Draft Minutes
Project Initiation Meeting
2023-2025 CALMAC Website Maintenance and
Weather File Creation Project
August 28, 2023, 1 PM Pacific Daylight Time
Held via Microsoft Meetings

Present:

<u>Website Committee and Other Participants:</u>

Brian Arthur Smith – PG&E – Statewide Project Manager for CALMAC Project
              – Website Committee Member,

Lauren Garcia – PG&E – PG&E Website Committee Alternate Member,

Jeff Hughes – PG&E – Weather Data User,

Cynthia Rogers – CEC – Website Committee Member,

Chris Kettoola – SDG&E – Website Committee Member,

Kevin Ehsani – SoCalGas – Website Committee Member,

Reginald Wilkins – SCE – Website Committee Member,

Andres Fergadiotti – SCE – Weather Data User,

Kelvin Valenzuela – SDG&E – Website Committee Member,

Jeorge Tagnipes – CPU/ED – Website Committee Member,

<u>Project Team Members</u>

Tim Caulfield – Caulfield Consulting – Project Team Manager

Jeff Yip – Third Strand – Project Team Website Programming Specialist

Joe Huang – White Box Technologies – Project Team Weather Files Specialist

Summary:

The conference call was called to order at approximately 1:03 PST. Tim Caulfield of Caulfield Consulting presented the attached PowerPoint slide deck, with added comments by Jeff Yip of Third Strand and Joe Huang of White Box Technologies. Brian Arthur Smith of PG&E, the

Statewide Project Manager also added detail and clarification as needed. Other participants asked questions or added in as appropriate.

Questions and discussion were addressed as they came up during the presentation, and at the end of the call. The primary areas of discussion were as follows:

Question about slide 5, maintenance of CALMAC site:

- Questions about how site traffic is tracked and whether historic trending of site traffic is tracked.
- Google Analytics has allowed for tracking of unique visits to the site over time, but it retired July 1, 2023. A new way to trend visits to CALMAC has been started.
- Number of reports downloaded also is tracked.
- Suggestion that CALMAC committee members ask analysts at evaluation firms whether they are using weather files provided on CALMAC. (We are aware that analysts at Demand Side Analytics (DSA) are using the weather files actively.)

Discussion about slide 15, titled "2.7. Update Documentation for the Weather File Creation" on additions to Weather Files page.

- Add text at top of the page warning users about issues with the data for the most recent 5 to 10 days.
- Added clearer documentation on letter codes in the data.
- Update Joe Huang's technical paper (CALMAC Study ID PGE0450.00). (This is part of Task 2.7.)

Comments at the end of the meeting about the new weather files:

- The weather files are in support of the EE efforts. CALMAC will be looking for direction from the CEC on what the right files are.
- CALMAC should position ourselves to get new weather files up on the CALMAC.org in time for when they are needed.
- There will probably be a time when both the current files and the CZ2025 files need to be posted on the site. Third Strand needs to assure that adequate storage space is available on the site.
- Prior to the time the CZ2025 files will be useful for the EE EM&V community, it's likely that the CZ2018 files can be removed from the site, as they are not allowed for use in new projects (effective 2023).
- How different are the new data from the old data? To be determined.
- Joe Huang stated that the software automatically creates a set of analytical data on the weather files when the files are created. Should this summary be posted on the site?

The conference call was called to a close at 1:54 PM PDT.

Note that, prior to official start of conference call, a brief recap of the discussion held on 8/25/2023 with representatives of evaluation firm Demand Side Analytics (DSA), White Box Technologies, PG&E and others was provided. The recommendation reached from this discussion on 8/25/2023 is that the updating of the weather files hosted on the CALMAC site takes a few days until delivery of the underlying data necessary for processing from NOAA. Updates to the documentation at the top of the Weather page will be made to add to caution users that the data for the most recent few days should not be considered reliable.

Project Initiation Meeting: 2023-2024 CALMAC Website Administration for Energy Efficiency Programs
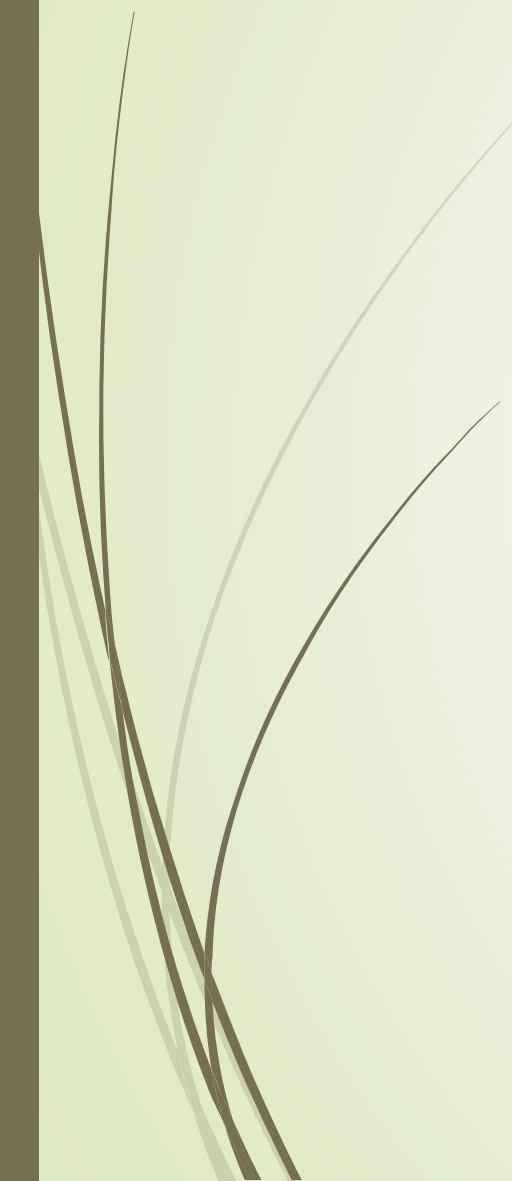
August 28th, 2023

Introductions
The CALMAC Website Committee

- Brian Arthur Smith supported by Lauren Garcia– PG&E - Statewide Project Manager

- Cynthia Rogers – California Energy Commission

- Kevin Ehsani – Southern California Gas Company

- Vacant – California Public Utility Commission/Energy Division

- Reginald Wilkins – Southern California Edison

- Kelvin Valenzuela – San Diego Gas and Electric Company

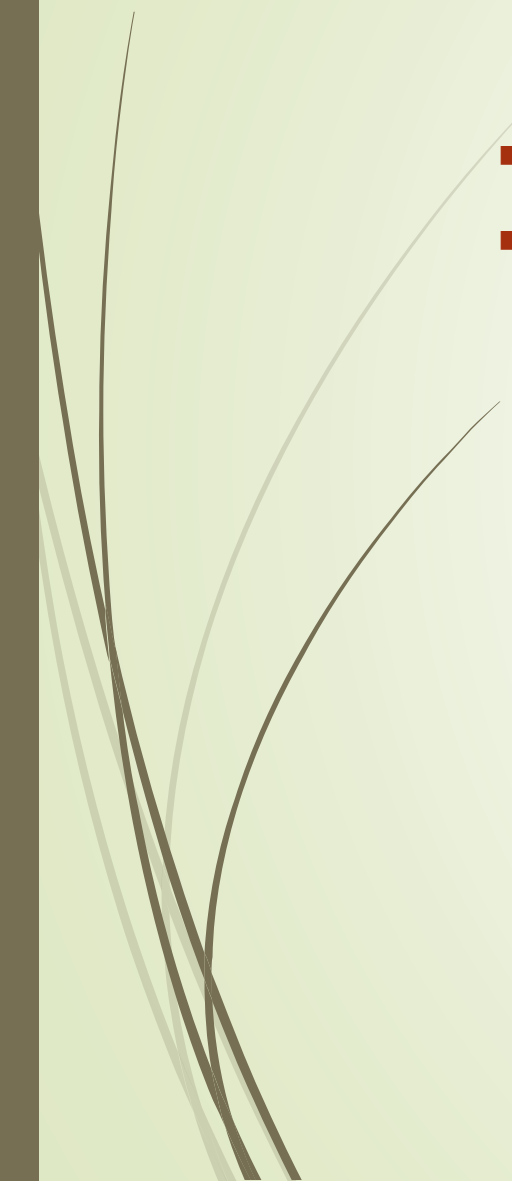- Chris Kettoola – San Diego Gas and Electric Company Lead going forward

Introductions
The Project Team

- Tim Caulfield – Caulfield Consulting – Prime Contractor/Project Manager

- Jeff Yip – Third Strand, Web Development

- Joe Huang – White Box Technologies, Weather File Development

Primary Project Structure

- Task 1 – Management and Maintenance of CALMAC Website

- Task 2 – Manage the Update of the California Weather Reference Files on the Server Hosting the CALMAC Website.

Maintenance of CALMAC.org and Website Committee Support
Tasks 1

- These tasks are a continuation of the project that has been going on since CALMAC.org was taken over by the CALMAC Website Committee in 2000.

- Maintenance involves:

  - Routine checking of the site to be sure it is operational and responding to issues.

  - Keeping content up to date.

  - Reviewing the site, recommending upgrades, including content, software and hardware.

  - Arranging and managing hosting of the site on the web.

  - Facilitating the operation of the CALMAC Website Committee.

  - And more ….

Manage the Update of the CA Weather Reference Files on the Server Hosting the CALMAC Website
Task 2

- This is a continuation of the weather files creation and automation of the 2021-22 CALMAC project.

- The objective is to try to "automate" some of the more difficult automation tasks that were bypassed in the 2021-22 effort.

- There is considerable uncertainty about how successfully the team can automate these processes. This is meticulous work and often requires human judgement and expertise that is hard to automate.

- The Project Team will work on a best efforts basis to accomplish these task, but complete success is far from guaranteed.

Task 2 Structure

- Task 2 – Manage the Update of the California Weather Reference Files on the Server Hosting the CALMAC Website

  - 2.1. Design Interactive Location Map for Inclusion on the CALMAC.org Weather Page

  - 2.2. Update Historical Weather Reference File Software to Incorporate Automatic Year-to-Year Changeover

  - 2.3. Update Historical Weather Reference File Generation Software to Automate Annual Incorporation of NREL Solar Values

  - 2.4. Implement Google Analytics Update to CALMAC Server Code

  - 2.5. Update Historical Weather Reference File Software to Incorporate Weather Data Imputation Algorithms

  - 2.6. Update the CZ2018 Typical Meteorological Year (TMY) Files to Represent the Most Current 12-year Period of Record

  - 2.7. Review and Coordinate Updates to the Documentation for the Weather File Creation

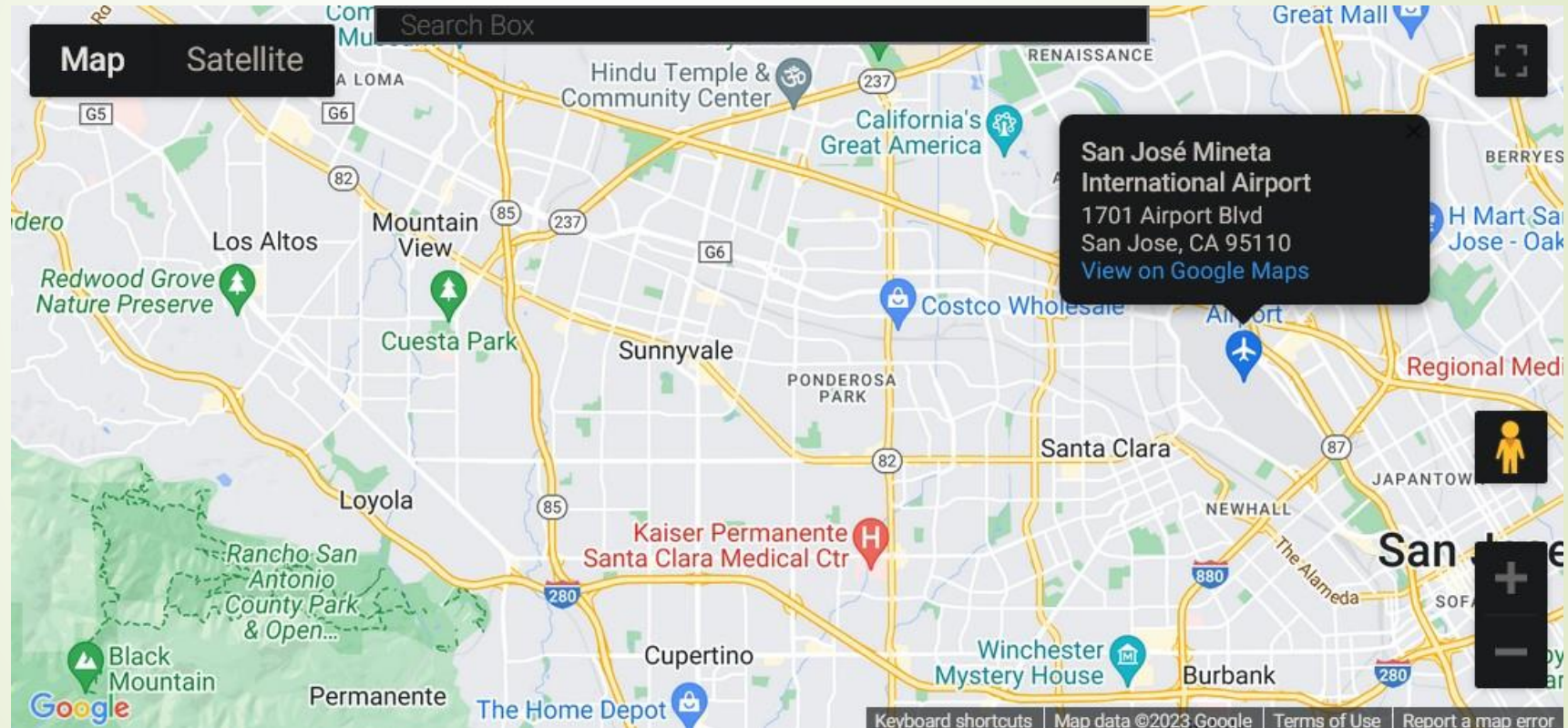 - 2.8. Make As-Yet Unspecified Improvements to CALMAC.org.

2.1. Design Interactive Location Map

➡ The following page shows the basic gist of what we are planning to build:

- ➡ Imagine map is of California

- ➡ Imagine markers will be weather stations

- ➡ if you click on a marker you can get more info and a link (to download page)

- ➡ There is a search field to look up locations

Link to demo site:
https://developers.google.com/maps/documentation/javascript/examples/places-searchbox

2.1. (Continued) Design Interactive Location Map

2.2. Incorporate Automatic Year-to-Year Changeover

- Year end, year/year begin weather file related tasks that happen once a year.

- Original file changes that were assumed would be done by a human, since the occur infrequently and require judgement of a professional experienced in weather files.

- CALMAC wants minimize the need for human interaction in the weather file creation process so that files are created automatically.

2.3. Automate Annual Incorporation of NREL Solar Values

- Initial weather file values use computer model estimates of solar irradiance. In July or August of each year, the National Renewable Energy Laboratory (NREL) posts estimated solar irradiance values based on satellite data.

- Each year these values need to be downloaded from the NREL website, cleaned, and then substituted into the weather estimates that are posted on CALMAC.org.

- This task will attempt to automate this process.

- Since the process has not been observed by the entire project team yet, there is considerable uncertainty surrounding whether it can be automated or not.

2.4. Implement Google Analytics Update to CALMAC Server Code

- Google Analytics is the software that CALMAC.org uses to track usage of the website, and to assess the sites performance.

- In early 2022 Google announced a newer version of Google Analytics and that the older version will no longer be supported.

- CALMAC should upgrade to the newer version.

- This task will:
  - upgrade the Google Analytics software,
  - install it on the CALMAC server, trouble shoot issues between the newer software and the site content,
  - define and create standard reports to facilitate reporting site use. Criteria for reports to be developed interactively with the Statewide Project Manage and the CALMAC Website Committee.

2.5. Incorporate Weather Data Imputation Algorithms

- The evaluation industry has identified the need to make available standardized, complete sets of weather data for savings modeling consistent with the CalTRACK data protocols.

- As such, the project team is being requested to automate the process of filling in gaps of missing data, particularly in for dry bulb temperatures, and then post that data for common use.

- The data filling criteria will be supplied to the project team by PG&E.

- The team will create code to fill in the data according to the criteria. Issues with any of the data filling processes will be discussed with the Statewide Project Manager and/or CALMAC Website Committee.

- Final data will be posted to CALMAC as part of the normal weather file updates.

2.6. Modified Objectives for CALMAC participation in Updated Weather File Development

- Participate to ensure that the processes for creating the CZ2022 files will make them consistent with those that will get posted to the CEC site, with the exceptions being that

  - 1) those files posted to CALMAC weather data do not contain missing values, and

  - 2) that values that clearly are inconsistent with surrounding values (that is, "spikes" and "valleys") are smoothed,

  - 3) the files offered on the CALMAC site may include different file formats of particular use to the EE community, and

  - 4) that the documentation of how the files are created is easy to understand and comprehensive..

- Budget will be modified with extra funds moving to task 2.8

2.7. Update Documentation for the Weather File Creation

- Review and coordinate updates to the report entitled *Update of California Weather Files for Use in Utility Energy Efficiency Programs and Building Energy Standard Compliance Calculations*, CALMAC Study ID PGE0450.00.

- Work will be made by a technical writer under direct contract to PG&E, to ensure that it contains the changes that will be made as a result of the work performed in this contract.

- Additional clarifications to this document as may be identified in collaboration with the Statewide Project Manager and/or CALMAC Website Committee.

- In addition to the update of this report, update the CALMAC Weather Files User Guide that is linked to the CALMAC Weather Page to reflect the changes made so that weather file users can be made aware of these changes.

2.8. Make As-Yet Unspecified Improvements to CALMAC.org

- History has shown that as the CALMAC website is reviewed, and accessed by users, improvements to the functioning and design of the website are identified.

- This sub-task is intended for that purpose. Work will only be initiated upon concurrence with the Statewide Project Manager and/or CALMAC Website Committee.

Project Progress Reporting

- Monthly memoranda to Website Committee summarizing progress.
- Bi-monthly participation in Website Committee conference calls to support the monthly memoranda and answer questions.
- Supplying documentation on software as requested by Statewide Project Manager.
- Other reporting as requested by the Statewide Project manager.

Project Specifics

- Contract Duration – May 1, 2023 through May 31, 2025.
- Total funding – $199,475
  - Task 1 – Management and Maintenance of Website - $108,670
  - Task 2 – Manage the Update of the California Weather Reference Files on the Server Hosting the CALMAC Website- $90,805
  - Breakdown variable depending on how project develops

Project Specifics

Task	Not-to-Exceed Amount
Task 1: Management and Maintenance of the CALMAC Website	$108,670
Task 2: Manage the Update of the California Weather Reference Files on the Server Hosting the CALMAC Website	$90,805
Task 2.1: Interactive Location Map	$8,700
Task 2.2: Automatic Year-to-Year Changeover	$7,080
Task 2.3: Automate NREL Data Incorporation	$9,585
Task 2.4: Google Analytics Update	$4,770
Task 2.5: Data Filling and Posting	$1,500
Task 2.6: CZ2022 Creation	$30,000
Task 2.7: Oversee and Coordinate Updates to the Documentation for the Weather Files	$6,000
Task 2.8: Make As-Yet Unspecified Improvements to CALMAC	$19,330
Total Contract Value Not-to-Exceed	$199,475

Questions?