

Water Efficiency Budget Assistance Project – Consultant Contract Approval

Mark Norton | Water Resources & Planning Manager
PA 22 Committee Meeting | Agenda Item 4.A.
February 9, 2021



Recommendation

- Approve the recommended contract with Quantum Spatial for the Water Efficiency Budget Assistance Project for \$594,387 and the retail water agency recruitment process that includes milestones with a formal schedule that interested agencies have to meet in order to partner on the Project.

Purpose of Project (SARCCUP Scope of Work)

- Help **5 to 10** retail agencies comply with State regulations that require water agencies to adhere to agency-wide water budgets (Senate Bill 606 and Assembly Bill 1668);
- Other side benefits:
 - A. Retailers can use Project data to understand customers and market conservation programs to them, and
 - B. If interested in budget-based rates, retailers can use Project data to create budgets for rate charges.



Consultant to Complete Two Major Assignments

1



- Data mining retail water agency billing software queries to determine dedicated irrigation customers, their physical location in the service area if available, and their water usage,
- Develop a list of these customers,
- Using information from the Customer-Interface Work (next slide), create georeferenced digitized area measurements through GIS software based on the information gathered via the Customer-Interface Work,
- Upload data from the Project into a web-based application.

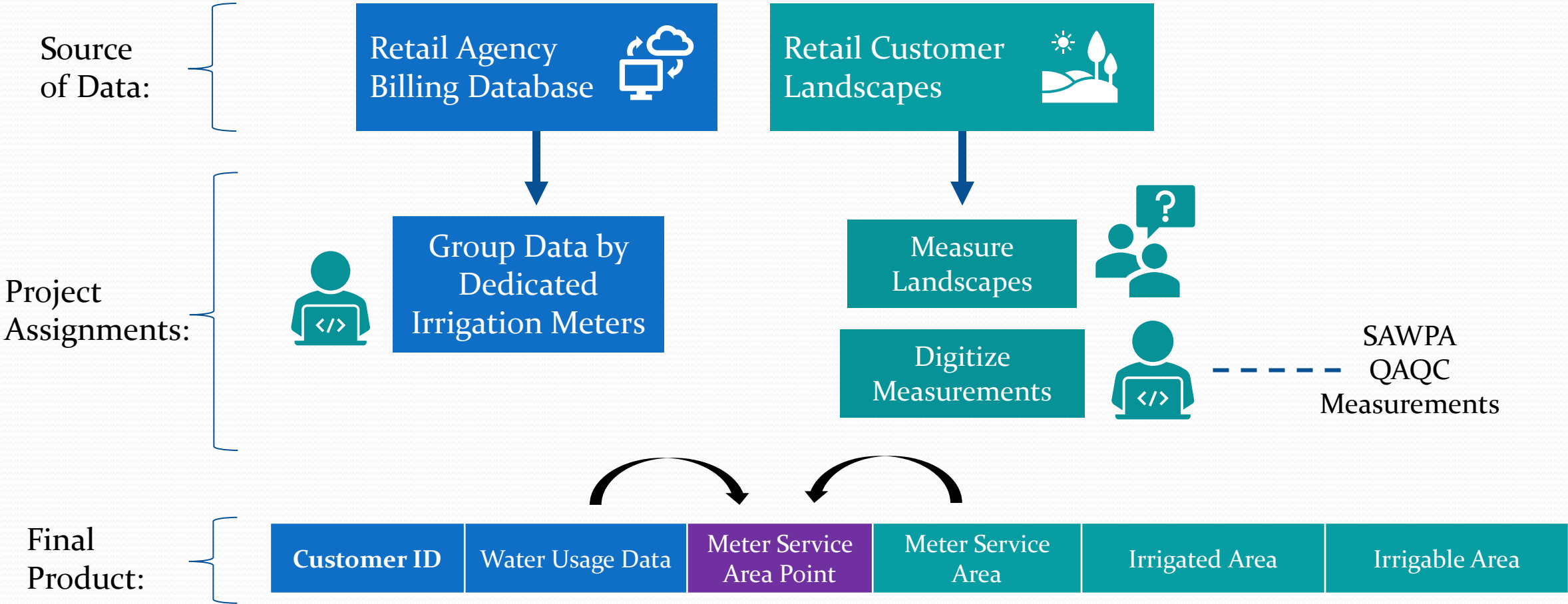
Consultant to Complete Two Major Assignments

2



- Interact with retail water agencies staff and their dedicated irrigation customers using the customer list from the GIS/Database Work (from previous slide),
- Calculate landscape measurements by working with water agency staff, customers, and/or property site managers.
 - Prioritize the use of remote sensing imagery; in field measurements to be used as last resort and special circumstances.

Relationship Between Assignments



Note: the two datasets are joined by meter service area point (not customer IDs)

Request for Proposals (RFP) Process

- **November 2020:** RFP approved by Committee and released,
- **December 2020:** Interviews with RFP responders (3 proposals),
- **January 2021:** Negotiating with “successful” consultant,
- **February 2021:** Recommended consultant contract to PA 22 Committee,
- **February/March 2021:** Begin formal recruiting of up to 10 retail water agencies.



REQUEST FOR PROPOSALS

Water Efficiency Budget Assistance

SANTA ANA WATERSHED PROJECT AUTHORITY

NOVEMBER 10, 2020



RFPs Received

- Firms that responded to RFP:
 - Waterfluence LLC
 - Quantum Spatial Inc. (Eagle Aerial sub-consultant)
 - Geoenvironment LLC (Lynn Merrill & Associates sub-consultant)
- All firms were interviewed by six-person panel composed of MWDOC, IEUA, SAWPA, and Laguna Beach WD.
- RFP criteria for considering proposals:
 - Responsiveness to the RFP,
 - Experience and qualifications of the assigned team of individuals,
 - Project approach and understanding of needs,
 - Appropriateness of proposed fees, and
 - Anticipated value and quality of services received.

Pricing – Two Dedicated Landscape Meter Customer Groups

1. Existing meter information generally available, customer knowledgeable of irrigated area.
2. No meter location available, may need field visit by consultant to determine irrigated area.

Analysis of RFPs Received

Interview Panel Results

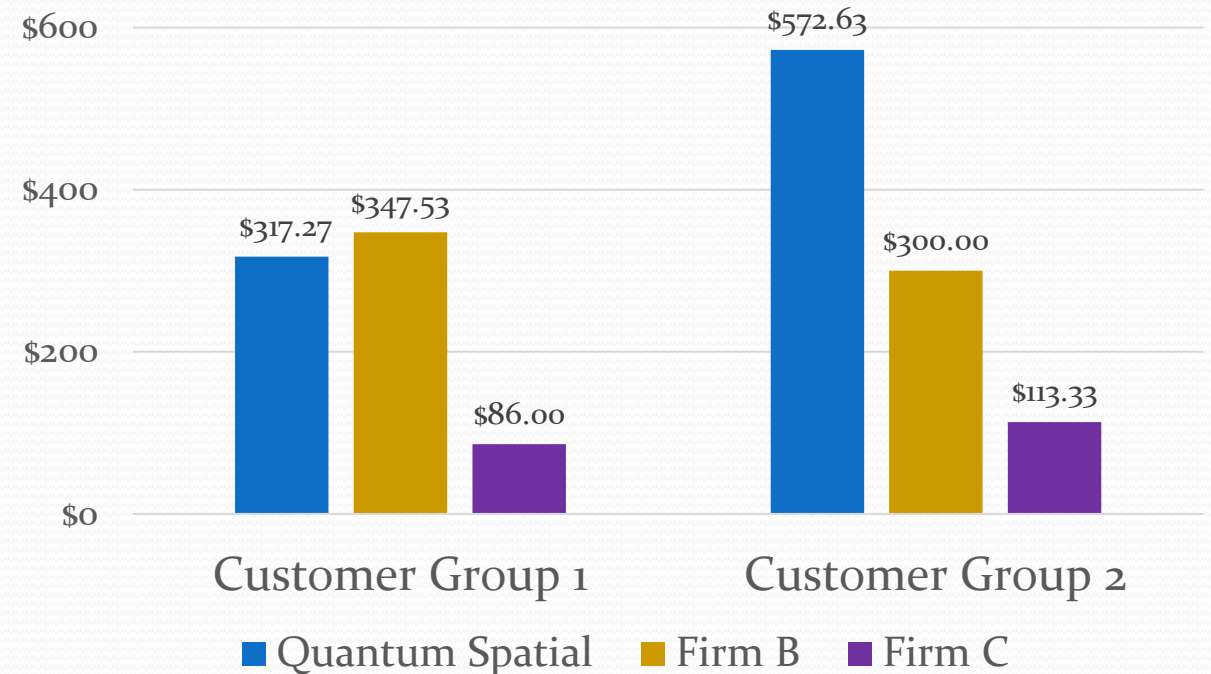
RFP Responder	Total for All Panelists	Panel Average
Quantum Spatial	152	25
Firm B	117	20
Firm C	105	18
Points Available	198	33

Notes:

Total points available = 33 per panelist (198 total)

Total panelist = 6

Price Comparison (Per Customer)



About Quantum Spatial

- **Full-service geospatial and big data analytics** firm specializing in spatial data generation, integration, and analysis for clients worldwide.
- Quantum/Eagle was selected on a sole source basis by DWR to conduct the statewide residential **irrigated vegetation study of 14 million residential parcels in California.**
- A key component of this Project will be **Customer Outreach/Client Engagement**, which Quantum Spatial has extensive experience with, working with clients to gather their data, review project data, and solicit feedback.
- Sub-consultants for this Project include Eagle Aerial Solutions and WaterFluence.
- Other Quantum/Eagle clients include Santa Margarita Water District, California Water Service, Western Municipal Water District, and NOAA Office of Response and Restoration.



Quantum Pricing Table

	Price	Total Customers*	Customer Group 1*	Customer Group 2*
Guarantee Buy	\$335,452.50	900	750	150
Additional Customers	\$113,734.50	300	150	150
Web-based Database	\$145,200.00	NA	NA	NA
Total Contract Value	\$594,387.00	1,200	900	300

*Specific customer totals (in each column) not included in contract; customer group amounts just used for calculated contract.

Guarantee Buy – How it Works

- SAWPA will sign up 10 retail water agencies and do as many water budgets as possible in both customer groups,
- Agencies in watershed on average have 140 potable landscape irrigation customers based on DWR data*, but there are potentially more in other customer categories like commercial and industrial.
- 10 agencies *140 = 1,140 total customers
 - But assume some are more or less than the average, have data quality issues and customers who don't participate in project.
- If project completes exactly 750 customers in group 1 and 150 customers in group 2, it will precisely reach the guarantee buy amount.
 - But customers in each group don't have to be exact – SAWPA just needs to hit the dollar value of the guarantee buy.

*Data subject to errors as it's gathered from over 50 retail agencies.

Retail Water Agency Recruitment Process

- Two retail water agencies per SAWPA member agency (10 total),
- Goals for Onboarding Process:
 - Retailers that have long-term engaged staff on the project,
 - Not recommending cost share be required.

Recruitment Process Continued

- Milestones, questionnaire and kick-off meeting with assigned staff.
 - A. Letter of interest signed by GM and department head of assigned staff.
 - B. Kick off meeting with assigned staff.
 - C. Questionnaire form.
 - D. Require billing query of their most recent data to make sure they can provide data in a timely manner.

Recommendation

- Approve the recommended contract with Quantum Spatial for the Water Efficiency Budget Assistance Project for \$594,387 and the retail water agency recruitment process that includes milestones with a formal schedule that interested agencies have to meet in order to partner on the Project.

Approval of Request for Proposals | 2021 Upper Watershed Aerial Imagery

Dean Unger | Information Technology Manager

PA 22 Committee | Agenda Item 4.B.

February 9, 2021

Proposition 1
IRWM Grant



Recommendation

Approve distribution of the 2021 Upper Santa Ana River Watershed High Resolution Aerial Imagery Request for Proposals (RFP).

Overall Project Scope

Proposition 1
IRWM Grant

Formal Project Name: Enhancements to Watershed-Wide Water Budget Decision Support Tool

- ▶ **Task 1 - Imagery:** Evaluate and acquire imagery to evaluate landscape for the entire urbanized Santa Ana River Watershed and South Orange County.
- ▶ **Task 2 - Landscape Analysis:** Measure landscapes to provide water budgets to retail agencies to support the achievement of water efficiency targets prescribed by the State.
- ▶ **Task 3 - Decision Support Tool:** Deploy tool to enable retail agencies to analyze customer water use data to assess customer efficiency, target water over use, and serve as a mechanism for customer outreach.

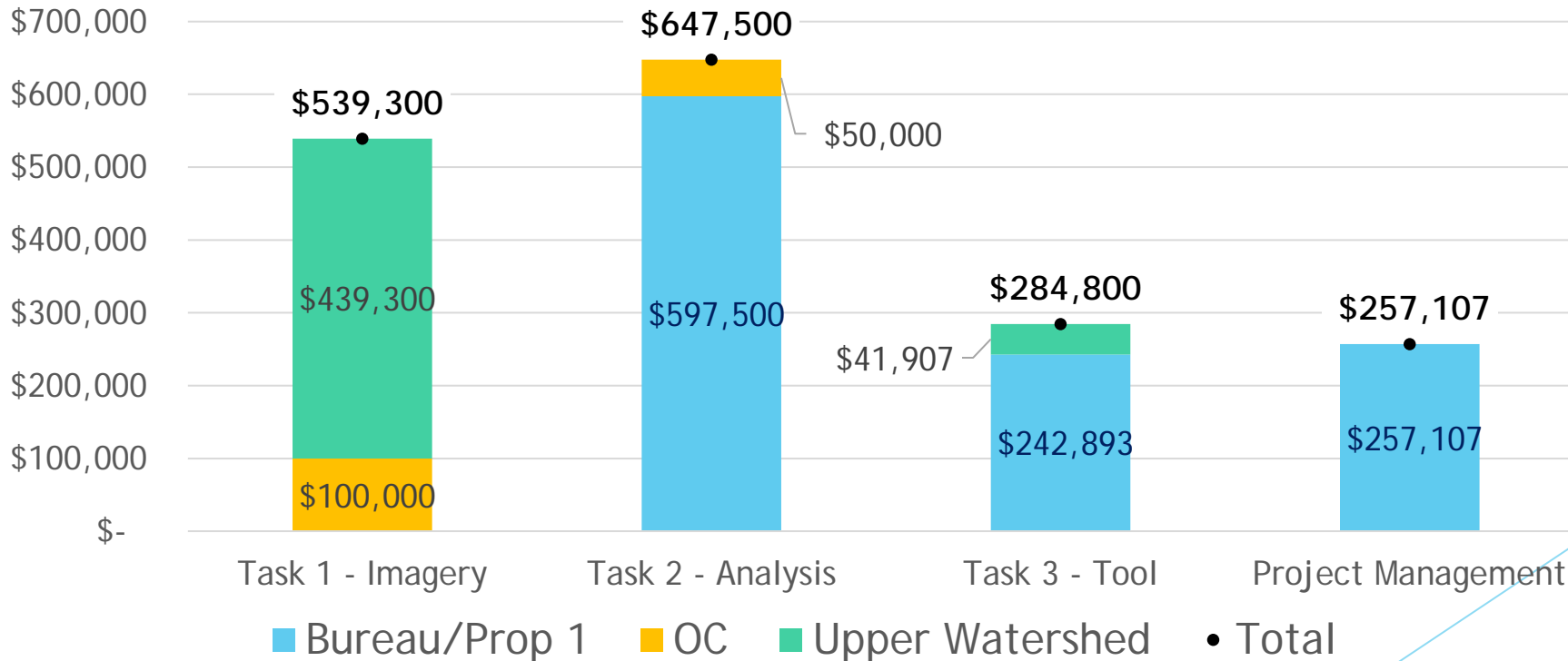
Previous PA 22 Committee Action Related to Project

Meeting Date	Committee Action
March 2019	Approval of: 1) Application submission to Bureau of Reclamation for \$597,500 in-kind staff time partnership, 2) Application submission to DWR for \$500,000 Prop 1 IRWM Round 1 grant funding.
July 2020	Approval of cost share for upper watershed SAWPA member agencies using formula.
February 2021	Consider approval of RFP for upper watershed imagery and elevation measurements.

Funding for Project

Prop 1 IRWM Grant	Reclamation Support	Cost Share*	Total Cost
\$500,000	\$597,500	\$631,207	\$1,728,707

Source of Funding for Each Project Task

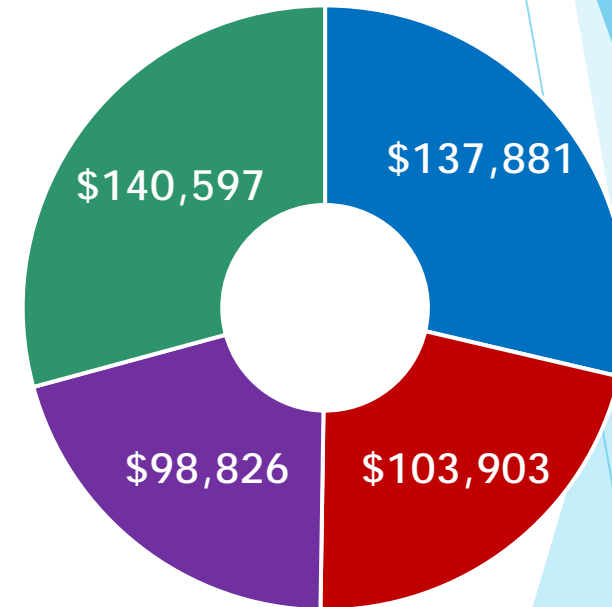


*For upper watershed and Orange County

Past PA 22 Committee Discussion

- ▶ At July 2020 meeting, PA 22 Committee agreed to formula for cost sharing 3-inch upper watershed aerial imagery.
- ▶ Formula based on values within their wholesale service areas:
 1. Population,
 2. Square mileage and
 3. Parcel amount.
- ▶ Estimated cost of upper watershed imagery shared with PA 22 Committee was \$439,300 (\$220 per square mile).

Project Cost Share for Upper Watershed



■ EMWD ■ IEUA ■ SBVMWD ■ WMWD

Totals to \$481,207 (\$439,300 for imagery, \$41,907 for decision support tool)

Purpose of 2021 Upper Watershed Imagery

- ▶ Utilize it for Bureau of Reclamation analysis that will create outdoor water budgets,
 - ▶ Utilize it for residential budgets, as well as CII budgets going forward,
 - ▶ Utilize it for habitat and vegetation mapping, and
 - ▶ Utilize it for water agency (including flood control) planning and engineering departments.
- ▶ The imagery will be available to the member agencies, in addition to being available for the Project.

Assembly Bill 1668

Provides for the use of alternative sources of data if alternative sources are shown to be as accurate as, or more accurate than, the data provided by the department.

Request for Proposals Developed

- ▶ Similar to 2015 RFP for high resolution watershed imagery
 - ▶ Asks for prices for a range of different resolutions including 3-inch, 4-inch, 6-inch and 12-inch pixels.
- ▶ Major changes from 2015 RFP:
 - ▶ Just upper watershed,
 - ▶ Flight paths to be centered around retail water agencies,
 - ▶ Elevation deliverables that allow for slope adjustments, and
 - ▶ Web-based dashboard to QA/QC imagery after its flown.
- ▶ RFP Coordination by SAWPA
 - ▶ Coordinated with water conservation advisory group and informed GIS and planning managers of SAWPA member agencies

RFP Deliverables

- ▶ Flight Plan
- ▶ Project Control Report
- ▶ Metadata Report
- ▶ Initial Raster Imagery (not orthorectified)
- ▶ Final GEOTIFF tiles
- ▶ Compression files (ECW)
- ▶ Elevation calculation deliverables
- ▶ Bi-weekly updates
- ▶ Four meeting updates (two to Advisory Group, two to PA 22 Committee)

Available via web-portal that member agencies have access too

Major deliverables, used for imagery analysis

What is a GEOTIFF?

- ▶ Same file format from 2015 imagery project.
- ▶ GeoTIFFs files are **raster image file** types that are commonly used to store satellite and aerial imagery data, along with **geographic metadata** that describes the location in space of the image.
- ▶ GeoTIFFs are compatible with nearly all CAD and GIS applications and maintain their quality when compressed, edited, and transferred.

More definitions →

Raster = collection of pixels

Geographic metadata = lat/long (maybe elevation) points

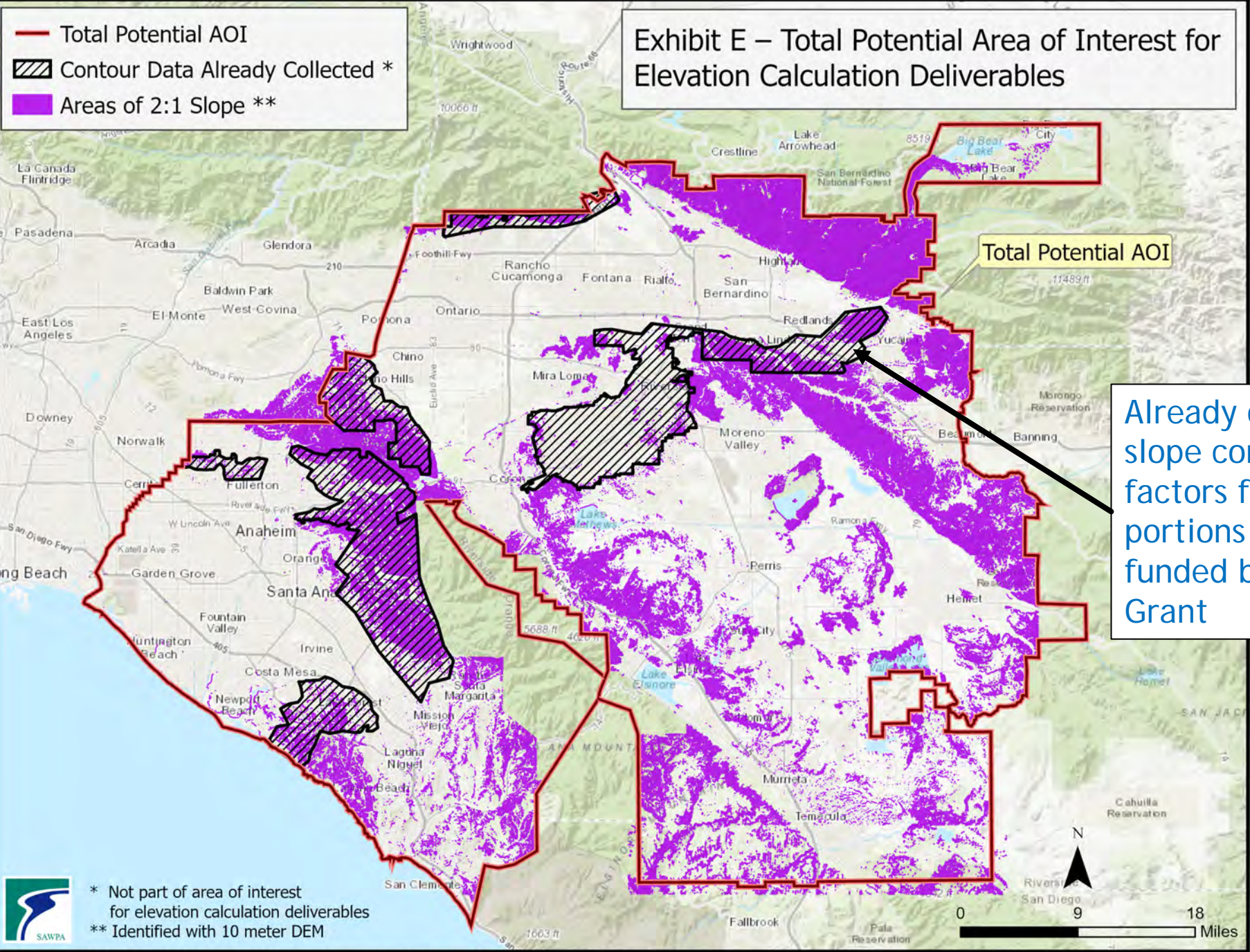
Orthorectified = a final product whereby every pixel appears where it is on the earth.

From: <https://www.propelleraero.com/blog/what-are-geotiff-files-and-why-are-they-so-useful-in-drone-mapping/> and <https://apollomapping.com/blog/g-faq-orthorectification-part>

Elevation Deliverables

- ▶ Asking for a triangulated irregular network (TIN),
 - ▶ Different area of interest than imagery.
 - ▶ Area of interest excludes the areas that we already have slope correction factors due to 2015 imagery project.
 - ▶ TIN allows for slope adjustments for hilly areas.
 - ▶ Would be funded by interested retailers and wholesalers (not included in total project cost of \$1.7 million).

Exhibit E – Total Potential Area of Interest for Elevation Calculation Deliverables



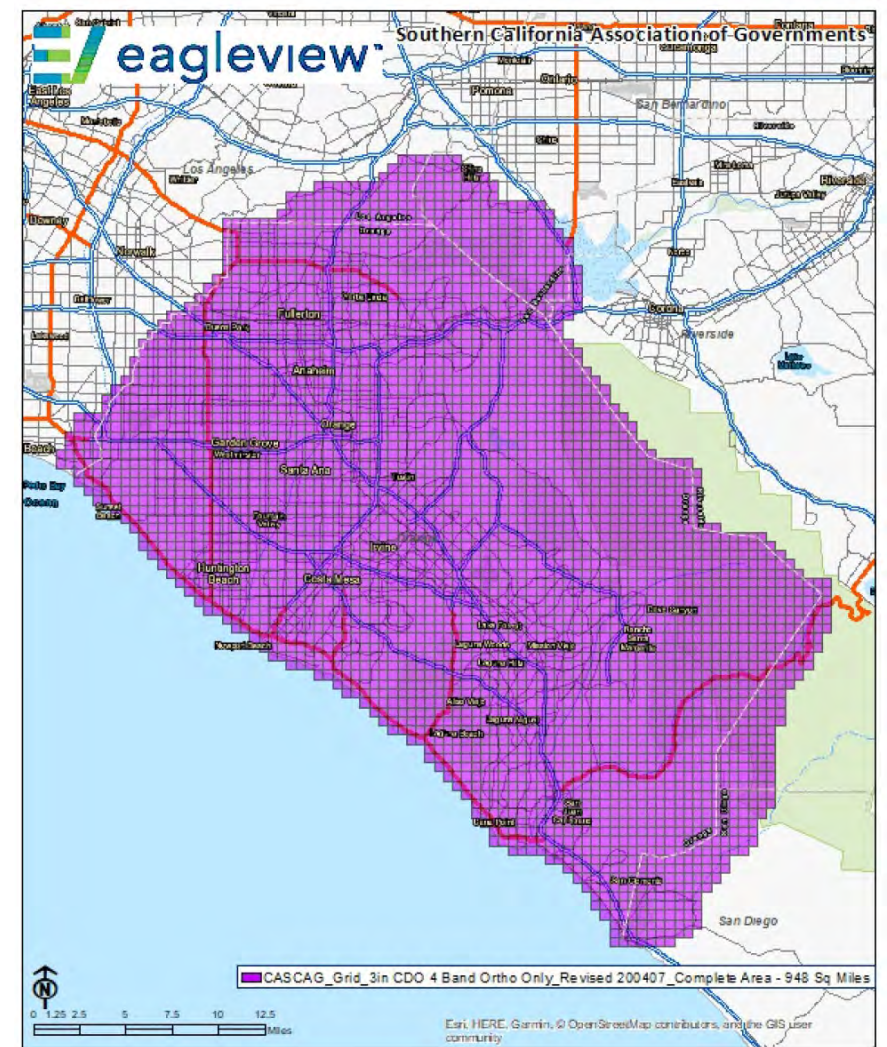
- Total Potential AOI
- ▨ Contour Data Already Collected *
- Areas of 2:1 Slope **

Already calculated slope correction factors for those portions in 2015; funded by Drought Grant

* Not part of area of interest for elevation calculation deliverables
** Identified with 10 meter DEM

Orange County Imagery Status

- ▶ 3-inch resolution imagery produced by Eagle View via contract with Southern California Association of Governments (SCAG),
- ▶ Final GEOTIFF files available for analysis by SAWPA and partner Bureau of Reclamation in June 2022,
- ▶ Effort funded, in part, by OCWD and MWDOC.



RFP Schedule

SAWPA's schedule for this procurement is:

RFP Issued	February 9, 2021
Bidder Q/A Period	February 9, 2021 through March 1, 2021
Close of Q/A Period	March 1, 2021 5pm PST
Final Q/A Response to Bidders	March 3, 2021 5pm PST
Bid Proposal Deadline	March 9, 2021 by 5pm <u>PST</u>
SAWPA Evaluation Period	March 9, 2021 – March 15, 2021
Final Negotiations/Optional Virtual Interview	March 15, 2021 - April 1, 2021
SAWPA Final Contract Approval	April 13, 2021

PA 22 Committee meeting



Recommendation

Approve distribution of the 2021 Upper Santa Ana River Watershed High Resolution Aerial Imagery Request for Proposals (RFP).