MARIN WATER

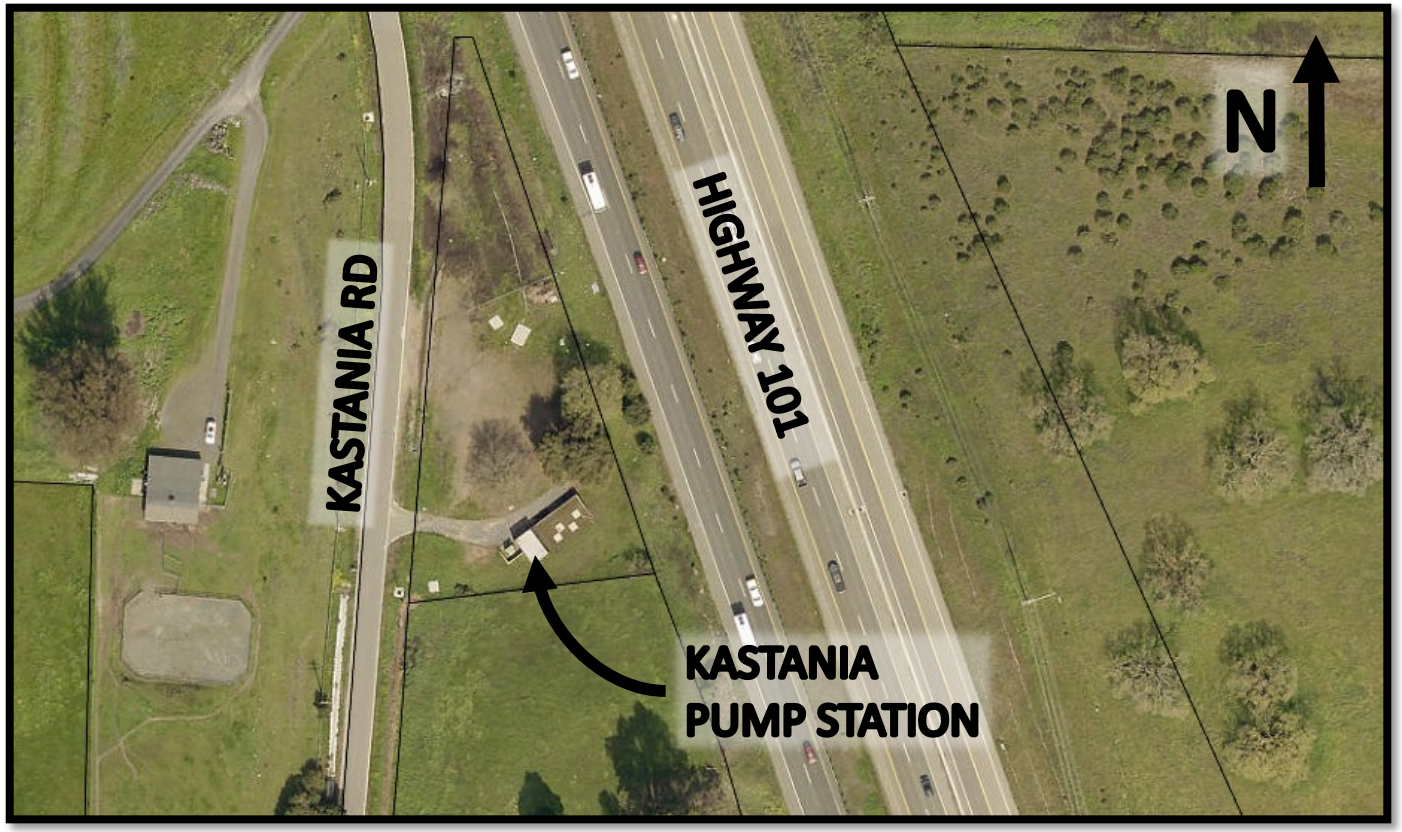
Kastania Pump Station Project Update

Board of Directors

February 1, 2022

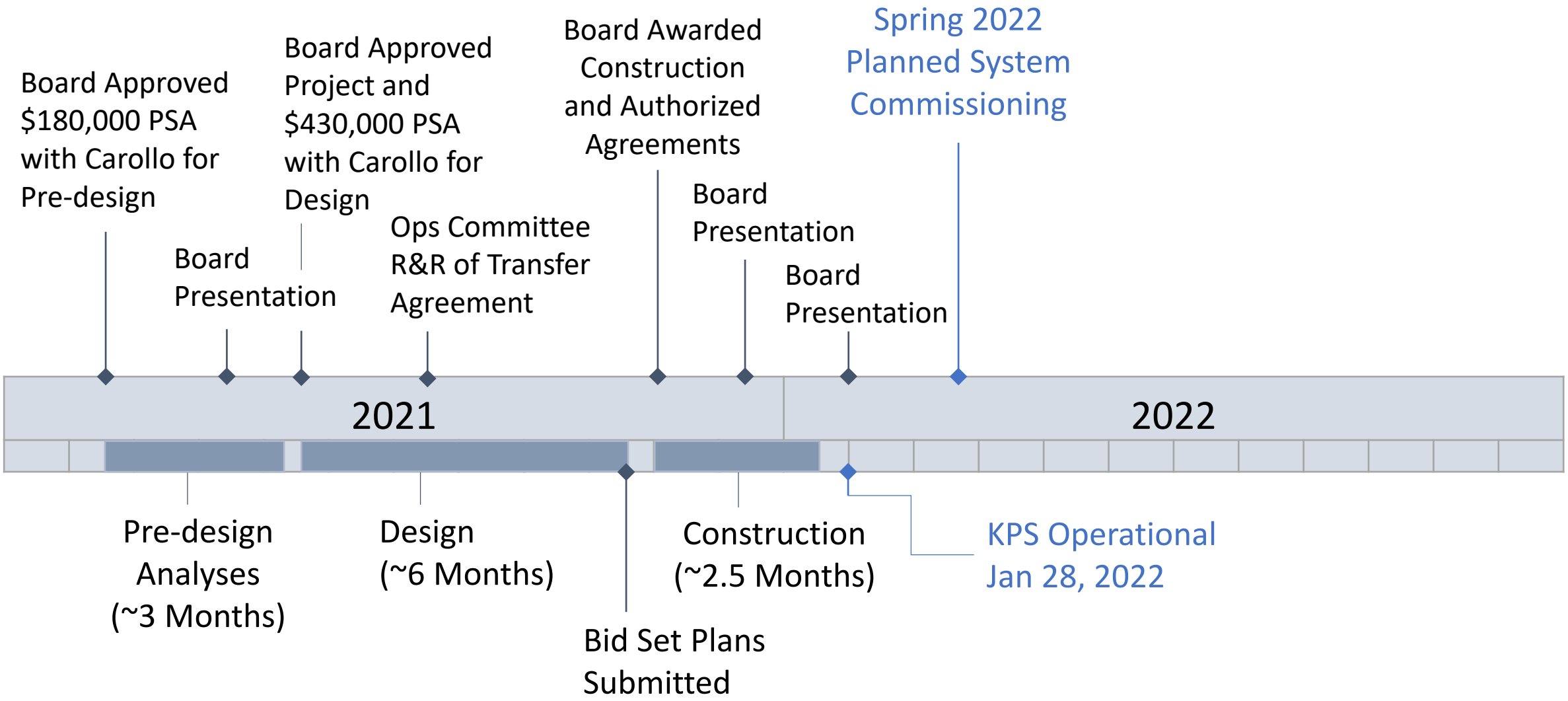
Kastania Pump Station Project Update

- Project Status
- Hydraulic and Operational benefits of Kastania PS
- Next Steps



Kastania Construction Update

Project Timeline



Construction Progress (95% Complete)

Complete:

✓All 30 inch piping and valves

✓Hot-Tap of North Marin Aqueduct

✓Pipeline testing, disinfection, and tie-in

✓MMWD Pump Station Start-up Testing

Pending:

❑Punch-list items

Construction

30” welded steel piping fabrication

Final tie-in to North Marin Aqueduct

Construction

Final paving

Final site restoration (erosion/sediment control)

Start Up Testing

Marin Water's Rob Cuneo testing system pressure

Pump Station functional testing

Hydraulic Improvements with Kastania

Flows Available via North Marin Aqueduct – New Conditions (with Kastania)

Available Flowrate with Kastania PS	21.5 mgd

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	MMWD System	10-12[(1)]	**6.5** (+160%)

Notes:

1. Capacity to import water via Kastania PS into MMWD distribution system when experiencing lower total system demand due to bottlenecks within the MMWD distribution system

Capacity with Improvements to the MMWD Distribution System

Objective - Increase operational efficiency to realize contractual import allotments and/or additional winter water supply from the Sonoma County Water Agency.

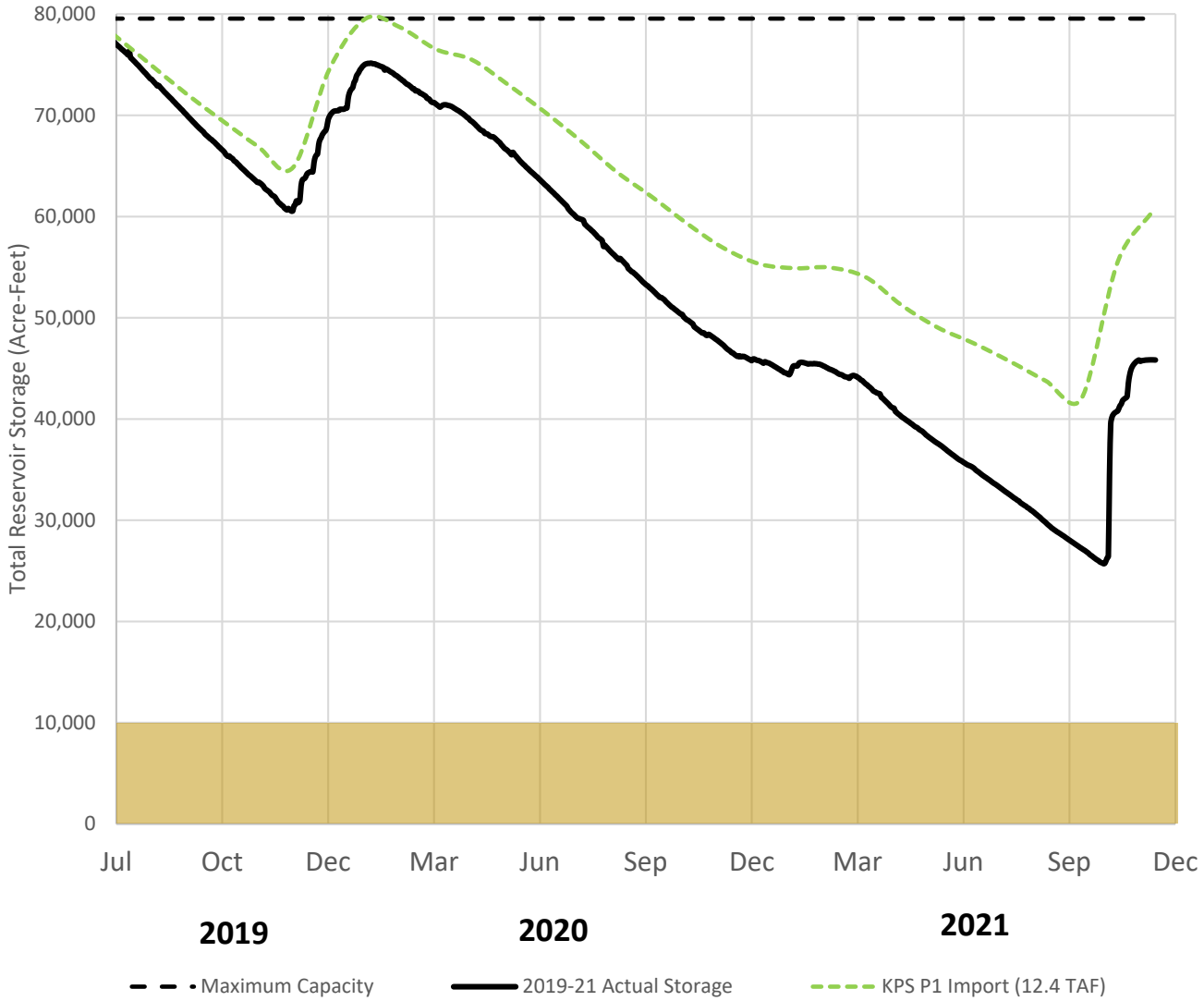
Imported Water Capacity with Kastania* (MGD)	Capacity (AF/Yr)	Contractual Allotment (AF/Yr)	Minimum System Improvement within MMWD**
10.5-11.2	12,500	14,300	1.6+ MGD

Notes:

* Current capacity of MMWD distribution system during low total system demand

** Additional MMWD system Improvements needed to import contractual allotment

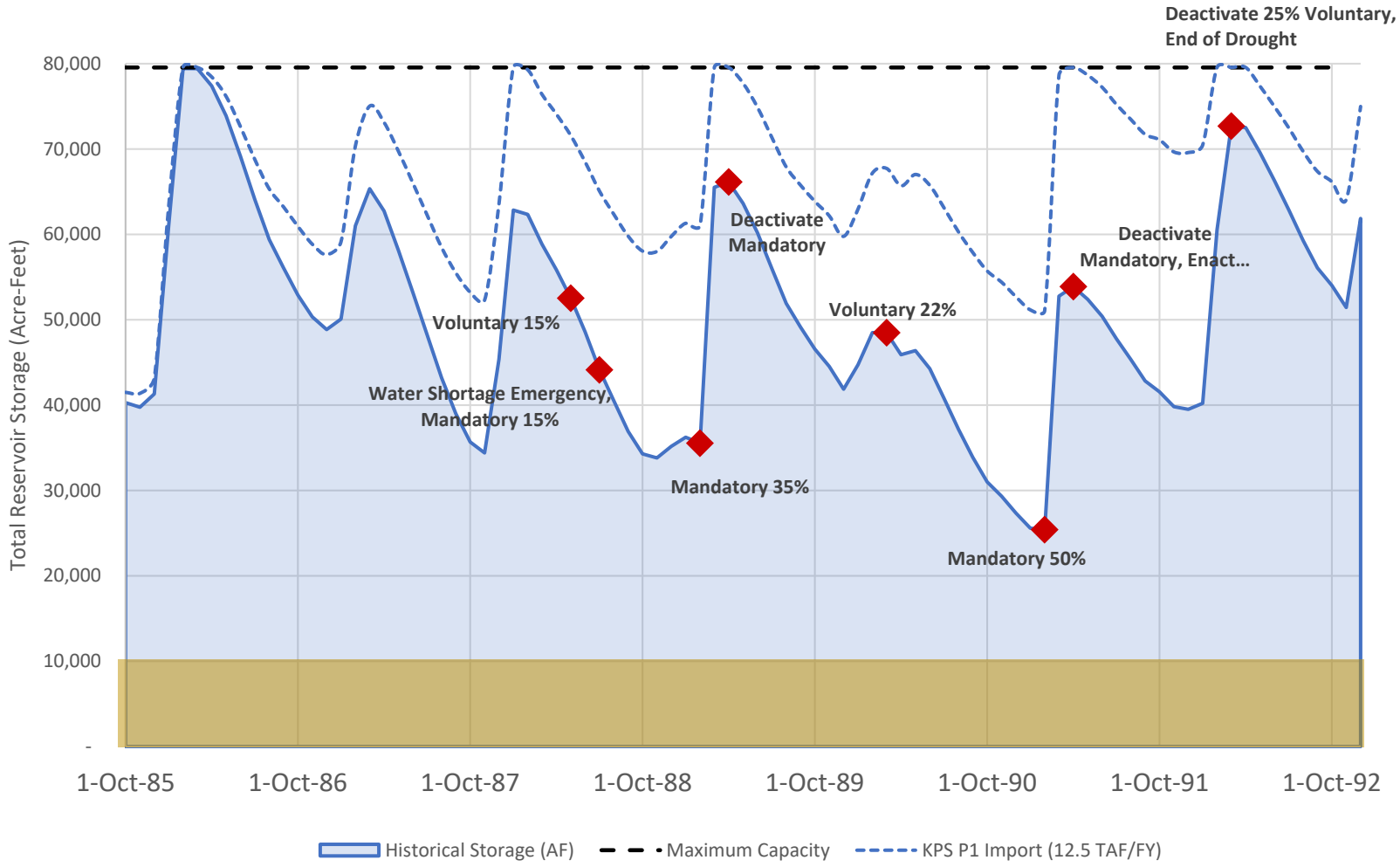
Effect of KPS on Storage Levels - Current Drought



- Simulated 12,500 AF per FY imported from SCWA since July 2019
- 15,000 AF additional water supplies purchased offsetting local storage over 30 month period
- Resultant storage level may not have severe triggered drought actions

Effect of KPS water on Storage Levels – Drought of 1986-1992

- Simulated taking <u>12,500 AF</u> per FY imported from SCWA
- Likely would not have been in drought conditions nor instituted severe drought actions during 1986-92 drought



Operational Flexibility from Kastania

- **Shift in operational practice to focus on water supply reliability:**
  - Allows a practice of front loading imports to maximize supplemental water so if winter is dry we can bring in (ultimately) full allotment of supplemental water
  - Provides access to full supplemental water allotment of 14,300 AF, if needed
  - Measurably improves drought resiliency
- **Operational Benefits:**
  - Provides greater independence from NMWD's use of Aqueduct
  - Provides additional water during peak demand periods

Kastania Project Costs

Kastania Pump Station

- $1.6M Capital Cost
- 6,300 AF/Year
- $254/AF initial capital investment

Unit cost far lower than most options for water supply

Next Steps

- With the successful completion of the Kastania Pump Station, the District continues its efforts towards drought and climate change resiliency
- Currently pursuing additional system improvements to optimize imported water from Sonoma
- Full environmental review of the East Bay (Emergency) Intertie Project
- Strategic Water Supply Assessment to evaluate long-term solutions to drought and climate change in Marin

Questions?