

Interactive Prototype

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1. Design Planning

1a. Meeting information

Meeting: Monday, November 11th, 2019

Summary:

When discussing plans for our prototype, we knew we had two distinct user groups coming to the Boulder Creek: fishers, and families. With those two groups come very different needs, especially in terms of data. We learned through our research that fishers like to look up water temperature and CF/s data before coming to the creek. We also learned that families are concerned with water safety when coming to the creek. We wanted to give these users one place to get this data - because searching for it online is difficult. Some families have given up on the process, and even swim in the Creek with unaddressed fear.

1b. Main tasks

This brings us to our **three main tasks in our applications**.

- 1) Giving fishers a place to look up water data
- 2) Giving families and community members a place to look up water quality data
- 3) Allowing the community to take samples of the Boulder Creek and view the data collected

To accomplish these tasks, we are designing two applications - one is a mobile app that allows people to access this information on the go and keep track of samples they have collected, the other is a large, interactive display that will exist in-situ at the Boulder Creek. Both will pull from the same data sources.

2. Design Session

2a. Summary

After deciding what we need to design, we did a more in-depth design session. We individually did sketches - one of us focusing on the mobile app and the other focusing on the interactive display. We then compared sketches and discussed how to combine the ideas into one cohesive experience. Although we discussed both applications at the same time, we have split up the discussion and sketches below.

2b. Critical areas of focus

Out of these discussions we also identified the following focus areas for design, which you will notice us focus on in our sketches and prototypes:

- 1) Separating / distinguishing between water quality sample data and fishing-related data
- 2) The end-to-end flow of the citizen science water sample collection
- 3) On the public display, separating interactive data exploration of individual data points from the immediate needs of people visiting

2c. Mobile application discussion and sketches

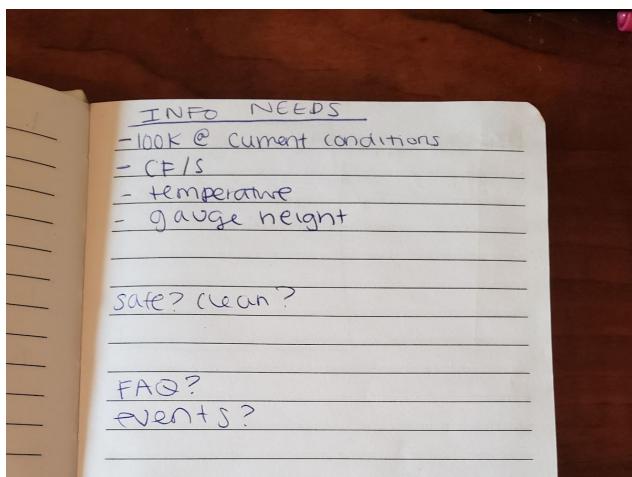
Since we are targeting two user groups in our application, fishers and the general public, we began to wonder if we should make two separate applications instead one one. Each of those groups have different needs when opening the application, and we want to address both of them in the best way possible. Once we started designing prototypes of our application, we started to think that maybe fisherman want to see all the data related to the Boulder Creek. The same goes to the general public. There are users who overlap in these two categories, and we don't want to limit what data they can see.

We also considered making a “privileged user” view for fishers. We discussed at login having users sign up as a fisher, or sign up as a community member. If someone logged in as a fisher, they would see everything the general public does, as well as more detailed information for the

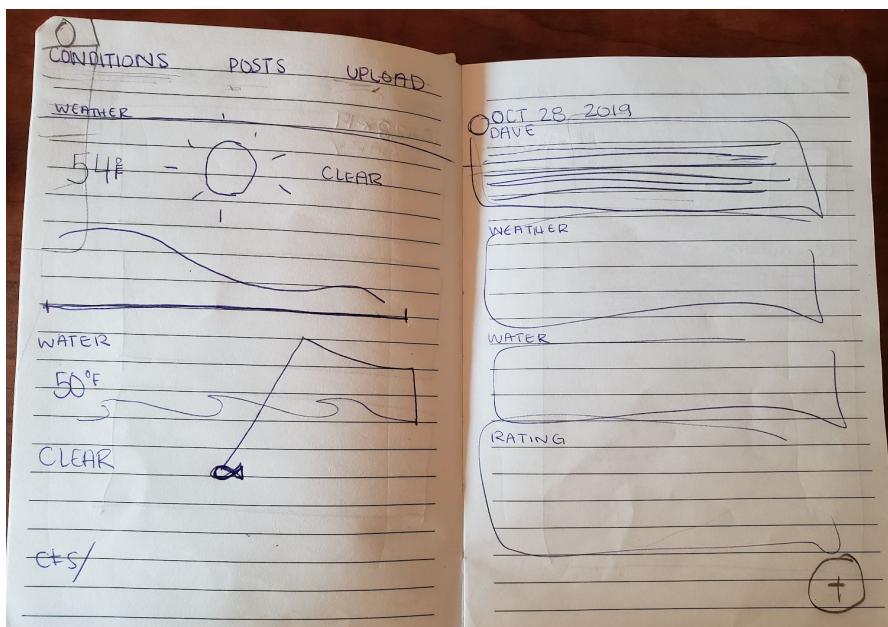
fishing community, such as fishing chat feeds, events, and more. We ended up deciding against this because we didn't want to be exclusive to data.

Another design change we discussed was having two different views on the application - similar to slack. That way, the data would be more organized depending on what you are interested in seeing. There would be a fishing tab, and a community tab. This started to get confusing, and felt like there were two applications inside of one application. We decided to take a step back and simplify things with the tabs at the bottom instead of channel changes at the top.

Brainstorming: What are the needs of our user(s)?



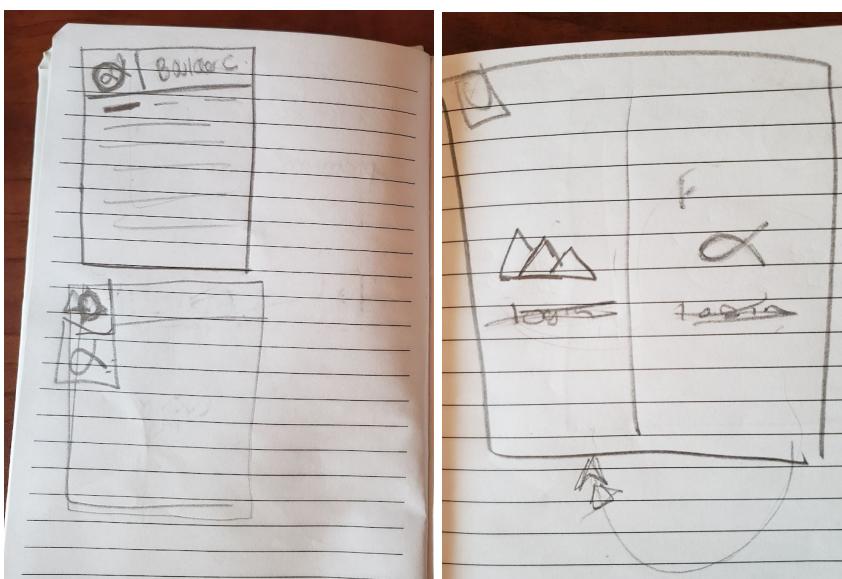
App Design #1: "Slack" Inspired Application. Two different "Slack" channels - fishing and community. Currently on fishing tab. Three tabs on the top: Conditions, Posts and Upload. Left is conditions - right is posts.



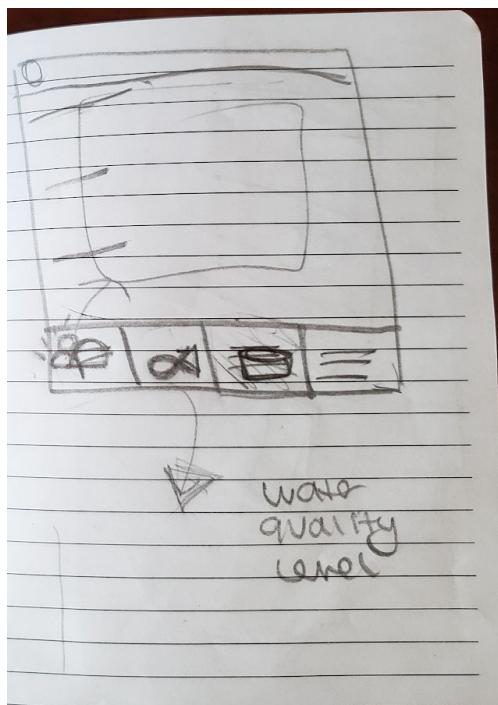
App Design #1: Rethinking the names of the tabs to: Reports, Reviews, Posts.
Currently showing the report on the left, and the reviews on the right.



App Design #1: Showing off the “Slack View” on the left photo.
Showing off the login screen on the right photo - Pick which channel to login to



App Design #2: "Tabs" Application with four tabs: Report, Fishing, Samples, and Events



App Design #2: "Report" View Tab (left) Switched to "Water Conditions" (right)

Reason: Duplicate data on fishing tab and report tab.

The image displays two hand-drawn sketches of a mobile application interface, side-by-side.

Left Sketch (Report View):

- Header:** OCT 28 2019
- WEATHER:** 55°F, CLEAR
- WATER TEMP:** 40°F
- E. COLI RESULT:** 240
- Bottom Tabs:** REPORT (highlighted in green), FISHING, SAMPLING, EVENTS

Right Sketch (Water Quality View):

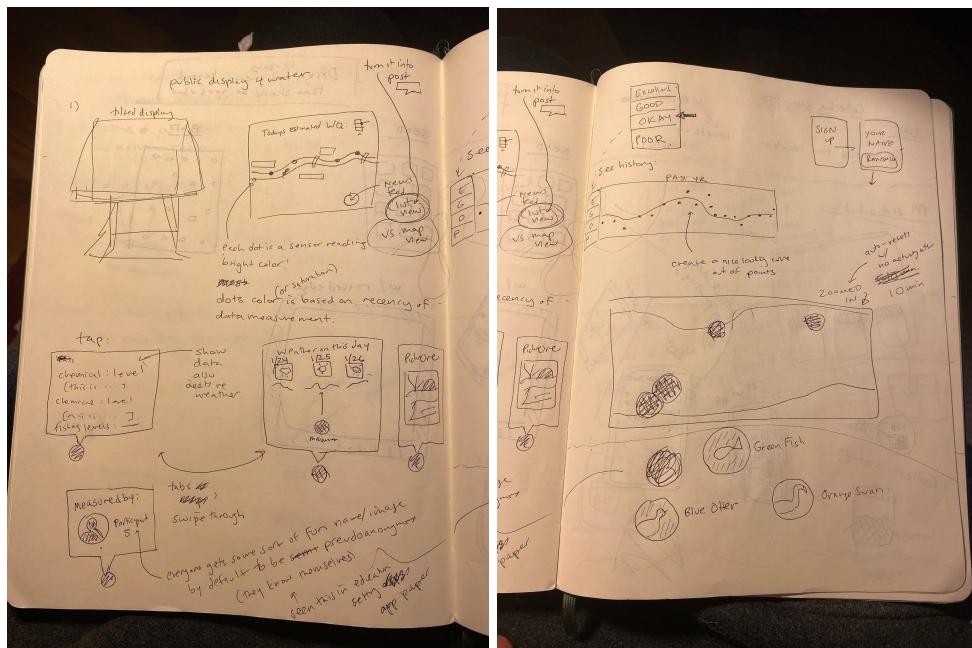
- Header:** WATER QUALITY
- Section:** BOULDER CREEK LATEST SAMPLE
- Temperature:** 53°F
- E. Coli:** 370
- Health Standard:** ✓ YES
- Section:** SAMPLE HISTORY
- Bottom Tabs:** Water quality (highlighted in green), FISHING, SAMPLING, EVENTS

2d. Interactive display discussion and sketches

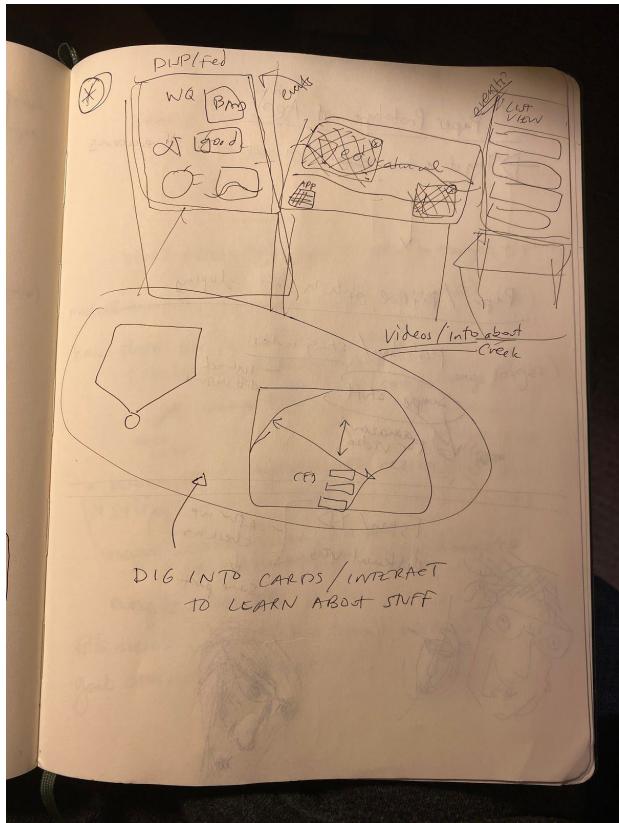
For the interactive display, we agreed that a geographic visualization would make sense for showing the water quality samples and some of the fishing-related data such as CFS. How to separate between the water quality data and fishing data on the interactive display was an area we knew we would have to try some ideas for, like in the mobile app.

We also discussed what the user needs are of someone who is at the Boulder Creek - only some people will want to actually explore into individual data points, while most people just want to know at a high level what the water quality level is right now. So, our most major decision we made was to separate the interactive display out into two screens. One screen allows for an explorative experience with the data, whereas the other shows real-time information about the water quality levels.

App Design #1 - One display



App Design #2 - Two displays

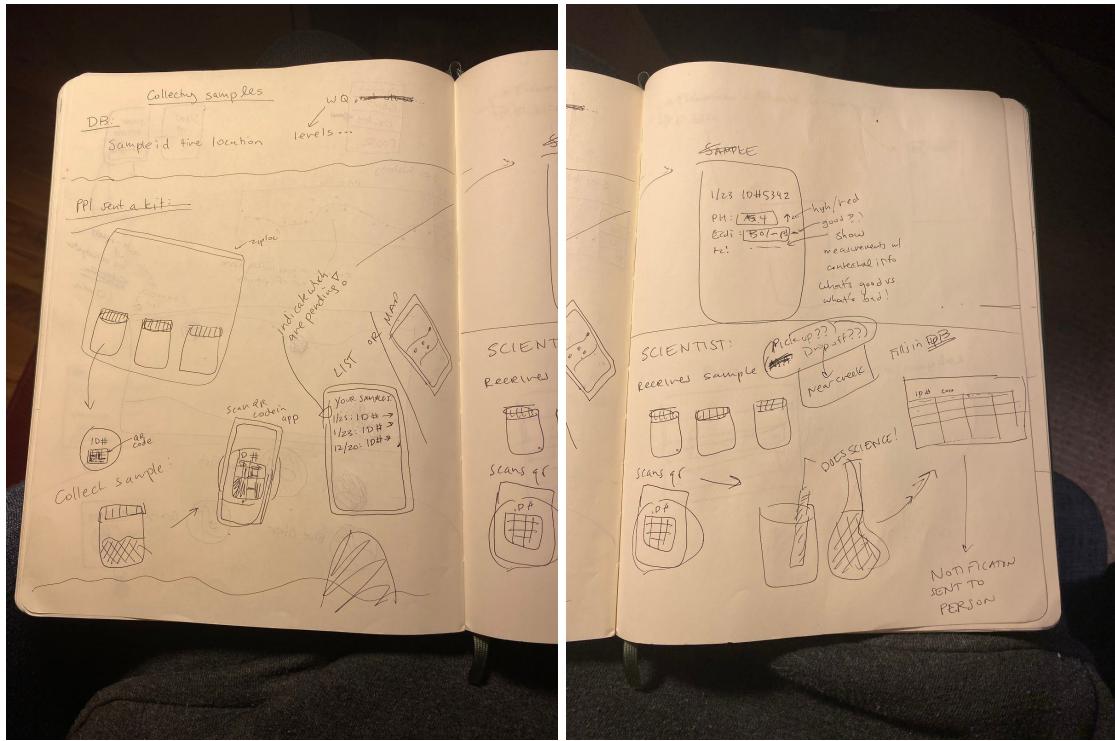


2e. Water sampling discussion and sketches

For the end-to-end experience of water sampling, we decided that we would send people sets of water collection cups with QR codes to identify them. Then people will use the mobile app to keep track of the samples by scanning them, in order to say when and where they took it. We also talked about adding some elements to the mobile app design to support the case when a sample was in the process of being analyzed by scientists

We decided that it would be important to have a way for people to keep track of samples without using their mobile phones, so there would be a back-up paper form with the kit that they could fill out and features to allow people to go back and add or edit existing samples in the app.

We also decided that the easiest thing would be for people to drop off the samples in a drop off box next to the public displays.



3. Paper Prototypes

After our design discussion, we created paper prototypes. We created two paper prototypes for the mobile app, exploring the two design variations we discussed in our design session. After deciding that the interactive display should have two screens, we created a paper prototype for each of the screens.

3a. Mobile App Design #1: Slack Inspired View

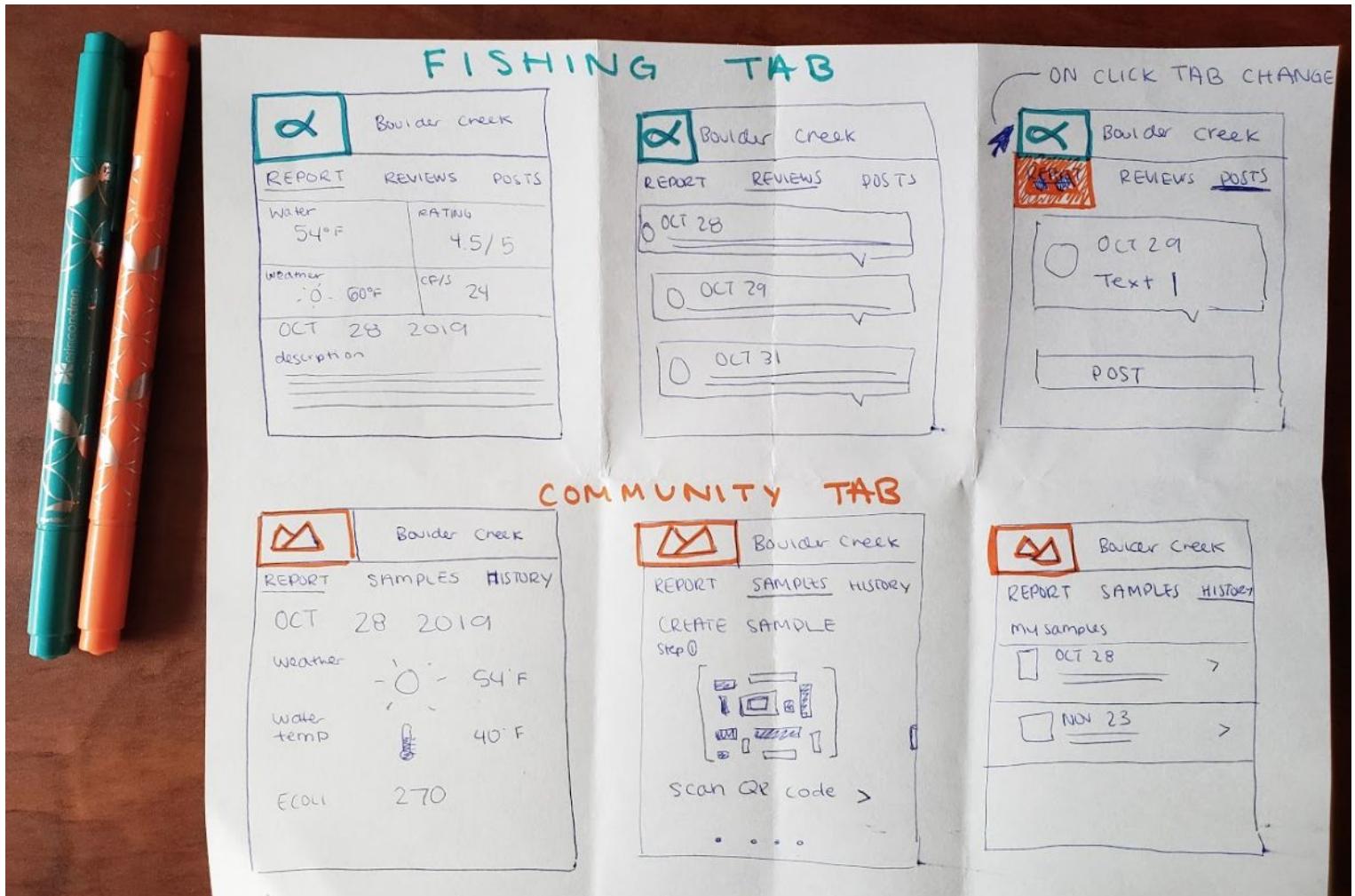
Inspired by slack, users have channels to login to based on what information they want to see. When logging into the application, the user will be prompted to login between a fisher channel, and a community channel. Once inside the application, the user can switch between the channels by clicking the button on the top left corner which has a picture of a fish for fishing, or a mountain for community.

The fishing channel - includes 3 tabs for “reports, reviews, and posts”

- Reports: Shows the current fishing report based on what fishers want to see. Including CF/s data, temperature data, and a description.
- Reviews: Shows a news feed from the fisherman. Fisherman post updates on what the current conditions are, and any other data they want to include in either the form of a photo, or description
- Posts: Provides a channel for fishers to report any notes/photos to other fisherman in the community.

The community channel - includes 3 tabs for “reports, samples, and history”

- Reports: Shows the current weather at the Boulder Creek, water temperature, and information about current water safety of the creek.
- Samples: Provides the user with a 3 step prompt to take a water sample at the Boulder Creek, and submit it to go to the lab.
- History: Allows the user to review their sample history, and see when they sample has been reviewed at the lab, and what data was collected on it.



****Winner: App Design #2****

3b. Mobile App Design #2: Tabs View

We wanted to make an application which felt like one application, instead of two apps nested within each other. This inspired us to make one application with four main tabs based on the most important pieces of functionality:

- Water Conditions: This tab is made for users who want to see the current conditions of the Boulder Creek, the water quality information, and up to date water samples of the Boulder Creek. This information is hard to find online, and sometimes isn't public unless users ask for it. This tab was designed to give quick access to this information. It was also designed for families and users who swim in the creek, but fear what the water quality and safety is.
- Fishing: The fishing tab allows users to see the latest fishing report, view other fisherman's statuses of the creek, and allows fishers to post their own statuses. This tab is designed for fishers who want a quick update on the conditions of the Boulder Creek - most importantly, CF/s levels and water temperature data. We noticed that the current fishing report online can sometimes be one week behind. Having a news feed addresses this problem and allows fishermen to rely on each others reports when data isn't always ready.
- Samples: The samples tab walks a user through collecting a sample of the creek. The tab walks the user through three main steps to creating a sample: scanning a QR code of the sample container, dragging a pin on a map to where the sample was taken, and confirming the date and time which the sample was taken. Once these three steps are complete, users will see a confirmation screen with information of their pending sample. Users also can pan to the history tab, where they will see all of their samples they have collected. The tab will show if the sample is pending, or complete. If the sample is complete, the user can click on the posting and see what the lab learned from their sample. This tab was created because users want to be involved with the water quality of Boulder Creek. This gives a chance for the public to learn more about water quality data, how it affects their community, and giving them a chance to participate.
- Events: There are many events which happen at the Boulder Creek. Including clean the creek days, Tube to Work day, fishing workshops, different fundraisers, and more! This tab allows users to keep up to date on what is happening in their community.

WATER QUALITY

BOULDER CREEK
LATEST SAMPLE

TEMPERATURE 53°F
ECOLI 370
HEALTH STANDARD ✓ YES

SAMPLE HISTORY

REPORT FISHING SAMPLES EVENTS

Water quality

LATEST REPORT
OCT 28 2019
RATING POOR
WEATHER 55°F CLEAR
WATER 18 CFS

REPORT FISHING SAMPLES EVENTS

POSTS

TODAY
CARL
NED
See more >

UPLOAD

[TEXT.....]

NEW SAMPLE HISTORY

① Scan the QR code on the sample

REPORT FISHING SAMPLES EVENTS

② DRAG TO CORRECT SPOT

③ Confirm location

TIME 10:00
DATE 10/10/10
CONFIRM TIME >

THANK YOU!

Please put container in case. Your confirmation code is 87230.

Click here for more info on the data.

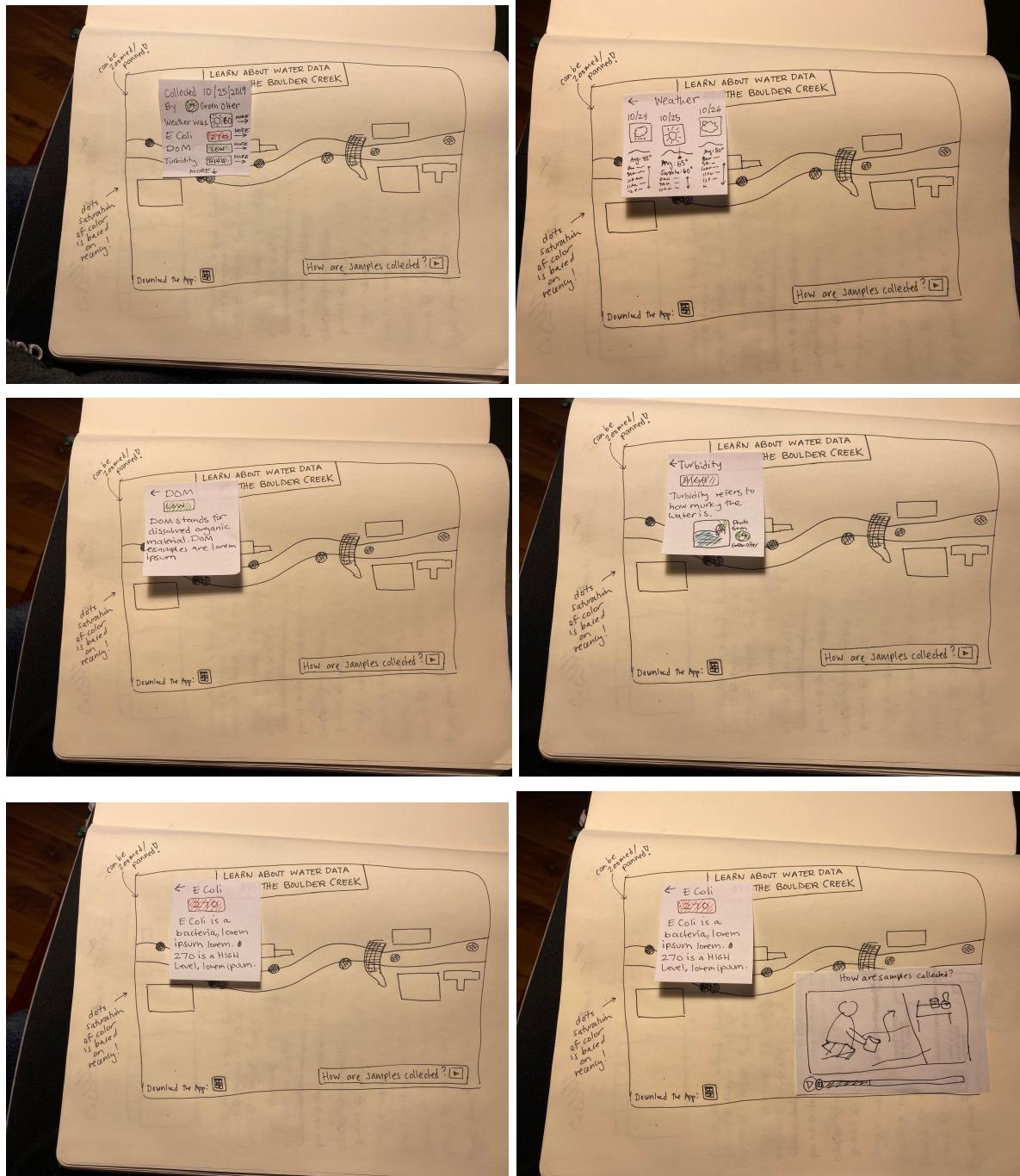
OCT 8 CLEAN THE CREEK >
OCT 10 TUBE TO WORK >
OCT 18 LEARN TO FLY FISH >

EVENTS

OCT 8
OCT 10
OCT 18

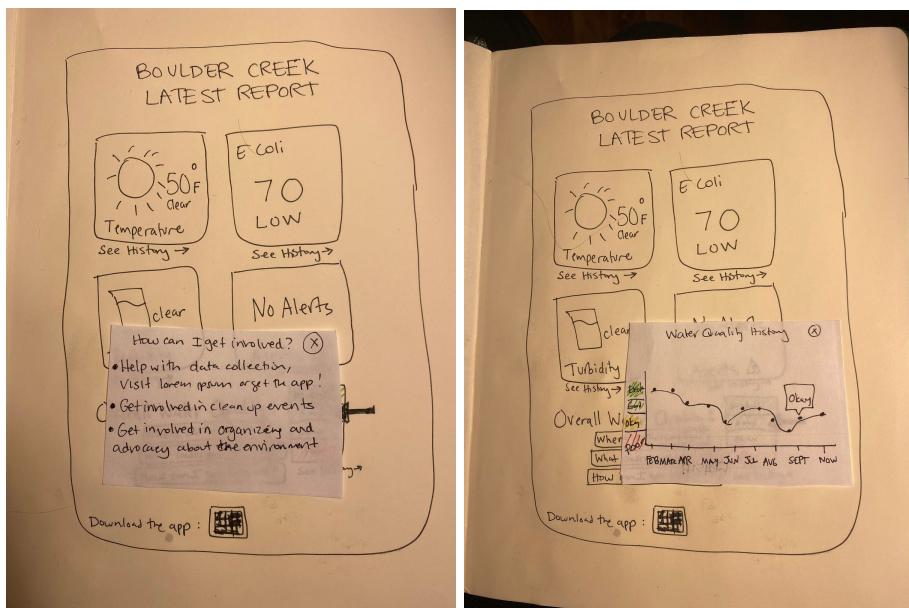
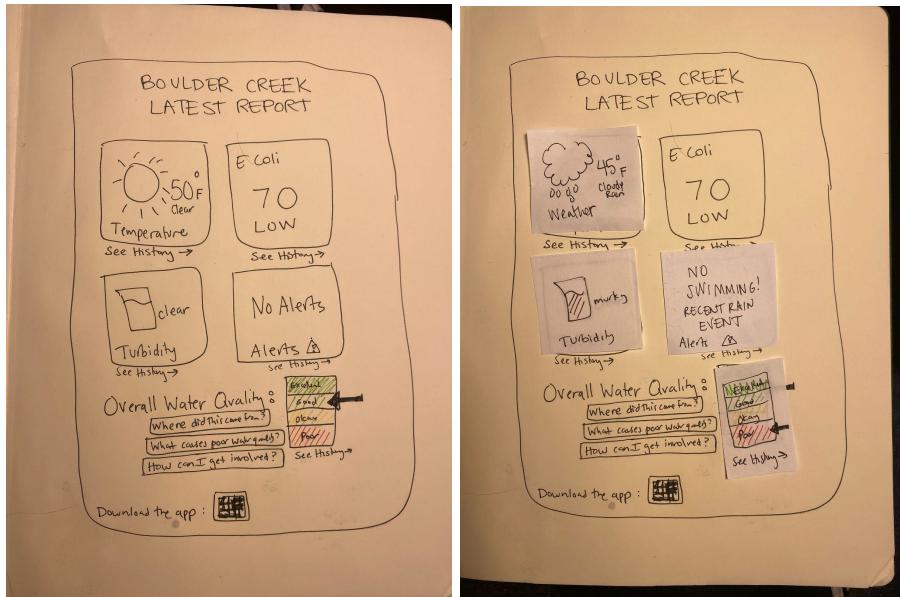
REPORT FISHING SAMPLES EVENTS

3c. Interactive Display Screen 1



3d. Interactive Display Screen 2

The second screen (real-time information) was modelled off of the Water Quality and Fishing tabs of the mobile application.



4. Figma Prototypes

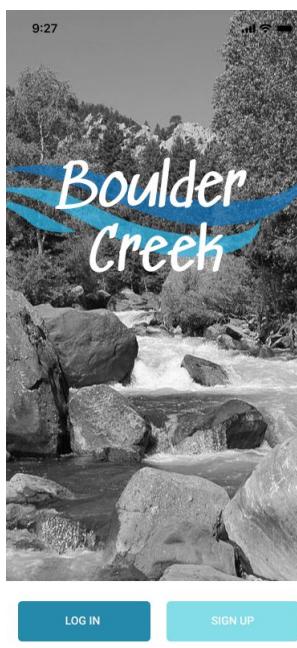
For the Figma Prototypes, we created a prototype for the design for the mobile app that we preferred after looking at the paper prototypes. For the displays, we decided to focus on the more interactive public display screen and created two variations of the public display, thinking of different ways to separate the fishing and water sample data and navigate between samples.

4a. Mobile App Figma Prototype:

[Interactive Prototype](#)

[Screens Link](#)

Home Screen



LOG IN

SIGN UP

Water Quality Tab

9:27 Boulder Creek ☰

Latest Report
OCTOBER 28 2019

50°F clear Temperature	270 E.Coli
clear Sample	✓ approved Health Standard

Sample History

10.09.19 Description	10.19.19 Description
09.09.19 Description	09.01.19 Description

See More >

Water Quality Fishing Samples Events

Fishing Tab

9:27 Boulder Creek ☰

Fishing Report Fishing Report 2 Fishing Report 3

Latest Report
NOVEMBER 1 2019

50°F clear Temperature	4.5/5 Rating
47°F clear Water Temperature	18 CF/s

Description

Lore ipsum dolor sit amet, consectetur adipisciing elit, sed do eiusmod tempor incididunt ut labore et dolore magna wirf Lore ipsum dolor sit amet, consectetur

report provided by Rocky Mountain Anglers

9:27 Boulder Creek ☰

REVIEWS POSTS

Today

- Jan
High water levels this time of year.
- Carl
No luck catching anything this AM.
- Ned
I recommend the spot by the park!

Yesterday

- Carl
Head West for the best fishing today!

See More >

9:27 Boulder Creek ☰

REVIEWS POSTS

Create Post Photo/Video

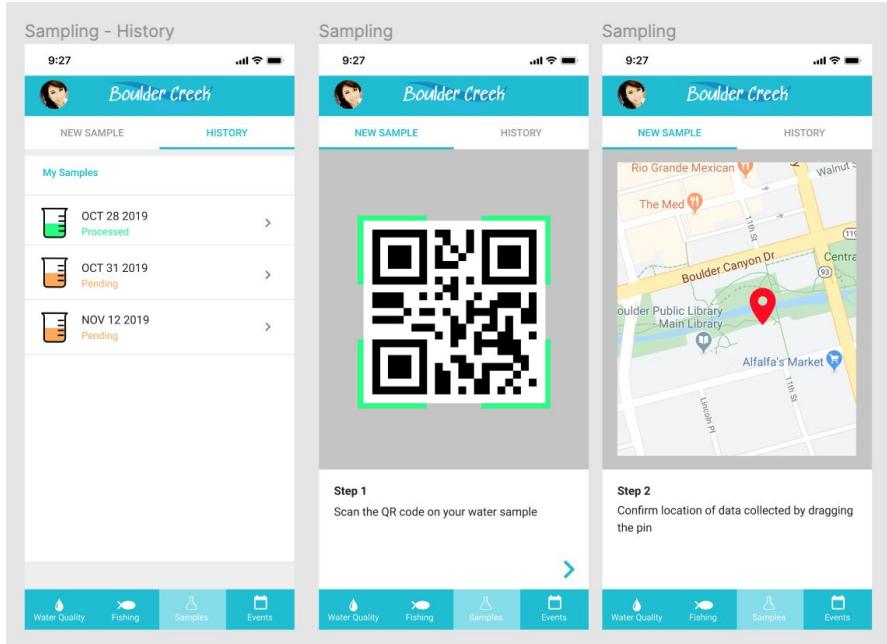
Input text

POST

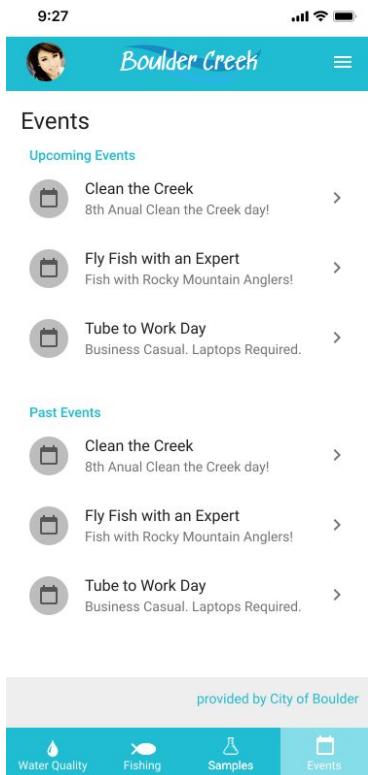
Janis Deanborn
10.10.19
High water levels this time of year. Might hold off on the fishing until next year. Getting sick of catching nothing.

Water Quality Fishing Samples Events

Sampling Tab



Events Tab

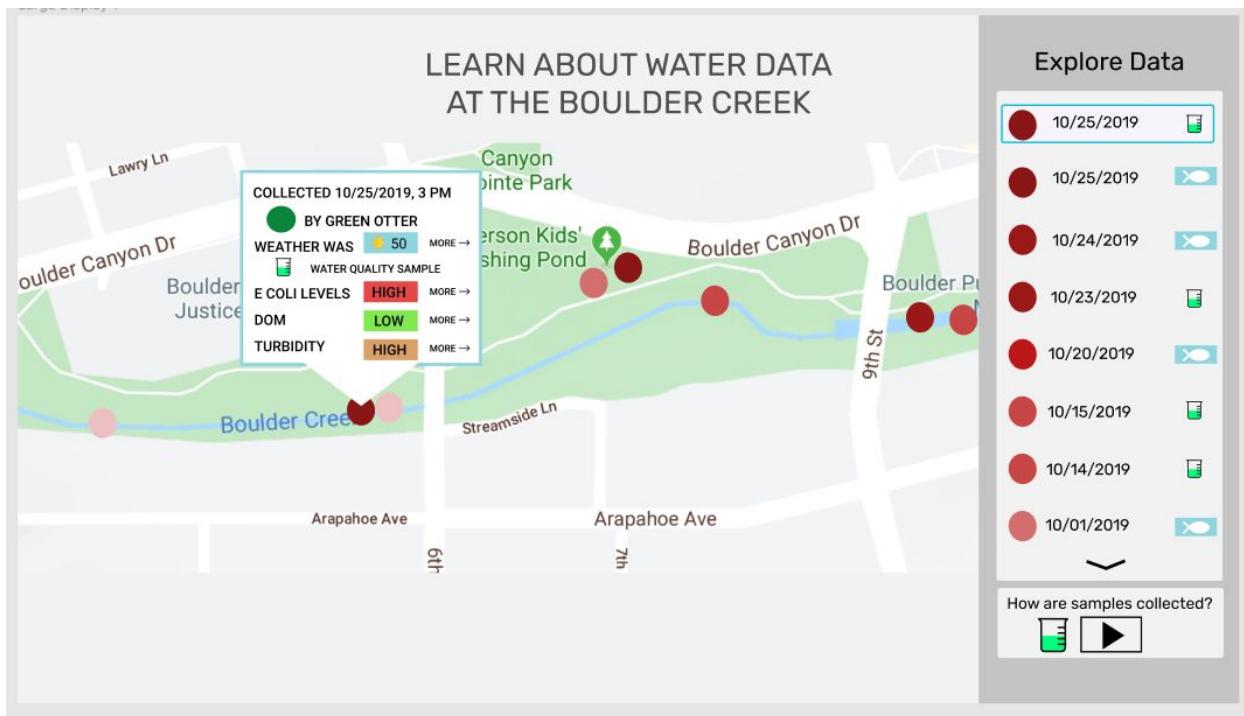


4b. Interactive Display, Screen 1, Version 1

[Interactive Prototype](#) (Note - Make sure the Display Mode is set to “Fit”)

[Figma Screens](#)

In this version, all of the data is on the same tab on the right, separated fishing v. water quality by icon. The prototype test involves 6 tasks.



4c. Interactive Display, Screen 1, Version 2 (For Task 5)

[Interactive Prototype](#) (Note - Make sure the Display Mode is set to “Fit”)

[Figma Screens](#)

In this version, you use tabs to switch between fishing vs. water quality data.

Only Task 5 (focused on fishing-related information) is repeated for this version.

