# Overview & Design Kick Off


## April 24, 2017

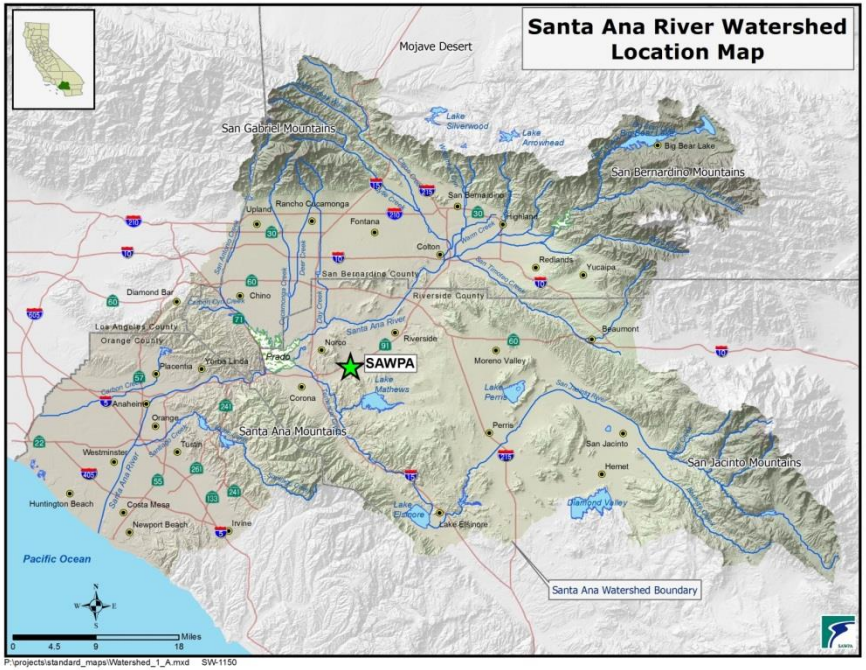
**Ian Achimore**
**Senior Watershed Manager**
**Santa Ana Watershed Project Authority**

SAWPA

Santa Ana Sucker Fish Conservation Team

# About SAWPA

- Joint Powers Authority
- Five member agencies
- Authority to plan and implement projects in the Santa Ana River Watershed
- Task force manager

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# Project Implemented By the SAS Fish Conservation Team

Team Members:

ORANGE COUNTY WATER DISTRICT
SINCE 1933

CITY OF RIVERSIDE
City of Arts & Innovation

SAWPA

Team Description: A group of public agencies whose goal is to determine the reasons for the decline of the Santa Ana Sucker (SAS) in the Santa Ana River Watershed, and devise strategies for the recovery of the species.

Santa Ana Sucker Fish Conservation Team

# About the Santa Ana Sucker

- Size <6 inches
- Feed on algae, small invertebrates
- Listed as Threatened in 2000
- Range includes Santa Ana River, Los Angeles River, and San Gabriel River basins
- “The most pressing threat to the species is the lack of suitable habitat necessary to increase population resiliency” US FWS, 2014


Photo credit: Brett Mills

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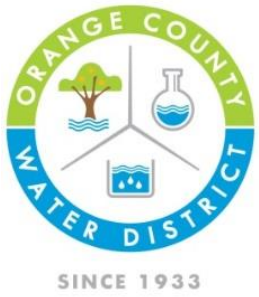
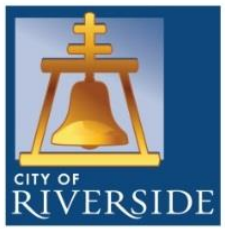
# Project Funding

- Grant from US Fish and Wildlife Service
- Supplementation Environmental Project Funding from Santa Ana Regional Water Quality Control Board
- Funding from Sucker Team
- Design cost share with San Bernardino Valley MWD




City of Arts & Innovation



Conservation Team

# Project Partners (Technical Assistance)

- San Bernardino Valley Municipal Water District
- US Army Corps of Engineers – LA District
- US Fish and Wildlife Service – Palm Springs Office
- Orange County Water District

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

SAN BERNARDINO Valley MUNICIPAL WATER DISTRICT

US Army Corps of Engineers
Los Angeles District

ORANGE COUNTY WATER DISTRICT
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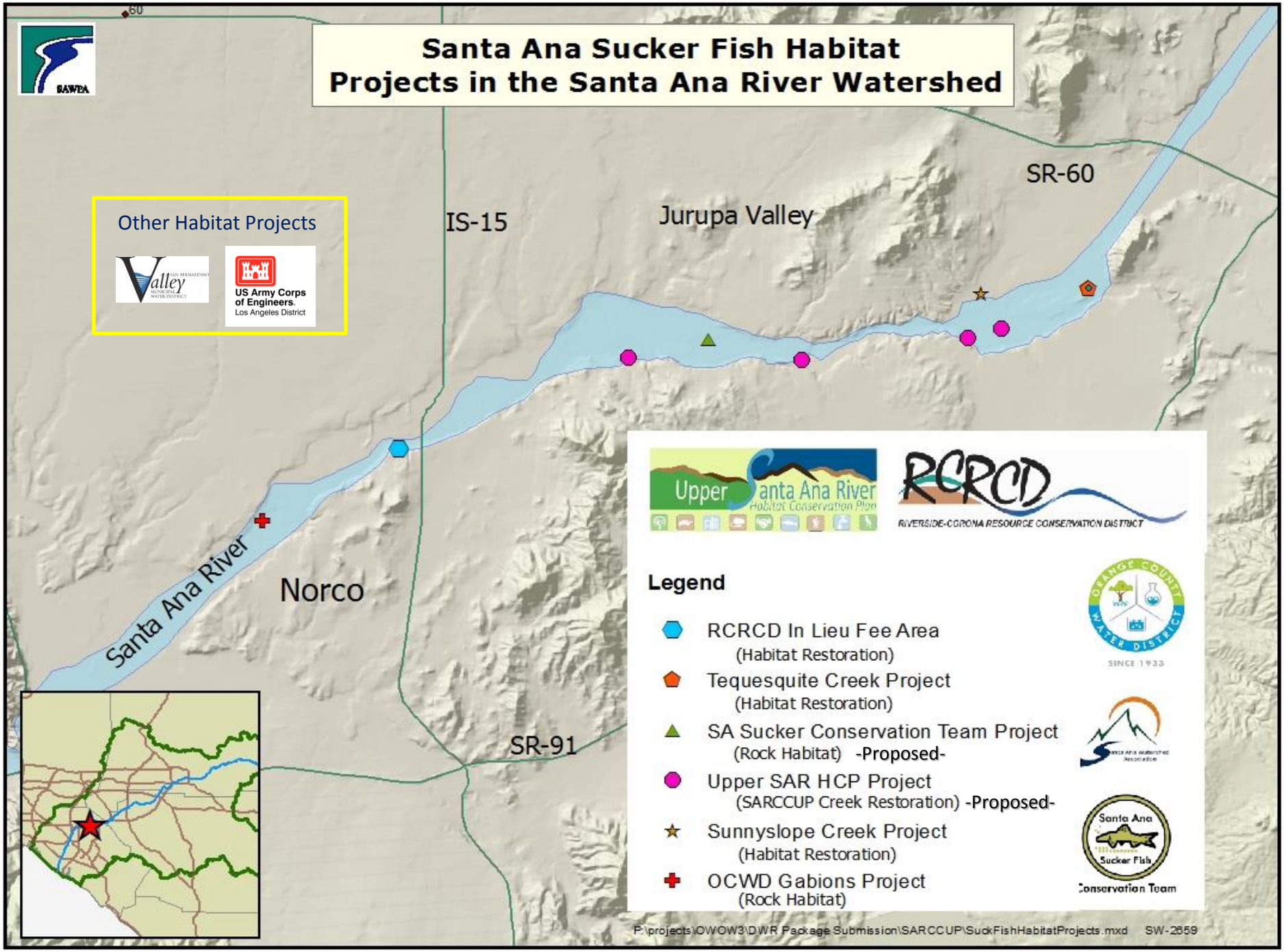
Santa Ana Sucker Fish Habitat
Projects in the Santa Ana River Watershed
SAWPA
Other Habitat Projects
Valley Municipal Water District
US Army Corps of Engineers.
Los Angeles District
IS-15
SR-60
Jurupa Valley
Santa Ana River
Norco
SR-91
Upper Santa Ana River Habitat Conservation Plan
RCRCD
RIVERSIDE-CORONA RESOURCE CONSERVATION DISTRICT
Legend
RCRCD In Lieu Fee Area
(Habitat Restoration)
Tequesquite Creek Project
(Habitat Restoration)
SA Sucker Conservation Team Project
(Rock Habitat) -Proposed-
Upper SAR HCP Project
(SARCCUP Creek Restoration) -Proposed-
Sunnyslope Creek Project
(Habitat Restoration)
OCWD Gabions Project
(Rock Habitat)
Orange County Water District
SINCE 1933
Santa Ana Sucker Fish Conservation Team
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# Project Scope and Schedule

- Amount of beneficial habitat for SAS, and Arroyo Chub (if possible):

Habitat structure length approx. **150 yards**

- Timeline Goal:

Construct habitat **Fall 2018**

**SHOW VIDEO**


Photo credit: Brett Mills

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# Project Schedule

Pre-Permit Application

- Start Design Contract – Apr 18, 2017
- Conclude Pre-Permit Design – Jun 19, 2017

Orange County Water District to Assist with Permit/CEQA Writing

- Submit Permit Applications – Jul 2017
- File Environmental Documents – Summer 2017

Post Permit Application

- Receive Feedback from Permit Review – Winter 2018
- Finish Final Design – Winter 2018
- Construction – Fall 2018

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# Minimization Efforts

Minimization measures could include:

1. all work conducted outside of breeding/nesting bird season,
2. all work conducted outside of spawning season for sucker,
3. prior to the start of work within the river the work area will be cleared of all native fish.

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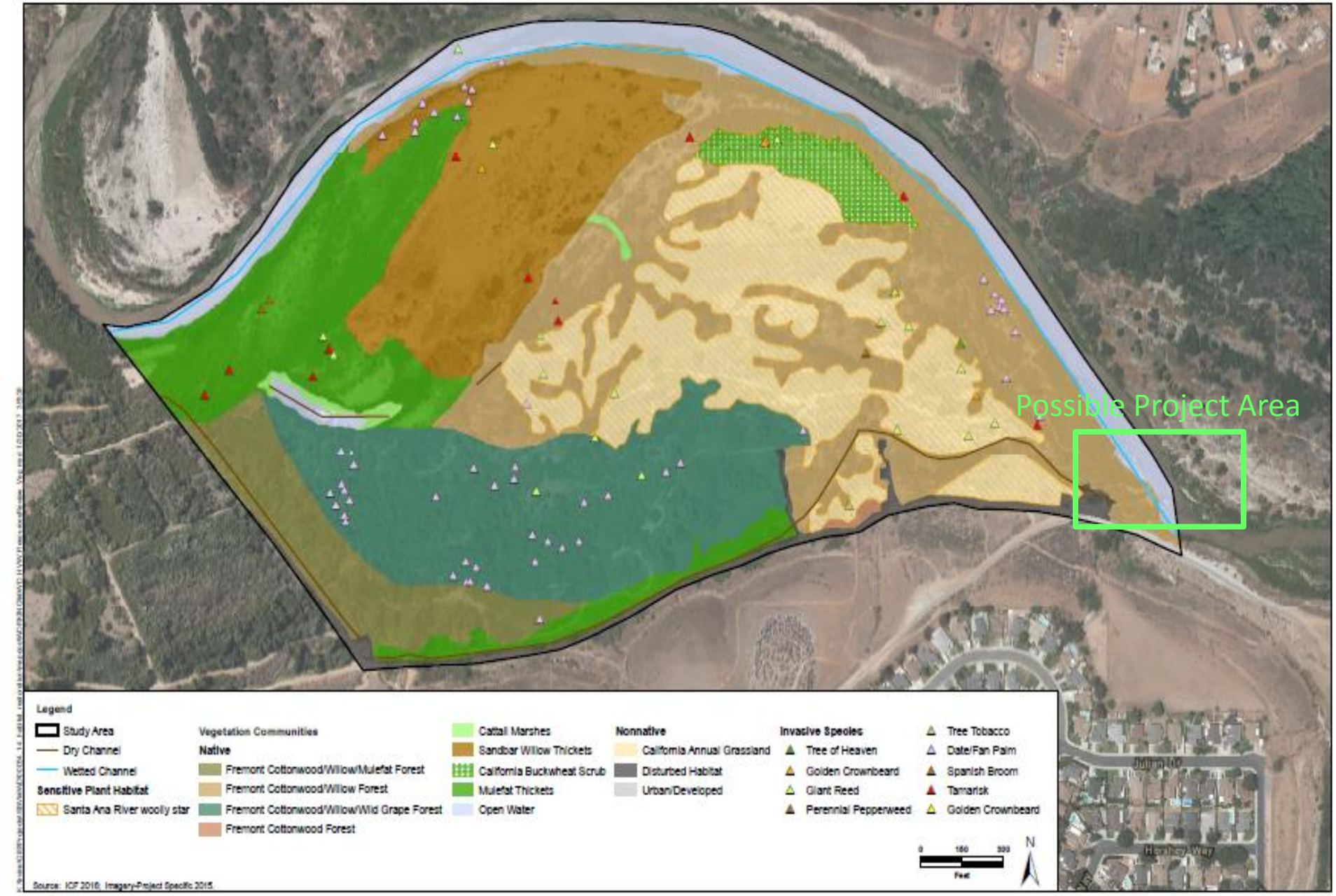
# Possible Project Area

- Land owned by CA Department of Fish and Wildlife; managed by Riverside County Parks
- Access for equipment along Santa Ana River Trail


ICF

**Map 1**
**Vegetation, Hidden Valley Wetlands Tributary Restoration Site**
**Upper Santa Ana River Tributary Restoration Sites**

# Project Should Consider Arroyo Chub Where Appropriate

They prefer the slowest moving sections where the substrates consist primarily of sand or mud, but they can also be found in swift sections (**.7 to 2 feet** per second) (USGS).

Photo credit: BonTerra Consulting

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# Design Contract Overview

- Contract will allow SAWPA to bring on a consultant to:
  - draft project concepts and alternatives,
  - collect field data,
  - design the Project,
  - create plans, specifications and drawings,
  - estimate construction cost.

Photo credit: Brittany App Photography

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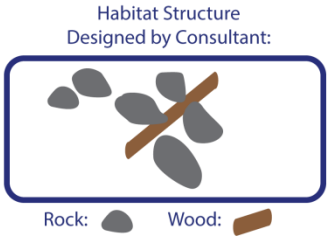
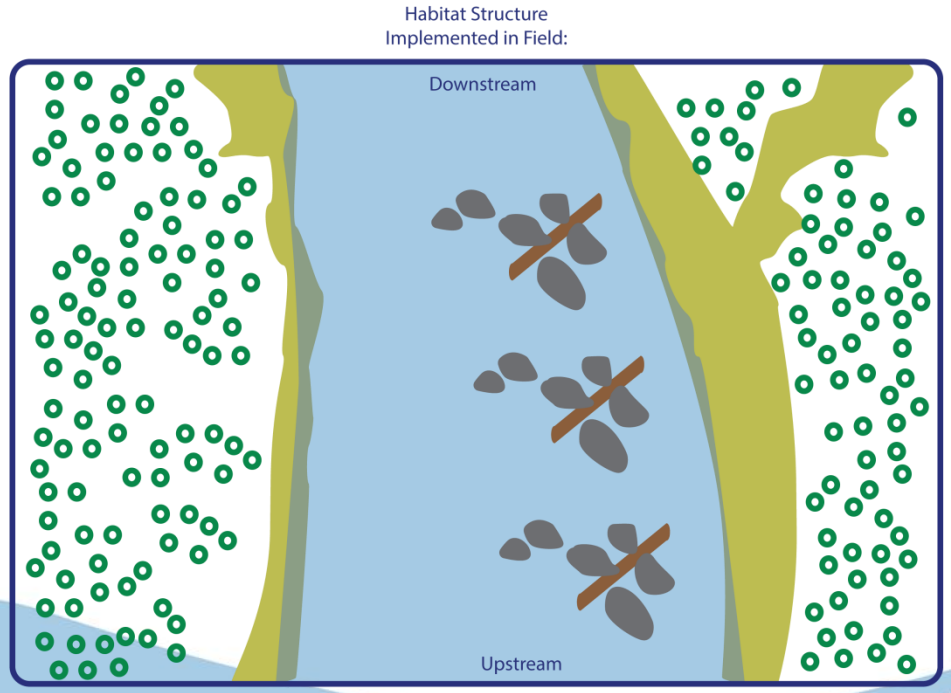
# Design Contract Deliverable

- Design that is repeatable

and can be used by other agencies

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# Design Consultant

- Extensive experience in Santa Ana River mainstem including flow and sedimentation studies
- Recommendation from references including Orange County Water District
- Previous experience designing habitat structures in Santa Ana River for Santa Ana Sucker

SCHEEVEL ENGINEERING

# Design Task List

1. Site Visit
2. Kick Off Meeting
3. Data Collection/Geotechnical Work
4. Conceptual Project Alternative Memo
5. 65% Design Technical Memo for Chosen Structure
6. Final Design/Updated Calculations
7. Design Support During Construction If Needed

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# Design Schedule

| Task No. | Task Name | Start Week | End Week |
|---|---|---|---|
| Task 1 | SITE VISIT | Tuesday, April 18, 2017 | Friday, April 21, 2017 |
| Task 2 | KICK OFF MEETING | Monday, April 24, 2017 | Tuesday, April 25, 2017 |
| Task 3 | DATA COLLECTION AND GEOTECHNICAL WORK | Tuesday, April 18, 2017 | Thursday, May 18, 2017 |
| Task 3A | DATA COLLECTION | Tuesday, April 18, 2017 | Thursday, May 18, 2017 |
| Task 3B | GEOTECHNICAL | Tuesday, April 18, 2017 | Thursday, May 18, 2017 |
| Task 4 | CONCEPTUAL PROJECT ALTERNATIVE MEMO | Saturday , April 22, 2017 | Monday, May 8, 2017 |
| Task 5 | 65% DESIGN TECHL MEMO FOR CHOSEN HABITAT STRUCTURE | Wednesday, April 26, 2017 | Monday, June 19, 2017 |
| Task 6 | FINAL DESIGN, CONSTRUCTION COSTS AND UPDATED CALCULATIONS | Within fifty (50) calendar days of receiving direction from SAWPA. | |
| Task 7 | DESIGN SUPPORT DURING CONSTRUCTION | N/A | |

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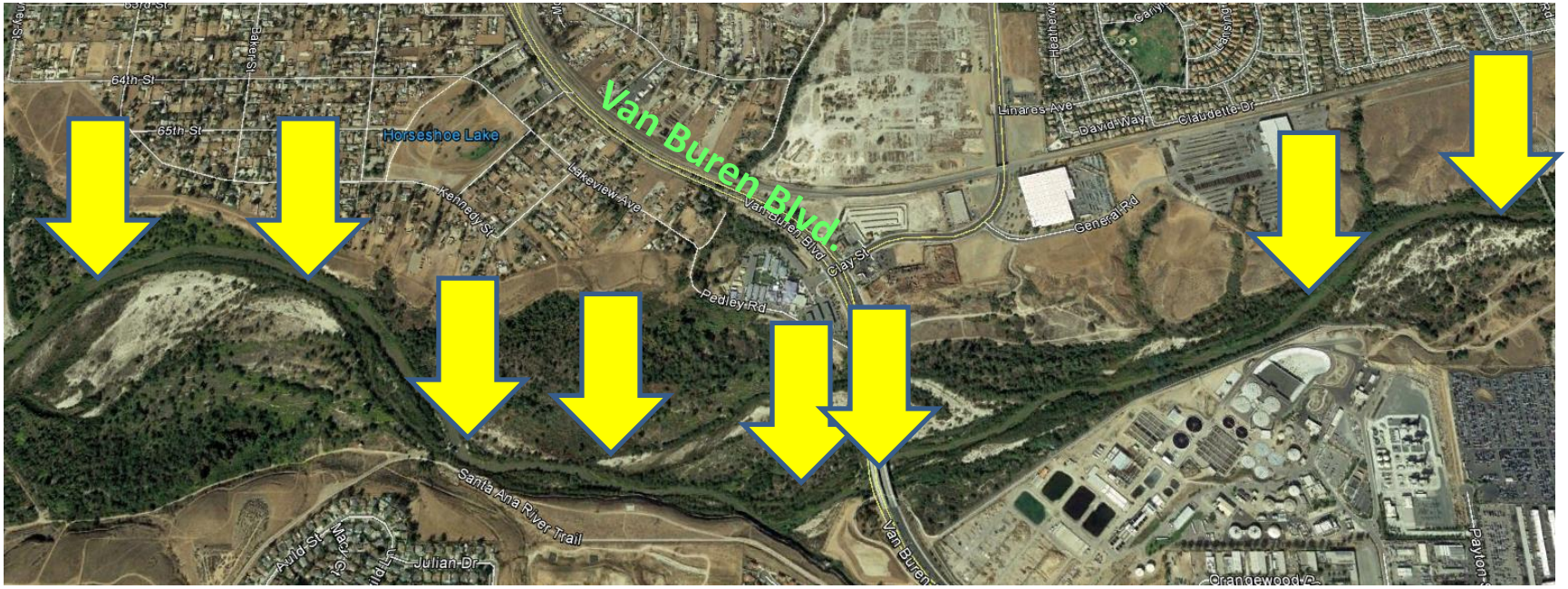
# Task 1: Site Visit

- Photos and visual surveys: April 19, 2017

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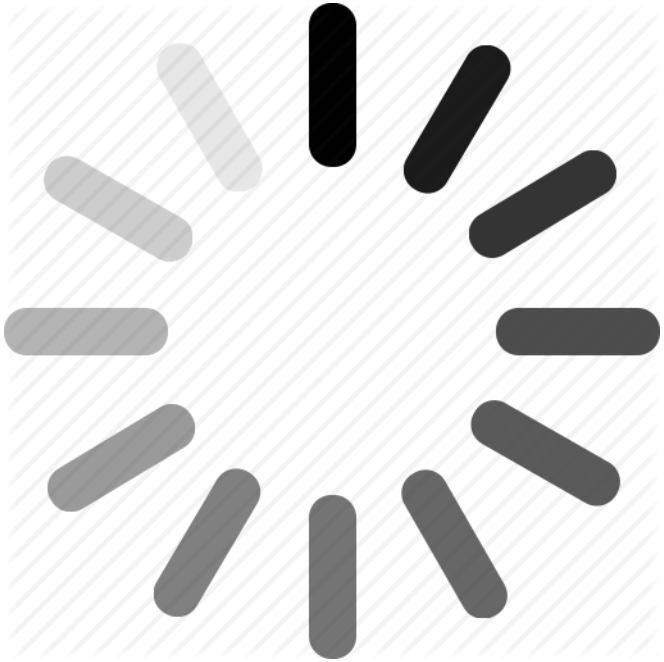
# Task 2: Kick Off Meeting

In progress



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# Task 3A: Data Collection

- Collect site specific data through such actions such as field measurements and database searches that may include but are not limited to:
  - bank material information;
  - substrate gradient over Project area;
  - historical high, low and median flow velocity;
  - vegetation size and health near the access point to the Project area;
  - historical high, low, median, flow volume;

Photo credit: Brittany App Photography

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# Task 3A: Data Collection
## Continued

- Physical Model:
  - Phase a temporary scaled version of concepts would be constructed in the field by hand using no motorized equipment.
  - The field data would then feed back into the design, be used to refine model assumptions and/or design calculations and be used to prepare the 65% Design Tech Memo.
- Preliminary Calculations:
  - Calculate the type, amount, weight and size of material needed to construct the habitat structures.

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# Task 3B: Geotechnical

- If necessary, review existing geotechnical and geologic studies in the vicinity of the possible Project area near Van Buren Blvd.
- Soil samples shall be taken to determine the engineering properties of the native soils.

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# Task 4: Conceptual Project Alternative Memorandum

- Memo describes a minimum of 3 project alternatives of different habitat structure types, with concept drawings showing location in the wetted channel, habitat structure size and placement.
- Memo should provide descriptions (at approximately one page in length), at the concept level that include the likely impacted area.
- Cost estimates should be developed for the designs that take into account access construction, equipment needs, material needs, material hauling, etc.


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# Task 4: Conceptual Project Alternative Memorandum Continued

- The conceptual project tech memo shall include general descriptions that compare the alternatives.
- For example, the comparisons should note if the other concepts would likely displace more sediment locally in the Project area, require larger material to build the structures, withstand larger flows, etc.


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# Task 5: 65% Design Tech Memo

- Tech memo will be used as basis for producing the final plans.
- Will also include a preliminary TOC, and the 65% plans and specs.
- Incorporates drawings showing placement location of habitat structure material.
- It shall also specify, at a minimum, the following:
  - Describing the habitat structure material type and size,
  - Channel width,
  - Access needed for construction equipment,
  - Veg clearing (using SBVMWD survey results),
  - Calculations.


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# Task 6A: Final Design

- All project construction and material procurement documents are prepared for an open and competitive bid.
- Docs should indicate if there are any project specific issues that cannot be addressed through competitive bidding and will provide documentation and a recommendations.

**Final Design**

Scheevel Engineering

**Within 50 Days After Direction**

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# Task 6B: Updated Calculations Technical Memorandum

- If need after the permit/CEQA process, if feedback is received from regulatory agencies that results in the need for updated calculations.
- Prepared in conjunction with final design documents, to include the following updated calculations based on the 65% design tech memo.

**Tech Memo**

Scheevel Engineering

**If Needed Within 50 Days After Direction**

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# Task 7: Design Support During Construction

- If needed, provide support to SAWPA by reviewing submittals, requests for information and design change requests.
- If needed, after the completion of the construction, provide record drawings incorporating any changes from the construction contractor.

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# Deliverables Summary

1. Tabulated data from field collections and database searches (including geotechnical data if needed)
2. Conceptual Project Alternative Tech Memo.
3. 65% Design Tech Memo.
4. Final Plans and specifications.
5. Updated Calculations Tech Memo if needed (including updated cost estimate to implement the Final Plans)
6. Revise design documents, if needed during construction.
7. Record drawings if deemed necessary by SAWPA
8. Bi-monthly invoices (first one due May 30)

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# Next Steps

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# Project Contact

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