

Product Requirements Document (PRD)

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Problem Description

Currently available solutions for road hazard notification often only notify a user about hazards on their current travel path, and rely on crowd-sourced data exclusively. There is a distinct lack of in-house data being applied to current solutions.

Scope

Our project's theoretical scope is limited to wherever we can get verified, accurate map data. Currently, we are limiting our scope to the Corvallis area, as we will not have the resources to expand as of right now.

We will be designing our app under the limitation of the actual scope, but with the theoretical scope in mind (modularization).

Use Cases

We want to open the app and use the "Hazard Selection" tool to filter which hazards we have on the map at once.

The user will be able to report observed hazards using the "Report Hazard" button.

The user will be able to view past data by being able to select dates in the hazard map.

Purpose and Vision (Background)

Our purpose is to develop a hazard watch platform that provides our users with current and past data that is selectable to what the user wishes to watch out for.

We want to become the platform of choice for people planning trips and wanting to avoid road hazards.

Up to now, you have always been at risk of having your path blocked from: random flood zones, construction blocking paths, landslides or car crashes.

Stakeholders

- Seed Investors
- CEO/CTO/Founders
- Engineering Managers
- Product Managers
- Engineering Team
- Marketing Team
- Legal Team
- Sales
- Users
- Local Government Municipalities

Preliminary Context

Assumptions

We can integrate map data easily and don't have to reinvent the wheel in that regard.

We have until the end of Winter Term to have our website at an adequate level of development to begin testing it with hardware instruments.

Constraints

We are a small team, and should plan accordingly. We want to be able to test core functionality of the website by the end of winter term.

Due to our data being reliant on crowdsourcing for part of its data, our data is limited based on our user base.

Dependencies

We need a database to store the past and present data that is reported.

We are dependent on users uploading data for us to be able to process.

Hardware dependencies based on the sensors we integrate with the project.

Market Assessment and Competition Analysis

Alternatives:

- Apple Maps, Google Maps, Waze: Good alternatives but are not primarily made to report hazards or view them.
- Pulse Point: Police / emergency services reporting app which only gives notifications when emergency services are responding to it.
- Street bump: A crowdsourcing app that collects data about potholes while you drive to share with local governments.

Target Demographics (User Persona)

- Jenkins is a 47 year old city planner who is interested in fixing poor road conditions in their city, but lacks data of where these flash conditions occur.
- Sam is 24 years old commuter who has to drive to their work every day and cant afford to be late
- Leeroy is a 23 year old college student who is empathetic and likes to report issues whenever they can so that others can avoid them.

Requirements

User Stories and Features (Functional Requirements)

User Story	Feature	Priority	GitHub Issue	Dependencies
As a commuter I want to be able to view what sort of hazards exist in my town and know how it might affect my day.	Overhead Map	Must Have	TBD	Web App Feature working
As a student in a college town I want to report when I see something happen, so that my peers can be safe.	Report Hazard Feature	Must Have	TBD	Web App Feature working
As a city planner I want to be able to see past data regarding road flood hazards in my area	Flood Zone Data-base	Must Have	TBD	Physical Sensor is connected to the database.

Non-Functional Requirements

- The website and database should be able to handle increases in traffic from users during peak periods
- The website should be available and formatted properly to be able to be used on various devices.
- The code would be well documented.
- The website should be user friendly and easy to navigate.

Data Requirements.

Integration Requirements

Unknown at this time, but we will probably use a map api of some sort.
We will update this document upon any api usage.

User Interaction and Design

Provide wireframes, mockups, or visual representations of the product's user interface. Describe the user experience design principles and interactions. Can live in a dedicated issue or document.

We have not had time to sit down and design any UX yet, but we have a general idea of what some features will look like.

- We want the overhead map to have a checkbox feature that allows users to filter what kinds of hazards show up on their map
- We want the Report feature to have all of these options available to report
- We want the flood data to be able to show an average and a current datapoint for a given sensor that can be clicked on on the map
 - Possibly the feature to look at all sensor data in a list as well

Milestones and Timeline

Website-only functionality done by the end of Winter Term 2024

Project done by the end of Spring Term 2024

Goals and Success Metrics

Goal	Metric	Baseline	Target	Tracking method
Verify Accuracy of data	Average of sensor input	Currently Unknown	>95%	Checking sensor data from the physical sensor and cross-referencing to see it is being uploaded correctly.
Product-market fit	How would you feel if you could no longer use this product?	Currently Unknown	Very disappointed > 40%	Interview

Open Questions

What will the physical hardware even be?

What does it look like to have the data from this hardware uploaded automatically?

Will it still need to be battery powered?

Out of Scope

The project will not include any physical infrastructure beyond the implementation of the physical sensors. For example, while our project concerns itself with informing municipalities about things such as flood data, it would not be responsible for actually building any of these infrastructure improvements.