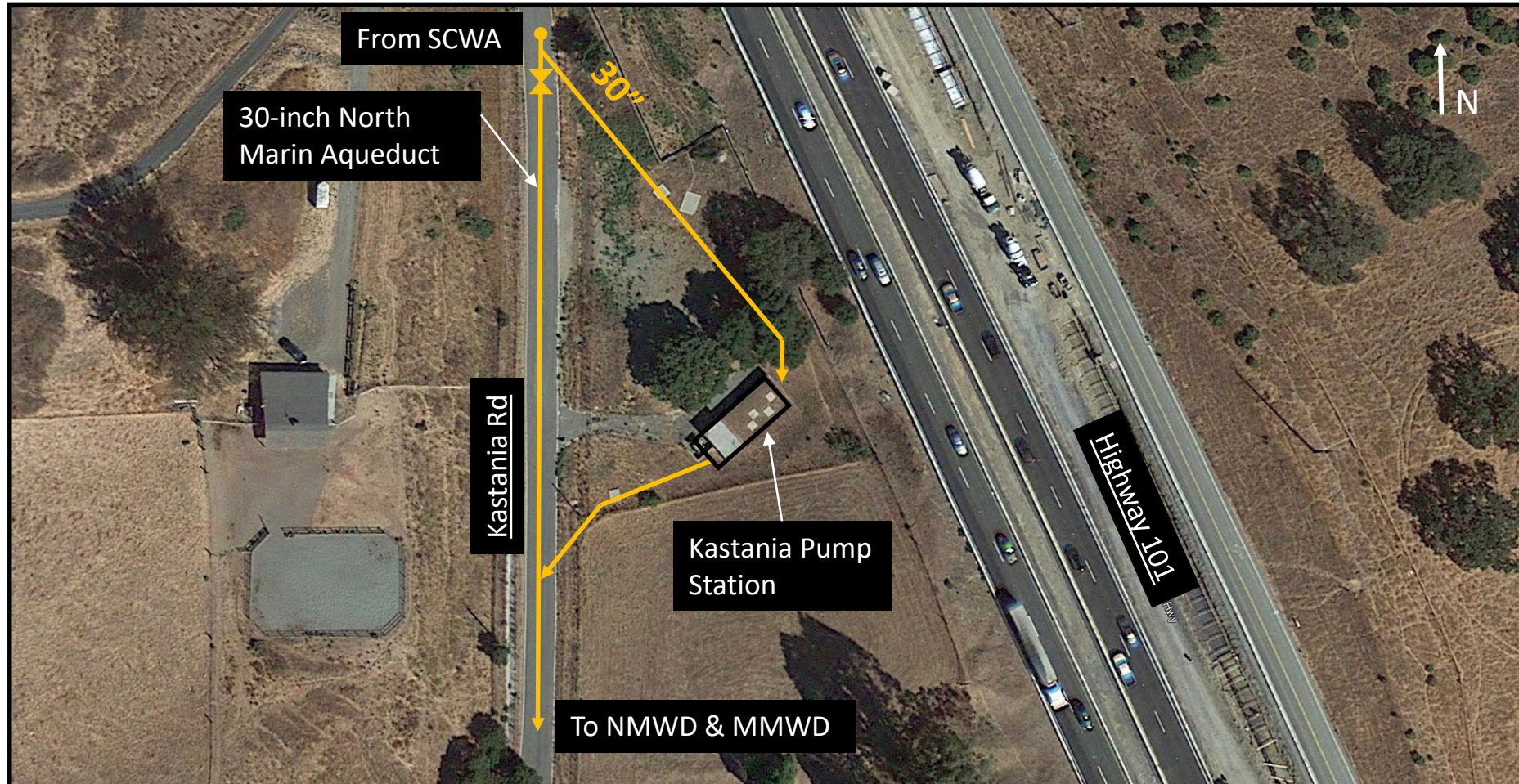
- MMWD transferred ownership to SCWA in 1999
- Offline 2015
- Equipment:
  - Two 400 hp pumps
  - Motors, valves, electrical controls



*Interior of Kastania Pump Station*



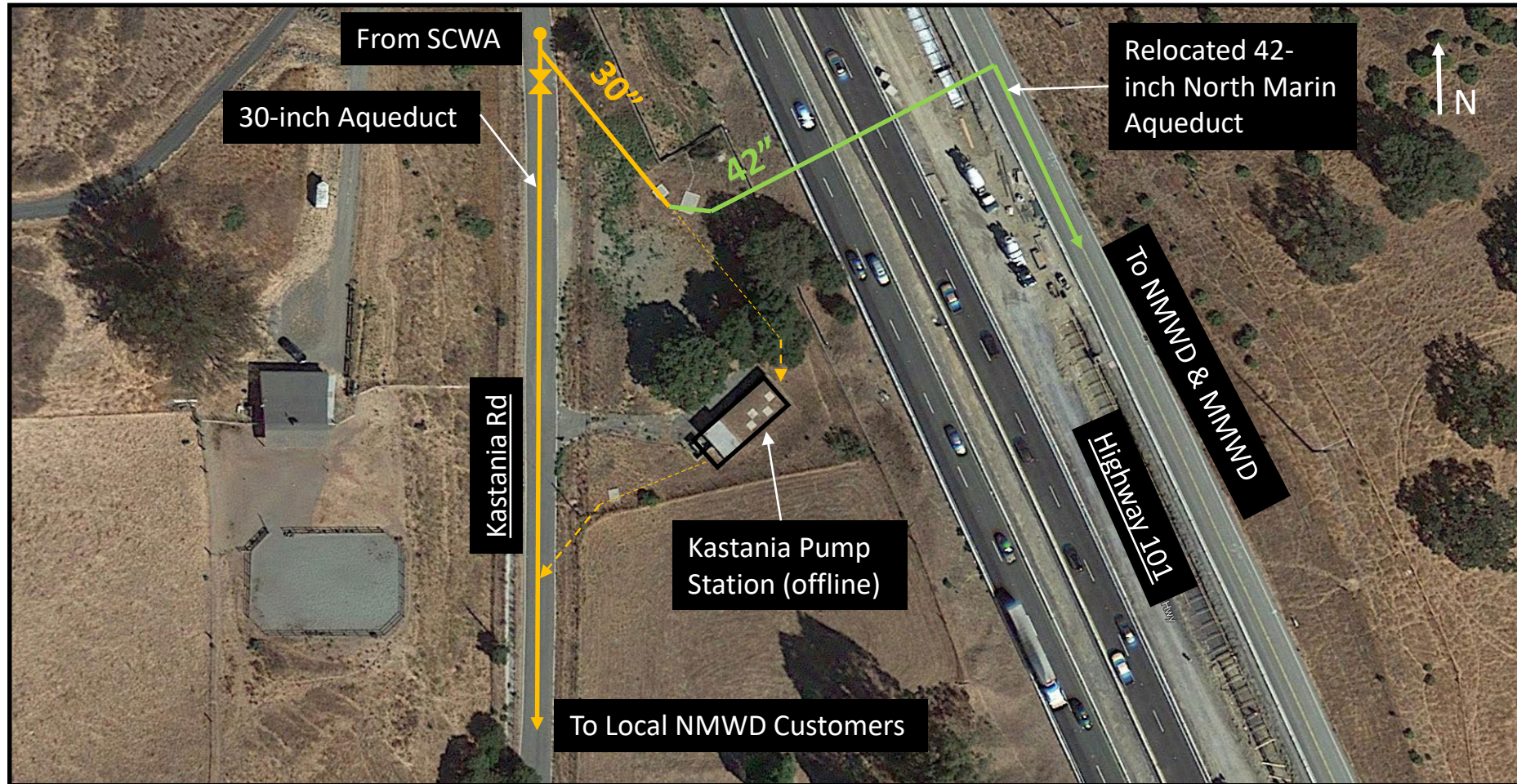
# Background and History



*Configuration of Kastania Pump Station Site, 1977 - 2015*



# Background and History



*Current Configuration of Kastania Pump Station Site*

# Operational Action Plan - Kastania Pump Station Rehabilitation Project

- January 19 Board: MMWD Drought Action Plan
  - Operational Action – Evaluate Rehabilitation of Kastania Pump Station
- February 2 Board: Amend agreement with Carollo Engineers to Evaluate Rehabilitation of Pump Station
- April 6 Board: Rehabilitation Options
  - Option 1 – Immediate Recommissioning



# Hydraulic Analysis

# Hydraulic Analysis

- North Marin Aqueduct:
  - Runs from Southern Petaluma to Novato
  - Seven miles long
  - Owned by North Marin Water District
  - Conveys imported water to North Marin Water District and MMWD's Ignacio Pump Station in Novato
- Objective: determine if Kastania Pump Station improves operational efficiency of imported water system



# Flows Available to North Marin Aqueduct – Existing Conditions (w/out Kastania)

<b>Available Flowrate</b>	<b>~15 mgd (17-18 mgd intermittently)</b>
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# Flows Available to North Marin Aqueduct – Existing Conditions (w/out Kastania)

Flowrate	~15 mgd (17-18 mgd intermittently)
North Marin Demand (Spring 2021)	<u>~11 mgd</u>
Available to MMWD	4 mgd



# Flows Available to North Marin Aqueduct With Kastania Pump Station

Available Flowrate	21.5 mgd
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# Impact of Kastania Pump Station

Condition	North Marin Demands (mgd)	Available Water to MMWD (mgd)		Limiting Factor	MMWD Capacity (mgd)	Difference, mgd (%)
		Without Kastania	With Kastania			
Spring 2021	~11	4	10.5	None	10-12 <sup>(1)</sup>	<b>6.5</b> (160%)

Notes:

1. Capacity of MMWD distribution system



# Impact of Kastania Pump Station

Condition	North Marin Demands (mgd)	Available Water to MMWD (mgd)		Limiting Factor	MMWD Capacity (mgd)	Difference, mgd (%)
		Without Kastania	With Kastania			
Spring 2021	~11 <sup>(1)</sup>	4	10.5	None	10-12 <sup>(2)</sup>	<b>6.5</b> (160%)
Summer	8	7	13.5	Contractual Limit	12.8 <sup>(3)</sup>	<b>5.8</b> (83%)
April/May	4	11	17.5	MMWD Distribution System	10-14 <sup>(2)</sup>	<b>1-3</b> (11-27%)

**Notes:**

1. Filling Stafford Lake.
2. Capacity of MMWD distribution system.
3. Max delivery under agreement with SCWA.

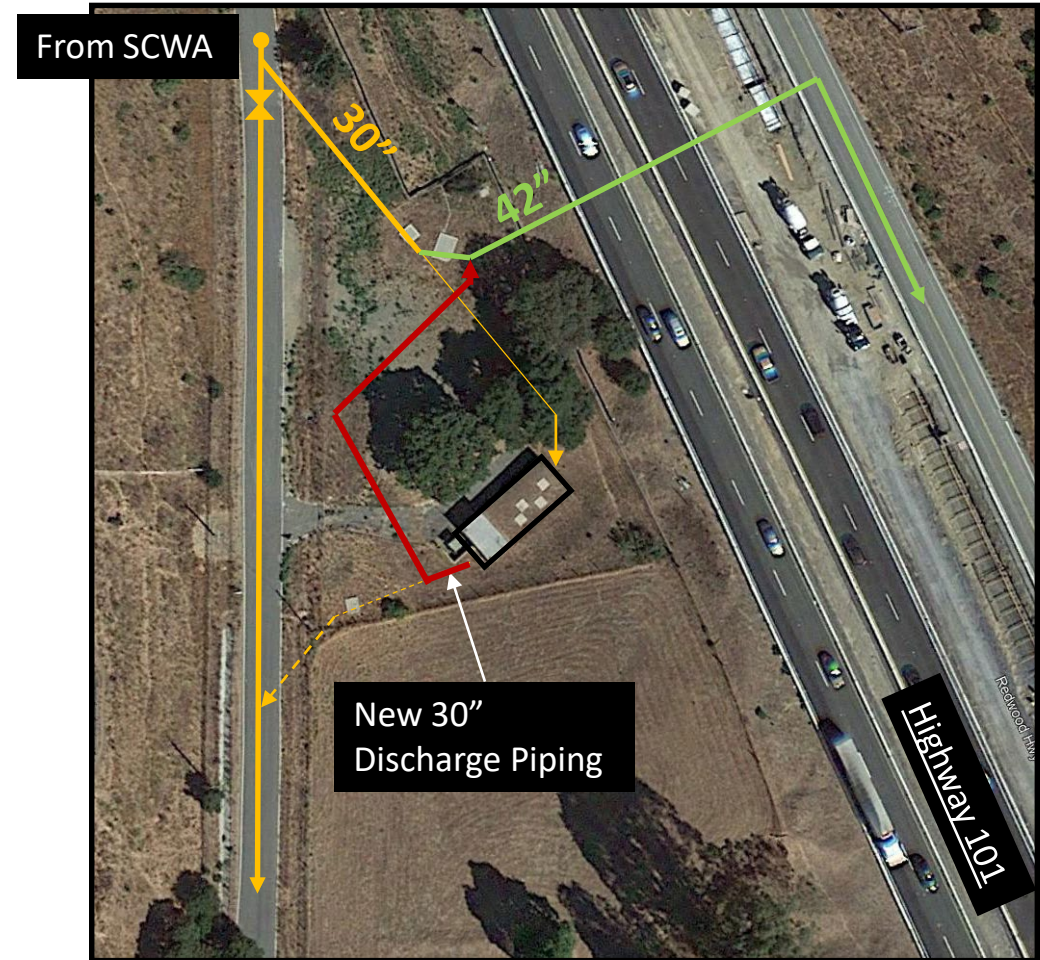
# Summary Impact of Kastania Pump Station

- Imported water supply January – May 2021:
  - North Marin increased demand
  - District's imported supply reduced below normal levels
  - If Kastania Pump Station had been operating, District would have been able to import normal volumes this year
- Conclusion: Running Kastania Pump Station will improve operational efficiency of District's imported water supply

# Rehabilitation Project

# Rehabilitation Project Scope

- 210 feet 30-inch pipe & fittings
- New 30-inch butterfly valves, flowmeters, vaults to control & monitor flows
- New Variable Frequency Drive (VFD) to better control pump No. 2.
- New Remote Terminal Unit (RTU) and Programmable Logic Controller (PLC) panel for control and monitoring
- New antenna for communications with MMWD operations center





# Rehabilitation Project Cost & Schedule

- Total cost approximately \$1.8M
- Schedule:
  - Professional Services Agreement: May 18, 2021
  - Complete Construction Documents: July 15, 2021
  - Construction Quotes Due: August 4, 2021
  - Award Construction Contract: August 17, 2021
  - Start Construction: September 12, 2021
  - Complete Construction: November 19, 2021

# Environmental Review

- Project meets CEQA exemptions:
  - Emergency Exemption under Section 15269  
Emergency Projects
  - Categorical Exemption under Section 15301  
Existing Facilities

# Summary and Recommendation

- Summary: Rehabilitating Kastania Pump Station will improve operational efficiency of District's imported water system
- Recommendation: approve resolution:
  - Approving the Kastania Pump Station Rehabilitation Project
  - Authorizing the General Manager to execute a professional services agreement with Carollo Engineers
  - Finding the Project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA), and directs staff to file a Notice of Exemption with the Sonoma County Clerk.