PROJECT REQUIREMENTS

Project Name	F.L.O.A.T. (Facilitating Level Objectives Assessment Technology)

Software Requirements

Interactive Frontend Site: A website or application that is able to see the regularly updated reports of our project's findings real-time testing and deployment out in Saskatchewan waters.

Trained Artificial Intelligence: A system trained off of one or multiple datasets that is capable of real-time object detection (primarily that of litter, oceanic life, and in water obstacles), based on the live data being passed to it.

Garbage & Litter Dataset: A dataset containing a wide range of litter in various different environments, especially in water. Ideally this dataset should be annotated and contain a wide variety of litter to accommodate for the random litter that will be uncovered in Saskatchewan waters.

Backend Log: A log of recorded water parameters and litter. This will detail where and when each piece of data was found. It will also log what kind of litter it was. The data will be viewable in a customer end device. This data should include a potential image of litter, along with a potential geolocation for the garbage which can be used on the interactive site for trend recording.

Physical Requirements

Go Pro Camera: This is the camera we plan to use to capture our real-time data in Saskatchewan waters. Newer generation GoPro cameras are capable of data transmission to either a mobile device or laptop if provided with a stable internet connection.

Internet Access: As mentioned above, due to how well the GoPro camera works for our project's situation, and the fact that we will need to transfer data in real-time to be reviewed by our software, we will require a hotspot or a form of consistent internet access for our project.

Mobile Device: Since a mobile device is capable of providing a hotspot & wifi connection, and additionally it is capable of running google colab, it would be ideal for our drone to hold a waterproof housing for a mobile device and all other electronics necessary.

RC Boat: When the time comes for live deployment in natural environments, we will require a RC boat to be able to maneuver in Saskatchewan waters and house our mobile device and/or electronic components.

Testing Facility: In initial stages of development and testing the physical portion of our project, we will require a testing facility that we can utilize to test our real-time litter detection software.