

# FLOODGUARD

Be Ready, Wherever the Rain Hits.

Group 15

RESCUE



# WHAT IS THE PROBLEM?

CURRENTLY

- Flash floods are increasingly common due to intense and sudden rainfall
- Monsoon surges and high tides worsen flood risks in low-lying areas
- Urbanization reduces natural drainage, causing water to accumulate faster
- Recent floods reported in areas like Jurong, Bedok, and Bukit Timah
- Existing drains and canals seemingly overwhelmed despite upgrades
- **Limited real-time alerts or guidance for citizens on what to do during floods**



# WHAT IS THE PROBLEM?

## THE FUTURE



- Climate change is expected to bring more frequent and intense storms
- Rising sea levels will increase flood risk in coastal and low-lying areas
- Heavy rainfall events may exceed current drainage system capacity
- Urban expansion may further reduce permeable surfaces for drainage
- Flood-prone areas may grow if infrastructure isn't upgraded in time
- **Growing need for better early warning systems and flood preparedness**
- **Citizens must be more equipped to respond to emergencies**

# PROBLEM STATEMENT

## CRISIS MANAGEMENT AND REPORTING:

FloodGuard aims to better equip citizens for flood situations by enabling a self-reporting system that feeds into a real-time flood map showing affected areas and nearby safety shelters, while an AI chatbot provides instant guidance and answers to flood-related questions.

# APP FEATURES



## FLOODMAP



## FLOODBOT



## REPORTS



## SETTINGS

A map showing flooded areas and shelter locations

An AI chatbot that answers your queries about flood

A reporting system for users to report flooded areas

Settings function to change the settings of the app

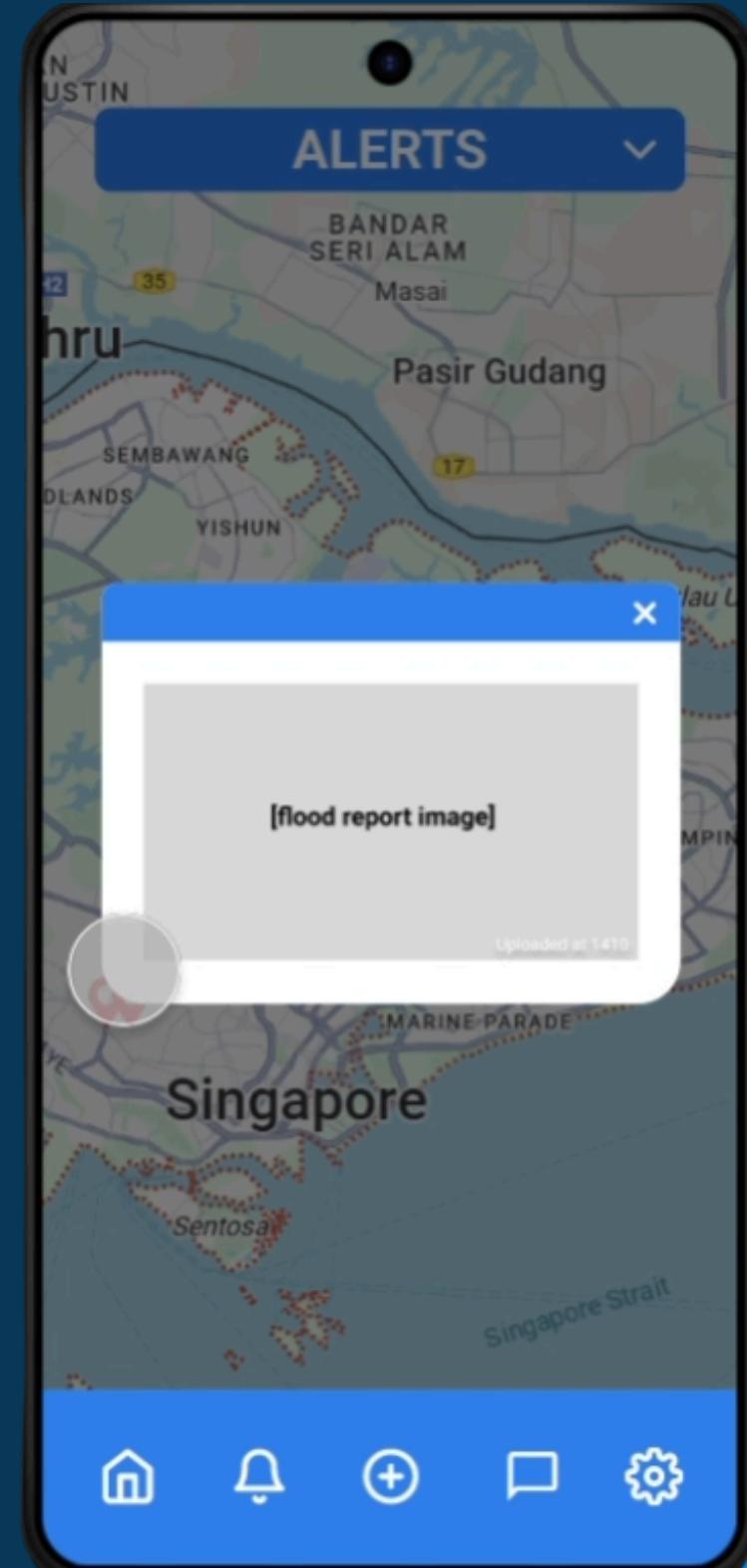
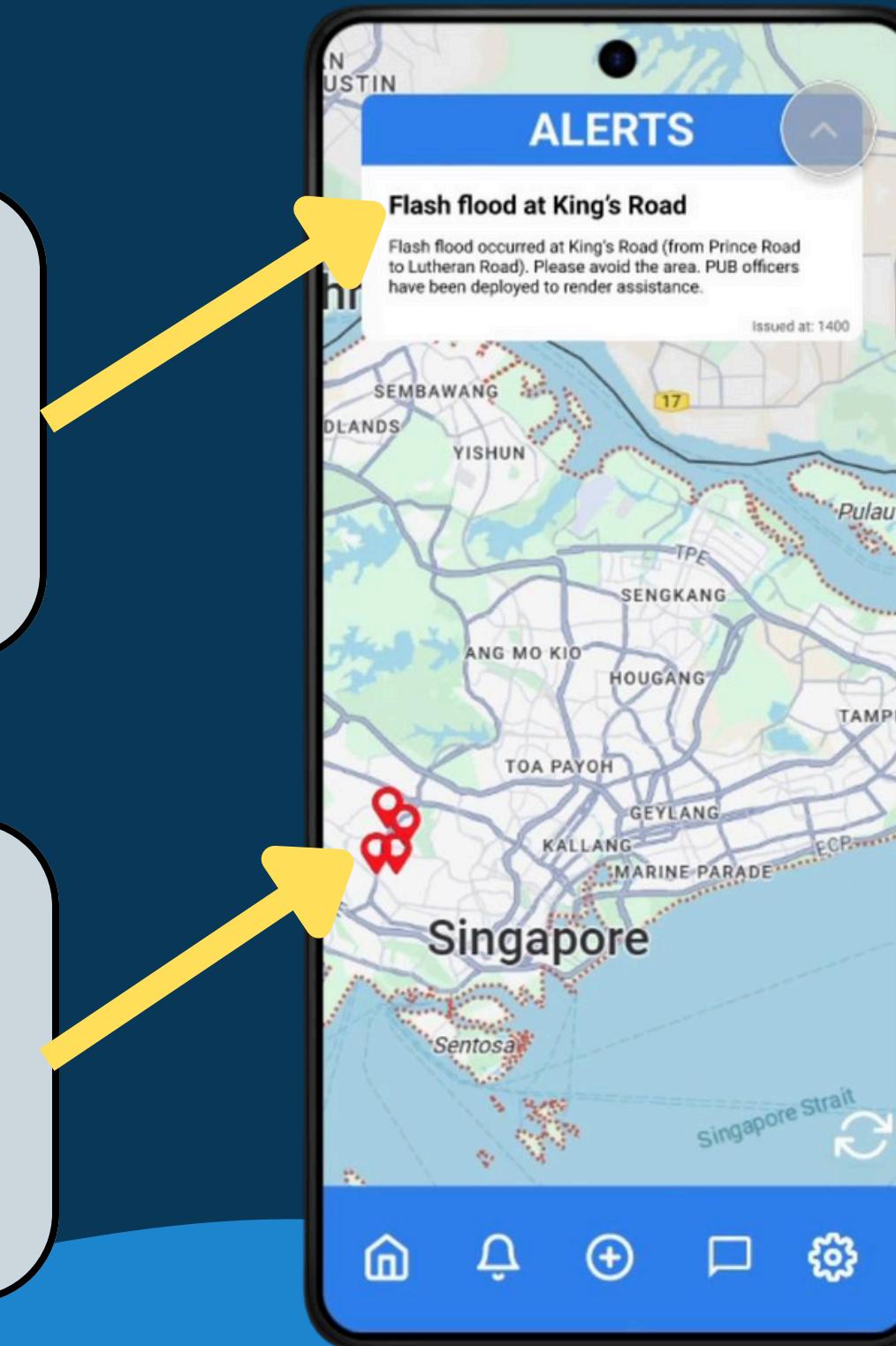
# Homepage



**ALERT**  
Updates user on recent alerts or forecasts.



**FLOODMAP**  
Flooded areas are indicated as pins in the flood map.



When the location pin is clicked, the flood report image pops up.

# NOTIFICATION HISTORY



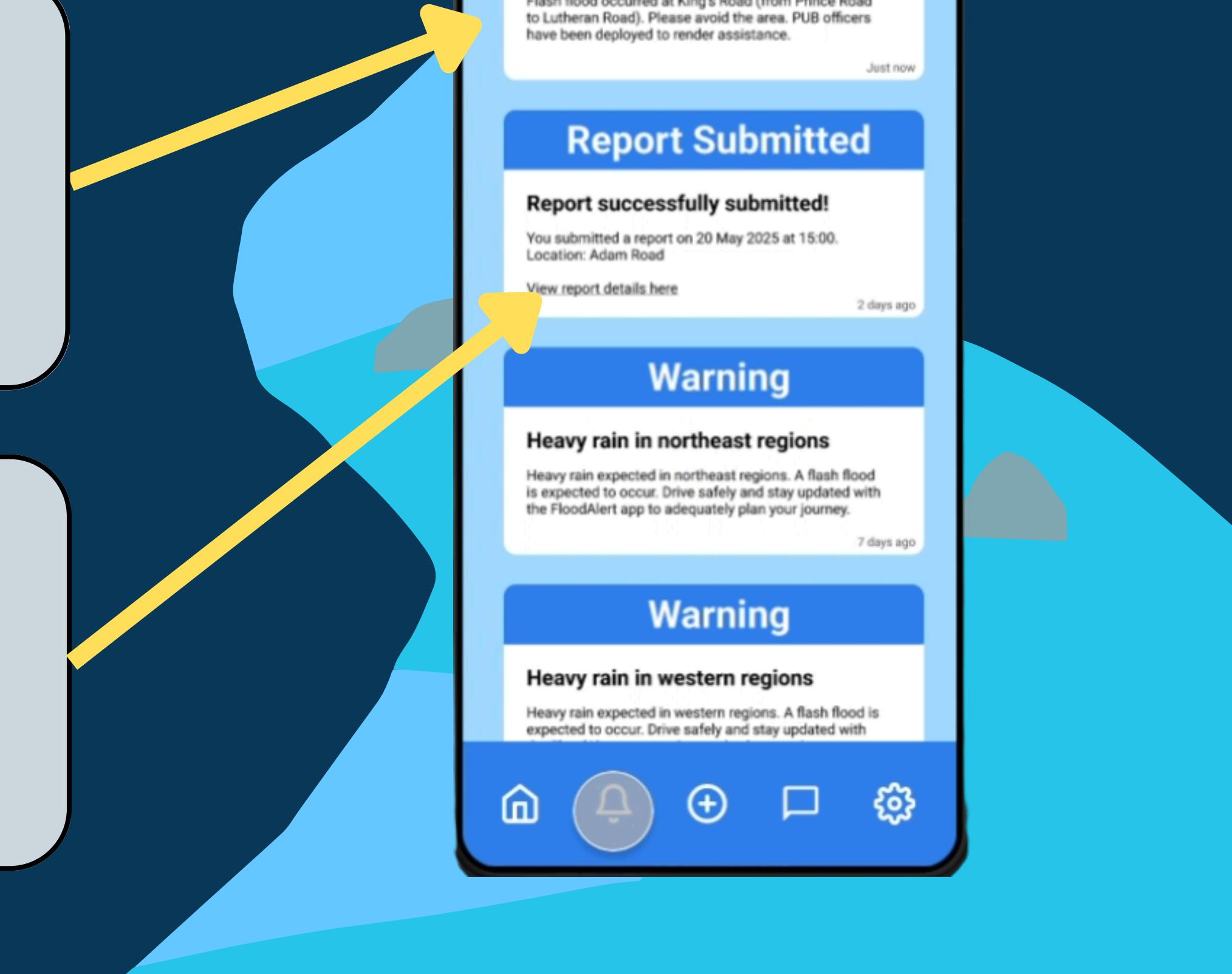
## NOTIFICATION STORING

Past notifications from the app will be stored in this page, with the most recent at the top.



## DETAILED REPORTS

Full report details can also be viewed by clicking on the notification.

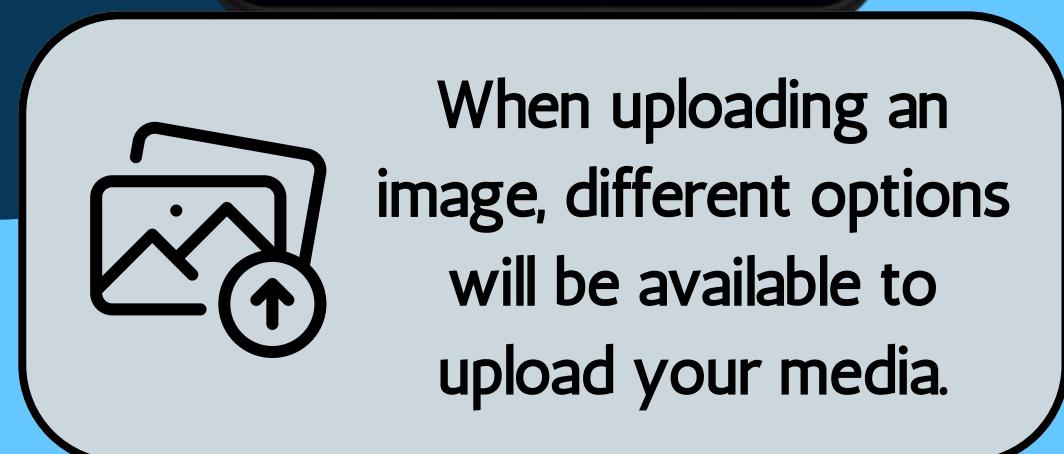
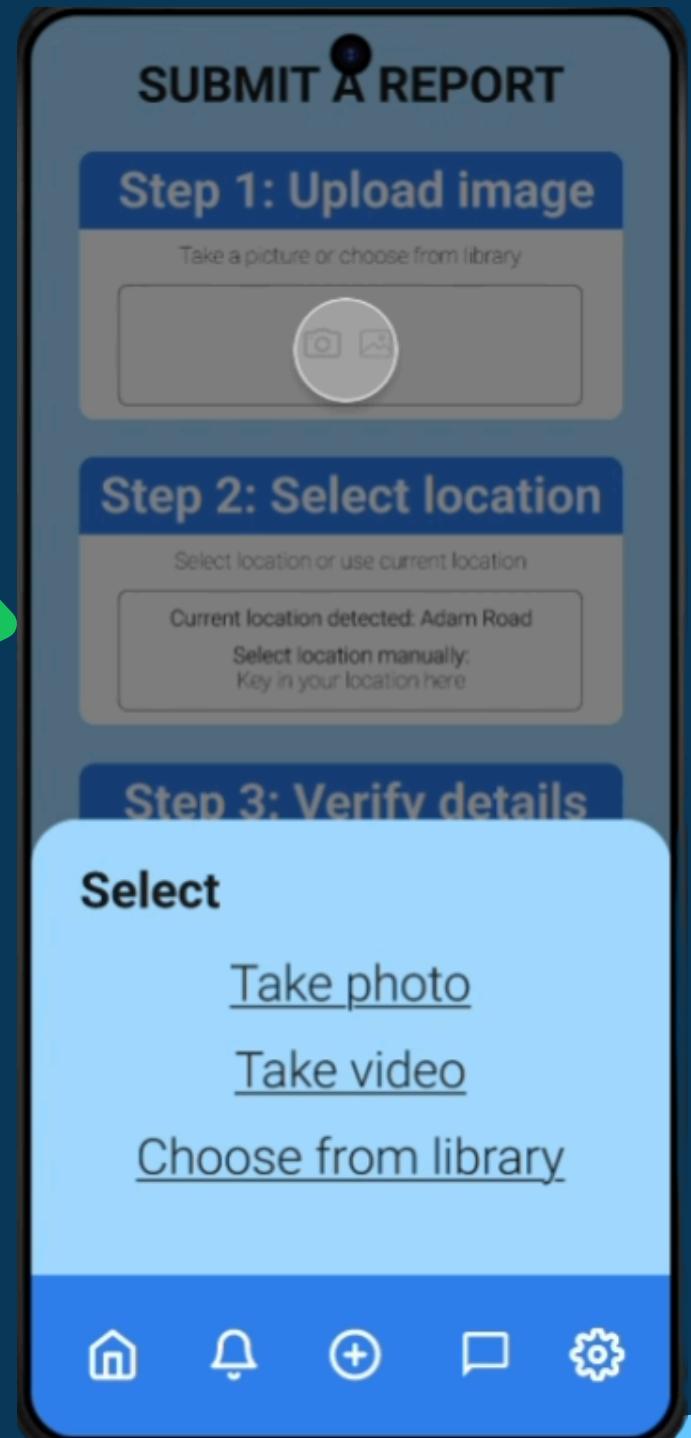
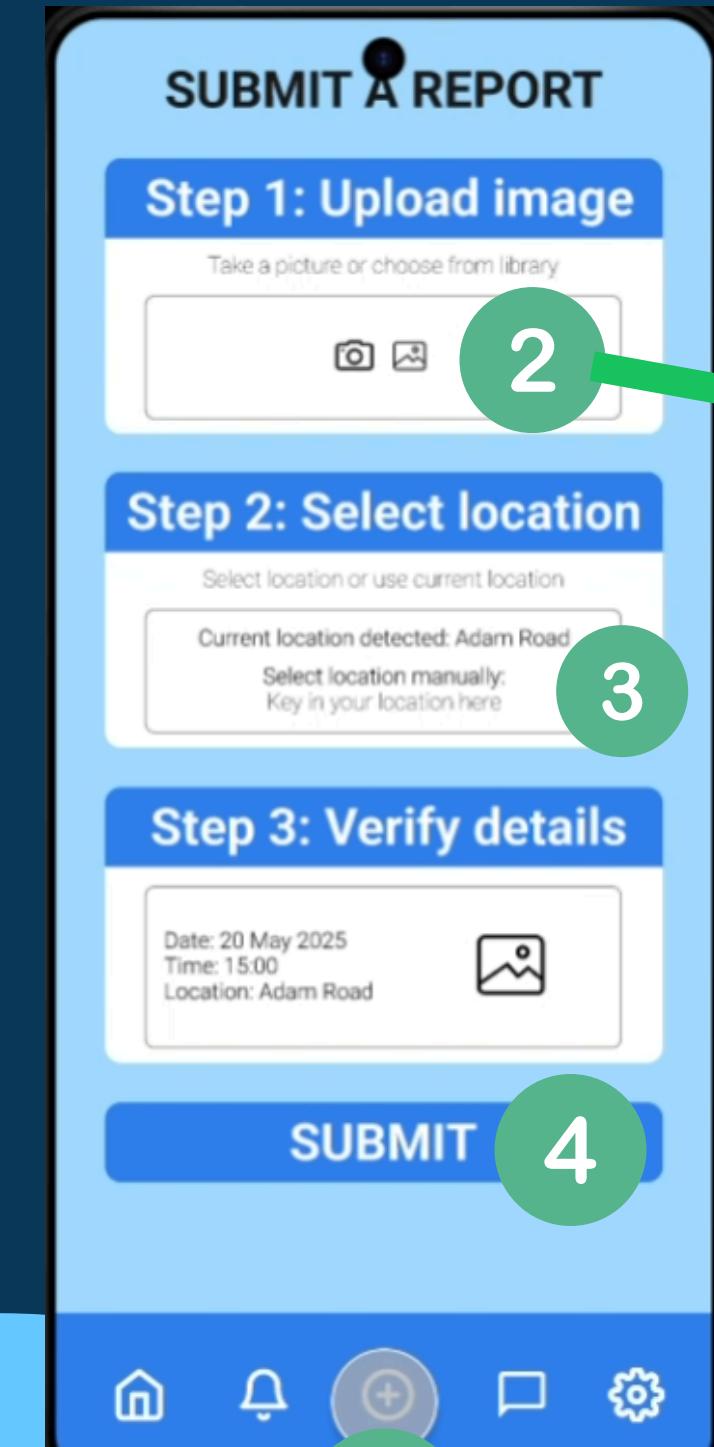


# SELF-REPORTING



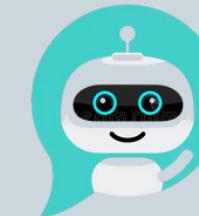
Users can self-report any instances of flooding

1. Tap on the reporting button.
2. Select an image to upload.
3. Select the location of the flood.
4. Press the "Submit" button.



When uploading an image, different options will be available to upload your media.

# FLOODBOT



## AI CHATBOT

AI Chatbot that assists users with any queries on floods.

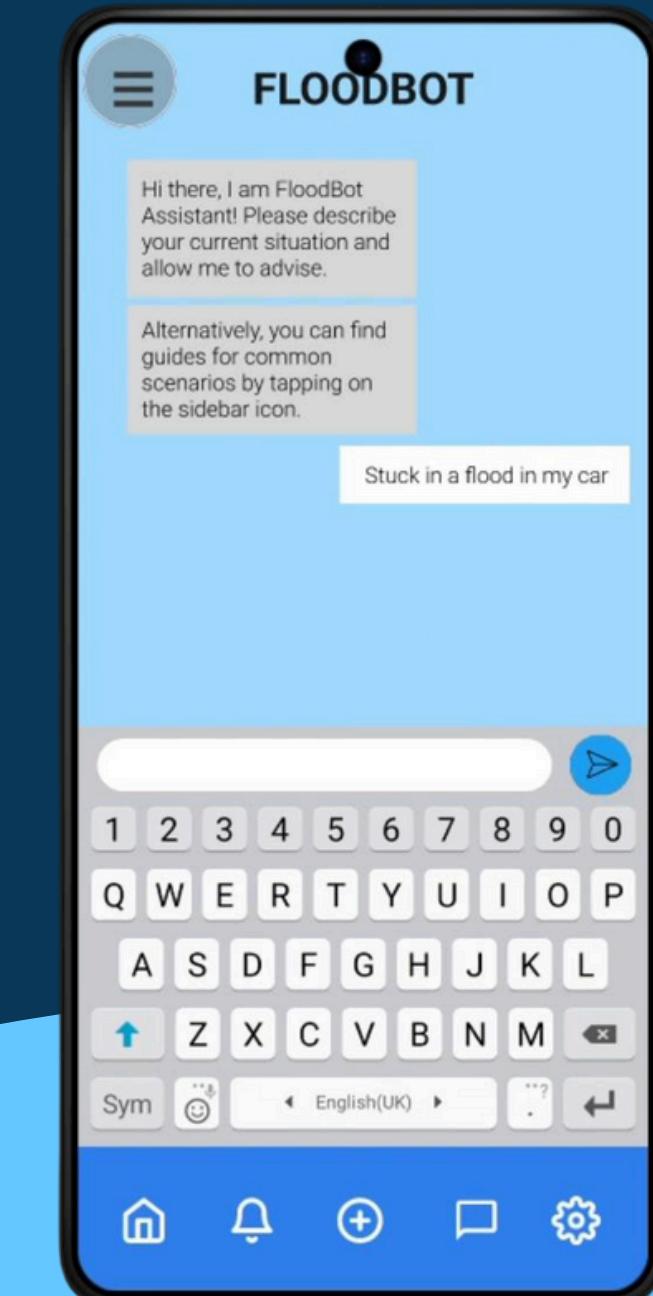


## FLOOD GUIDES

Flood guides on sidebar for offline access and users who prefer reading.



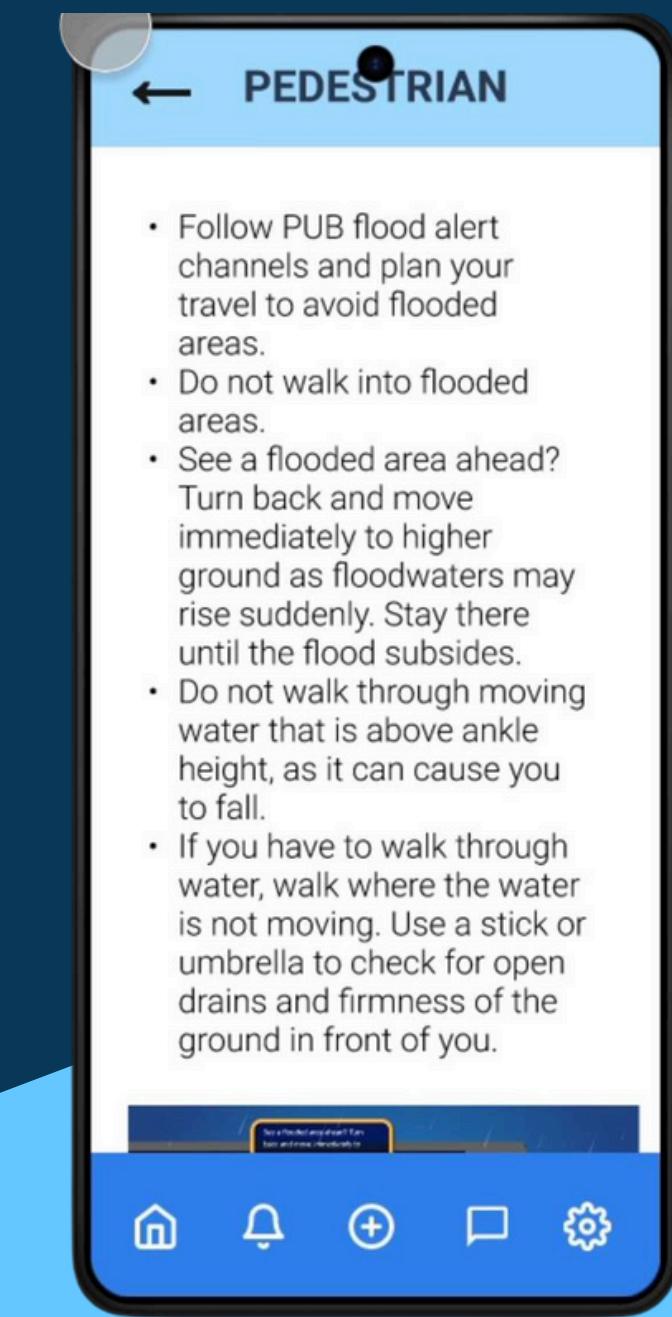
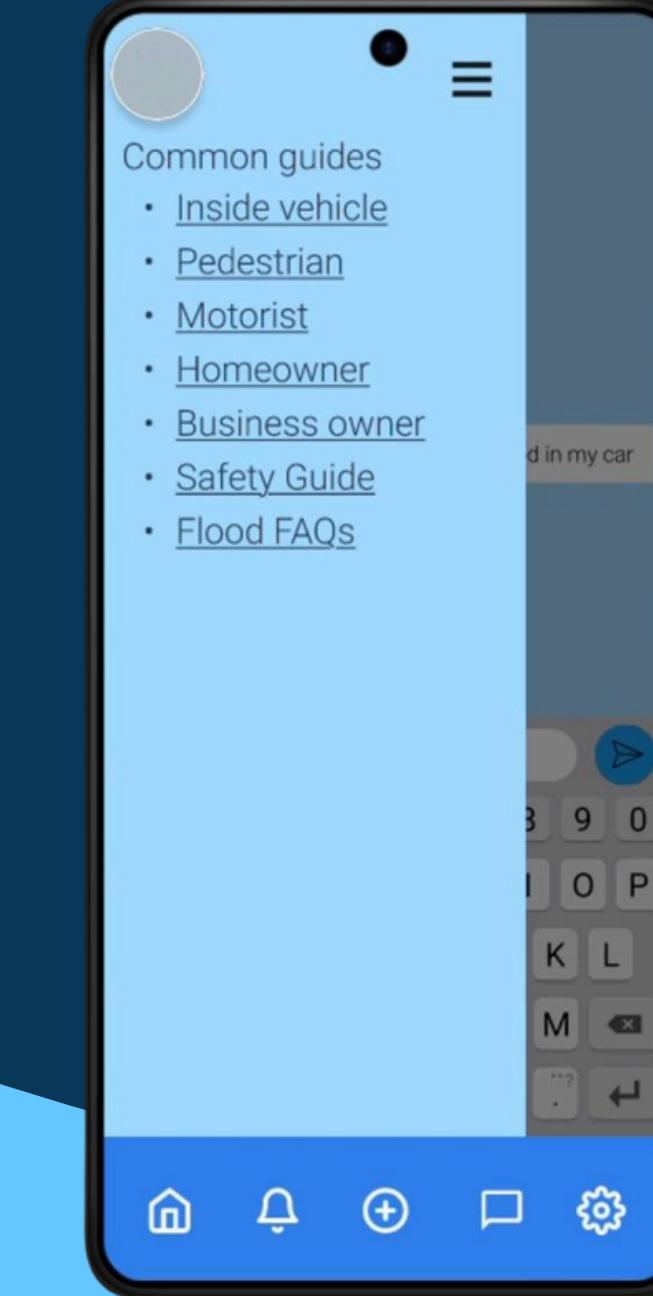
### AI ChatBot



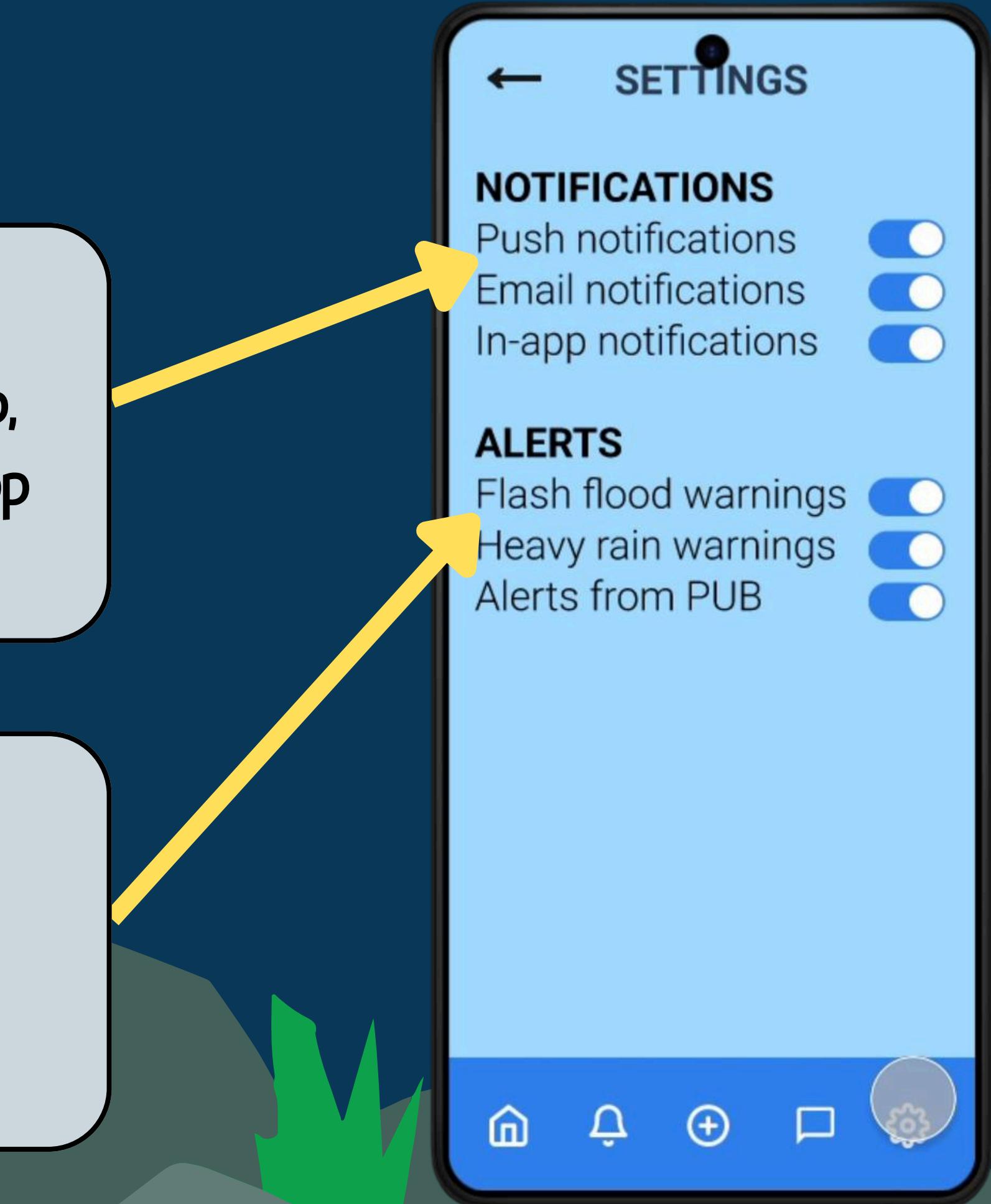
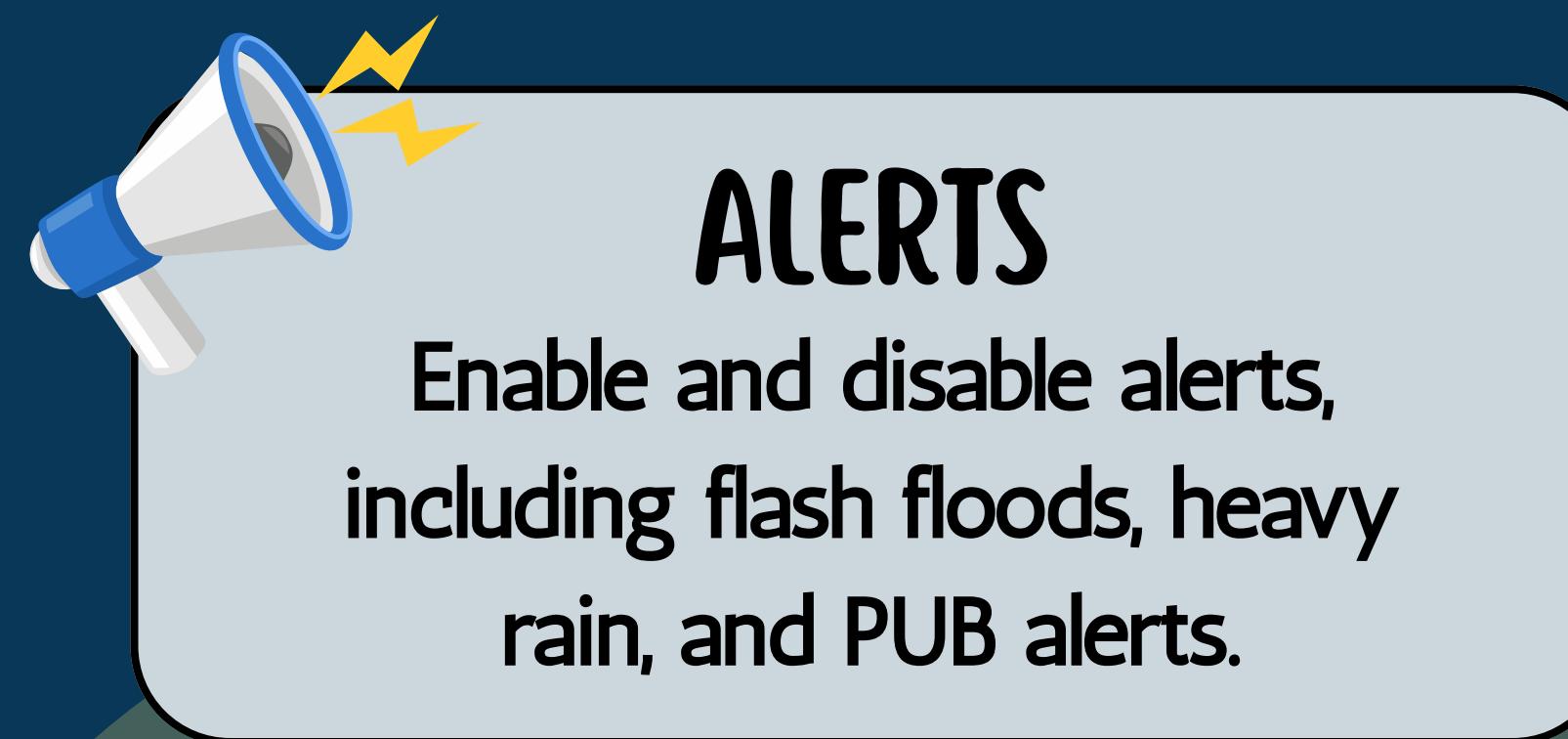
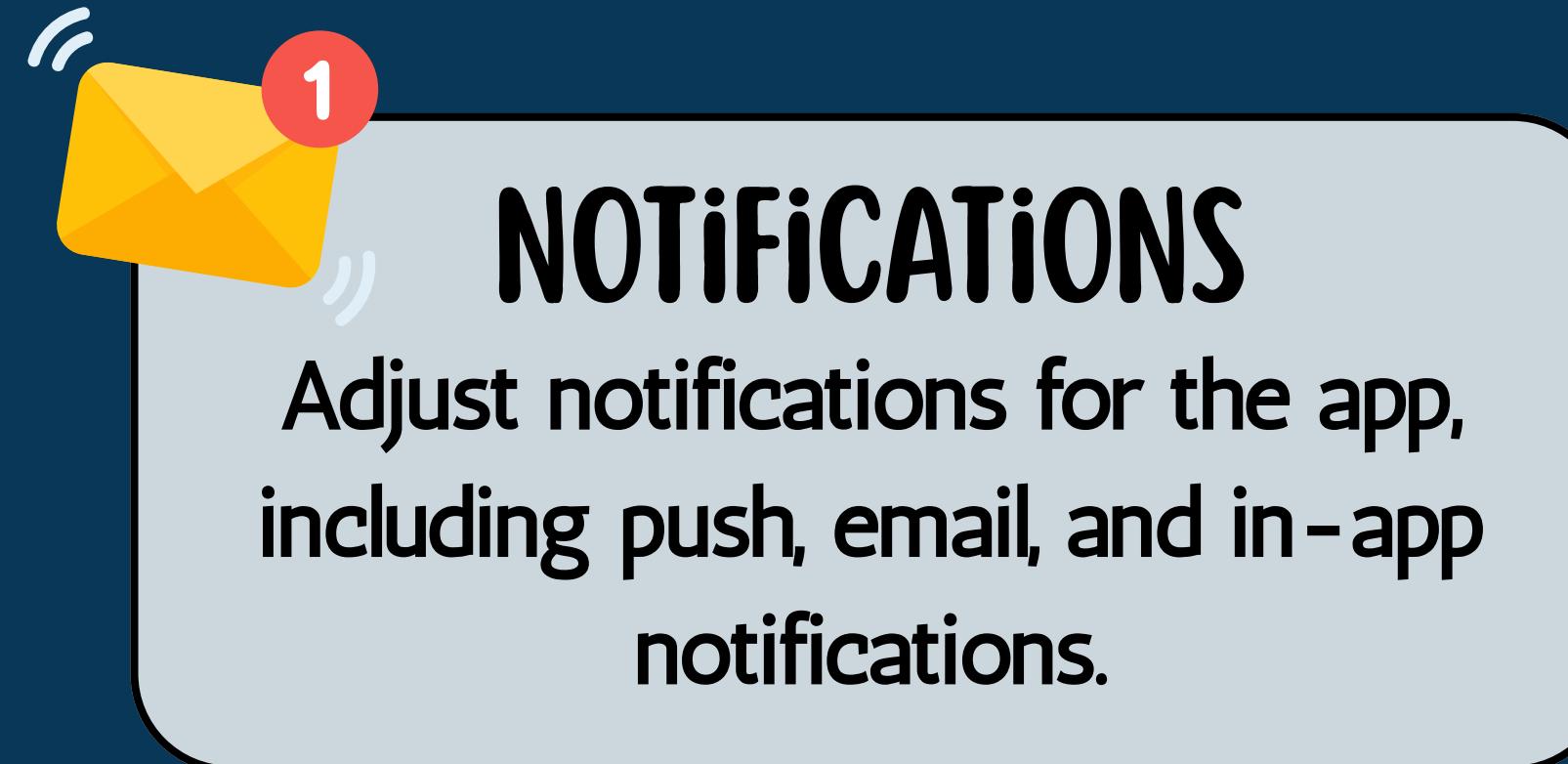
Guides available when the sidebar is clicked



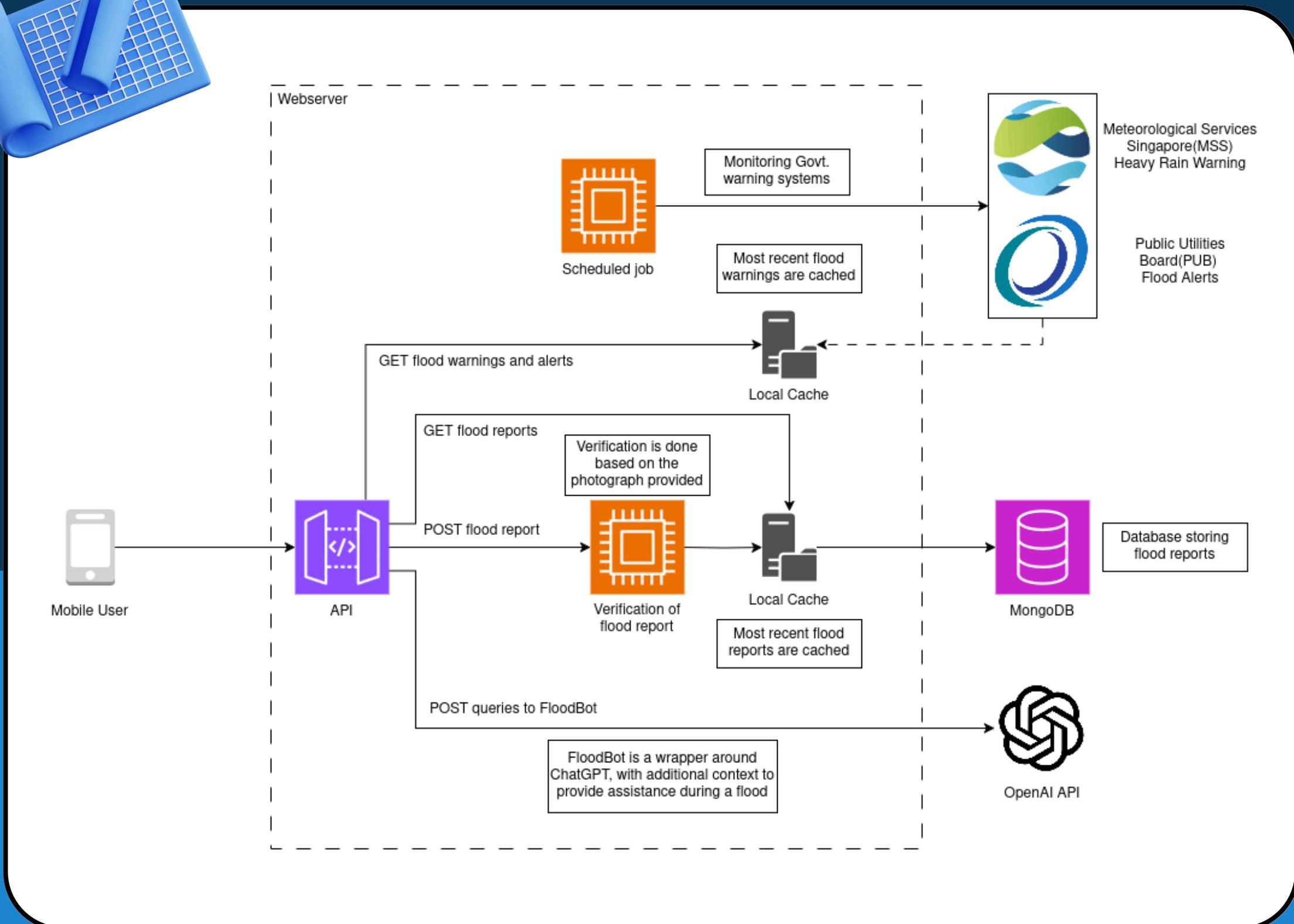
Click into relevant guide to find out more information



# SETTINGS



# ARCHITECTURE



Local cache reduces external request to govt. warning systems, and stores recent reports.

No user authentication, only a verification of the flood report is done.

Queries to FloodBot are forwarded to AI, with context about the flood.

# VALUE PROPOSITION



## GENERAL PUBLIC

- Increased safety for users
- Access to real time data
- Reduces panic through reliable information



## GOVERNMENT

- Greater ease of accessing flooded areas and the severity of flooding
- Improves emergency response
- Reduces economic losses

# CURRENT ALTERNATIVES

myENV



## CONS



- ✗ **No self-reporting feature** – limits real-time ground updates, making the app less responsive to sudden flood events
- ✗ **Does not show nearby safety shelters** – users may struggle to find safe locations quickly during emergencies
- ✗ **Lacks AI chatbot for personalized guidance** – users must manually search for information, which delays decision-making in crises
- ✗ **Relies only on official data sources** – slower to reflect rapidly changing on-ground conditions compared to community-sourced reports

**THANK YOU!**