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March 22, 2022

Via email
Executive Committee
Salinas Valley Basin Groundwater Sustainability Agency
P.O. Box 1350
Carmel Valley, CA 93924

Re: MCWRA funding request for Interlake Tunnel

Dear Members of the Executive Committee:

This is to supplement my March 21 letter on behalf of LandWatch Monterey County. In that letter I explained that, because staff's "Letter A" and "Letter B" both support the Interlake Tunnel project (ILT), staff have not complied with the Executive Committee's direction to prepare one letter supporting the funding request for the Interlake Tunnel (ILT) and one letter not supporting that request.

In that letter I referenced the status report that was presented to MCWRA on March 21 that summarizes modeling results purporting to show costs and benefits of the ILT, and I explained that there is no modeling that determines the actual economic benefits to users who actually need additional water supply.

MCWRA made the same presentation to the Board of Supervisors today, correcting the estimated increase in water delivered to the rubber dam from around 100 AFY to 1,1100 AFY. I attach a copy of MCWRA's presentation.

MCWRA promotes the ILT as a "water storage project," but users are presumably not willing to pay for water storage unless it solves a problem. That is, users who do not need that additional storage derive no "benefits" from its provision. Thus, there are several critical issues that the presentation fails to address.

First, the purported average annual 4,600 AFY increase in recharge that the ILT would provide would apparently occur in south County, where the GSPs indicate that no projects are needed because the subbasins are already in balance. Staff did not dispute public comments that there is no evidence of a recharge benefit to the north County areas that are out of balance, even in response to direct questions by the Supervisors today.

Second, even if there were some benefit from additional recharge to south County subbasins, it is misleading to calculate a $297 per acre foot "annual value of water" for "dry year increase in groundwater recharge" because the relevant question is the average recharge benefit over all types of water years. (See presentation, PDF page 21 [$297 per

AF equals $14,385,000 annual debt service cost divided by the 48,500 af increase in dry year recharge].) Farmers would have to pay the Prop 218 assessment even in wet and normal years, not just dry years. The average annual cost per acre foot for recharge increases over all water years is $3,127 per AF, not merely $297 per AF. It seems unlikely that farmers would be willing to pay $3,127 per AF for recharge, especially farmers who believe that their subbasins are already in balance. Again, there are no modeling results that indicate a recharge benefit to the north County subbasins.

Third, the only identified benefit to the north County subbasins for which GSP's identify a water shortage is the 1,100 AFY increase in surface water available to the SRDF, which could presumably be used by the CSIP project. This appears to be a meager benefit for a $226 million dollar project with an annual debt service cost of $14,385,000. The cost per acre-foot of this 1,100 AFY would come to $13,077, which appears to be substantially more than farmers in the northern subbasins would be willing to pay.

Again, the ILT, as currently described, is a water storage project. As such, the ILT is missing the critical water delivery component that might make it useful to farmers in areas that actually need additional water. A number of water delivery options that would use water stored in the reservoirs have been described in the GSPs, including, e.g.:

- the winter releases with ASR proposed in the Monterey GSP to benefit the 180/400 Subbasin with a capital cost of $172 million to deliver water at $1450 per AF, assuming no other capital cost;

- the new points of diversion at Chualar or Soledad proposed in the Eastside GSP with capital costs of $56 million and $105 million and unit costs of $1,280 to $2,110 per AF, assuming no other capital cost.[1]

If the ILT were necessary to make these projects viable, then the cost per AF of these projects would have to be increased to cover the ILT's $226 million capital cost. Again, however, the modeling is incomplete: there is no evidence that the ILT is in fact necessary to make the water delivery projects in the GSPs viable.

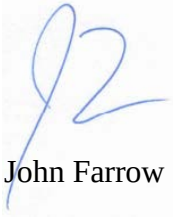
In sum, in light of the lack of demonstrated benefits to areas the GSA has found in need of increased water supplies, the Board should not support MCWRA's request for $150 million for the ILT. Staff should be asked to prepare a draft letter that supports only MCWRA's request for $162 million in funding for the dam maintenance and the San Lucas pipeline and that expressly disavows any position on the ILT, i.e., one of the two letter options the Executive Committee originally requested.

[1] DWR's 1946 Bulletin 52 also proposed a delivery system to move water from the south to the north.

Again, if there is state funding available, the SVGBGSA should seek funding for its own initiatives, including its work plan for the next two years, which will assess feasibility, costs, and benefits to support an informed selection of projects.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.



John Farrow

JHF:hs

cc: Donna Meyers, meyersd@svbgsa.org
Emily Gardner, gardnere@svbgsa.org

Interlake Tunnel and Spillway Modification Project

Progress Report

March 2022

Agenda

1. Introduction – a water storage project
2. Update on project benefits
   - Current model results and groundwater benefits
3. Changes in hydrologic models and effects on project
   - Baseline changes and reasons why
   - Features, scenarios, results
4. Capital costs of project and value of project benefits
   - Financing plan
5. Project schedule
6. Next steps

Disclaimer

The results presented herein are from an Unofficial Collaborator Development Version of a Preliminary Model. Access to the model and use of its data are limited to those who are collaborating on the model development. Once the model is published and receives full USGS approval it will be archived and released to the public. This preliminary data (model and/or model results) are preliminary or provisional and are subject to revision. This model and model results are being provided specifically to collaborate with agencies who are contributing to the model development and meet the need for timely best science. The model has not received final approval by the U.S. Geological Survey (USGS). No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the model and related material nor shall the fact of release constitute any such warranty. The model is provided on the condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the model.

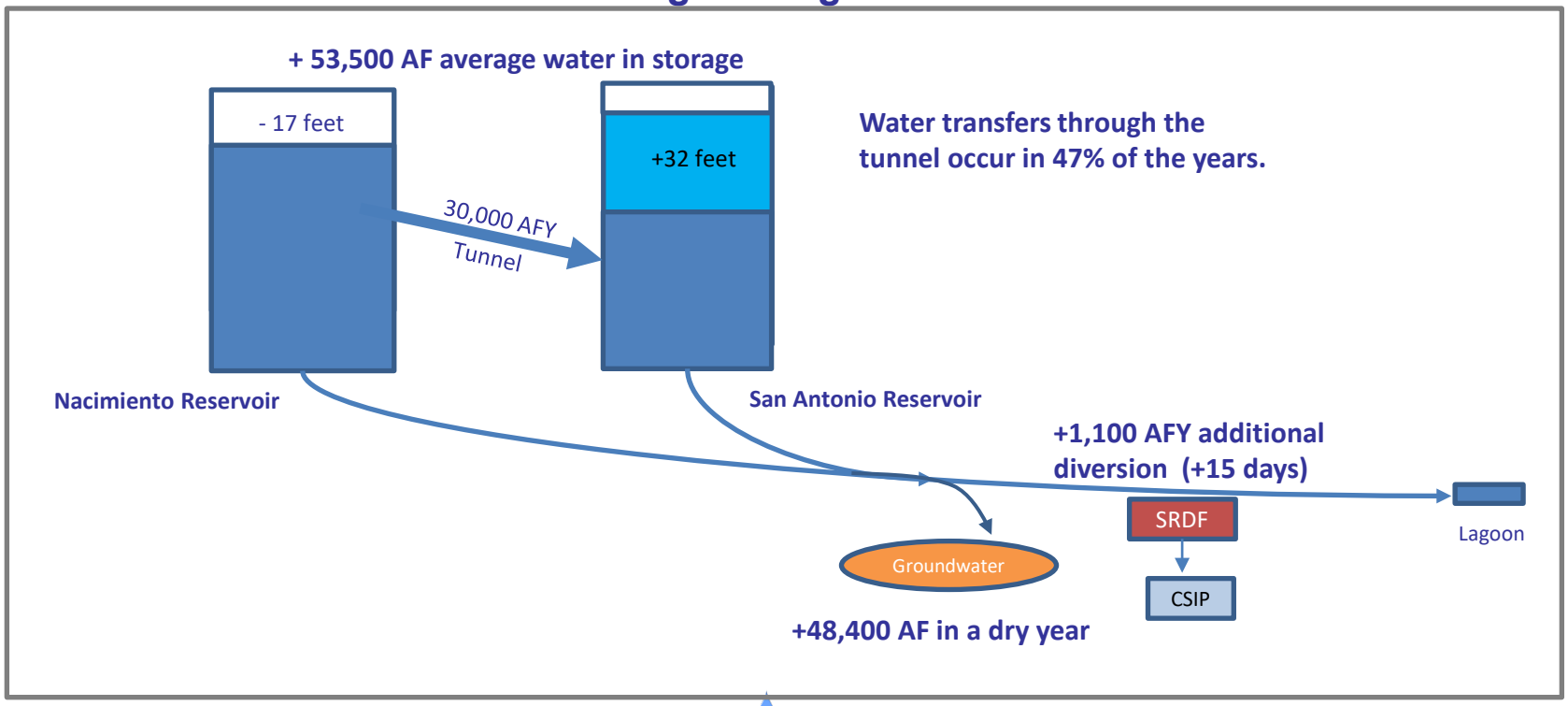
Interlake Tunnel – a water storage project

- The Interlake Tunnel and San Antonio Spillway Modification Project can capture wet year water that is released for flood control.
- Over the modeled period (1967-2014) 2,600,000 AF of water was released for flood control.
- With the tunnel and spillway modification in place for that period, **50% of the flood control releases could have been avoided – 1,310,000 AF**.
- The tunnel and spillway modification project would have transferred a total of 1,400,000 AF of water to storage.
- In 2017 the tunnel could have moved 88,000 AF from Nacimiento to San Antonio of the 192,000 AF that was spilled from Nacimiento.

SVOM Model results summary
Tunnel + 7′ Spillway Modification

- Increases average water storage by 53,500 AF
- Increases conservation releases by 14,400 AFY
- Reduces flood control releases by -17,000 AFY
- Improves performance of SRDF with additional 1,100 AFY
- Groundwater recharge benefit is greatest in dry years

Annual average changes from 2021 Baseline



SVOM Results Summary

Annual average, all year types

Description	Tunnel Only	Tunnel + 7' Spillway Raise
Change in Combined Storage (af)	+39,000	+53,500
Nacimiento Change in Stage (ft)	-18	-17
San Antonio Change in Stage (ft)	+29	+32
Tunnel Transfer (afy)	30,200	30,000
% of Years with Tunnel Transfer	51%	47%
Change in Non-Flood Control Releases (afy)	+9,900	+14,500
Change in Flood Control Releases (afy)	-11,700	-17,100
Change in SRDF Diversions (afy)	+1,000	+1,100
Change in SRDF Diversion Days	+13	+15

All differences are calculated from the 2021 Baseline scenario.
Numbers greater than 1,000 have been rounded to the nearest hundred.

Groundwater – Surface Water Interaction

Simulated Groundwater – Surface Water Interaction by Year Type (af/yr)

	Baseline	Tunnel-Only	Tunnel Plus 7' Spillway Raise
Avg. (All Years)	406,800	411,000	411,400
	Difference from Baseline	*4,300*	*4,600*
		Difference from Tunnel-Only	*340*
Avg. (Wet Years)	625,100	607,100	606,500
	Difference from Baseline	*-18,000*	*-18,600*
		Difference from Tunnel-Only	*-590*
Avg. (Normal Years)	376,900	371,300	371,200
	Difference from Baseline	*-5,600*	*-5,600*
		Difference from Tunnel-Only	*-44*
Avg. (Dry Years)	225,300	271,700	273,800
	Difference from Baseline	*46,400*	*48,500*
		Difference from Tunnel-Only	*2,000*

Includes all stream loss to the aquifer (groundwater recharge, riparian evapotranspiration)

Groundwater recharge benefit is greatest in dry years: 48,500 AF

Changes to hydrologic models

- Incorporated water rights limitations and environmental commitments.
- Streambed recalibration
  - Salinas River is “thirstier” than previously modeled. The basin is soaking up more water as it flows downstream.
- Baseline is different due to model refinements.
  - Current baseline better reflects reality.
  - Baseline requires increased releases to meet downstream demands after streambed recalibration.
    - Therefore, changes in project releases over baseline are less than in results from previous model versions.

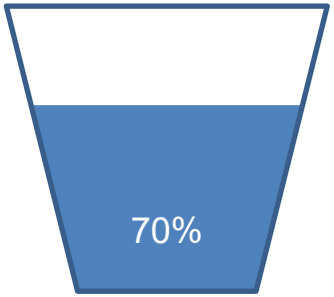
Changes to hydrologic models

- Release ratio prioritizes Nacimiento, with additional demand met by San Antonio.
- Evaluated multiple operational strategies
  - Storage and release constraints determined to be the limiting factors.
- Water rights are tracked by the models but are not limiting the simulated operation of the Tunnel.
- Applies current conditions to historical data.
  - Simulations use actual climatic/hydrologic data.

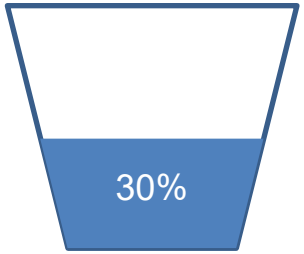
Release ratio changes

SVOM – 2020 version

Nacimiento Reservoir



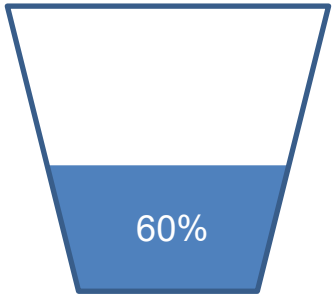
San Antonio Reservoir



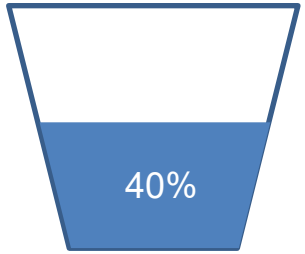
- Ratio of simulated releases varied for each water year.
- Ratio determined based on the ratio of reservoir storage on October 1.

SVOM – 2021 version

Nacimiento Reservoir



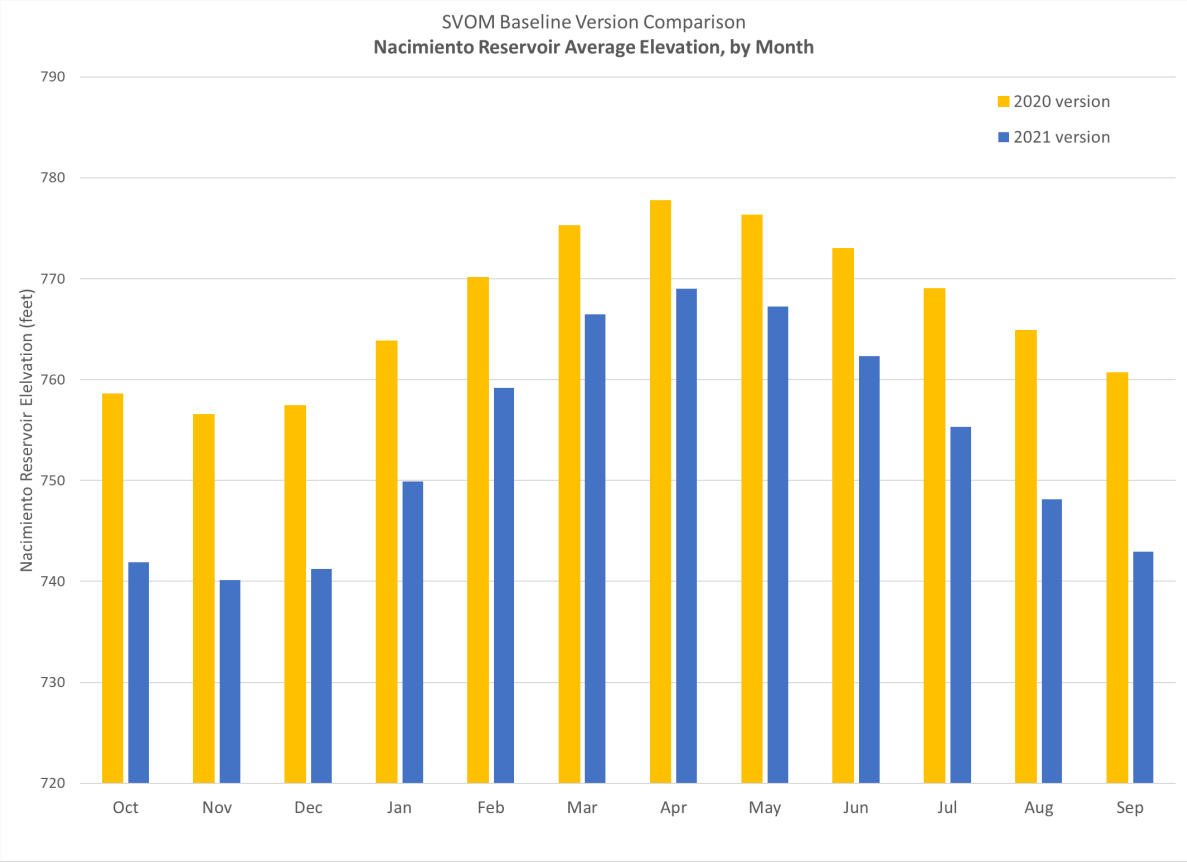
San Antonio Reservoir



- Nacimiento is prioritized as the source of water to meet simulated demands, within physical constraints, and San Antonio makes up the difference.

Baseline version comparison

The 2021 SVOM requires more releases to achieve downstream demands. This **results in a lower average elevation at both reservoirs.**



Differences in Simulated Baseline Results related to model updates (avg. annual)

Description	Baseline 2020	Baseline 2021	Change
Storage (AF)	327,600	281,000	-46,600
Nacimiento Stage (Ft)	767	753	-14
San Antonio Stage (Ft)	708	704	-4
Non-Flood Control Releases (AF)	127,700	190,800	63,100
Flood Control Releases (AF)	80,100	57,600	-22,500
SRDF Diversion (AF)	9,700	9,600	-100
SRDF Diversion Days	138	136	-2

Notes
1. Values greater than 1,000 have been rounded to the nearest hundred.

The average combined storage didn't change much between the two baseline versions but how that water is moving through the system and accounted for changed.

Salinas Valley Operational Model Analysis

- Baseline holds land use constant at 2014 conditions.
- The model reflects current fully-functioning operations across entire period (1967-2014)
  - Held steady except adding tunnel and spillway in project scenarios.
- The high infiltration in the Salinas River places great demand on the reservoirs such that the additional water placed in storage is used up much more quickly (with or without the tunnel).
- Tunnel does a good job of moving a lot of water to San Antonio.
- Increased storage makes more water available, especially in non-wet years.

Model capabilities

- Provides a large range of data for evaluation.
- Future land use or climate data can be added.
- Can evaluate benefit of releases in 3rd consecutive dry year.

SVOM Results Summary

Annual average, all year types

2021 Baseline	Description	Tunnel Only	Tunnel + 7' Spillway Raise
281,000 af	Change in Combined Storage (af)	+39,000	+53,500
753 ft	Nacimiento Change in Stage (ft)	-18	-17
704 af	San Antonio Change in Stage (ft)	+29	+32
--	Tunnel Transfer (afy)	30,200	30,000
--	% of Years with Tunnel Transfer	51%	47%
190,800 af	Change in Non-Flood Control Releases (afy)	+9,900	+14,500
57,600 af	Change in Flood Control Releases (afy)	-11,700	-17,100
9,600 af	Change in SRDF Diversions (afy)	+1,000	+1,100
136 days	Change in SRDF Diversion Days	+13	+15

All differences are calculated from the 2021 Baseline scenario.
Numbers greater than 1,000 have been rounded to the nearest hundred.

Project benefits

- Aquifer is gaining more water from releases.
- Greatest benefit is in the dry years – groundwater recharge up to 48,500 AFY
- More water available for beneficial use
- San Antonio has more stored water enabling releases if Nacimiento is operationally down
- Increase in water available for SRDF diversions and operational days

Cost / Benefit Analysis

Development Work Accomplished

Desription	Prior to DWR Grant	Post DWR Grant (9/2016)	DWR Budget	Funds Remaining
Project Administration	$1,436,868	$2,712,038	$3,253,146	$541,108
Planning & Conceptual Engineering	$1,256,166			
Land Purchase Easements		$0	$124,000	$124,000
Hydrologic Modeling		$1,041,454	$674,634	($366,820)
Environmental and Permitting	$182,966	$1,074,797	$1,660,380	$585,583
Water Rights		$172,886	$550,000	$377,114
LiDAR Survey		$132,188	$132,188	$0
San Antonio Spillway Design		$947,951	$1,117,316	$169,365
Tunnel Design		$2,054,060	$2,488,336	$434,276
	$2,876,000	**$8,135,374**	**$10,000,000**	**$1,864,626**
Total Costs To Date		**$11,011,374**		

Estimate to complete

DWR Grant

Task Name	Actual Costs to Date	Budget remaining	ACTUAL % COMPLETE
DWR Grant	**$8,135,373.60**	**$1,864,626**	**81%**
Project Administration	$2,712,038.09	**$541,108**	83%
MCWRA Project Support	$922,323.30	**$276,483**	77%
Program Management	$1,789,712.69	**$264,628**	87%
Land Purchase Easements	$0.00	**$124,000**	0%
Planning / Design / Engineering and Environmental Documentation	$5,423,335.51	**$1,199,517**	82%
Hydrologic Modeling	$1,041,453.86	**$30,000**	154%
Environmental and Permitting	$1,074,797.49	**$585,583**	65%
Water Rights	$172,885.65	**$347,114**	33%
LiDAR Survey	$132,188.00	**$0**	100%
San Antonio Spillway Design	$947,950.72	**$0**	85%
Tunnel Design	$2,054,059.79	**$236,821**	83%

Capital Costs/ Funding Sources

Category	Description	Tunnel	Funding MCWRA	Funding DWR	State Fish Screen Grant	Funding Prop 218
Total	**Total**	**$226,355,736**	**$2,876,000**	**$10,000,000**	**$17,000,000**	**$199,355,736**
1000	**Project Development**	**$13,094,724**				**$7,784,738**
2000	**Tunnel Construction**	**$137,296,896**				**$120,296,896**
2500	**Spillway Modification**	**$7,484,873**				**$7,484,873**
3000	**Management & Administration**	**$18,097,721**				**$13,407,707**
4000	**Capitalized O&M Costs**	**$19,984,186**				**$19,984,186**
5000	**Contingency & Escalation**	**$21,717,265**				**$21,717,265**

Cost / Financing Analysis

Capital Costs

Capital Cost Estimate ($k - 2021)		Tunnel +Spillway Mod
1000	Project Development	$12,876
2000	Construction	$137,297
2500	Spillway Modification	$7,485
3000	Management & Administration	$18,098
4000	Capitalized O&M Costs	$19,984
4500	Capital Equipment Replacement Fund	$5,784
4600	Financing Fees	$2,896
5000	Contingency & Escalation	$21,717
Total		$226,137

Capital Costs	**$226,137 million**
Annual O&M and Debt Service for 30 years	**($14,385) million**

Financing Plan

Financing ($K)	
DWR Grant	($10,000)
CDFW Grant - Fish Screens	($17,000)
Prop 218	$199,137
Financing Assumptions	
Proposition 218 Bonds	
Interest Rate	5%
Term (Years)	30
Annual Costs ($k)	
Principal Amount To Finance	$199,137
Two years P&I Reserve	$22,000
Annual Debt Service	**($14,385)**

$1,198k per month for 30 years

Project Cost Allocation / Benefit Analysis

Cost Allocation – annual cost per acre

Debt Service Cost Allocation - $/Acre/Yr		
	Acres	Tunnel + Spillway Mod
All lands less "no charge"	418,784	-$34
Irrigated agriculture & flood lands	214,654	-$67
All lands except dry farming/grazing/vacant	257,329	-$56
Deferred Maintenance allocaton of equivalent acreage	256,105	-$56

Measurement metrics

Value of Benefits ($/AFY)	Average		Cost/Year/AF*
Change in storage	53,528	AF	$269
Change in flood releases	(17,119)	AFY	included
Change in conservation releases	14,451	AFY	$995
Improved SRDF performance	96	AFY	Included
Changes in groundwater recharge (AVERAGE)	4,598	AFY	$3,129
Changes in groundwater recharge (DRY Year)	48,486	AFY	$297

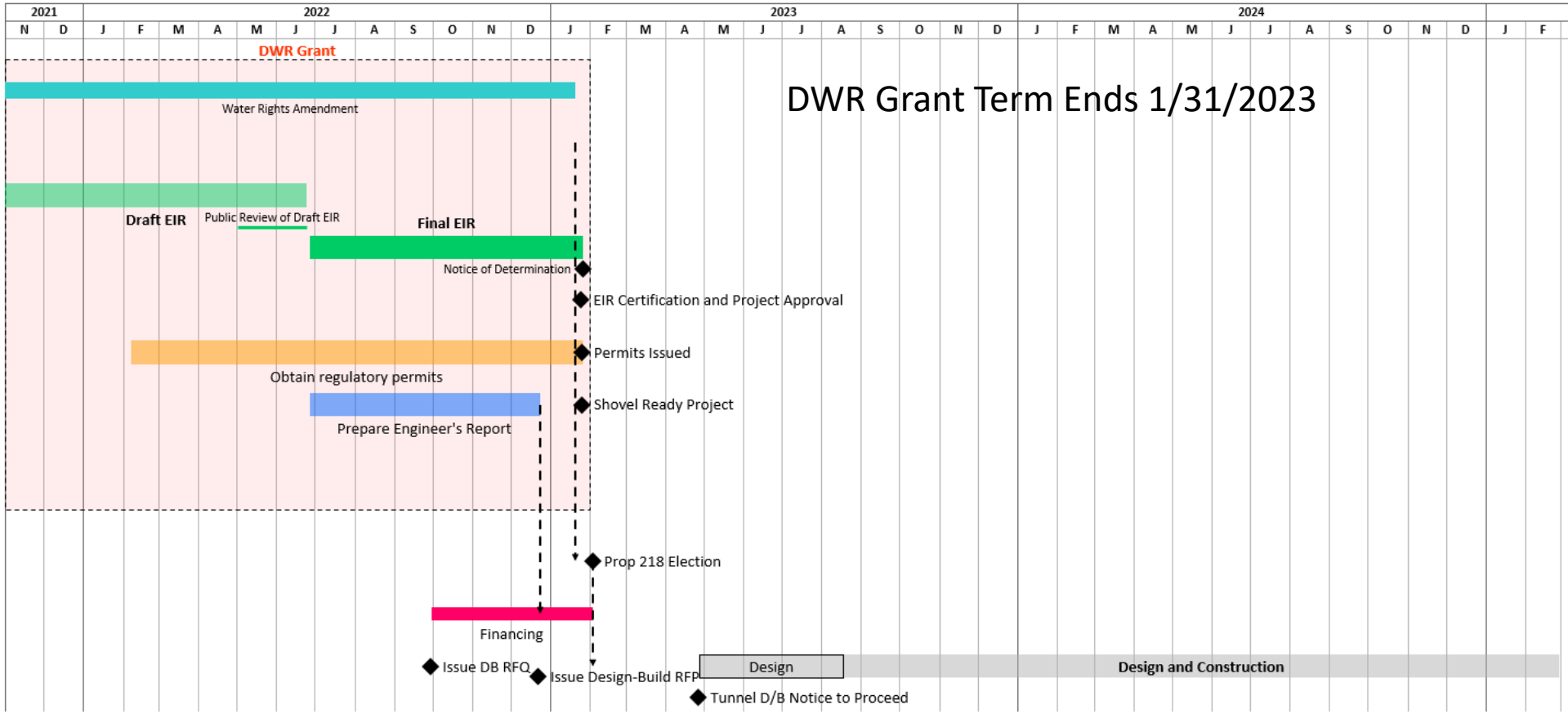
* Each metric individually measures cost of full debt service

Value of increased water benefits (various metrics)

Annual Value of Water per AFY	$/AFY*
Average conservation release (new conservation release)	**$995**
Reduced flood control releases	**$840**
Dry year increase in groundwater recharge	**$297**
Increased storage	**$268**

Greatest benefit is increased storage at $268 per AF per year

Schedule forecast



Next Steps

- Stay the course to complete the EIR
- Present the model findings and project benefits to the stakeholders and GSA
- Decide to incorporate spillway raise and spillway repairs with the tunnel project
- Prepare regulatory permit applications and begin consultations
- Prepare the Engineer's Report for Prop 218 financing
- Seek State and Federal grant funding for shovel ready project
- Prepare bid documents for:
  - Tunnel – Design Build
  - Spillway modifications – Design Bid Build

Questions