Blue Ribbon Committee for the Rehabilitation of Clear Lake

Meeting #7

September 26, 2019

9:00AM-5:00PM

Welcome and Introductions

Agenda

- Welcome and Introductions
- Items for Committee Approval
- Review 2019 Annual Report and Recommendations
- BREAK
- Recommendation Refinement and Informational Presentations
- LUNCH
- Recommendation Refinement (cont.)
- BREAK
- Next Steps and Public Comment

Items for Committee Approval

August Meeting Minutes
2020 Schedule
Socioeconomic Subcommittee Proposal

August 15th Meeting Minutes

- Distributed to Committee members August 26th.
- DRAFT summary posted to Clear Lake website: http://resources.ca.gov/clear-lake/clearlake-meeting-materials-6/

Proposed 2020 Meeting Dates

- March 11
- June 24
- September 23
- December 9

Socioeconomic and Cultural/Natural Resources Proposal

- Subcommittee proposal modified to reflect March 13th Committee comments
- Subsequent discussions with Socioeconomic and Cultural/Natural Resources Subcommittee volunteer leads
- Proposal:
  - Subcommittees serve as screening mechanism for technical recommendations
  - Assembled on ad hoc basis to address specific needs at the direction of Subgroup volunteer leads
  - Rotating membership based on specific need and expertise

2019 Annual Report Recommendations Refinement Process

2019 Report Overview and Outline

- Each section corresponds to required information from AB 707 and Resources Agency Guidance:
  - Background/setting
  - Progress and Process to Date
  - Barriers to Improving Water Quality
  - Committee Recommendations
  - Proposed 2020 Workplan
- By end of meeting, we will ask for conditional approval of recommendations and the report structure

2019 Report Approval Timeline and Process

- September 26: Committee meeting seeking conditional approval of recommendations to date and report structure
- October-November:
  - Technical Subcommittee meetings and interim Committee meeting (as needed)
  - Resources and facilitation team refinement of report
- December 11: Final Committee approval of report
- December 12-31: Resources finalizes report and submits to Legislature

Recommendation Overview and Committee Survey Results

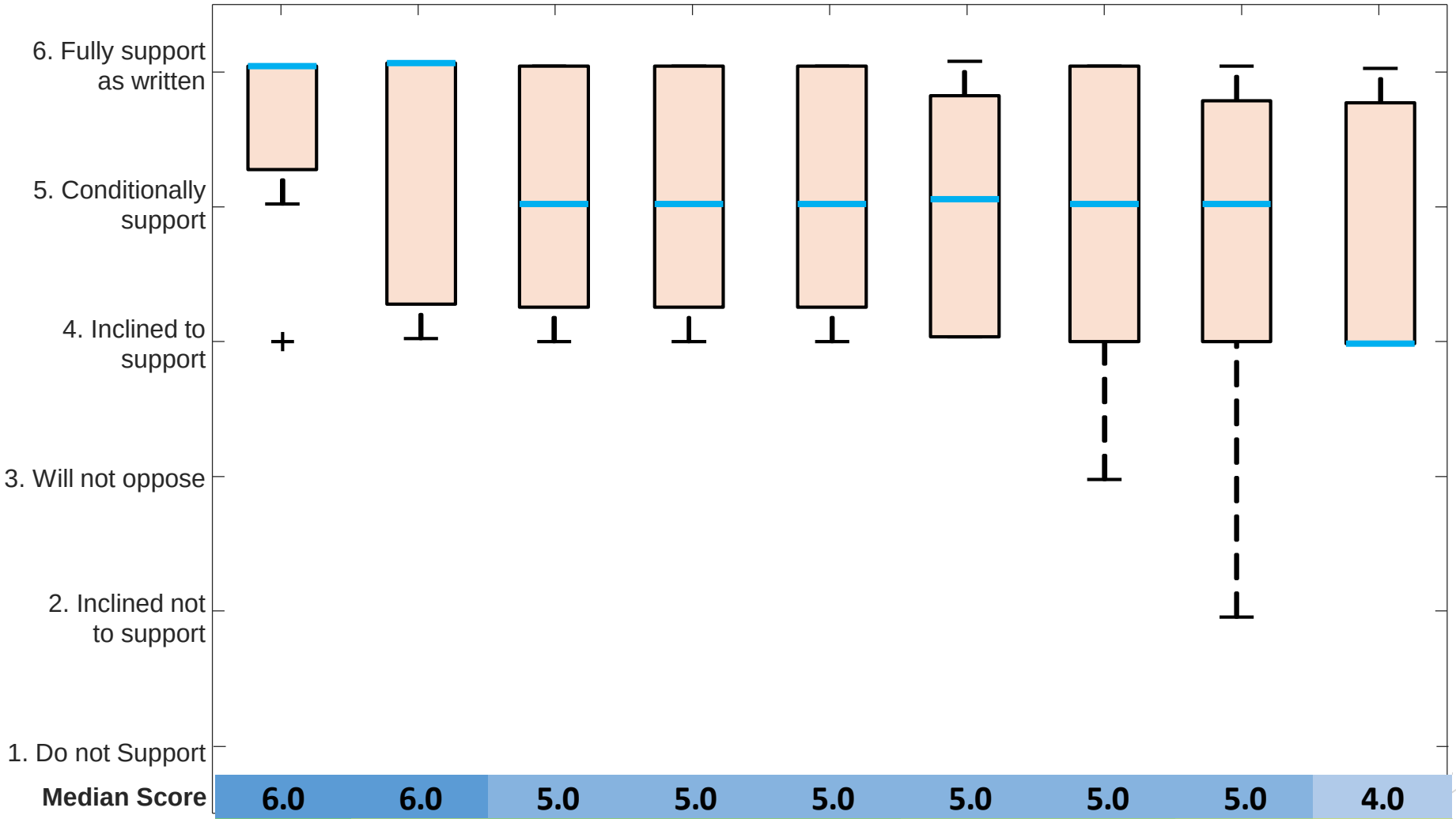
Barriers to Water Quality

- Institutional barriers:
  - Data deficiency: lack of quantitative data across the watershed
  - Resource limitations: limited funding for specific restoration projects
  - Political: lack of support to resolve the data deficiency and to implement the needed remediation projects
- Physical barriers:
  - Increasing lake temperatures
  - Low dissolved oxygen, especially episodic deep-water events
  - Nutrient inputs
  - Increasing frequency of cyanobacteria blooms
  - High mercury levels
  - Macrophyte dominance vs turbid phytoplankton dominance

2019 Recommendations To Date

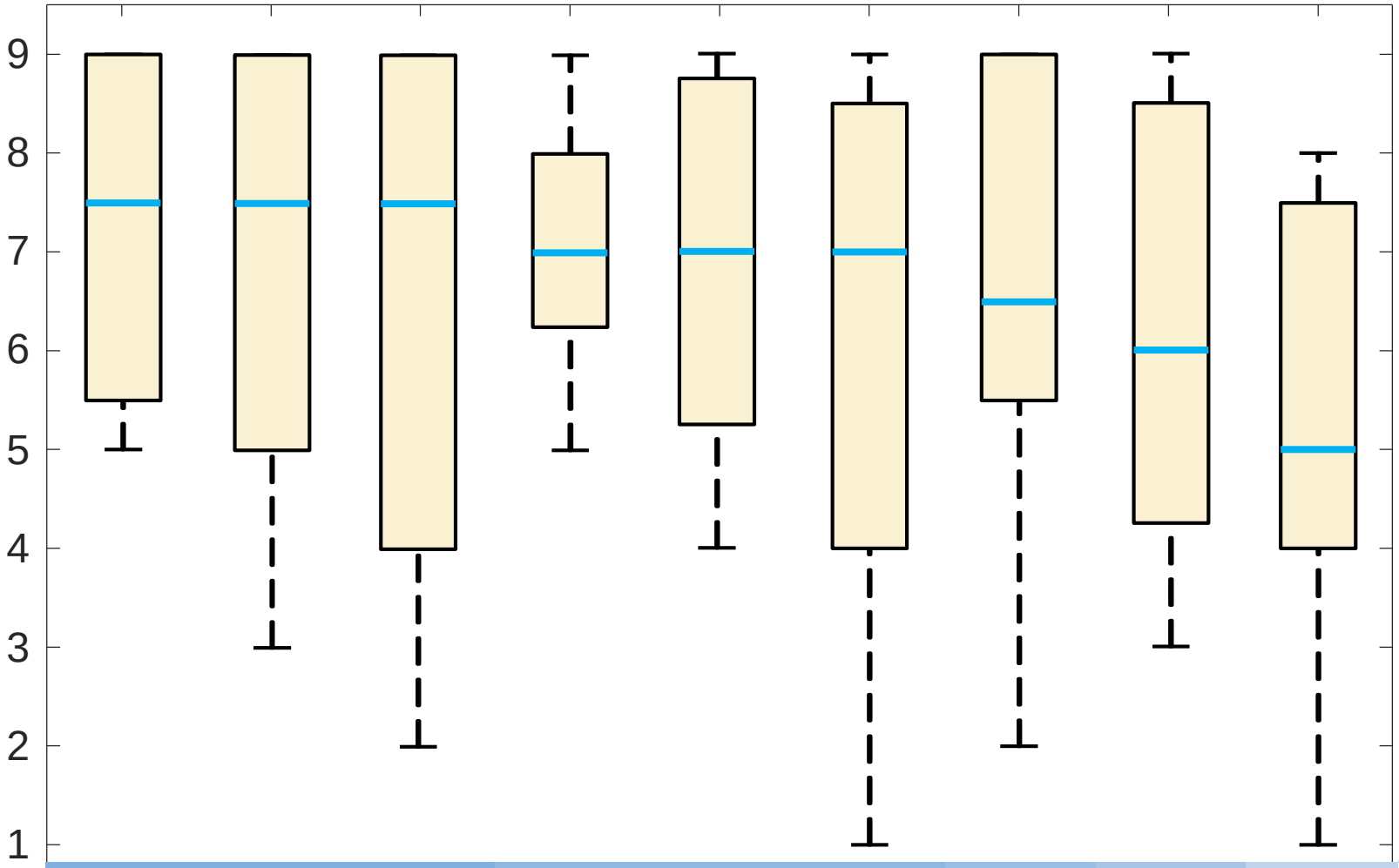
- Conduct a LiDAR survey of the entire Clear Lake watershed
- Conduct a bathymetric survey of Clear Lake
- Analyze satellite imagery of nutrients and algal blooms throughout the watershed
- Maintain and improve consistent monitoring of the upper watershed and urban sources
- Develop a model of the upper watershed
- Analyze existing Clear Lake data and compile it in an accessible unified database, with database management staff
- Assess the public's perceptions, attitudes, and knowledge gaps towards water quality in order to improve education and ultimately human impacts on Clear Lake
- Review the implementation and efficacy of existing tribal, local, state, and federal programs, BMPs, and other management requirements in the Clear Lake Basin
- Expedite the Middle Creek Restoration Project

Survey Results: Level of Support (8 Responses)



	Bathymetry	Database, Analysis & Staff	Lidar	Continued Improved Monitoring	Review Existing Req's	Watershed Model	Middle Creek Project	Public Assess-ment	Satellite
Median Score	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0
Average Score	5.6	4.7	5.1	5.1	5.1	4.9	4.9	4.6	4.1

Survey Results: Prioritization (8 Responses)



	Watershed Model	Continued Improved Monitoring	Review Existing Req's	Lidar	Bathymetry	Public Assessm't	Middle Creek Project	Database, Analysis & Staff	Satellite
Median Score	7.5	7.5	7.5	7.0	7.0	7.0	6.5	6.0	5.0
Average Score	7.3	6.9	6.5	7.1	6.9	6.1	6.6	6.1	5.1

Conduct a LiDAR survey of the entire watershed

- Cost Estimate: $250-$270 per square mile
- Relative Priority: 2 of 9
- Information needs:
  - Cost/benefit analysis.+++
  - Compare LiDAR vs. satellite++
  - Is LiDAR data needed to guide the other monitoring recommendations?++
  - Budget considerations of basin vs. watershed LiDAR.
  - Can NASA Ames and JPL help?
  - Does Resources coordinate remote telemetry for CA State agencies?
  - Is monitored data from 2016 to now enough to ground truth the LiDAR comparison?
- Q's/Suggestions for Refinement:
  - Funding for on-the-ground monitoring will be needed for the ground truthing.
  - The agency assigned to complete it should be multi-jurisdictional and provide opportunities for others to participate.
  - The local political climate will require a point-source to identify responsible parties.
- Concerns
  - LiDAR may only be able to show where replanting needs to happen due to sever burn and slope. Most of this was determined in the BEAR assessment reports from the fires.
  - LiDAR data on its own will not be sufficient to appropriately characterize the lake.

Conduct a Bathymetric Survey of Clear Lake

- Rough Cost Estimate: $350k-$400k
- Relative Priority: 4 of 9
- Information needs:
  - Cost and timing.
  - Will this information be available in time for the UC Davis modeling?
  - What is the cost relative to other data gathering requirements?
- Concerns
  - Although more data is always good, I am not sure it would make a significant impact on the goals we are working towards.
  - If the Davis modeling won't be able to incorporate this information without a revised contract, it may not be a top priority
- Support
  - If the model is key, and this is required for a high-quality model, then this is important. +
  - We must make the most use of what work has been or is being done.
  - Having up-to-date information is critical for informed decisions.
  - This will be very beneficial to the EPA Superfund work and may become necessary.
  - If current studies have a 10-20% margin of error currently because of out-of-date information, it this is a top priority.

Analyze Satellite Imagery of Clear Lake (Conduct a satellite survey of Clear Lake)

- Rough Cost Estimate: $300-400k
- Relative Priority: 9 of 9
- Information needs:
  - How is it different from LiDAR/is it auxiliary to LiDAR?+++
  - What can the satellite imagery tell us?
  - Was the satellite imagery from 2012 using a ground truthed algorithm to make the assumptions of sediment loading to phosphorus concentrations? This impacts how it can be compared to current data.
- Q's/Suggestions to Refine
  - Utilize Dr. Ustin as a resource.++
- Concerns
  - Although it might help identify additional areas of concern, I do not think it contributes to the solution.
- Support
  - This could be a long-term tool if we are taught how to use it.

Maintain and improve consistent monitoring of the upper watershed and urban sources

- Rough Cost Estimate: $200k/yr for staff and lab equipment, $15k/yr per stream gauge, $25k start up cost per gauge
- Relative Priority: 3 of 9
- Information needs:
  - Cost estimate +++
  - Will remote sensing provide the same information and be more affordable?
- Q's/Suggestions to Refine
  - Targeted areas of monitoring must define point sources. Land management practices wont change without ID'ing sediment runoff contribution of responsible parties.+
  - Limit acquisition to the two main population centers
  - More collaboration like the Cyanotoxin Monitoring Program that includes samples at the 5 DWR lake sites and the 7 UC Davis sites in the microcystin toxin analysis, a resource that the tribes have shared
- Concerns
  - Modest ongoing monitoring may be appropriate, but not a pre-requisite compared to other data acquisition
- Support
  - We can't manage what we don't monitor.
  - A monitoring program to determine baseline conditions and current loading is important to determine any next steps
  - Monitoring of the lower arms needs more support than the Middle Creek Project

Develop a model of the upper watershed

- Cost Estimate: $1-10 million
- Relative Priority: 1 of 9
- Information needs:
  - How would low, medium, and high cost proposals differ?+++
  - How much money would be saved by revamping the Tahoe Model?+
  - Is a new model necessary?
  - How does this project fit in with the timing of the other recommendations?+
- Q's/Suggestions to Refine
  - A good model needs more years of continual monitoring. Do the model after 5 years.
  - Any modeling should include TOC and any other needed parameter for the system to provide drinking water to 65% of the County.
  - Wait for the current project to be complete before we determine if another model is needed.
- Concerns
  - Redundancy. The LiDAR and satellite data would ultimately create a watershed model.
  - Redundancy. A model was created for the TMDL and it's unclear if those suggested BMP's are working.
  - This is a longer-term effort, requiring the completion of other recommendations and currently implemented projects. A good model is useful for the overall rehabilitation of Clear Lake, but it is unclear if the UCD model will need augmentation.
- Support
  - It could enable long-lasting understanding of how the lake may change with different perturbations over time
  - It could guide us to effective BMP's and sustainable and targeted sampling.
  - It would be used for decision making by stakeholders, agencies, and management.
  - It could help predict other factors that could/will impact the lake and help 'future proof' anything that is achieved over the next few years

Analyze existing Clear Lake data and compile it in an accessible unified database, with database management staff

- Rough Cost Estimate: $200k start up, $100k annually, $75k annually for staff
- Relative Priority: 7 of 9
- Information needs:
  - Is this duplicative to the State's Open Data portal? Will this fit within that effort?
- Q's/Suggestions to Refine
  - Can a watershed modeling tool be combined with the unified database, making the model more reliable?+
  - The gathering of all the data in one place should happen when the model is done.
  - Who will own the database and be responsible for its upkeep?
  - Where would the position be housed? Funding will vary based on the type of position - State, County, private, etc.+
- Concerns
  - Great to have, but other more immediate priorities need to take precedence +
  - That much collaboration for a long period of time between all the entities to make a truly complete database might be unrealistic.
- Support
  - Additional data will not be useful until existing data is in a useful format and analyzed.+
  - Making decisions with data not in a useful format is "spinning our wheels".

Assess the public's perceptions, attitudes, and knowledge gaps towards water quality in order to improve education and ultimately human impacts on Clear Lake

- Cost Estimate: $50-100k
- Relative Priority: 8 of 9
- Information needs:
  - A better understanding of the details of the full recommendation.
- Q's/Suggestions to Refine
  - Use this time to also educate the community on water quality issues and their responsibilities to help the watershed.+
  - Wait until we have data to share, for a more informed discussion.
  - Do preliminary surveying to establish a baseline, then revisit later in the process to gauge improvements and satisfaction with the approaches being deployed
- Concerns
  - A survey is unnecessary; most people already know what they should and shouldn't do
- Support
  - This would be very informative and low cost. ++
  - Gets the community involved in the conversation and solutions+
  - Not many folks trust the powers at be in Lake County, so educating the public is necessary to support measures that will make changes. To build trust there needs to be transparency of the real impacts to Clear Lake.
  - This information would help drive many of our next steps.

Review the implementation and efficacy of existing tribal, local, state, and federal programs, BMPs, and other management requirements in the Clear Lake Basin

- Cost Estimate: *Unknown*
- Relative Priority: 6 of 9
- Q's/Suggestions to Refine
  - Assess the ordinance, and also if the BMP's being used are working and implemented correctly.
  - Who would do this analysis? An independent consultant/contractor? What regulatory body would recommend or oversee changes?+
  - A single repository is needed for the many local, state, and federal ordinances, regulations, and legislation in place for oversight of waters, floods, etc.
  - The review should be included in the work of whatever entity pulls together all of the other recommended studies.
- Concerns
  - This is important, but less exciting for us, the Legislature, and the Governor.
  - Not as high priority as other tasks in the short term
- Support
  - Relatively low-cost task that could elucidate the current status
  - Understanding the effectiveness of practices being implemented helps determine next steps

Expedite the Middle Creek Restoration Project

- Rough Cost Estimate: $70k per year for full time staff, $10k per year for pilot projects
- Relative Priority: 5 of 9
- Information needs:
  - Does the County need to create a position to act as a single point of contact?
  - What are sources of funding for the full build out of the project?
  - Why are pilot projects needed?
  - Is the full project planned for implementation once the properties are acquired? What is needed to expedite property acquisition?
- Q's/Suggestions to Refine
  - Lands in the restoration area need to be mitigated and restored before draining to the lake.
  - Soil studies must be done of lands to be inundated.
  - The County should have a project coordinator and support that cost.
  - How long will the Project Coordinator be hired for and are they part or full time?
  - Cultural resources must be protected.
- Concerns
  - Middle Creek is the highest sediment loading area, but is it highest in nutrient loading? +
  - How much political capitol should the Committee expend on a project that already has the political will behind it to happen?+
- Support
  - The TMDL anticipated the project will reduce loading to the lake. Supporting the project aligns with the goals of the TMDL.+
  - This is a pre-formed product that the Committee can "buy" in terms of supporting (easy) and requesting funds (hard) from private and public sources upon appropriation by the legislature.

BREAK

UC Davis CRC Update

UCDAVIS

Center for Regional Change

Clear Lake Blue Ribbon Committee

Bernadette Austin, *Associate Director*

September 26, 2019

Purpose: developing a baseline socio-economic analysis and community and tribal engagement around strategies to improve the community vitality of the Clear Lake region.

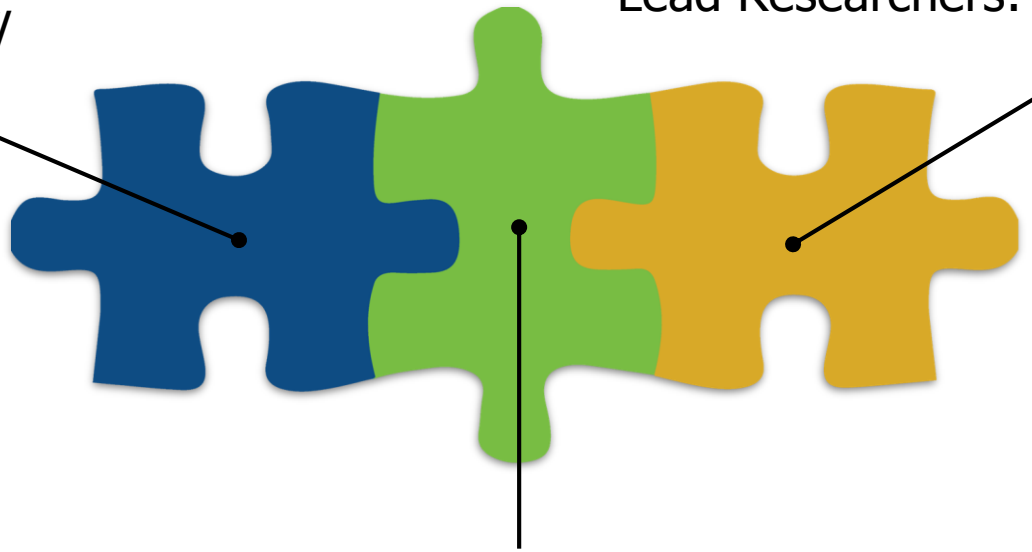

Research Team

Socio-Economic Analysis

Lead Researcher: *Noli Brazil*

Tribal Engagement Strategy

Lead Researchers: *Anne Visser, Clare Cann*



Community Economic Development Strategy

Lead Researcher: *Keith Taylor*

Goals

- conduct a demographic and economic well-being assessment and analysis of the Clear Lake community
- capture what the Clear Lake community currently looks like, how it has changed over time, and how it compares to the broader region and comparable neighboring communities

Activities & Timeline

1. Identifying relevant data and their sources: **COMPLETE**
2. Revisions to socioeconomic analysis based on BRC feedback: **DECEMBER 2019**
3. Collecting, cleaning and processing data: **DECEMBER 2019**
4. Data analysis: **MARCH 2020**
5. Data reporting and presentation: **JUNE 2020**

Goals

- work with local stakeholders to develop a community economic plan to promote the revitalization of the regional economy and community health and well-being

Activities & Timeline

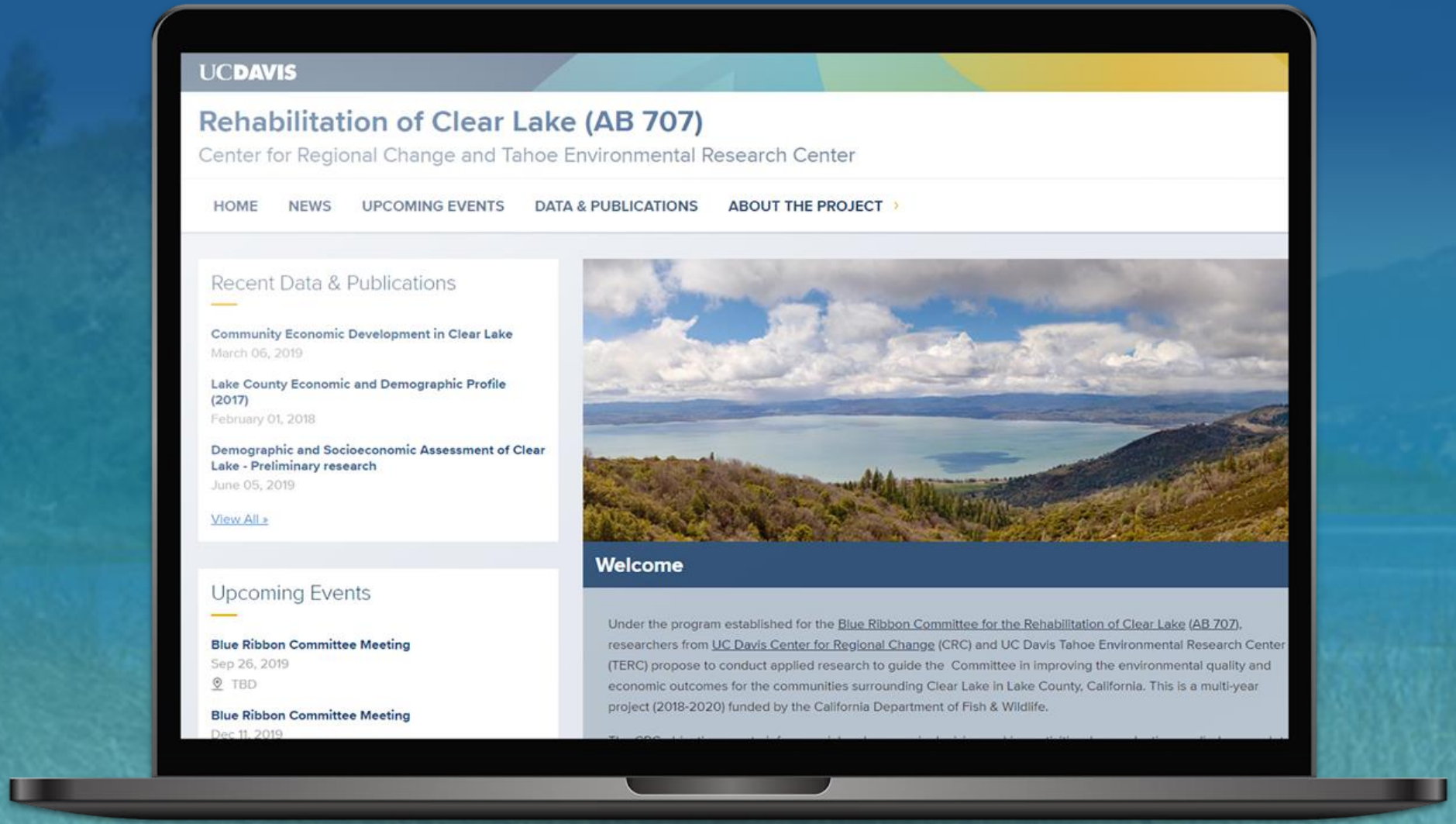
1. Economic Asset Mapping: **COMPLETE**
2. Participatory Strategy Sessions (Strategic Doing Workshops): **DECEMBER 2019**
3. Community Economic Development Plan: **JUNE 2020**

Goals

- work to engage Tribes in the development of collaborative environmental stewardship and economic strategies

Activities & Timeline

1. Tribal Relationship Building:
   a. Interviews with tribal leaders: **ONGOING**
   b. Facilitate convening: **2020**
2. Youth engagement - Participatory Action: **ON-GOING**
3. Youth engagement - Professional Development Training: **JUNE 2020**



Stay up to date with us at
https://clearlake.ucdavis.edu/

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Center for Regional Change

Thank you!

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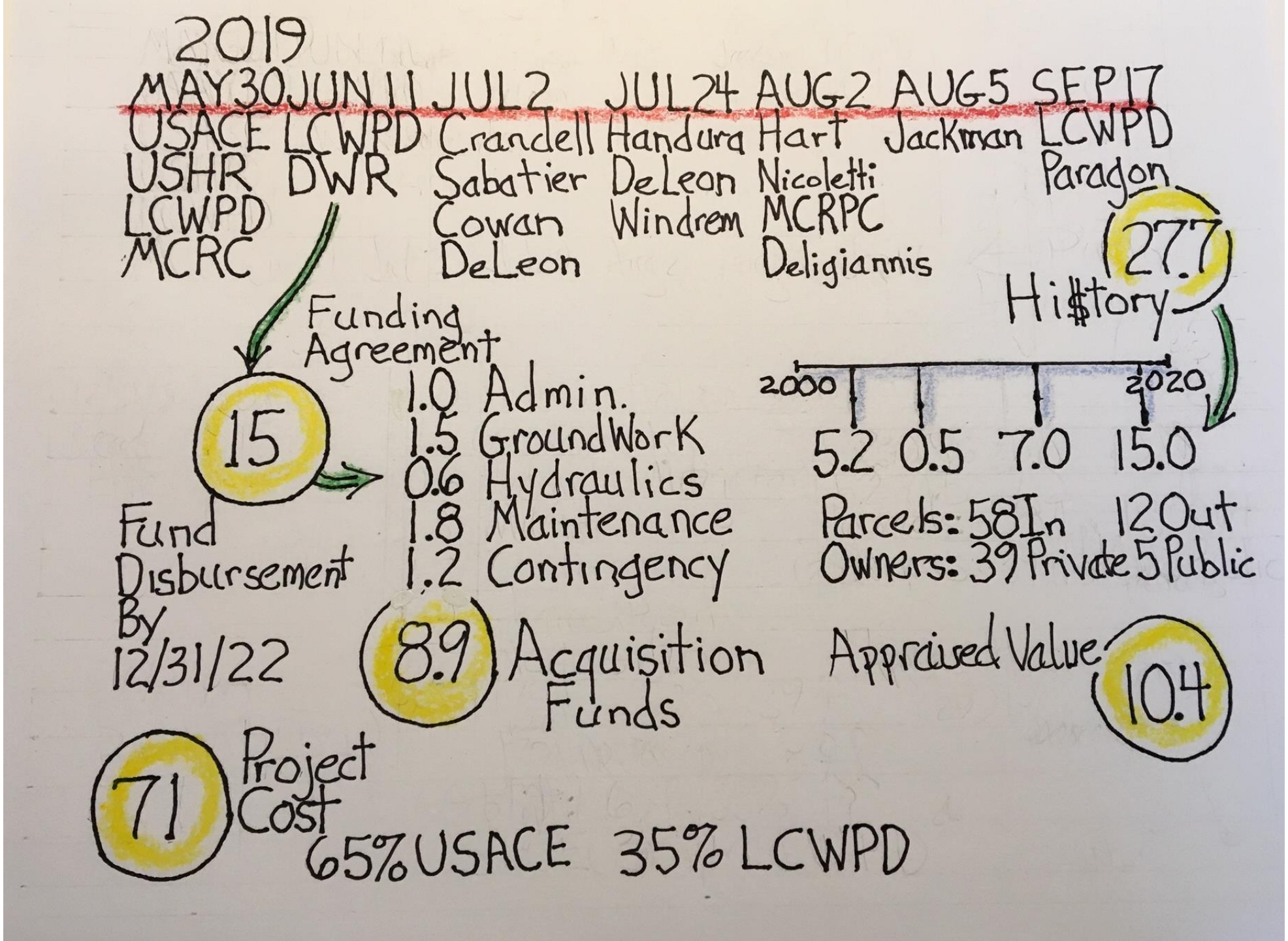
UC Davis TERC Modeling

Middle Creek Restoration Project


2019
MAY30 JUN11 JUL2 JUL24 AUG2 AUG5 SEP17
USACE LCWPD Crandell Handura Hart Jackman LCWPD
USHR DWR Sabatier DeLeon Nicoletti Paragon
LCWPD Cowan Windrem MCRPC
MCRC DeLeon Deligiannis
27.7
Hi$tory
2000
2020
5.2 0.5 7.0 15.0
Parcels: 58 In 120 Out
Owners: 39 Private 5 Public
Appraised Value
10.4
Funding Agreement
15
1.0 Admin.
1.5 GroundWorK
0.6 Hydraulics
1.8 Maintenance
1.2 Contingency
Fund Disbursement By 12/31/22
8.9
Acquisition Funds
71
Project Cost
65% USACE 35% LCWPD

LERRDs

27.7	LCWPD	2022
8	PG&E	
5	CalTrans	
3	Orphan	
0.8	Design Phase	

44.5 LCWPD

AB707

Money Model

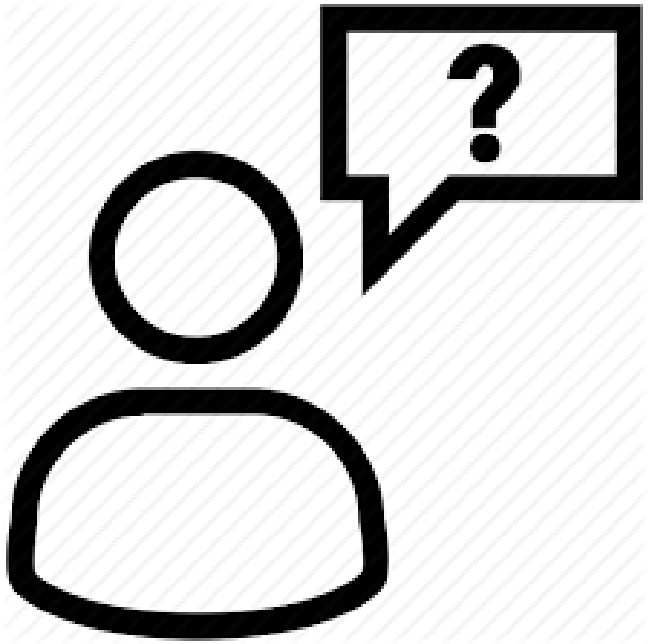
LA

35-15

Salton Sea (10 yr) Management Program

DWR	NRA	F&W
Prop 1		80
Prop 84	H_2O Bds	21
WCB		14
USDA		7 ⇑
DOI & NRA		30
Philanthropy		10

162



Public Comments and Questions

QUESTIONS?

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