- **App Idea** – You should have a clearer vision of the app so the description of the app idea can be more precise.

  This app will allow users to report and check trail conditions. For standard users, the data collected from user reports will be used to check if the trail is in good riding condition before actually traveling to the trail. User reports include a ranking of muddiness, which will be processed and shown on the home screen. Eventually it will be used to create a predictive model that integrates water level data of local streams.

- **Users** – You should have identified more users types and learn more specifics about the users.

  Students & Researchers

  - Interested in analyzing the data to find patterns correlating trail usage, trail conditions, and stream levels

  Trail users

  - Want to see the trail conditions before they travel to use the trails
  - Want to provide feedback on the condition of the trails to help other users

  Government Employees & Trail Managers

  - Interested in looking at usage patterns to figure out where to direct funding?

- **Major Workflows** – From your second interview with the scientist, you should have learned the details of the app usage and can write a workflow. A workflow is a step by step description of the user interacting with the app. This can be a numbered list. Most apps have more than one workflow, for example each user type may have a workflow, or there are alternative workflows, or workflows when the things go wrong. So you should have more than one workflow.

  a. View general conditions:
     - Open app -- overview is on home screen
  b. View conditions of specific trail:
     - Select a trail from the list
  c. Submit report of trail:
     - Select "Submit Report" (or equivalent)
     - Fill out form
  d. Download data:
     - Select privileged login (or equivalent)
     - Log in

- - - Select Download Data
- - - Apply Download constraints (all data or data from last n days)
- - - Download an archive of all data for further analysis (as CSV)
- e. Submit stream data (if not able to automatically collect)
- - - Select researcher login (or equivalent)
- - - Log in
- - - Select Upload Data
- - - Upload Data
- f. View quick stats (privileged view)
- - - Select researcher login (or equivalent)
- - - Log in
- - - Stats are on privileged home screen

- **Views** – Now that you have a clearer vision of the app, you can list major views (pages) that your app will have. You can also list the widgets of the views.
    - a. Everyone:
        - ■ Overall trail condition report
        - ■ List of trails
        - ■ Trail details page
    - b. Privileged:
        - ■ Overview stats
        - ■ Export data
        - ■ Upload data (if not able to automatically collect from sensors)

- **Data** – Your list of data types can be more complete and more specific.

    Trail Report:
    - - Identifier of trail
    - - Coordinates of report (optional)
    - - Condition
    - - Notes
    - - Danger / Warning tag (optional)
    - - Date / Time of submission
        *User has the option of changing the time of report, defaults to current time.

Sensor Data Point: (export as .csv)
- Identifier of trail
- Coordinates of sensor
- Date / Time of submission
- Sensor data:
    - pH
    - Dissolved oxygen
    - Specific conductivity
    - Temperature
    - Stream gauge
    - Days since precipitation

Presented Data:

- Average of condition reports in the last 24 hrs
- Count of reports in the last 24 hours

- **Anticipated Challenges** – Now that you have a clearer vision of the app you identify challenges. These challenges include both usability and implementation challenges. Usability challenges are generally related to errors that a user may make.

- Users not submitting data.
- Dealing with maps and other GIS elements.