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PASSCODE: 3802020

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NOTICE REGARDING (COVID-19)

Before public comments are considered, the record will reflect that pursuant to the provisions of Executive Order N-29-20 issued by Governor Gavin Newsom on March 19, 2020, this meeting will be conducted by teleconference only.



Call to Order

Board of Directors Workshop - Engineering
Tuesday, March 13, 2021

Chairperson – Director Harrison
Vice-Chair – Director Hayes



Introductions

Following the introduction of Directors and District staff, participants may use this time to state their name and agency/affiliation in order to be included in the formal record of attendees.



Public Comment

Any person may address the Board on matters within its jurisdiction.

Please use the chat feature on the Zoom toolbar or digitally raise your hand to let the moderator know you would like to make a comment.



Summary of Previous Meeting (Pg. 3)

Board of Directors Workshop – Engineering
March 9, 2021



Presentation Item 4.1 (Pg. 10)

Joanna Gibson, MS – Habitat Conservation Program Manager

Presentation on United States Geological Survey Western Ecological Research Center 2020 Surveys/Studies within the Upper SAR HCP Planning Area

Staff Recommendation
Receive and file



*San Bernardino Valley Municipal Water District
USGS workplan 2020*



- 1) Santa Ana Sucker Genetics
- 2) Santa Ana Sucker Translocated Population Genetics Management Plan
- 3) Mountain Yellow-legged Frog Translocation in the Santa Ana River Watershed
- 4) Mountain Yellow-legged Frog eDNA Monitoring Technique Study
- 5) Updated Population Survey for Western Spadefoot in the SAR HCP Plan Area
- 6) Updated Population Survey for Santa Ana Speckled Dace in the SAR HCP Plan Area
- 7) Updated Population Survey for the Western Pond Turtle in the SAR HCP Plan Area

Robert N. Fisher, Adam R. Backlin, Elizabeth A. Gallegos, and Jonathan Q. Richmond





The SoCal Solution → Habitat Conservation Planning/NCCP

A Regional Response to resolve biodiversity and development conflicts

Each subarea plan has it's own goals

Deliver habitat and species protections

Planning for Biodiversity



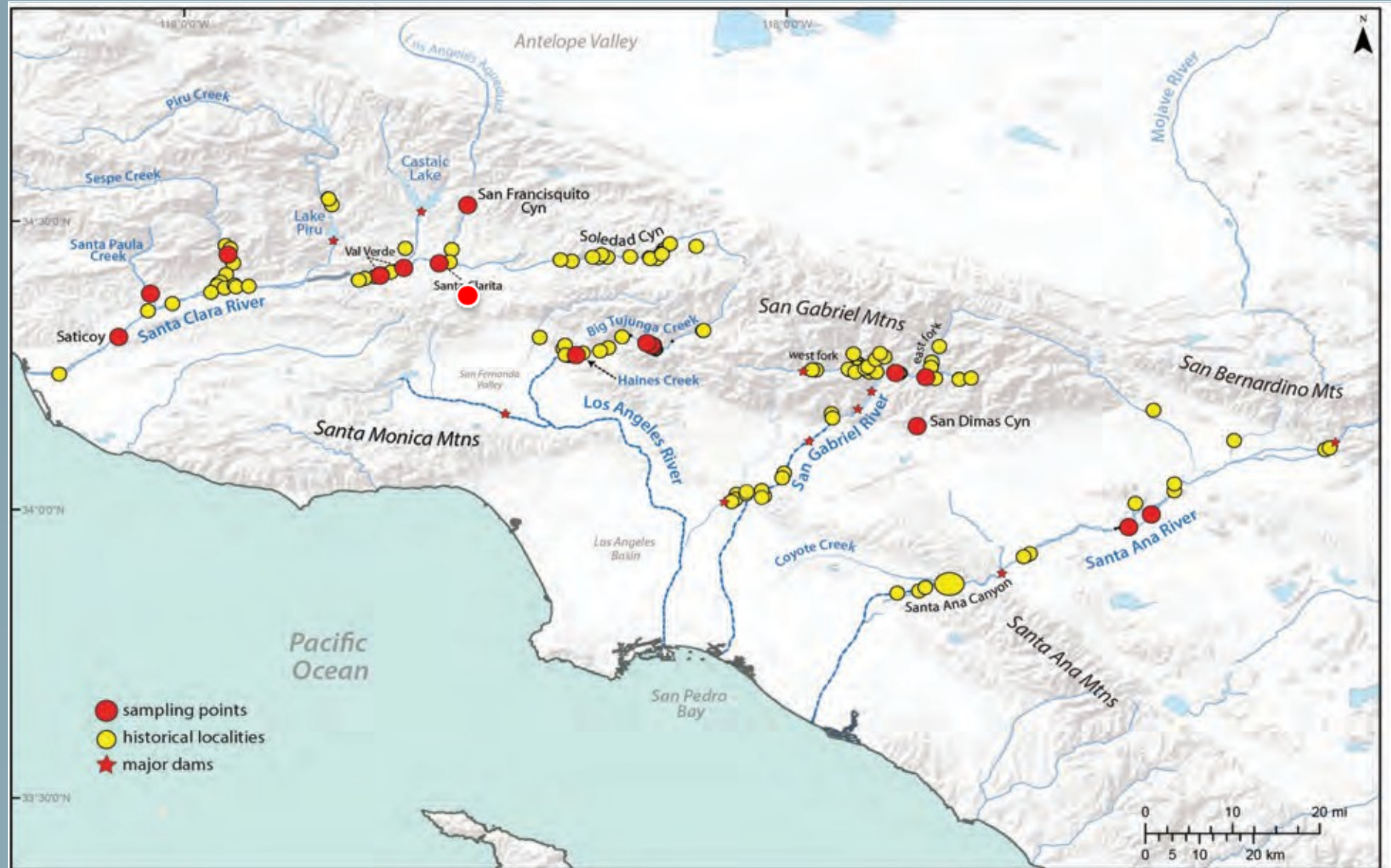
- NCCP Region
- Subregional Planning Areas
- Camp Pendleton Resource Management Plan
- Coastal/Central Orange County NCCP

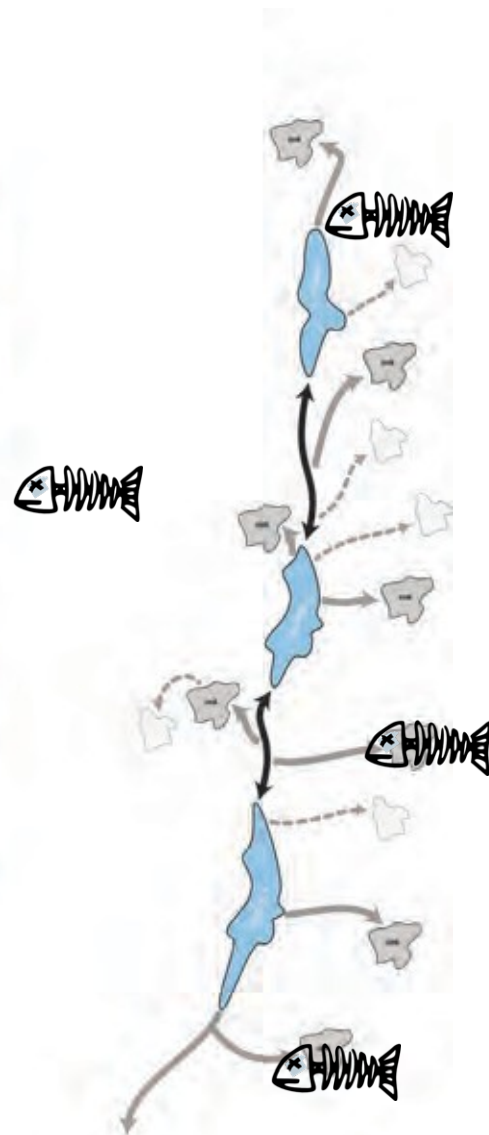
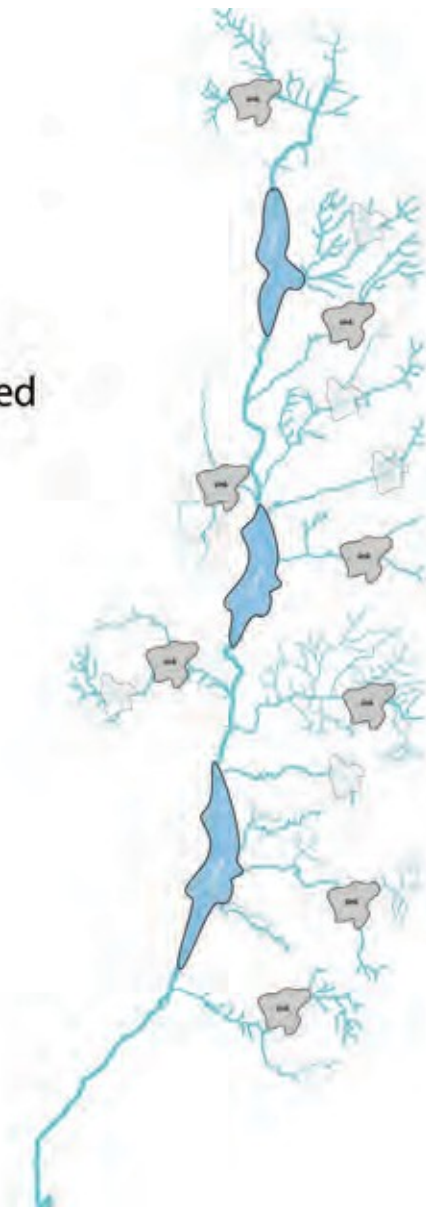
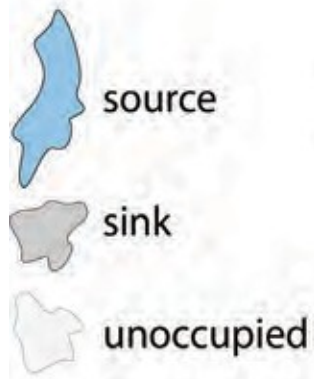
Tasks

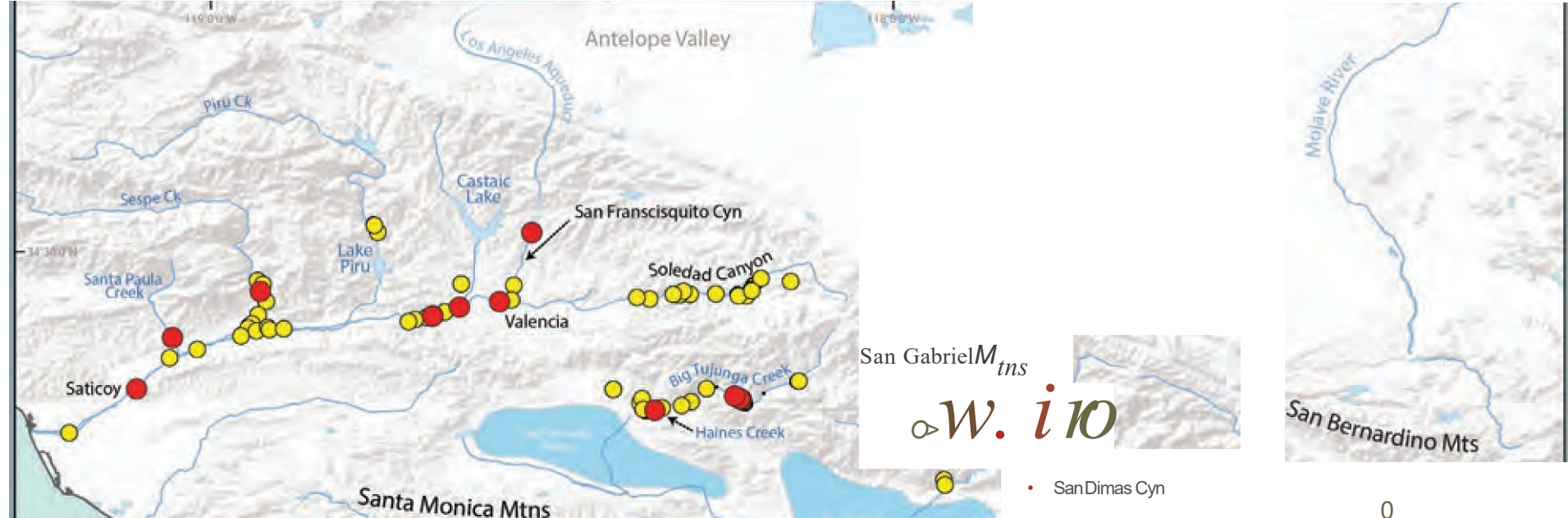
- 1. Examine population genetic structure and diversity of Santa Ana Sucker using genomic sequencing data**
 - Emphasis on testing for possible declines in genetic diversity in the Santa Ana River over the past 20 years
- 2. Develop a genetics Management Plan**



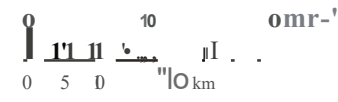
Photo by Sam Stuart

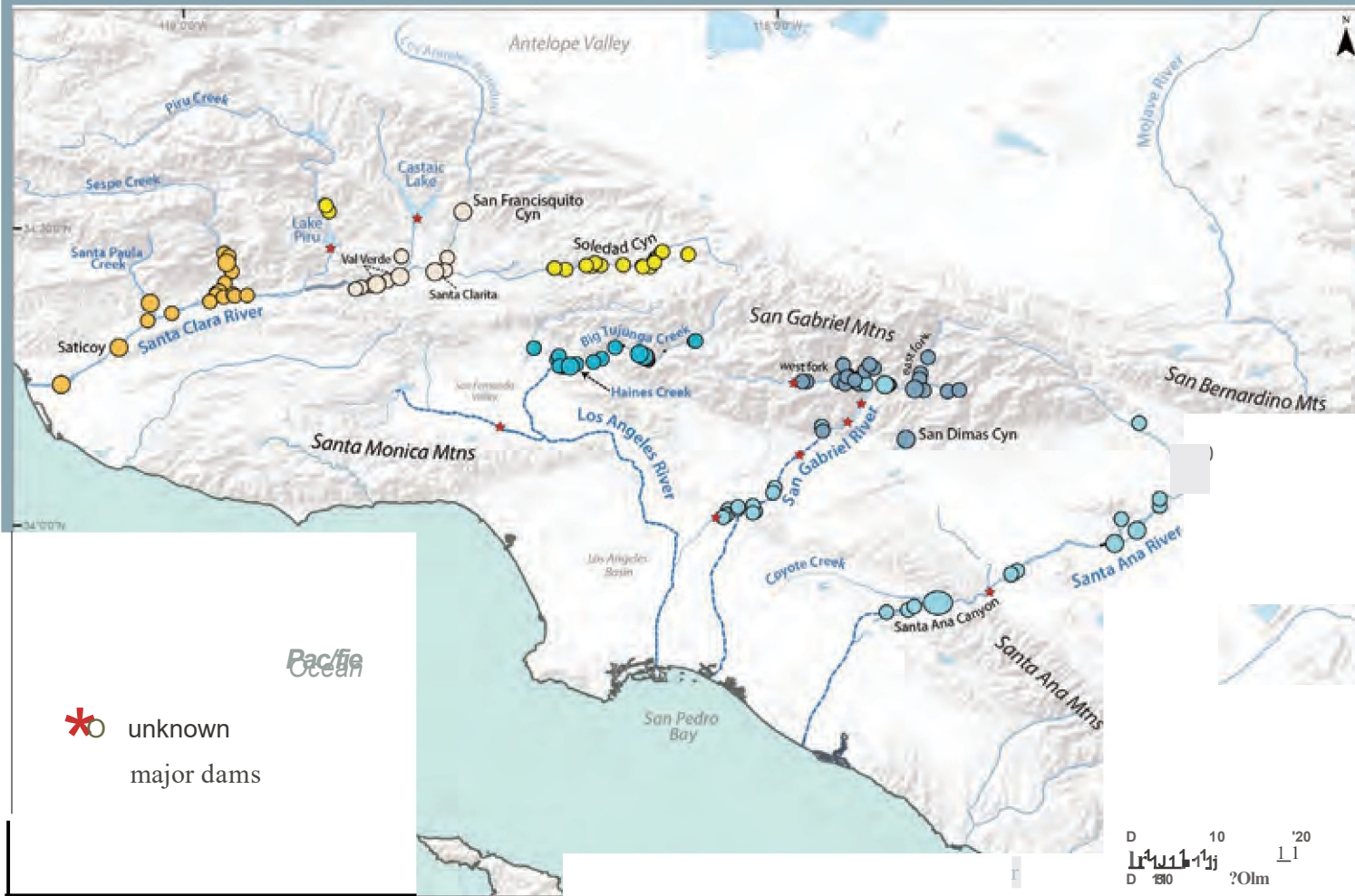




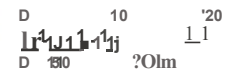


- Sampling points
- historical localities





* unknown
 major dams



Santa Clara River

Los Angeles River

San Gabriel River

Santa Ana River



Summary



- **Genomic sequencing data**

- All data have been collected and are now being analyzed

- Genome-wide SNP data (previous datasets consisted of microsatellites and mtDNA only)

- Includes samples from all known sites where sucker occur

- Includes temporal samples for the San Gabriel and Santa Ana Rivers (2000; 2009-10; 2019; had to omit 2013 samples because of tissue degradation) to test for possible loss of genetic diversity through time

- Data can be used to further inform sources for translocation

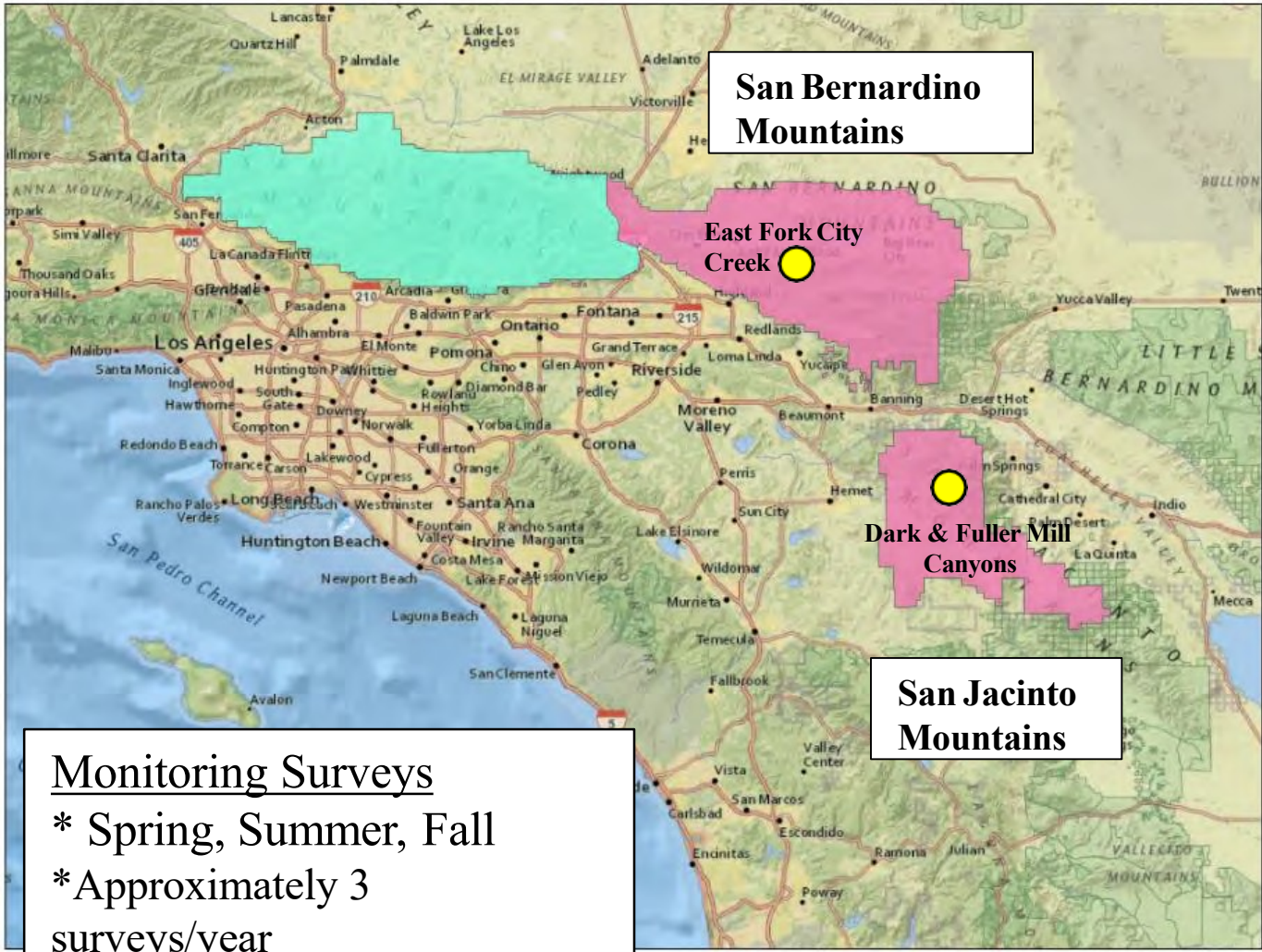
- Develop a set of target loci that can be used for future monitoring

- **Draft of the Genetics Management Plan completed and under review by SBVMWD**

Mountain Yellow-legged Frog

- Occupies the southern Sierra Nevada & the southern CA mts
- Has declined from over 99% of its historic range
- Listed as Endangered by USFWS in 2002 and by the State in 2012
- 9 remaining populations in southern California (< 200 ind.)
- San Gabriel Mts (5 populations)
- San Bernardino Mts (1 population)
- San Jacinto Mts (3 populations)





Monitoring Surveys
 * Spring, Summer, Fall
 * Approximately 3 surveys/year



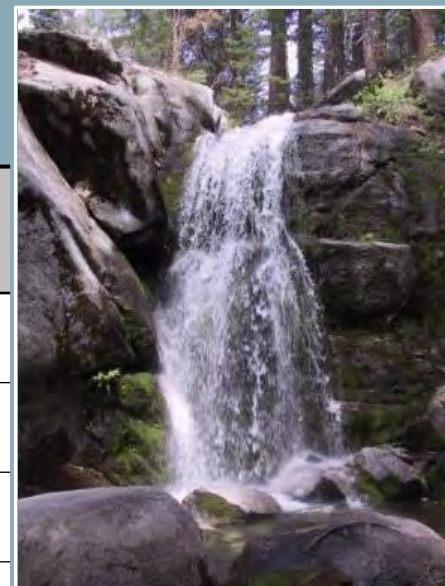
Mountain Yellow-legged Frog - 2020

| Site Name | Egg Mass | 1st Year Tadpole | 2nd Year Tadpole | Subadult | Adult ¹ | Individual Adults ² |
|--------------------------|----------|------------------|------------------|----------|--------------------|--------------------------------|
| City Creek, East Fork | 0 | 6 | 0 | 2 | 27 | 20 |
| Dark Canyon, Main Stem | 0 | 12 | 18 | 3 | 0 | 0 |
| Dark Canyon, Tributary | 0 | 330 | 405 | 158 | 26 | 12 |
| Fuller Mill Creek, Lower | 0 | 0 | 0 | 0 | 0 | 0 |
| Fuller Mill Creek, Upper | 0 | 0 | 0 | 0 | 1 | 1 |
| Willow Creek | 0 | 0 | 0 | 0 | 0 | 0 |
| Tahquitz Creek | 0 | 0 | 0 | 0 | 0 | 0 |

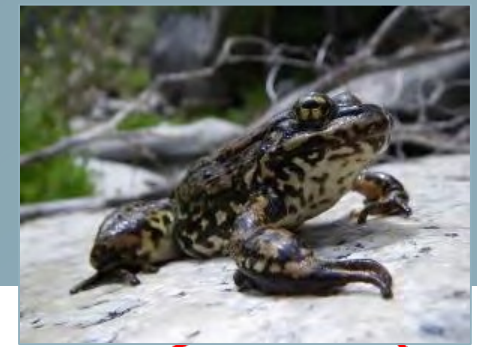
¹ This represents the total number of adults detected, including escaped and recaptured.

² This represents the total number of individually marked adults captured.

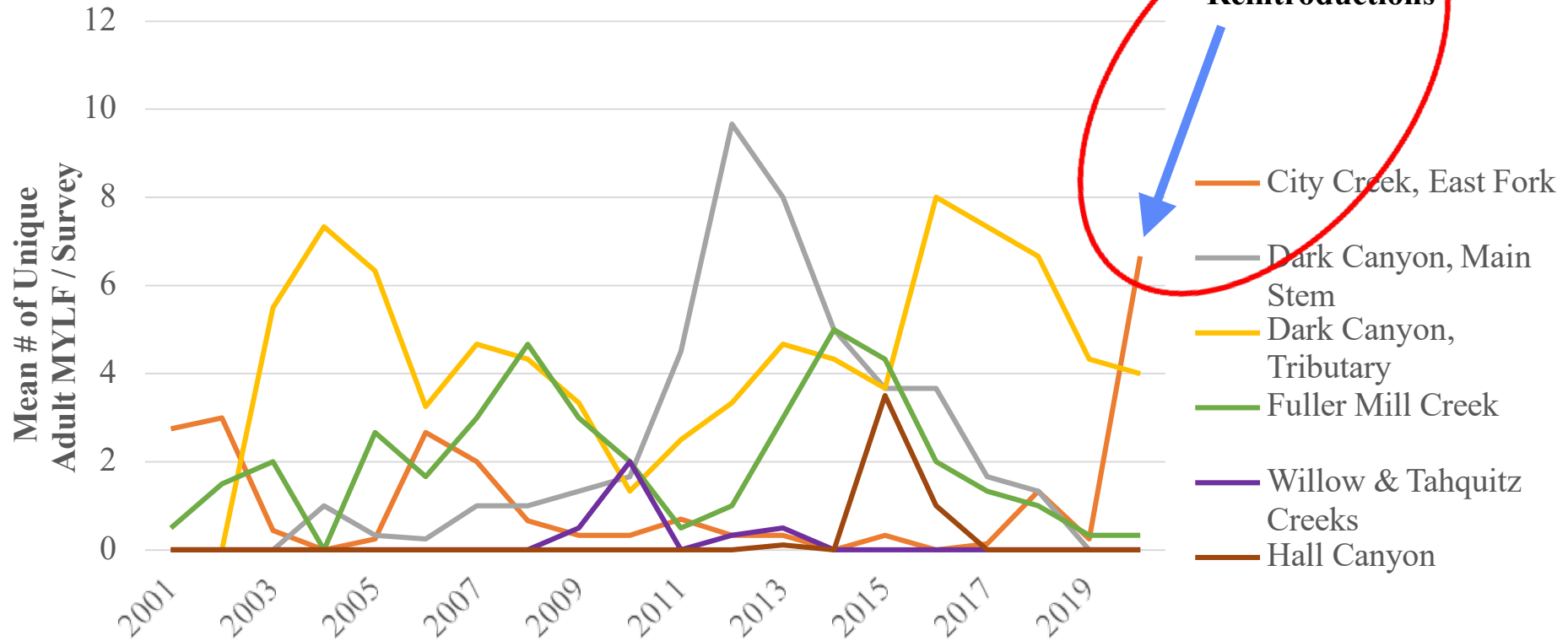
Note: The survey effort for each site varies. Refer to Table 2 for total number of surveys completed.



Mountain Yellow-legged Frog



San Bernardino National Forest
MYLF Unique Adult Capture Rates



Mountain Yellow-legged Frog

Reintroductions, captively bred from San Diego Zoo

| Mountain Range | Site Name | Release Date | Age Class | Total Released | Total Released/Site |
|-----------------------|-----------------------|--------------------|------------------|----------------|---------------------|
| San Bernardino | City Creek, East Fork | May 2, 2020 | Subadults - 1yr | 15 | 135 |
| | | May 2, 2020 | Subadults - 2 yr | 13 | |
| | | June 6, 2020 | Subadults - 2 yr | 36 | |
| | | June 6, 2020 | Subadults - 2 yr | 36 | |
| | | June 6, 2020 | Subadult - 2 yr | 35 | |
| San Jacinto | Stone Creek | June 18, 2020 | Tadpoles | 261 | 394 |
| | | September 18, 2020 | Tadpoles | 10 | |
| | | | Subadults | 89 | |
| | | | | 34 | |
| | Dark Canyon | July 3, 2020 | Tadpoles | 222 296 | 518 |
| | Willow Creek | August 10, 2020 | Subadults - 1yr | 23 | 220 |
| | | | Subadults - 2 yr | 21 | |
| | | | Subadults - 1yr | 23 | |
| | | | Subadults - 2 yr | 21 | |
| | | | Subadults - 1yr | 23 | |
| Subadults - 2 yr | | | 21 | | |
| Subadults - 1yr | | | 23 | | |
| Subadults - 2 yr | | | 21 | | |
| Subadults - 1yr | | | 22 | | |
| Subadults - 2 yr | | | 22 | | |
| TOTAL RELEASED | | | | | 1267 |



Using Environmental DNA to Aid in Mountain Yellow-legged Frog Recovery in Southern California



Mountain Yellow-legged Frog - eDNA

Environmental DNA (eDNA)

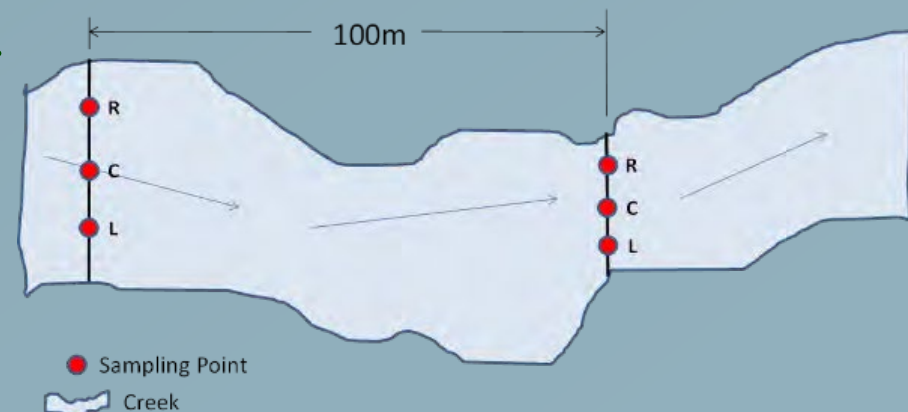
- Species shed DNA from skin cells, feces, urine, etc.
- Shed DNA in environment is known as eDNA
- eDNA can be collected from water samples using flow-through filters
- Analyzed with DNA ‘fingerprinting’ techniques.



Mountain Yellow-legged Frog - eDNA

Sampling

- We sampled water in 2012 from 3 streams known to support extant frog populations, >500 samples
- Evaluate each sample for 4 species (MYLF, trout, garter snake, Bd)
- To evaluate optimal timing of sampling, we collected and filtered water samples in the Summer and Fall.
- Filters are preserved in 95% ethanol



Mountain Yellow-legged Frog - eDNA

Potential Applications

- Conduct large scale inventory surveys for *R. muscosa* across historically occupied range & release sites
- Conduct inventory surveys that are often difficult to survey
- Confirm presence of trout within streams for *R. muscosa* restoration efforts



Mountain Yellow-legged Frog - eDNA

SBVMWD Funding

- 2020: COVID-19
- Set up an agreement with Washington State University, Caren Goldberg's Lab
- Develop assays
- Run samples



Updated Population Survey for the Western Spadefoot with Area



Methods

- Breeding pond surveys for Western Spadefoot egg masses and tadpoles
 - Dip nets
 - Visual encounter surveys



Results

- 12 sites surveyed in the Santa Ana River Watershed
- Multiple ponds per site were sampled
- Western spadefoot detected in 6 of the 12 sites

| | |
|--|--|
| Alberhill Creek | Santa Ana River Wildlife Area |
| Box Springs Mountain Reserve | Santa Rosa Plateau Ecological Reserve |
| El Sobrante HCP | Steele Peak Reserve |
| Harford Springs Reserve | Badger Canyon |
| Lake Mathews Ecological Reserve | Borea Canyon |
| Potrero Reserve | Sweetwater Basin |

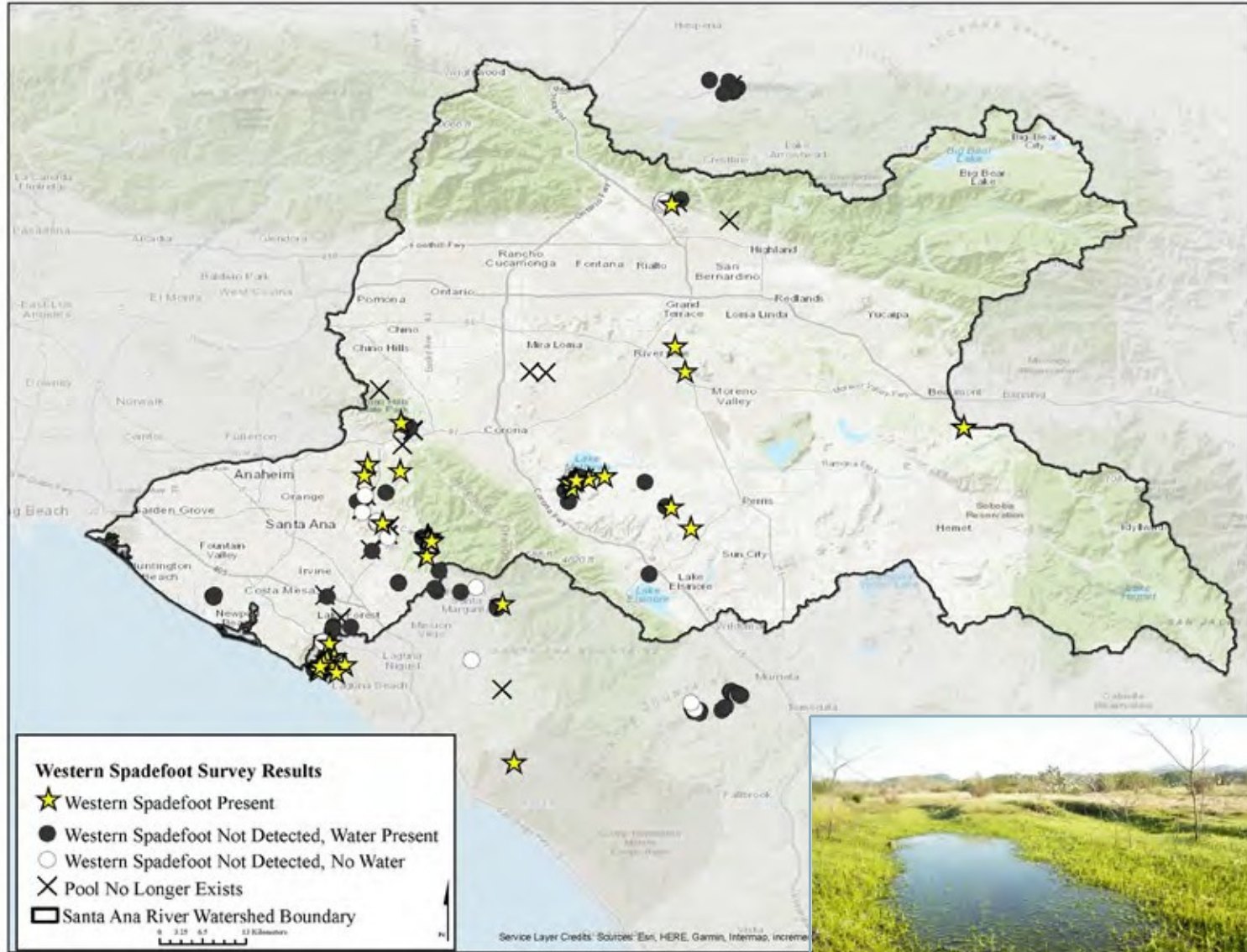
Results

- 12 sites surveyed in the Santa Ana River Watershed
 - Multiple ponds per site were sampled
- Western spadefoot detected in 6 of the 12 sites



| Count of Pools | Pool Exists | Pool does not Exist | Grand Total |
|------------------------|-------------|---------------------|-------------|
| Pools w/water | 72 | | 72 |
| No Spadefoot | 41 | | 41 |
| Yes Spadefoot | 31 | | 31 |
| Pools w/o water | 16 | 19 | 35 |
| No Spadefoot | 15 | 19 | 34 |
| Yes Spadefoot | 1 | | 1 |
| Grand Total | 88 | 19 | 107 |

Results



Updated Population Survey for the Santa Ana Speckled Dace within the SAR HCP Plan Area



Santa Ana Speckled Dace

- Covered species in the Upper Santa Ana River HCP
- 1 of 5 native fishes remaining in the watershed
- In southern California, dramatic declines due to habitat loss, altered hydrology, and the effects of fire/flood regimes



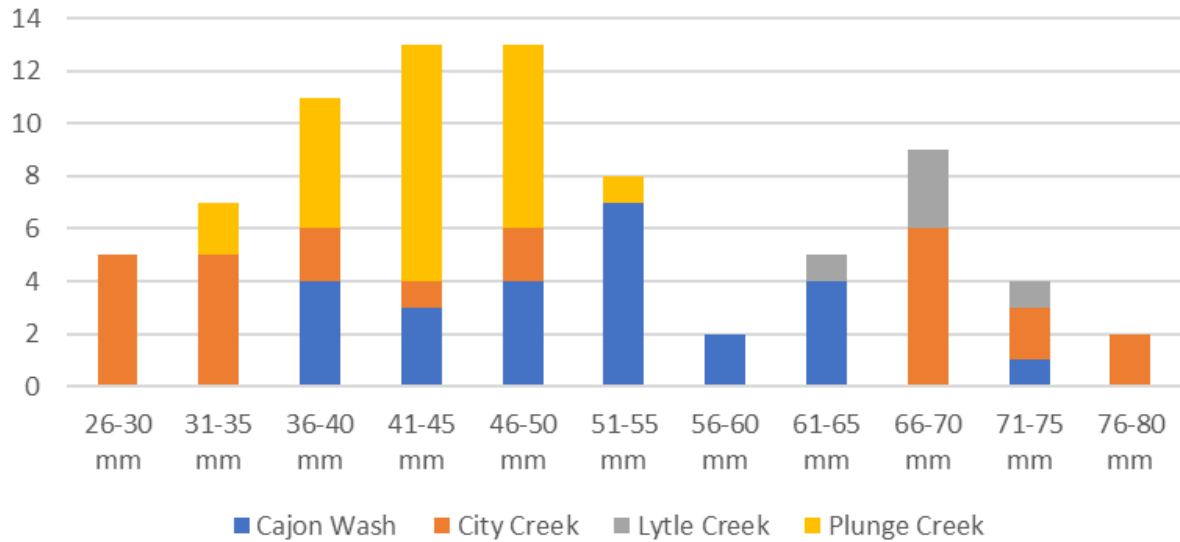
Santa Ana Speckled Dace

| Site Name | Survey Date | Speckled Dace Observed |
|--------------------------|-------------------|------------------------|
| City Creek | November 13, 2020 | Yes |
| Cajon Wash | | Yes |
| Plunge Creek | November 17, 2020 | Yes |
| Lytle Creek | November 20, 2020 | Yes |
| Lytle Creek, Middle Fork | | No |
| Hemlock Creek | November 23, 2020 | No |
| Fredalba Creek | | No |
| Hemlock Creek | December 9, 2020 | No |
| Waterman Creek | December 10, 2020 | No |



Santa Ana Speckled Dace

Speckled Dace Size Classes



*Updated Population Survey for the Southwestern Pond
Turtle within the SAR HCP Plan Area*



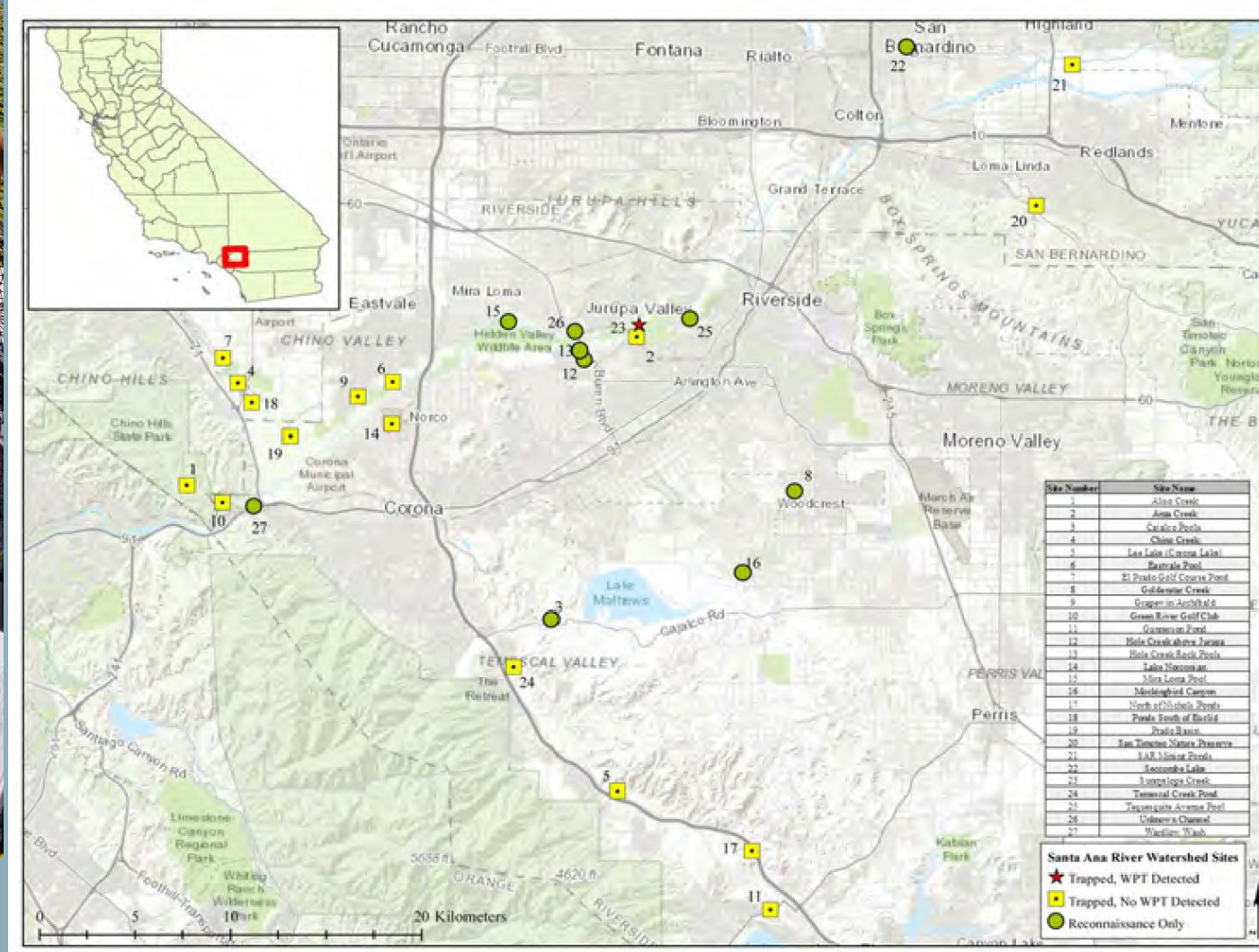
Methods

Southwestern Pond Turtles

- 27 sites habitat suitability was evaluated
- 21 sites were trapped (4 days/site)
- 3 sites were seined
- 4 sites determined unsuitable



Updated Population Survey for the Southwestern Pond Turtle within the SAR HCP Plan Area



Results

Southwestern Pond Turtles

- Detected Pond Turtles at 1 site – Sunnyslope Creek
- 12 sites had non-native turtles
 - Red-eared sliders, spiny soft-shelled , and false map turtles



Next Steps



- Future Santa Ana Sucker scenarios
- Continue MYLF monitoring and restoration
- Awaiting results for eDNA
- Continue to resolve population sizes for Southwestern Pond Turtles
- Expanding baseline information to other species including Two-striped and Red-sided Garter Snakes, Glossy Snakes, Horned Lizards, and more



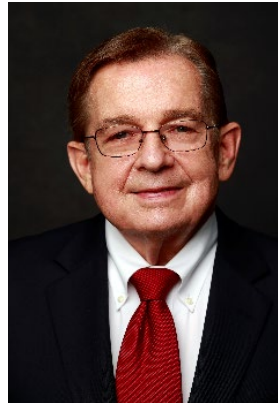
Director Comments and Discussion



**Paul
Kielhold**
President



June Hayes
Vice President



**T. Milford
Harrison**
Treasurer



**Gil J.
Botello**
Director



**Susan
Longville**
Director

Staff Recommendation

Receive and File

Discussion Item 5.1 (Pg. 13)

Cindy Saks, CPA – Chief Financial Officer/Deputy GM

Consider Proposal from PFM Solutions / Synario Software for the development of a Financial Model

Staff Recommendation

Direct Staff to bring a consultant agreement with PFM Solutions / Synario Software for the development of a Financial Model, once all agreements/documents are agreed to form by District house counsel, to a future Board meeting for consideration.

- In 2008, the District hired a consultant to create an Excel dashboard financial model to provide the Board and Staff the ability to input various scenarios to view and analyze long term financial impacts based on changing data. An update of the financial model is needed in order to inform upcoming strategic financial decisions
- In February 2021, staff prepared a Request for Proposal for a new Financial Modeling Study. Staff held a pre-proposal meeting to answer questions and subsequently the District received five proposals.
- Staff interviewed all five proposers with each firm holding unique aspects. All firms were very qualified and provided a variety of concepts and examples of their financial model.
- The costs for the financial model study proposals ranged in cost from \$30,750 (platform development + annual license fee) to \$70,050 (professional services to create Excel dashboard financial model).
- After an in-depth staff review and discussion, staff is recommending the Board consider a new type of financial model platform proposed by PFM Solutions / Synario Software.

- The Synario platform offers a purpose-built tool to help District Staff to build, maintain, and easily use financial projections. This tool includes all of our financial information such as revenue and expenses but is set up in a way that allows staff to easily test many different scenarios regarding capital projects or other initiatives that we are considering by using a toggle to select projects on or off.
- This unique tool will be very helpful to our internal planning process and assist in development of a financing strategy for our capital improvement program and other investments.
- The PFM Solutions / Synario Software proposal includes an onboarding fee of \$15,750 based on 45 hours at \$350 per hour to set up the specific Financial Model and a Licensing Fee of \$15,000 per year. This annual licensing fee would allow three interchangeable District staff to input data on budget and long-term construction costs and include the ability to run various financial scenarios.
- With the license-based fee model the modeling tool is consistently updated by the designer and maintained on the cloud.
- The proposed PFM Solutions / Synario Software proposal and subscription agreement as attached are currently being reviewed by house counsel Varner Brandt.

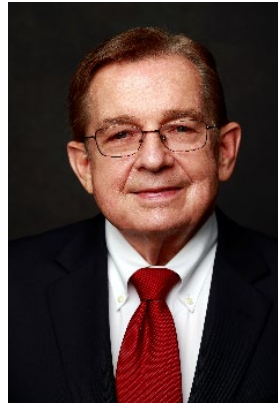
Director Comments and Discussion



**Paul
Kielhold**
President



June Hayes
Vice President



**T. Milford
Harrison**
Treasurer



**Gil J.
Botello**
Director



**Susan
Longville**
Director

Staff Recommendation

Direct Staff to bring a consultant agreement with PFM Solutions / Synario Software for the development of a Financial Model, once all agreements/documents are agreed to form by District house counsel, to a future Board meeting for consideration.



Discussion Item 5.2 (Pg. 30)

Wen B. Huang, PE, MS – Chief Engineer/Deputy GM

Consider Reimbursement Agreement with East Valley Water District for Design of the Regional Recycled Water Facilities

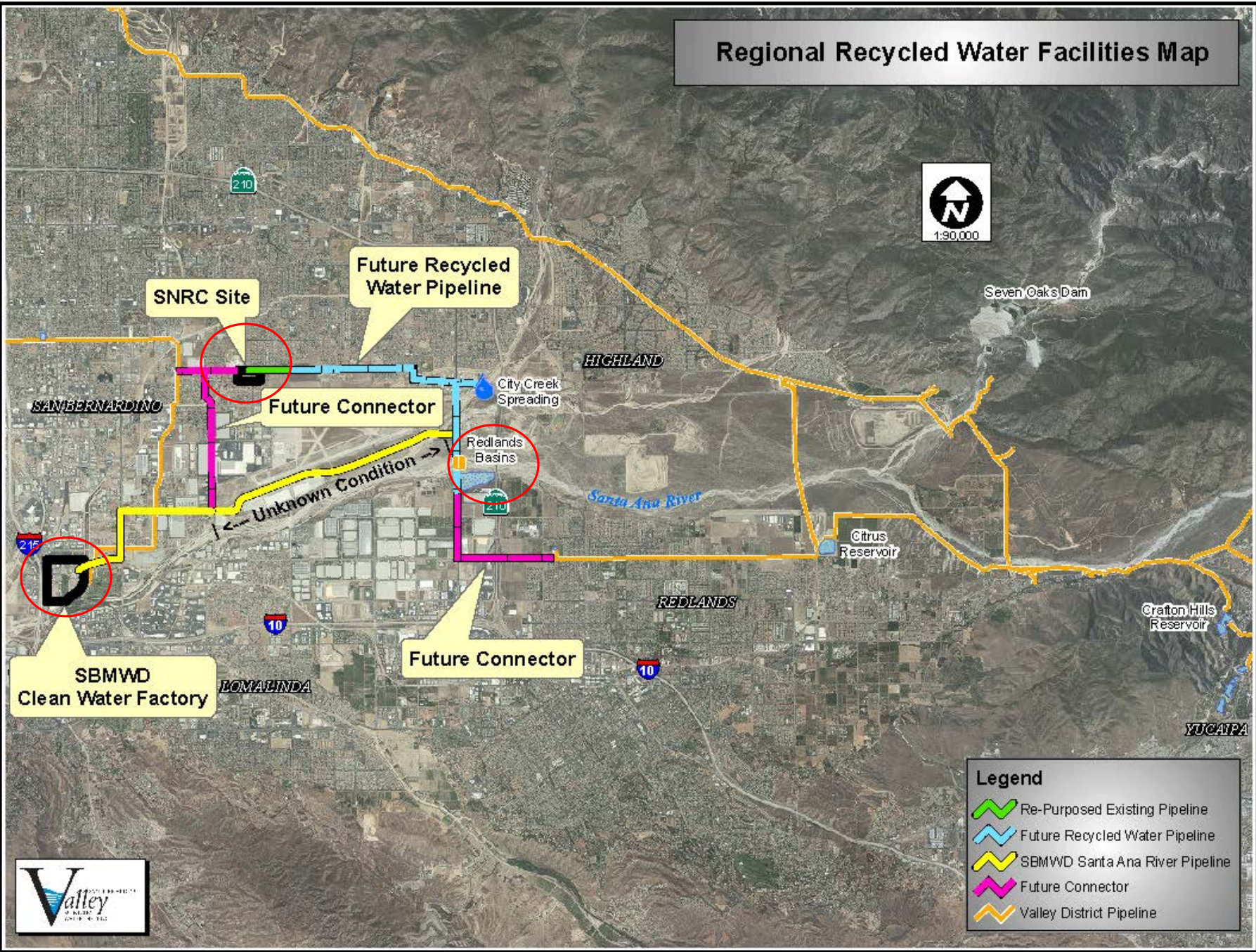
Staff Recommendation

Direct Staff to forward this item to the next Board of Directors' meeting for consideration

Background

1. Regional Recycled Water Concept Study in 2016:
 - Further development of SNRC and CWF
 - Valley District to develop Regional Recycled Water Infrastructure
2. Valley District roles:
 - Historically responsible for regional infrastructure for local and imported water
 - Continue its leadership role in managing regional water resource through development of regional recycled water facilities to support recycled water projects
 - Provide incentives through Local Resources Investment Program (LRIP)
 - Participate collaboratively in the Regional Recycled Water Ad-Hoc Committee with EVWD and SBMWD
3. Previous Arrangements:
 - Entered into two reimbursement agreements with EVWD for design and construction of Regional Recycled Water Pipeline from SNRC to Redlands Basins

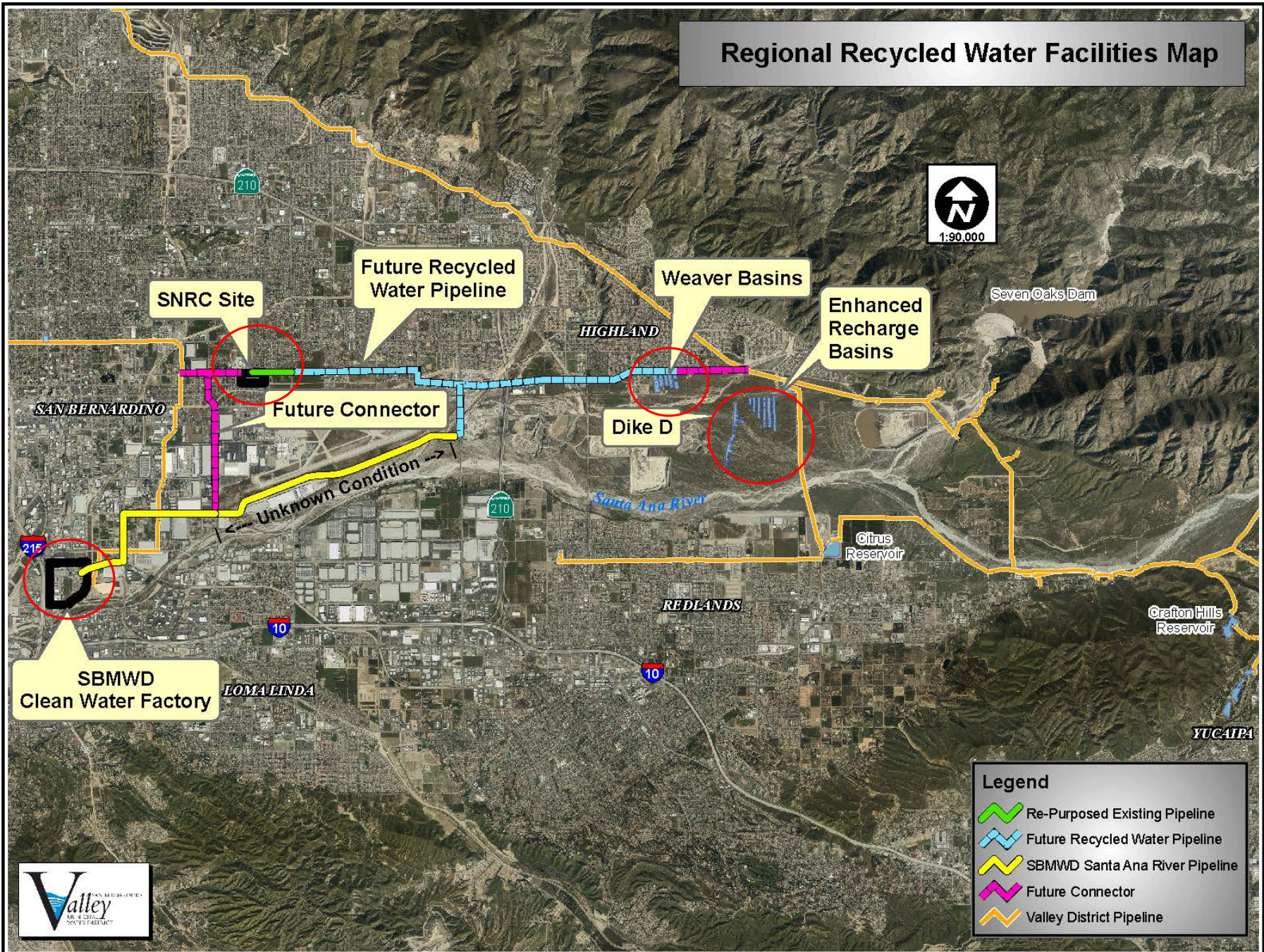
Regional Recycled Water Facilities Map

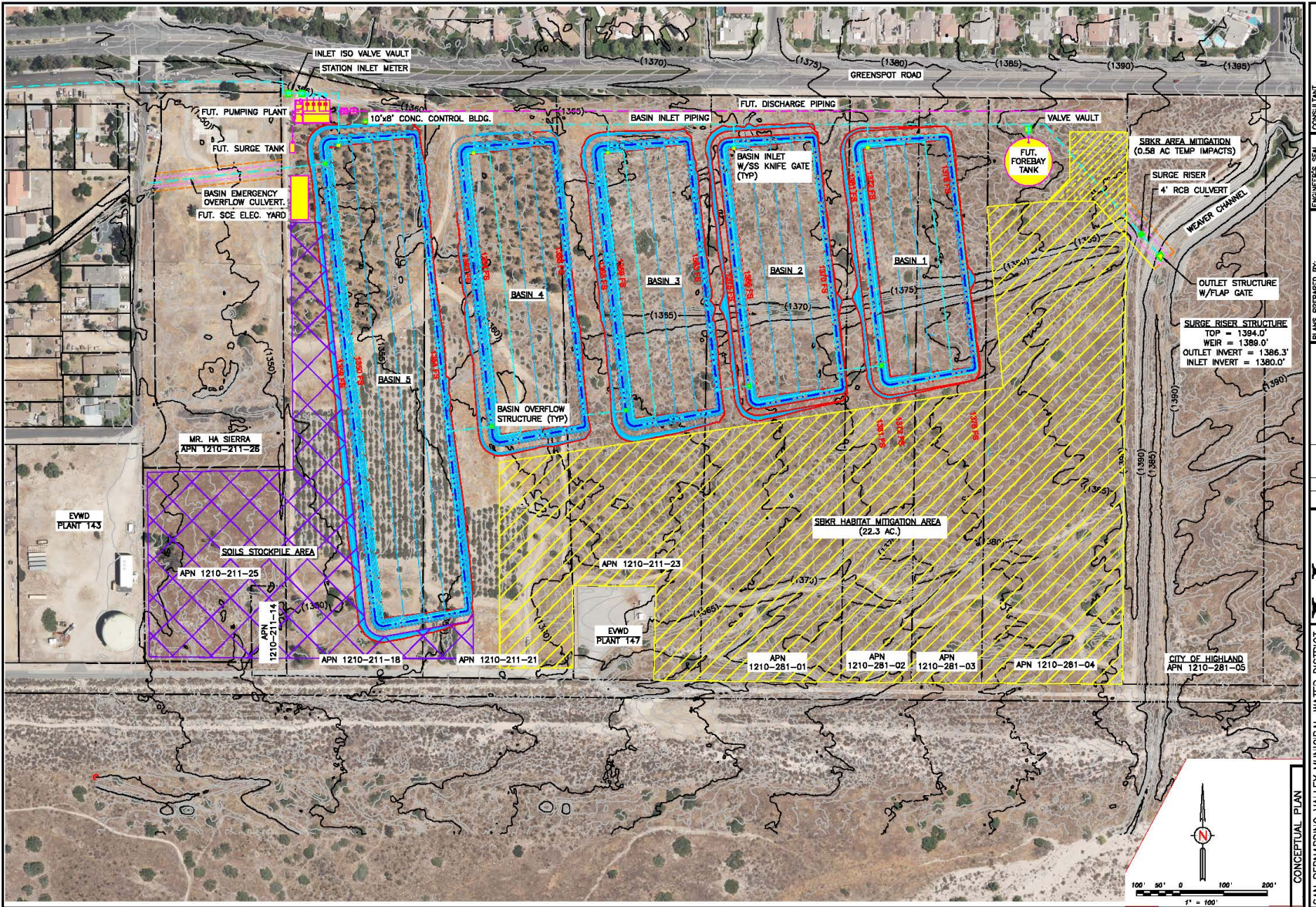


- Legend**
- Re-Purposed Existing Pipeline
 - Future Recycled Water Pipeline
 - SBMWD Santa Ana River Pipeline
 - Future Connector
 - Valley District Pipeline



Regional Recycled Water Facilities Map





CONSULTANT



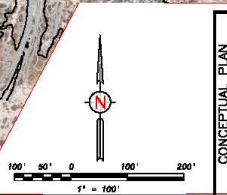
PLANS PREPARED BY: _____ DATE: _____
 PROJECT MANAGER: _____ APPROVED BY: _____
 ENGINEER: _____

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
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| | | |
| | | |



DATE: 12.24.20
 DRAWN BY: _____
 CHECKED BY: _____
 SCALE: AS SHOWN
 SHEET NO: 1800

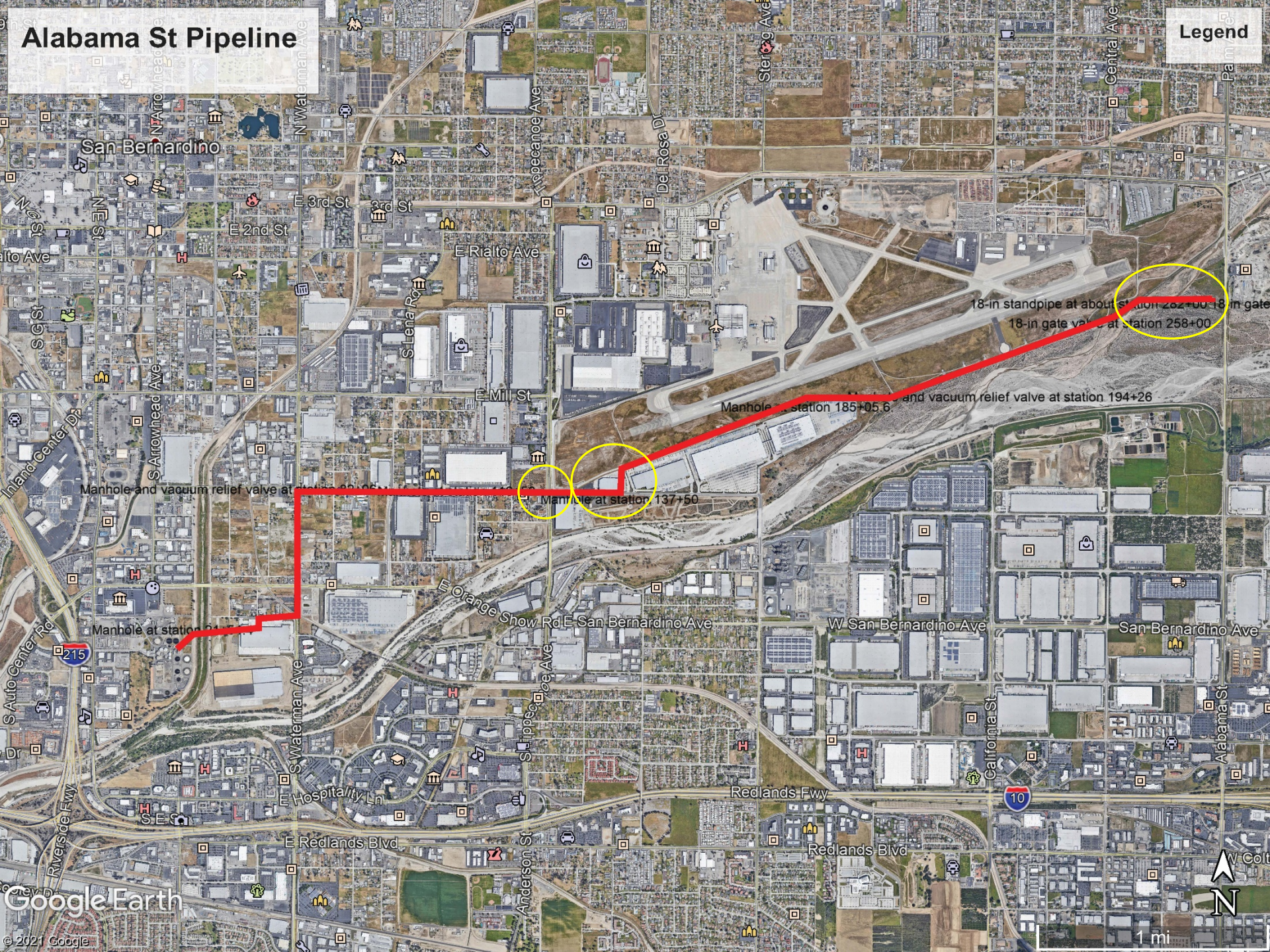
CONCEPTUAL PLAN
 SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT
 SRKR EFFLUENT BASINS PROJECT
 WEAVER BASINS



ORIGINAL SIZE: 22"x34"

Alabama St Pipeline

Legend



Summary of Scope

1. Design of Modified RRWP:
 - Reroute to Weaver Basins
 - Following Greenspot Road Corridor
 - T&M fees of \$472,971 including Design and Geotechnical Investigation
2. Design of Weaver Basins:
 - A series of 5 recharge basins based on the conceptual design layout
 - Slide gates, overflow structures, and SCADA, etc.
 - T&M fees of \$524,009 including Design and Geotechnical Investigation
 - *May expand the scope to include abandonment of a nonfunctional well*
3. Preliminary Condition Assessment for Alabama St. Pipeline:
 - Investigating and testing sections of the pipeline
 - Recommending alternatives for possible rehabilitation and reconstruction
 - T&M fees of \$279,728

Project Benefits

1. Facilitate Delivery and Recharge of Recycled Water

- Up to a total of 16,600 AFY including SNRC 11,000 AFY and CWF 5,600 AFY
- Drought-proof new water supplies to augment local rainfall and imported water
- New water supplies for up to 33,000 households annually

2. Valley District's own Basins for recharge of SWP and stormwater

- With future expansion of the RRWP to Foothill Pipeline, these basins may be used for
 - SWP Recharge
 - Stormwater Recharge

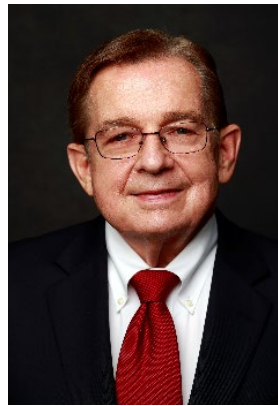
Director Comments and Discussion



**Paul
Kielhold**
President



June Hayes
Vice President



**T. Milford
Harrison**
Treasurer



**Gil J.
Botello**
Director



**Susan
Longville**
Director

Staff Recommendation

Direct Staff to forward this item to the next Board of Directors' meeting for consideration



Discussion Item 5.3 (Pg. 72)

Bob Tincher, PE, MS – Chief Water Resources Officer/Deputy GM

Consider Agreement for Recharge in San Bernardino County Flood Control Facilities

Staff Recommendation

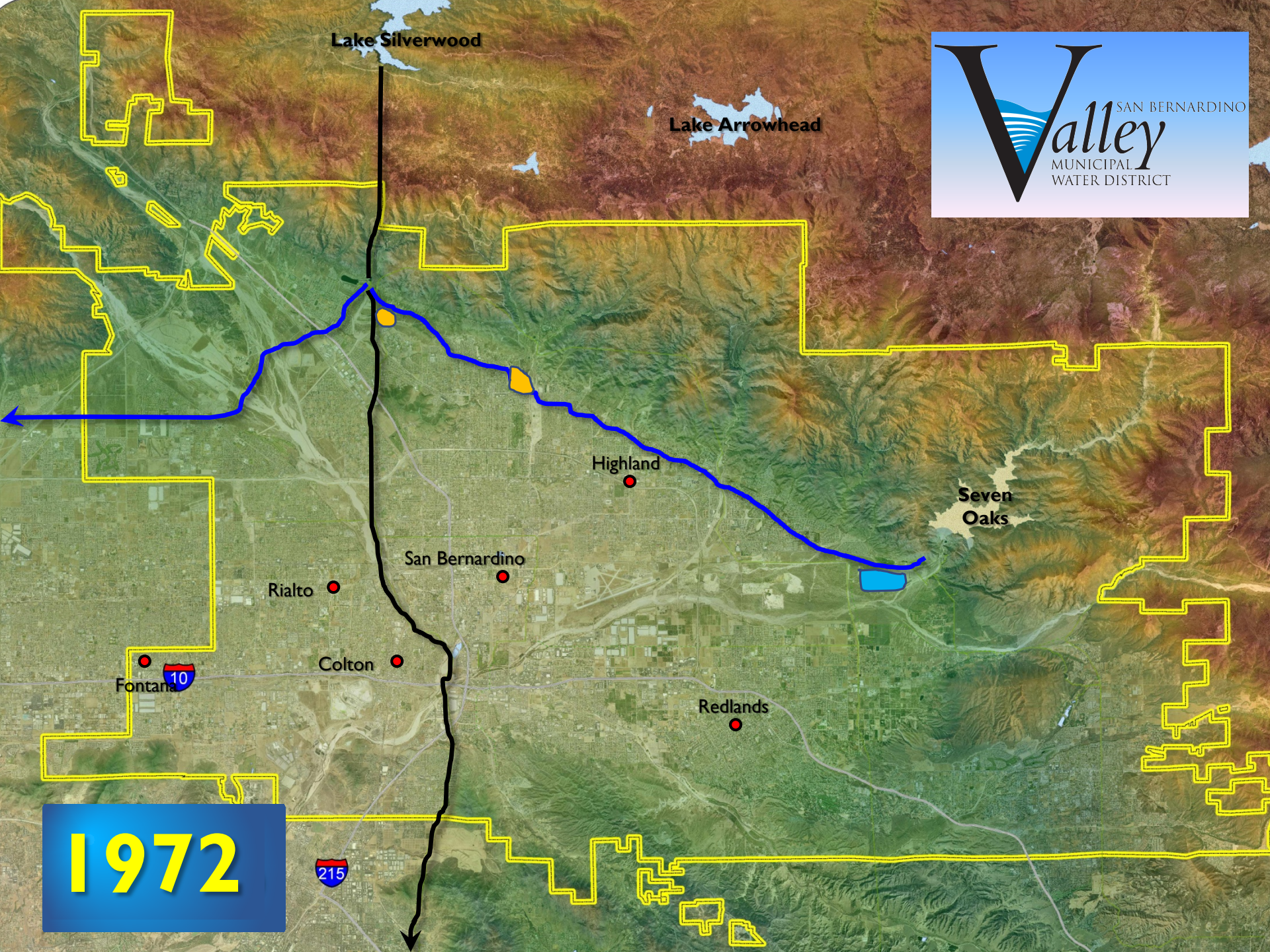
Direct staff to forward this item to an upcoming Board of Directors meeting for consideration

Overview

Background



Proposed
Agreement



Lake Silverwood

Lake Arrowhead

Highland

Seven Oaks

San Bernardino

Rialto

Colton

Fontana

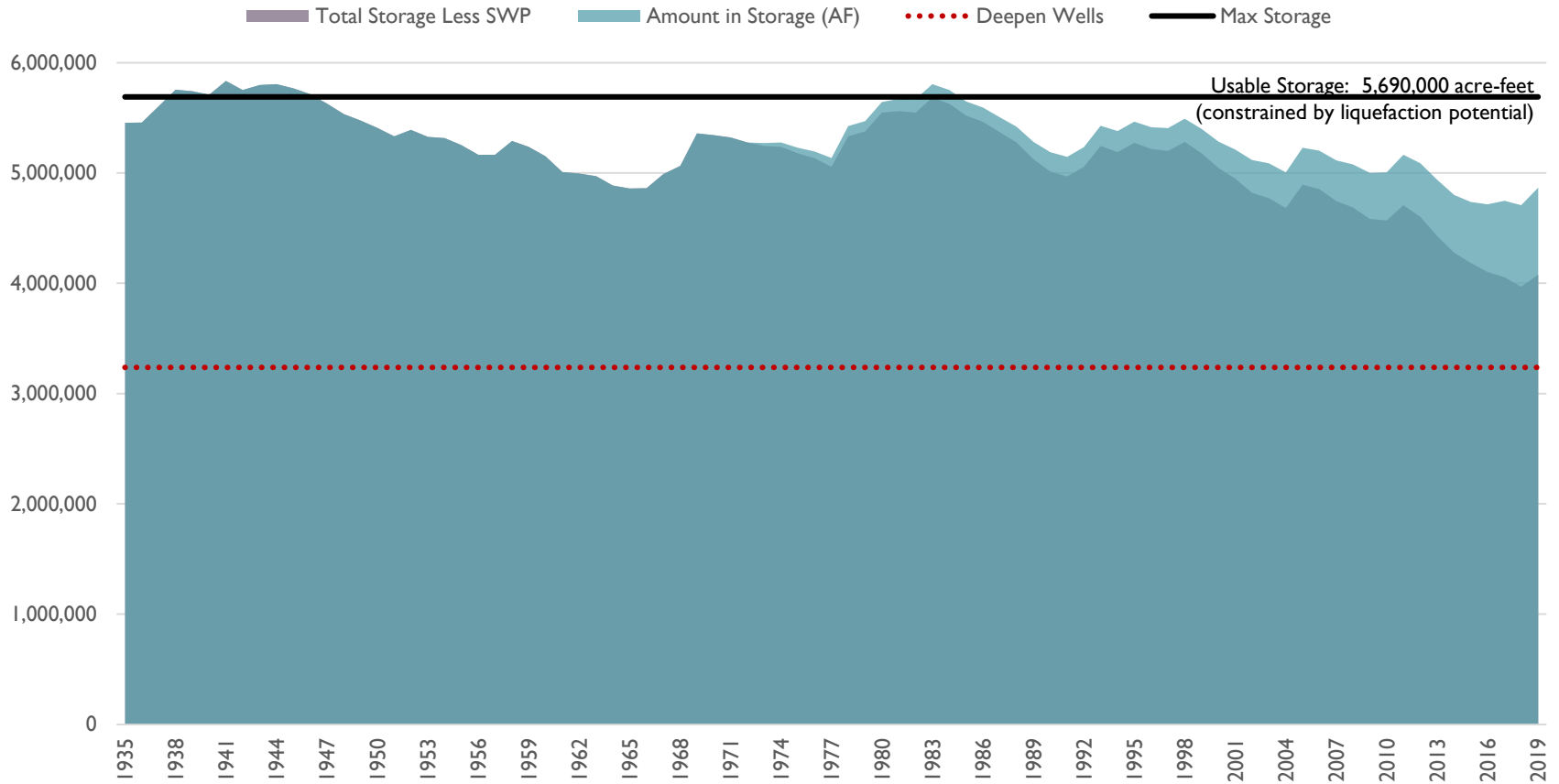
Redlands

1972

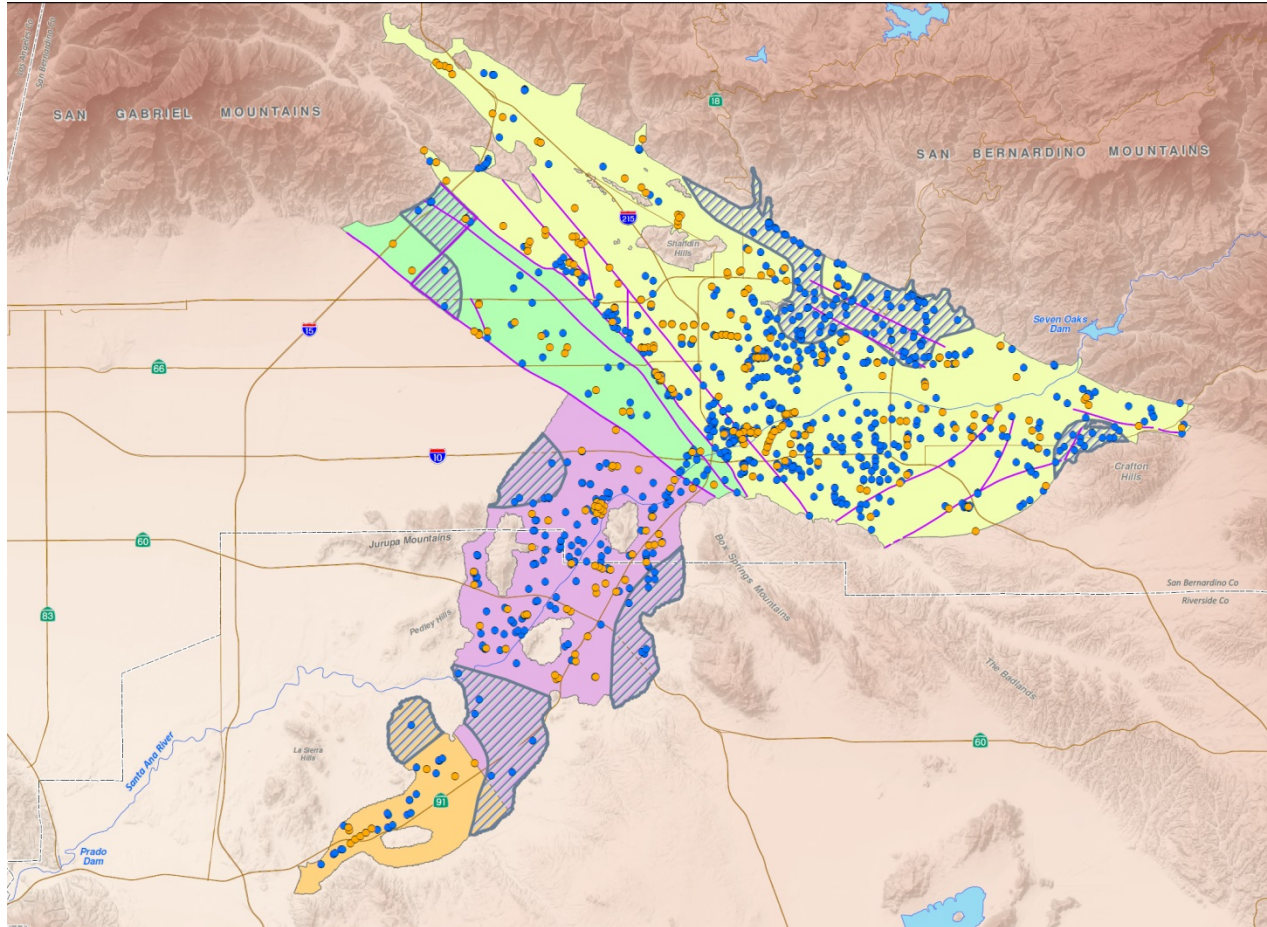
10

215

San Bernardino Basin Area Storage (in acre-feet)



Groundwater Basins Used to Deliver Water



Using Flood Control Detention Basins for Recharge

- Eliminates the need for Valley District to construct basins
- Entered into a Recharge Agreement and Common Use Agreement in 1972
 - Water conservation and recharge are part of FCD's secondary mission
- Flood Control adopted the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (IRWMP)
 - One of the IRWMP's goals is to Balance Flood Management and Increase Stormwater Recharge
- 2013 Ten Year Planning MOU for recharge

YOUR COPY

RECEIVED

1972 OCT 20 AM 11:01 AGREEMENT

S.B.V.M.W.D.

This agreement is made and entered into the date appearing at the end hereof, by and between the San Bernardino Valley Municipal Water District, a municipal water district organized and existing under the Municipal Water District Law of 1911, as amended (Water Code §§71000 et seq), hereinafter referred to as "Water District," and the San Bernardino County Flood Control District, a body corporate and politic of the State of California, hereinafter referred to as "Flood Control District".

The Water District is currently engaged in construction of a distribution line for the distribution of water to be received by the Water District from the State Water Project pursuant to Water District's contract with the State of California Department of Water Resources. The Water District's plans provide for the construction of a pipeline and related facilities for transmission of such water from the District's turnout at the State Devil Canyon Power Plant Afterbay to the Flood Control District's Waterman Canyon spreading grounds for the first stage of construction and at a later date, to extend such transmission facilities in a southeasterly direction. The said first stage plans contemplate the utilization of certain lands held by the Flood Control District, either in fee or pursuant to flood control easements, by the construction of said transmission pipeline and related facilities and the use of a portion of said lands for the spreading of imported waters for purposes of ground water recharge.

SBVMWD INCOMING
CORRESPONDENCE 05256

A723/07002

1.
SBVMWD LEGAL
DOCUMENT 00308

Flood Control and Valley District Agreement

1972 AGREEMENT

Term: Evergreen

General Elements:

1. Groundwater recharge
2. Easements to Valley District
3. Common Use Agreement
4. Valley District pays Flood Control costs for recharge of Valley District water
5. Flood control must approve plans for recharge and facilities
6. Easements/Turnouts: Devil Canyon, Badger, Sycamore, Waterman
7. Pipeline easements for Foothill Pipeline



Lake Silverwood

Lake Arrowhead

Active Recharge Project

Coming Soon...

Highland

Seven Oaks

San Bernardino

Rialto

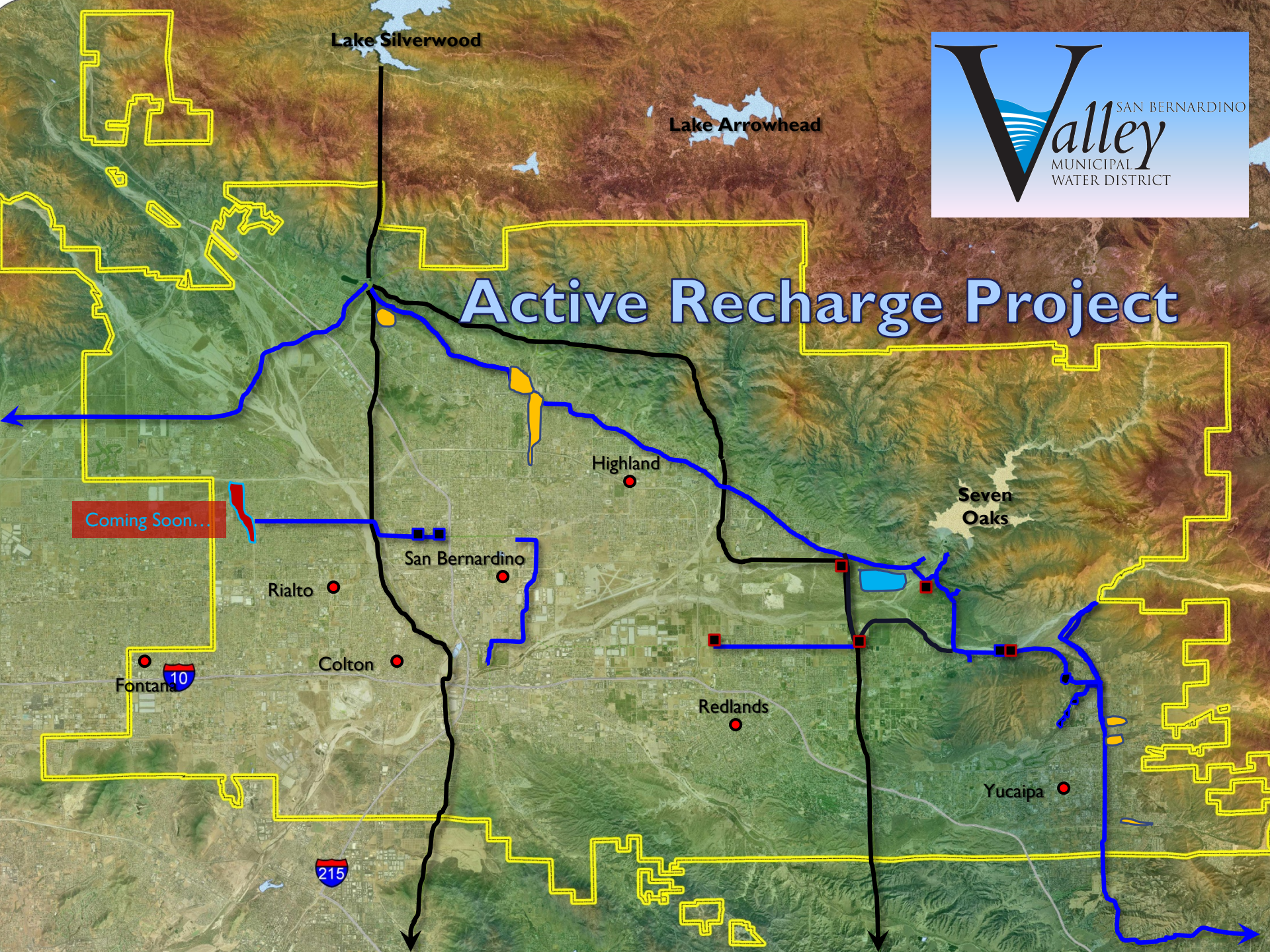
Colton

Fontana



Redlands

Yucaipa



Flood Control and Valley District Agreement

1972 AGREEMENT

Term: Evergreen

General Elements:

1. Groundwater recharge
2. Easements to Valley District
3. Common Use Agreement
4. Valley District pays Flood Control costs for recharge of Valley District water
5. Flood control must approve plans for recharge and facilities
6. Easements/Turnouts: Devil Canyon, Badger, Sycamore, Waterman
7. Pipeline easements for Foothill Pipeline

2021 AGREEMENT

Term: 20 years, six optional 5year extensions

General Elements:

- 1. Replaces all prior agreements**
- 2. Flood control takes priority**
3. Groundwater recharge
4. Easements to Valley District
5. Valley District pays Flood Control costs for recharge of Valley District water
- 6. Valley District pays \$20/AF “lease” type payment for SWP recharge only**
7. Flood control must approve plans for recharge and facilities
8. Easements/Turnouts: Devil Canyon, Badger, Waterman, **East Twin, Wilson, Oak Glen, Wildwood**
9. Complete easement for a portion of the Foothill Pipeline
10. Does not provide permits

Next Steps



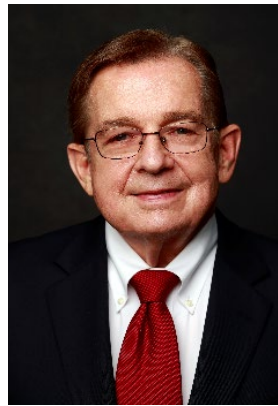
Director Comments and Discussion



**Paul
Kielhold**
President



June Hayes
Vice President



**T. Milford
Harrison**
Treasurer



**Gil J.
Botello**
Director



**Susan
Longville**
Director

Staff Recommendation

Direct staff to forward this item to an upcoming Board of Directors meeting for consideration



Future Business



Adjournment
