

LCRA's Water Supply Planning Update

Water Operations Committee Meeting
Sept. 20, 2023



Need for New Water Supply in Upper Reach

	A-f per year					
	2030	2040	2050	2060	2070	2080
Projected future firm contractual commitments in upper reach	468,000	477,000	455,000	456,000	464,000	464,000
Uncertainty cushion	30,000	30,000	50,000	50,000	50,000	50,000
Total supply needed	498,000	507,000	505,000	506,000	514,000	514,000
Historic firm yield – upper reach ¹	450,000	450,000	450,000	450,000	450,000	450,000
New supply needed	48,000	57,000	55,000	56,000	64,000	64,000

¹Combined firm yield of lakes Travis and Buchanan plus 33,000 a-f per year of Garwood right. Does not include potential sedimentation.

Targeted new firm water supply for the upper reach of about 60,000 a-f per year by 2040

Planning for Future Water Demand

LCRA Water Supply Projects ¹ 50-Year Horizon	Estimated Supply (acre-feet per year)
Ongoing	
Municipal water conservation programs	Up to 15,000
Agricultural water conservation programs	To be determined (interruptible supply)
Construction Phase	
Arbuckle Reservoir	Up to 90,000
Engineering/Design/Permitting Phase	
Griffith League Ranch groundwater	Up to 25,000
Import water from Williamson County	Up to 35,000
Lake Bastrop Water	Up to 10,200
Amend run-of-river water rights to add upstream diversion locations and/or storage	Improved efficiency
Planning/Future Development/Feasibility Phase	
Midbasin off-channel reservoir	Up to 20,000
Brackish groundwater to supplement bay during drought ² (stryker wells)	TBD
Ocean water desalination ²	Up to 22,400
Aquifer Storage and Recovery Project	TBD
Additional groundwater	TBD
Lower basin off-channel reservoir	Up to 39,000
Brackish groundwater desalination	TBD
Managed aquifer recharge	TBD

¹ Implementation or planning phase as of fiscal year 2022. Project implementation order may affect supplies created by subsequent projects, therefore the values in the Estimated Supply column should not be summed at the full project amount.

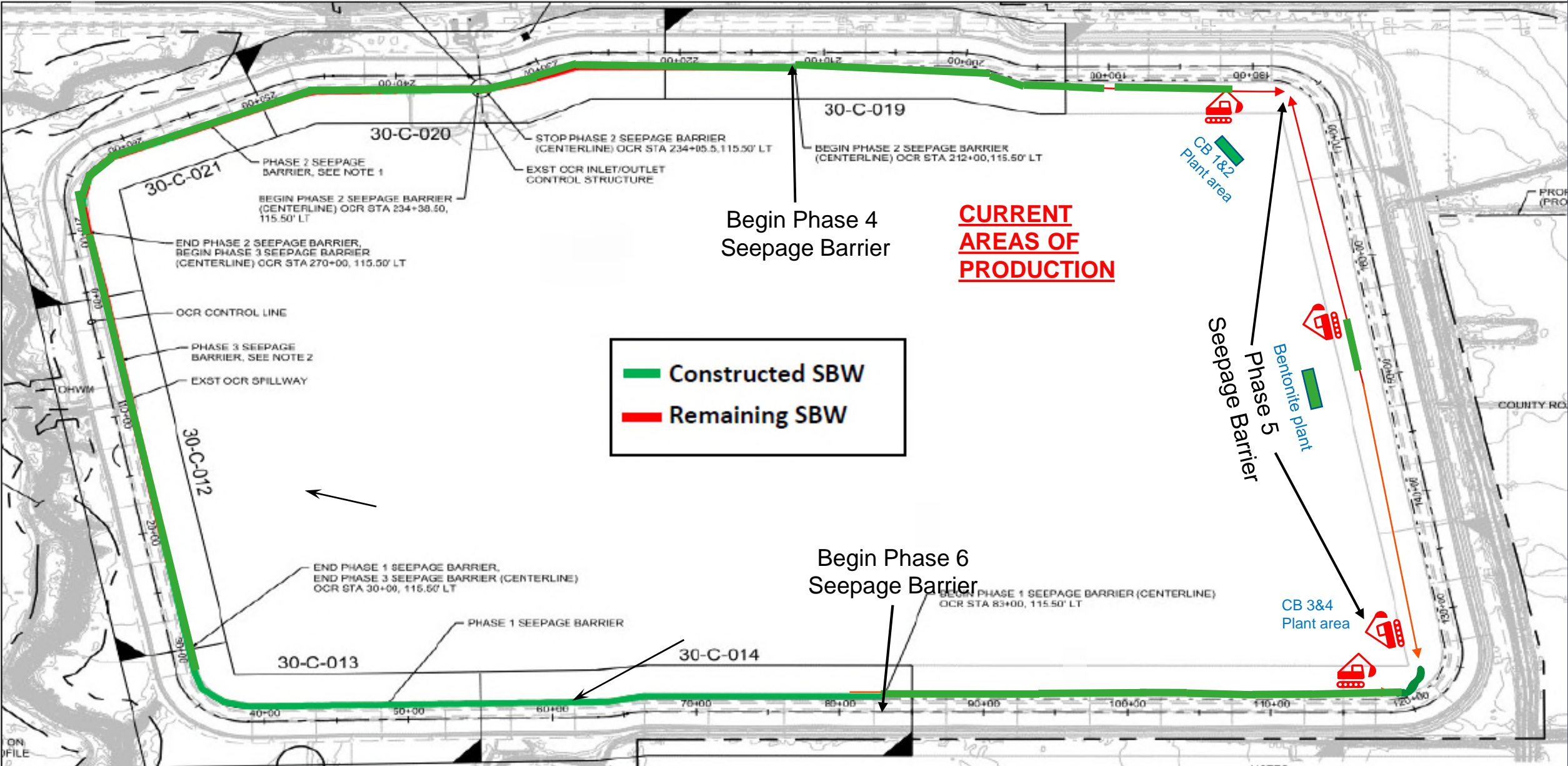
² Alternative strategy in 2021 Region K Water Plan

Municipal and Agricultural Water Conservation Programs

- May 2019 – Board approved Raw Water Conservation Plan
- Spring 2024 – will seek Board approval for the new Raw Water Conservation Plan
- Hired Freese and Nichols to review the effectiveness of our conservation programs
- Includes municipal and agricultural five- and 10-year goals

Customer Type	Five-Year Goals	2022 Actual Savings
Municipal	6,500 a-f per year	7,353 a-f per year
Agricultural	15,000 a-f per year	15,926 a-f per year
Industrial	700 a-f per year	1,276 a-f per year

Arbuckle Reservoir – General Overview of Work Site



Griffith League Ranch Groundwater

Groundwater permits for
8,000 a-f per year

Transportation permits for
25,000 a-f per year

Working on the monitoring
well agreement

Ongoing permitting challenges

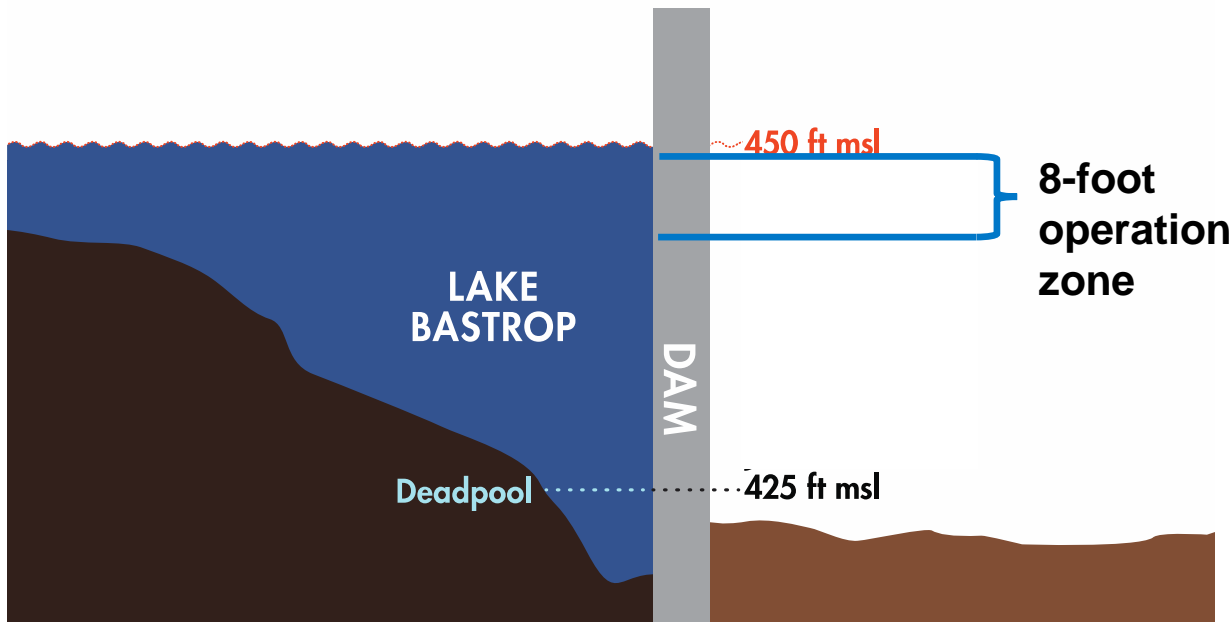


Lake Bastrop Water

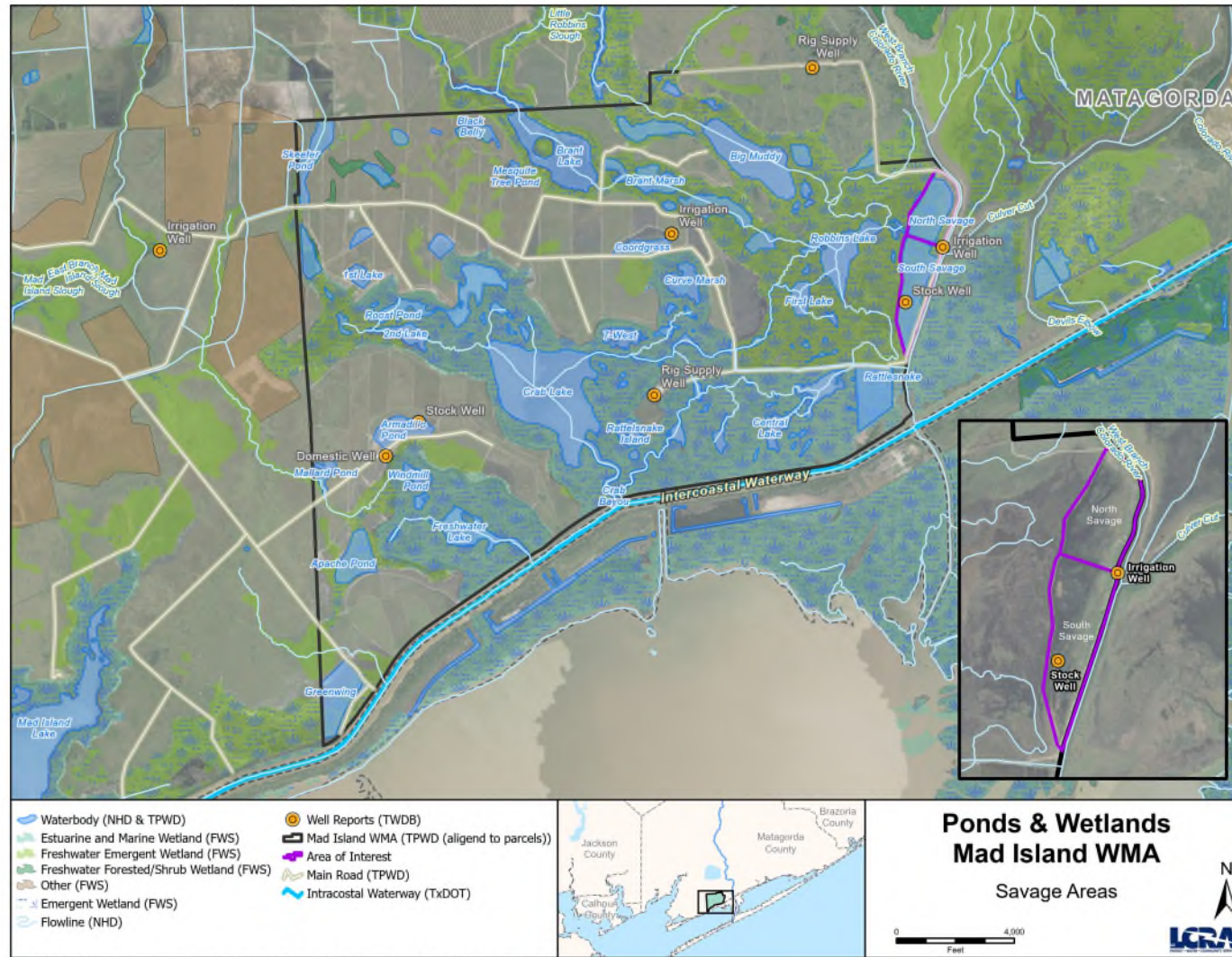
Total firm yield: 10,200 a-f per year

Additional facility actions

- Upgrade existing river intake
- New river pump station and pipeline
 - Design capacity 150 cubic feet per second
- New outfall structure into Lake Bastrop
- Concrete block wave protection to elevation 440
- Operate Lake Bastrop between elevation 442 and elevation 450 feet above mean sea level



Brackish Groundwater (Stryker)

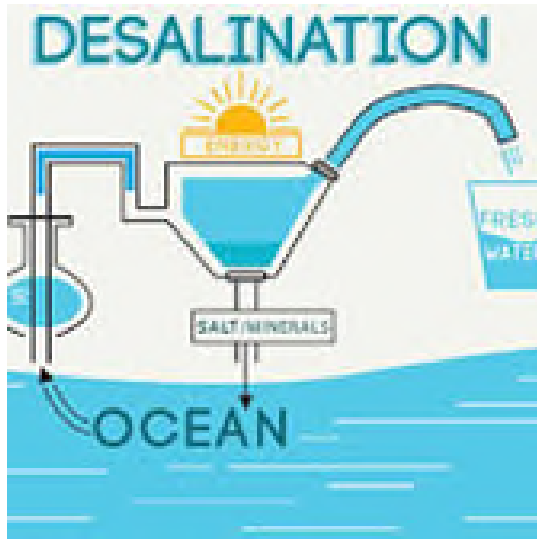


Path: V:\WaterCo\Project\Water_Resource_Protection\Stryker\Mad_Island_WMA.aprx Name: Ponds & Wetlands Savage Area

Surface Water Permit Amendments

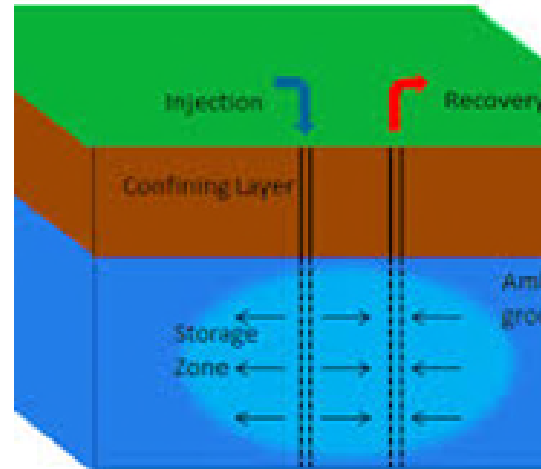
- Amend water rights to increase water supply in the basin and provide operational flexibility
- Completed the amendment of the Excess Flows permit
- Pending at Texas Commission on Environmental Quality:
 - Amendment to our downstream Garwood Water Rights to add diversion reaches from below Longhorn Dam to Bay City Dam

Additional Strategies



Desalination

Brackish and Gulf
seawater



Aquifer Storage

Aquifer storage and
recovery with
off-channel reservoir



Groundwater

Additional
conjunctive use



Importation

Future opportunities
to partner

What Does All This Mean?

- **We are planning for supplies in locations where we see projected needs**
- **We have refocused our efforts on the short-term goal of 60,000 a-f per year by 2040 in the upper reaches**
- **We will continue to evaluate a variety of strategies**

Potential Strategies

Groundwater Strategies	Supply Benefit to Upper Basin
Purchase wholesale groundwater	Yes

Aquifer Storage and Recovery	Supply Benefit to Upper Basin
Aquifer storage and recovery in Bastrop County – partnership with others	Yes
Aquifer storage and recovery in Bastrop County – go it alone	Yes

Direct and Indirect Reuse Strategies	Supply Benefit to Upper Basin
Direct potable reuse – Highland Lakes area	Yes
Indirect reuse – Pflugerville return flows	Yes

Reservoir Strategies – Pipeline vs. no Pipeline	Supply Benefit to Upper Basin
Bastrop County storage reservoir	Yes
Baylor Creek reservoir	Yes/maybe
Lower basin off-channel reservoir	Yes/maybe

Next Steps

- **Continue with the projects in flight**
- **Evaluate the potential strategies through the Water Supply Resources Report project**
- **Public input process**
- **Prioritize future projects**
- **Funding sources**

