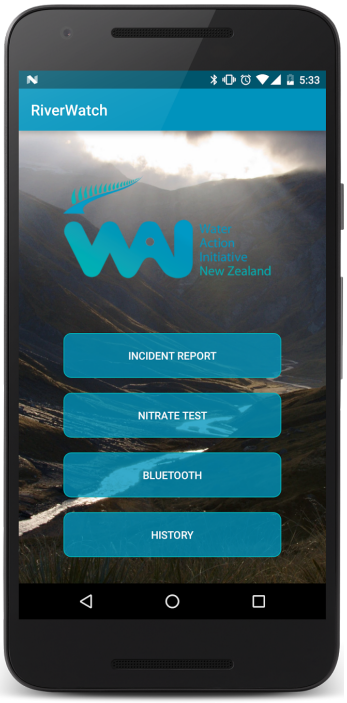
User Documentation

Android Application

Main Menu

Once the app is opened the first screen you will see is the main menu where the user will be able to select one of four buttons, these buttons being: Incident Report, Nitrate Test, Bluetooth and History. These buttons will take you to the four main features of the app. Also, cllicking on the WaiNZ logo will open up the WaiNZ website where you can find more information about the Riverwatch project.



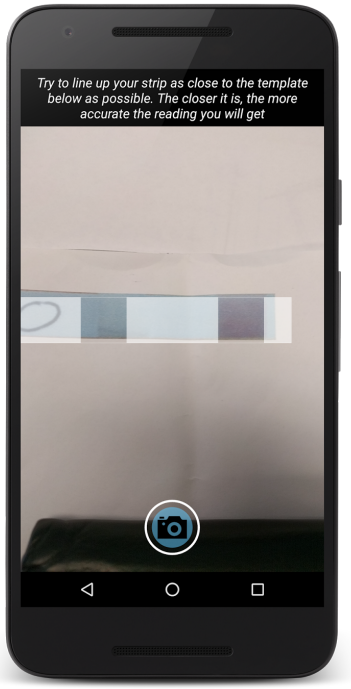
Incident Report

Incident capture with camera

Once the User presses the ‘Incident Report button
they will come to a typical camera screen which will allow
the user to take a picture of an incident of pollution that is
occurring by pressing the camera button at the bottom of
the phone.
The incident camera is set to only use the back camera by default
and fully supports rotation, the camera button will rotate to
Indicate that the app is ready to take a rotated picture so that
it will format properly.
The app will also inform the user when it is connected to
the google API services so that the location of the incident can
Be recorded.

Submission Screen
Here the user is able to view the picture they have taken of The incident, input details about the incident, and if they swipe to the second tab they are able to view a map of where the incident occurred.
When submitting an incident report there are 2 text fields the the user has to fill out, the first one being a description of the incident and the second the words that will be represented as tags on the website.
Once the user is happy with the incident report they can hit the submit button which is located under the incident image, which will send the report to the website and save it to the history, and the user will be taken to the home screen.

Nitrate/Nitrite Testing



Nitrate/Nitrite camera screen

Once the user has pressed the ‘Nitrate Test’ button they will come to a screen like the one in fig 2.1. The main focus of this screen is to line up the nitrate/nitrite strip with the overlay, if the camera is out of focus the user can touch the screen and it will auto focus. Although it is not necessary for the camera to be focused for the algorithm to work.

Results Screen

Once a user takes a photo they will be taken to the results screen where they will need to enter a name for the test and a description of it, the description could include things such as the environment it was taken in, the weather or other things of note that might have affected the test.

Once the user has filled out that information the can review the geolocation by swiping left. Now

they can either cancel the test by pressing the 3 vertical dots in the upper right and selecting ‘Cancel Test’ or save the test by pressing the floating button in the lower right.

Once the user has saved the test they will be taken back to the main menu and of they want they can review the test in the history section.

Bluetooth

Main Bluetooth Screen

The user has the choice of 4 buttons to click

- Settings Icon

  This takes you to the **Setting Screen**

- Test

  This makes a simple test of conductivity, turbitity, temperature and pH and will display the output to the user. If the user is connected to the internet with location services enabled the data will be sent to the website.

  This can take up to 10 seconds while the device is making the samples

- Status

  This requests the state of the Bluetooth device and will be displayed in the data area

- Retrieve Data

  This will retrieve all of the data off the SD card of the device. It is then displayed to the user and all of the data will be uploaded to the website and save to the local database.

Settings Screen

On first entry to this page, the user must scan and connect to the Bluetooth device.
From there the following steps can be made:

1. The device must be reset - this is just to ensure that the Bluetooth state is now in standard user mode.

2. The time interval can be updated in seconds to what the user wants. The desired amount should be entered then the update device button should be clicked.

3. Then the user can navigate back to the Main Bluetooth Screen

There are other buttons there that can be implemented in the future

History

The history section stores all the reports that the user has previously generated using the app. These are separated into the three types of reports, Incidents Reports, Nitrate Tests and Water Tests. Each of these has a scrollable list of all the reports.

The user can click on a list item to go into a page with tabs the user can swipe between which give more information about that report.
Tabs:
Incident and Nitrate Test Reports :

- ‘Info’ which shows the picture and all information about the report
- ‘Map’ which shows a google map with a marker on the location the report/test was conducted

Water Tests Reports:

- ‘Samples’, which give the results for temperature, conductivity, turbidity and pH as well as time into the test for each sample from a water test carried out by, and retrieved from the companion water measurement device
- ‘Map’ which again shows a google map of the location of the test
- ‘Graphs’ which give a graphical representation of the results for temperature, conductivity, turbidity and pH over time for the test.

The user can also hold down a list item to be given the option to permanently delete that report.

Each list item also has a ‘SUBMIT’ button. This is for submitting the report data to the WaiNZ website to aid in their fight against freshwater pollution. This will be greyed once the report has been submitted to avoid a report being submitted twice.