

# Persona

**I'm Van, 21 (B) from Marikina,  
and this is my story.**

Van and her family have **victims to floods for years;**  
from flooding in Typhoon Ondoy, to Typhoon Ulysses,  
and **just last week, Typhoon Carina.**

It's the same story each time, **but it never ends.**

- 
- **18-45** years old
  - Class **BCD**
  - **Flood-prone** areas

# Context

An average of **97,000 Filipinos** are displaced in floods.

(Save the Children Philippines, 2024)



# Context

Every year, **372,000 Filipinos** lose their lives to drowning in floods.

(Martinez et al., 2016)



Philippine floods can destroy  
**925,000 homes and buildings.**

(OxFam, 2022)



# Context

211,000 displaced Pinoys



1.3M Pinoys affected

All of this in 1 day...

(Mangaluz, 2024)

P9.7 million in agricultural damage



36 dead

# Context



because we were **unprepared** for the onslaught.

# Problem Statement



## SDG 11: Sustainable Cities & Communities

How might we enhance Philippines cities' **climate resilience** and enhance **emergency responsiveness**, effectively meeting residents' needs amid climate change challenges?

# Root Causes

Based on over 10 consumer insight interviews:

## TIMEFRAME

## PAIN POINT

## ROOT CAUSE

**PRE-FLOOD**

**Lacking or delayed warnings**  
for flood prevention

**Inaccessible warnings**  
and **forecasting**

**DURING FLOOD**

**Scattered avenues** for  
**assistance**, lack of  
**accountability** in rescue help

No **user-driven**  
reporting mechanism

**POST-FLOOD**

**LGU's delayed response** in  
relief operations and aid

**Non-centralized** and  
**standardized LGU**  
**response** system



# RESPOND<sup>e</sup><sub>PH</sub>

Tutok *bahay-bahai!*

Real-time Evacuation Surveillance Platform for Operational  
Navigation in Flood-Related Disasters and Emergencies

# Startup Introduction

An **integrated flood resilience system** designed to protect Philippine communities from the devastating impacts of floods through 2 distinct but interconnected components for **LGU dashboard** and **citizen portal**, combining:

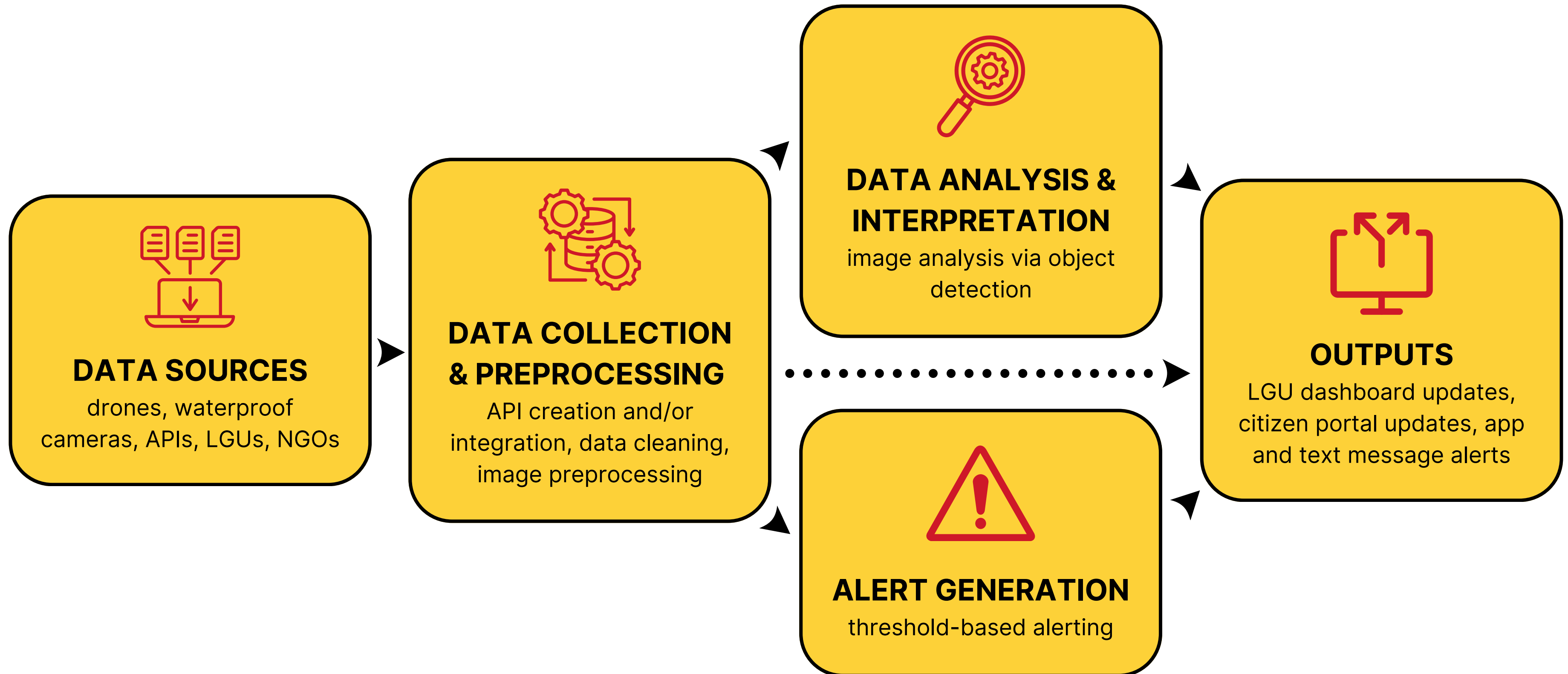
**Waterproof cameras**

**Drone camera feed**

**Object detection AI**

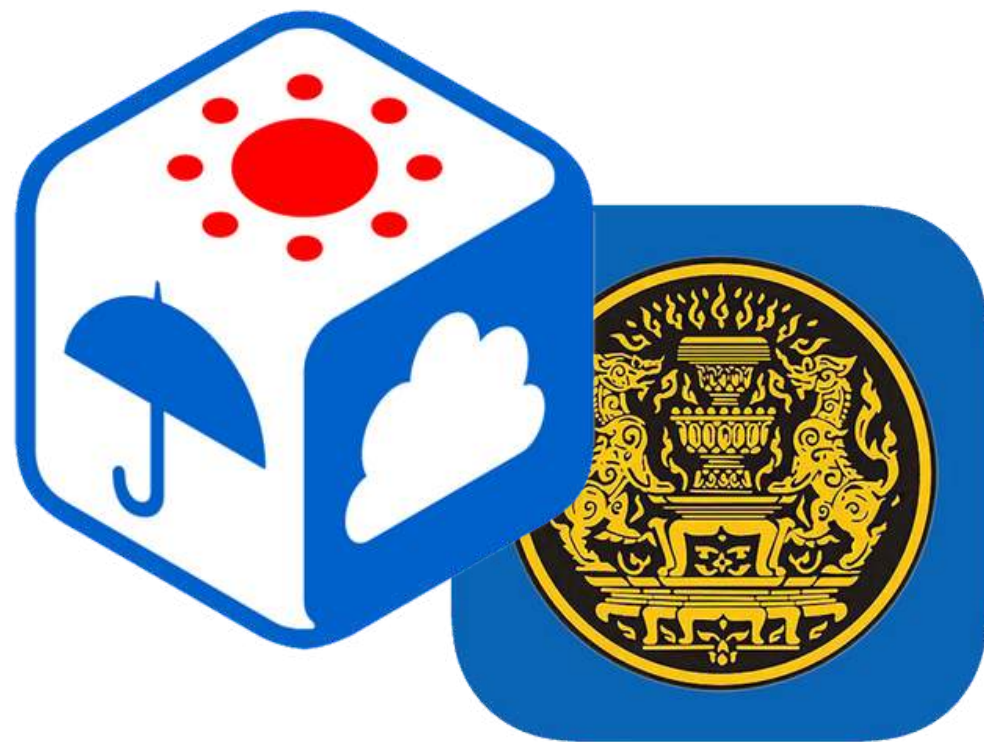
**Climate data**

# System Flow



# Feasibility

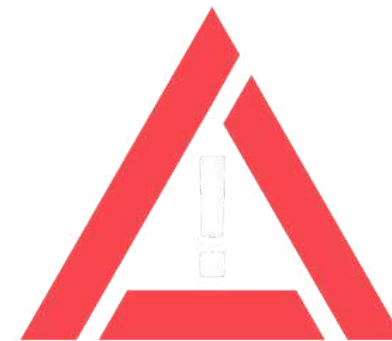
This integrates multi-modal data sources with AI algorithms to provide **EWS, real-time alerts**, and **predictive weather risk data** inspired by:



## EARLY WARNINGS

Tenki (Japan)  
Water4Thai (Thailand)

 **CITIZEN**



## LIVE UPDATES & ALERTS

Citizen (U.S.)  
ubAlert (U.S.)



## RISK & FORECASTING

WeatherNews Inc (Japan)

# Unique Selling Points

Existing mechanism	Gap	RESPONDE PH
<p>NDRRMC text alerts</p>	<p>Warnings often <b>delayed</b> or <b>too repetitive</b> (Tomacruz, 2018)</p>	<ul style="list-style-type: none"> <li>• Works with <b>telcos</b> to ensure <b>prompt delivery</b> and NDRRMC for <b>information dissemination</b></li> <li>• Incorporates <b>forecasting</b> technology to provide early warnings</li> </ul>
<p>LGU emergency typhoon hotlines</p>	<p>Alone does <b>not ensure accountability</b> in deploying dispatch team immediately</p>	<p>Allows for <b>live-monitoring of aid and deployment</b></p>
<p>PAGASA and NOAH flood mapping</p>	<p>Not considered <b>accessible</b> or easy to navigate</p>	<p>Makes all required information <b>accessible</b> and <b>digestible</b></p>

# LGU DASHBOARD

Home Page

Forecasting

Map View

Incident  
Summary

Live Chat

Rescue  
Navigator



**RESPONDE**<sub>PH</sub>  
Tutok *bahay-bahai!*

Pasig City, NCR

July 26, 2024

10:12:23 AM

Partly Cloudy

Sign In

Register

# RESPONDE<sub>PH</sub>

Tutok *bahay-bahai!*

# LGU DASHBOARD

Home Page

Forecasting

Map View

Incident  
Summary

Live Chat

Rescue  
Navigator



**RESPONDE**<sup>PH</sup>  
Tutok *bahay-baha!*

Pasig City, NCR

July 26, 2024

10:12:23 AM

Partly Cloudy

Sign Out



Forecasting

Map View

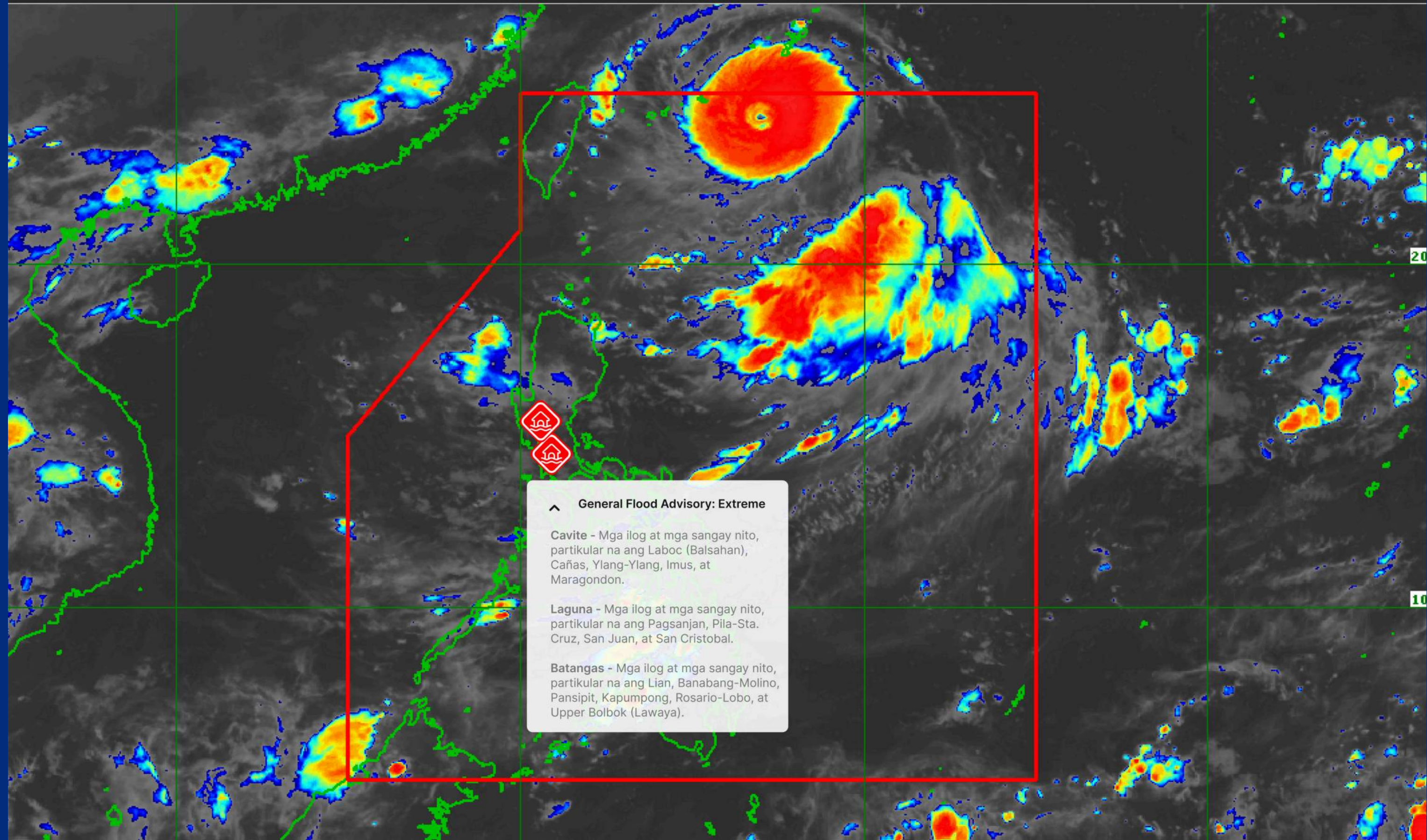
Incident Summary

Live Chat

Rescue Navigator

Supplies and Distribution

Live Feed



# LGU DASHBOARD

Home Page

Forecasting

**Map View**

Incident Summary

Live Chat

Rescue Navigator



Forecasting

**Map View**

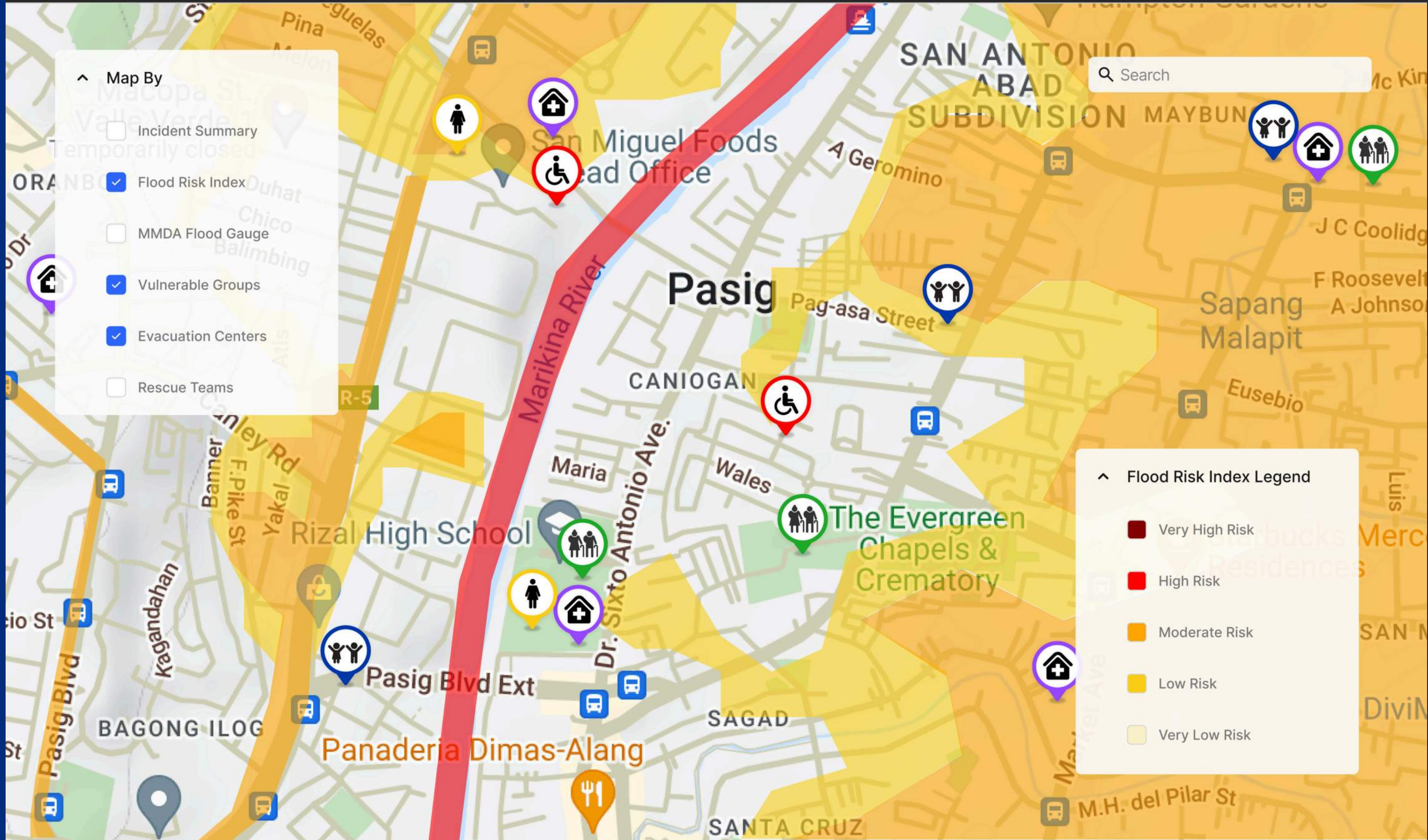
Incident Summary

Live Chat

Rescue Navigator

Supplies and Distribution

Live Feed



**Map By**

- Incident Summary
- Flood Risk Index
- MMDA Flood Gauge
- Vulnerable Groups
- Evacuation Centers
- Rescue Teams

Search

**Flood Risk Index Legend**

- Very High Risk
- High Risk
- Moderate Risk
- Low Risk
- Very Low Risk



# LGU DASHBOARD

Home Page

Forecasting

Map View

**Incident Summary**

Live Chat

Rescue Navigator



Forecasting

Map View

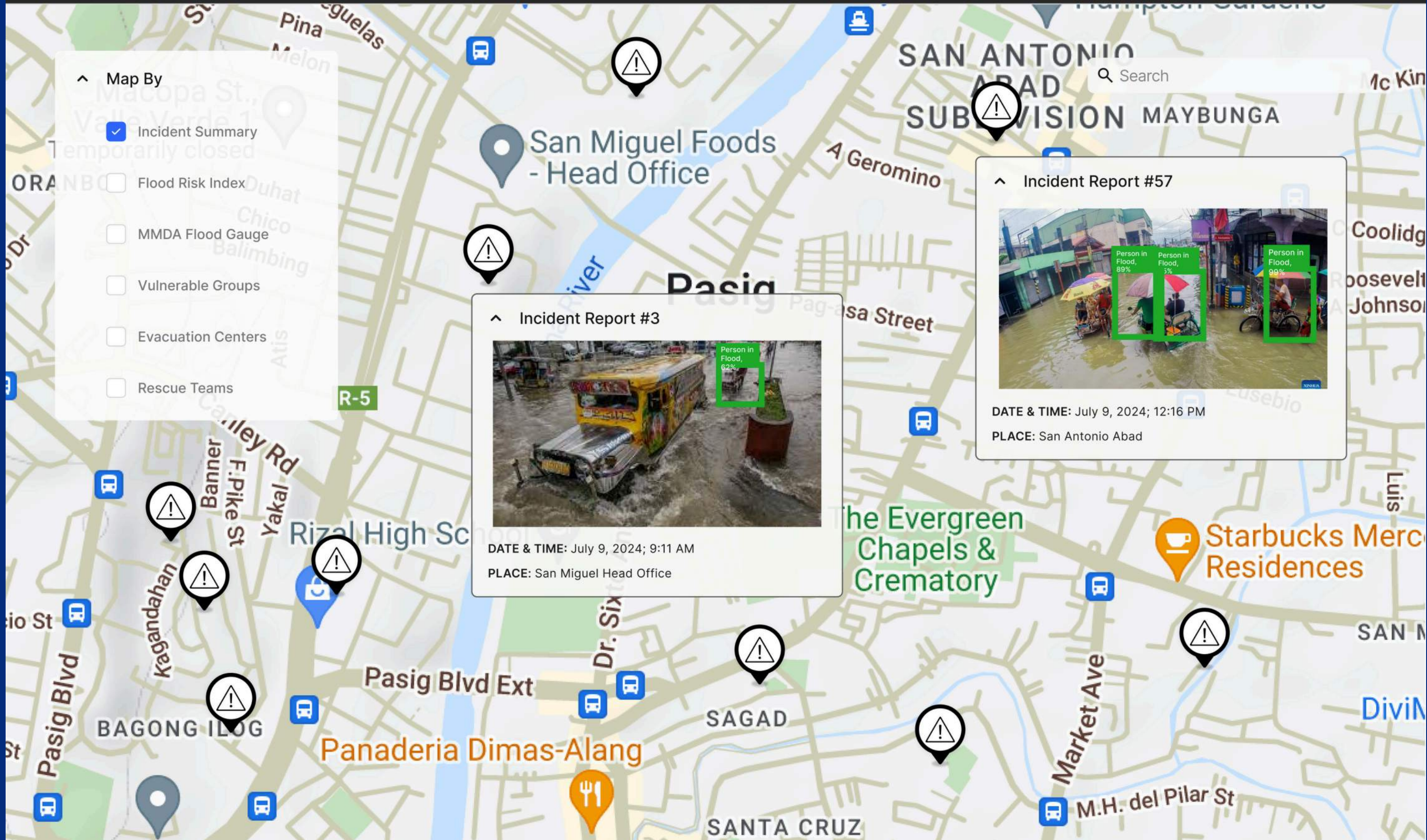
**Incident Summary**

Live Chat

Rescue Navigator

Supplies and Distribution

Live Feed



**Map By**

- Incident Summary
- Flood Risk Index
- MMDA Flood Gauge
- Vulnerable Groups
- Evacuation Centers
- Rescue Teams

**Incident Report #3**

Person in Flood, 62%

DATE & TIME: July 9, 2024; 9:11 AM  
PLACE: San Miguel Head Office

**Incident Report #57**

Person in Flood, 89%  
Person in Flood, 5%  
Person in Flood, 99%

DATE & TIME: July 9, 2024; 12:16 PM  
PLACE: San Antonio Abad

# LGU DASHBOARD

Home Page

Forecasting

Map View

**Incident Summary**

Live Chat

Rescue Navigator



Search

Person on Roof, 98%

Person on Roof, 96%

Person in Flood, 99%

Floodway, Manggahan

# LGU DASHBOARD

Home Page

Forecasting

Map View

**Incident Summary**

Live Chat

Rescue Navigator



Forecasting

Map View

**Incident Summary**

Live Chat

Rescue Navigator

Supplies and Distribution

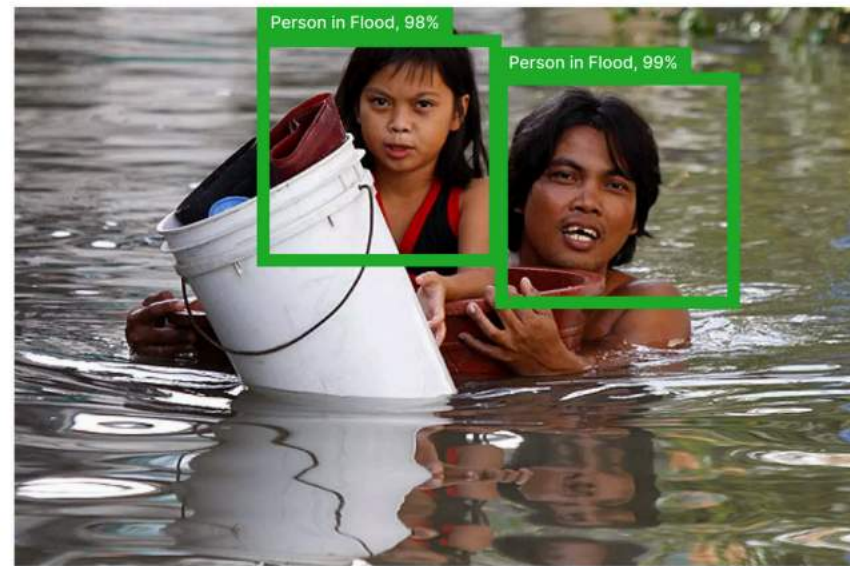
Live Feed

## INCIDENT SUMMARY

Detail

Table

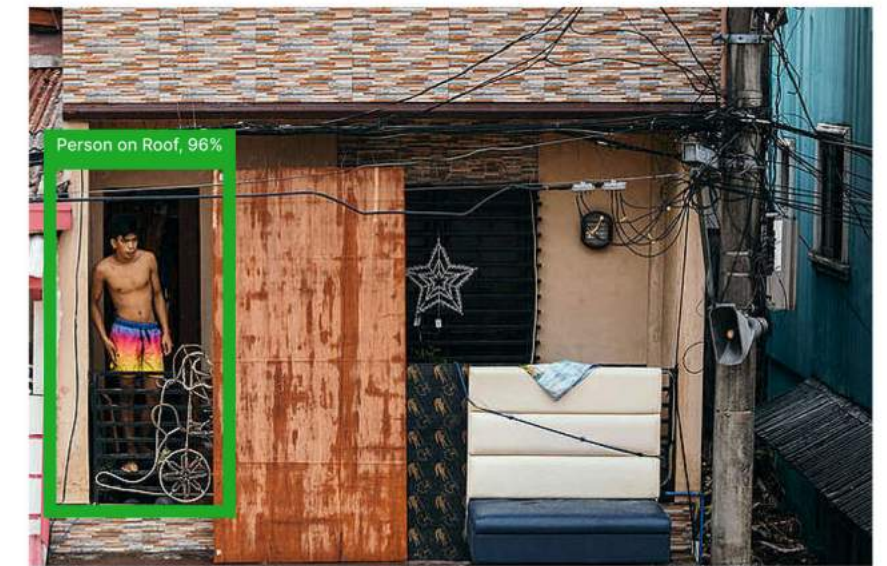
Search



DATE & TIME: July 11, 2024; 2:37 PM  
PLACE: Floodway, Manggahan



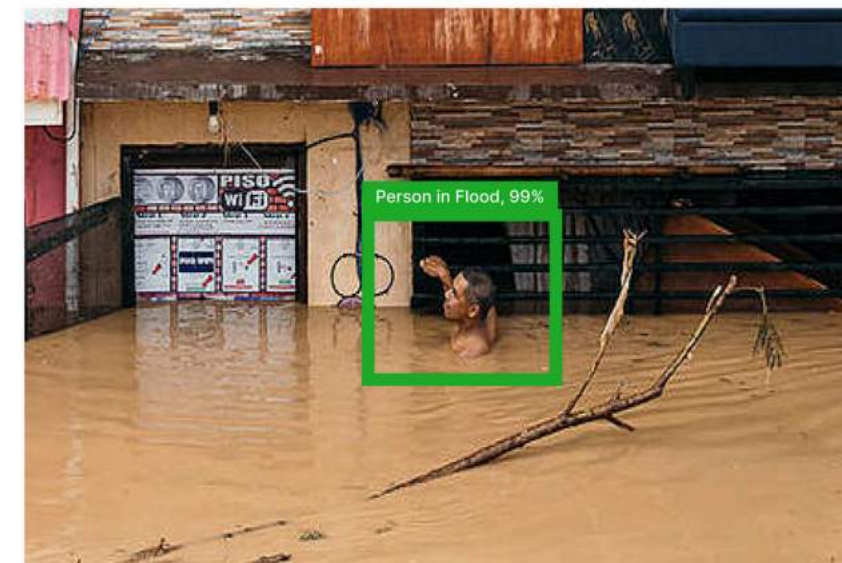
DATE & TIME: July 9, 2024; 12:16 PM  
PLACE: Tramo, Rosario



DATE & TIME: July 14, 2024; 10:52 AM  
PLACE: Bliss, Sta. Lucia



DATE & TIME: July 14, 2024; 10:52 AM



DATE & TIME: July 14, 2024; 10:52 AM



DATE & TIME: July 21, 2024; 5:49 PM

# LGU DASHBOARD

Home Page

Forecasting

Map View

Incident Summary

Live Chat

Rescue Navigator



Forecasting

Map View

Incident Summary

Live Chat


Rescue Navigator

Supplies and Distribution

Live Feed

Q Search

## Inbox

 **Aika C. Lopez** PWD  
You: Hello Aika, naitala ko na ang... 2m

 **Maxine Gomez**  
Maxine: Papasok na sa second fl... 5m

 **Tom B. Dela Cruz**  
Tom: Family of 4, isang newborn ... 9m

 **Angel L. Castro**  
Angel: Stuck po ako sa aking stal... 10m

 **Zoe Y. Soriano**  
You: OTW na po ang rescue tea... 12m

 **Carol R. Garcia** PWD  
You: Naitala po ang inyong conc... 15m

 **Jennifer E. Zamora**



**Aika C. Lopez**

Barangay Santolan, Pasig



Today 11:11 AM

Hello, si Mavy ito mula sa Pasig Emergency Response Unit. Ano ang iyong emergency?

Hello Mavy, ako si Aika, taga-Barangay Santolan. Nakawheelchair ako at mayroong dalawang maliit na anak. Hanggang dibdib na ang baha sa amin at mukhang di titigil sa pagtaas. Kailangan po namin ng tulong sa paglilikas agad! Nahihirapan po akong ilikas sila dahil ako po ay nakawheelchair.

Today, 11:12 AM

Hello Aika, naitala ko na ang iyong lokasyon at sitwasyon. Nagpapadala na kami ng team sa iyong lugar agad. Bibigyan kita ng update tungkol sa ipinadalang rescue team. Manatiling makipag-ugnayan sa amin hangga't di dumadating ang rescue team.

Sent 2m ago



Type your message here...

# LGU DASHBOARD

Home Page

Forecasting

Map View

Incident Summary

Live Chat

**Rescue Navigator**



## PRIORITY RESCUE IDENTIFIER

All  Search /

+ New Entry

All 19 Vulnerable 4 Healthy Adult 4 Pet or Plant 2 Archived 9

<input type="checkbox"/>	#	NAME	PROFILE	CATEGORY	LOCATION
<input type="checkbox"/>	1	Jieun Lee	Female, Senior Citizen, With Comorbidities	Vulnerable	Rainforest Drive, Maybunga, Pasig City
<input type="checkbox"/>	2	Chappell Roan	Female, Middle-Aged, Mother of 2	Healthy Adult	Jenny's Avenue, Rosario, Pasig City
<input type="checkbox"/>	3	Solar	Dog: Shih-Tzu, Brown and White Fur	Pet or Plant	Camia St., De Castro Subdivision, Sta. Lucia, Pasig City
<input type="checkbox"/>	4	Sean Catacutan	Male, Young Adult	Healthy Adult	Nile Bldg., Riverfront Residences, Caniogan, Pasig City
<input type="checkbox"/>	5	Mary Loi Yves Ricalde	Female, PWD: Difficulty Hearing, Young Adult	Vulnerable	Monggo St., Napico Subdivision, Manggahan, Pasig City
<input type="checkbox"/>	6	Kai	Cat: Siamese, White Fur	Pet or Plant	Nile Bldg., Riverfront Residences, Caniogan, Pasig City
<input type="checkbox"/>	7	Justin Paolo Canlas	Male, Middle-Aged, Father of 3	Healthy Adult	Camia St., De Castro Subdivision, Sta. Lucia, Pasig City
<input type="checkbox"/>	8	Ma. Nicolette Vergara	Female, Child	Vulnerable	Monggo St., Napico Subdivision, Manggahan, Pasig City
<input type="checkbox"/>	9	Ignatius Loyola III	Male, Senior Citizen, With Comorbidities	Vulnerable	Jenny's Avenue, Rosario, Pasig City
<input type="checkbox"/>	10	Ian Arceta	Male, Young Adult	Healthy Adult	Rainforest Drive, Maybunga, Pasig City

# LGU DASHBOARD

Home Page

Forecasting

Map View

Incident  
Summary

Live Chat

Rescue  
Navigator



Forecasting

Map View

Incident Summary

Live Chat

Rescue Navigator

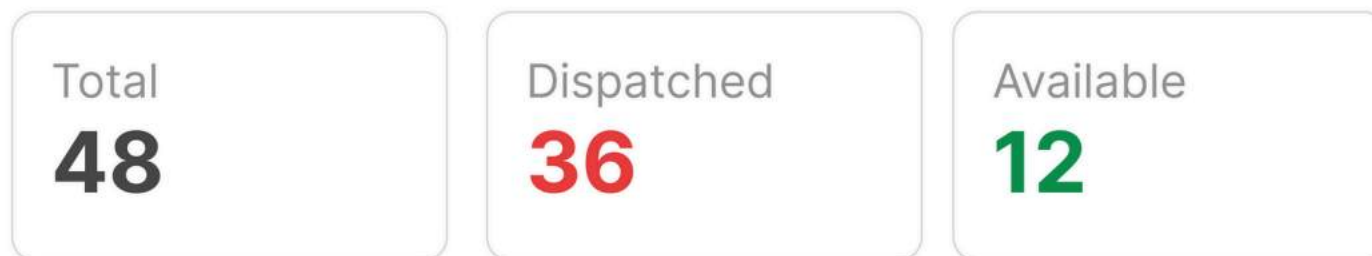
Supplies and Distribution

Live Feed

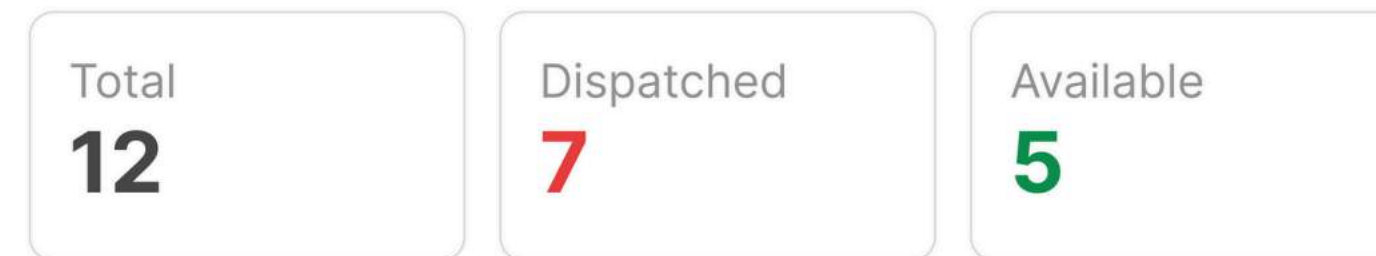
## PRIORITY RESCUE IDENTIFIER

## RESCUE RESOURCES

### RESCUE TEAMS



### RESCUE BOATS



### RESCUE TEAM UPDATES

+ New Entry

All 143 Dispatched 57 Available 86

<input type="checkbox"/>	#	TEAM MEMBERS	CATEGORY	CONTACT NUMBER/S	LAST LOCATION	LAST UPDATE
<input type="checkbox"/>	1	Juan dela Cruz, Tom Reyes	Dispatched	09981213452	Rainforest Drive, Maybunga, Pasig City	15 Jul 2024, 12:47 PM
<input type="checkbox"/>	2	Maria Tolentino, Rod Sanchez, ...	Available	09157265399	Rainforest Drive, Maybunga, Pasig City	14 Jul 2024, 2:36 AM
<input type="checkbox"/>	3	Wil Idefonso, Peter Santos, Erik ...	Dispatched	09230973434	Jenny's Avenue, Rosario, Pasig City	15 Jul 2024, 6:12 PM
<input type="checkbox"/>	4	Patricia Jimenez, Jansen Cruz, ...	Dispatched	09982327656	Rainforest Drive, Maybunga, Pasig City	13 Jul 2024, 1:25 AM

# LGU DASHBOARD

Home Page

Forecasting

Map View

Incident Summary

Live Chat

**Rescue Navigator**



Forecasting

Map View

Incident Summary

Live Chat

**Rescue Navigator**

Supplies and Distribution

Live Feed

## PRIORITY RESCUE IDENTIFIER

## RESCUE RESOURCES

## REAL-TIME RESCUED PEOPLE DATABASE



+ New Entry

<input type="checkbox"/>	#	NAME	RESCUE TIME	RESCUE LOCATION	EVACUATION LOCATION	DETAILS ON MEDICAL ACTION TAKEN
<input type="checkbox"/>	1	Sabrina Plumber	14 Jul 2024, 12:51 AM	Jenny's Avenue, Rosario, Pasig City	Rainforest Park, Maybunga, Pasig City	N/A
<input type="checkbox"/>	2	Conan Peach	22 Jul 2024, 10:10 PM	Rainforest Drive, Maybunga, Pasig City	Rainforest Park, Maybunga, Pasig City	First aid given
<input type="checkbox"/>	3	Saekyeong Shin	5 Jul 2024, 1:35 AM	Camia St., De Castro Subdivision, ...	Rainforest Park, Maybunga, Pasig City	CPR performed
<input type="checkbox"/>	4	Jolina Madrigal	7 Jul 2024, 7:47 PM	Marietta Romeo Village, Sta. Lucia, ...	Rainforest Park, Maybunga, Pasig City	N/A
<input type="checkbox"/>	5	Bryan Magpantay	16 Jul 2024, 12:06 AM	Jenny's Avenue, Rosario, Pasig City	Rainforest Park, Maybunga, Pasig City	First aid given
<input type="checkbox"/>	6	Priscilla Tan-Ching	21 Jul 2024, 9:11 AM	Rainforest Drive, Maybunga, Pasig City	Rainforest Park, Maybunga, Pasig City	N/A
<input type="checkbox"/>	7	Jongsuk Lee	10 Jul 2024, 3:56 PM	Marietta Romeo Village, Sta. Lucia, ...	Rainforest Park, Maybunga, Pasig City	N/A

# CITIZEN'S PORTAL

Sign Up

Info Page

Flood Alert Notification

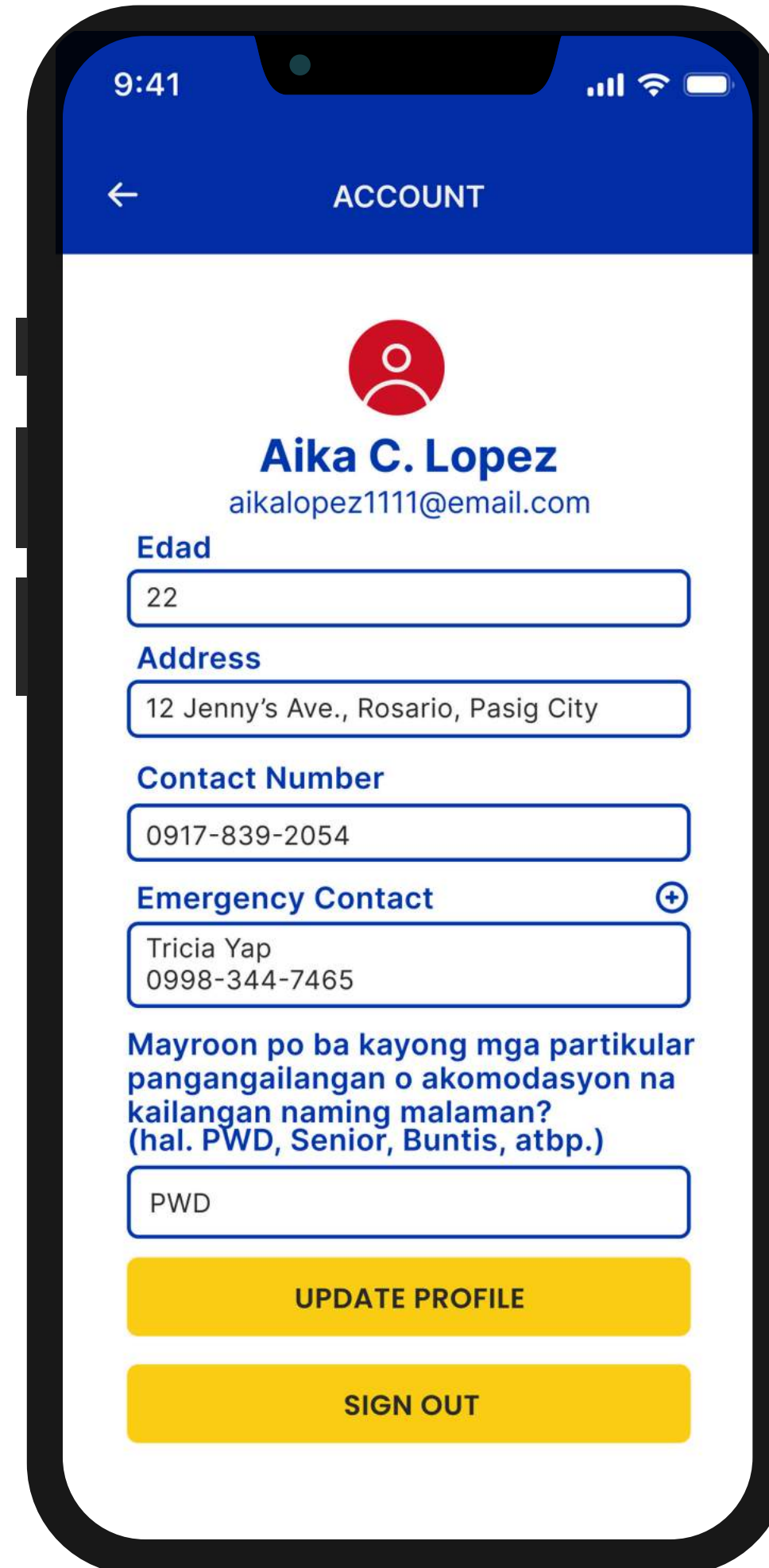
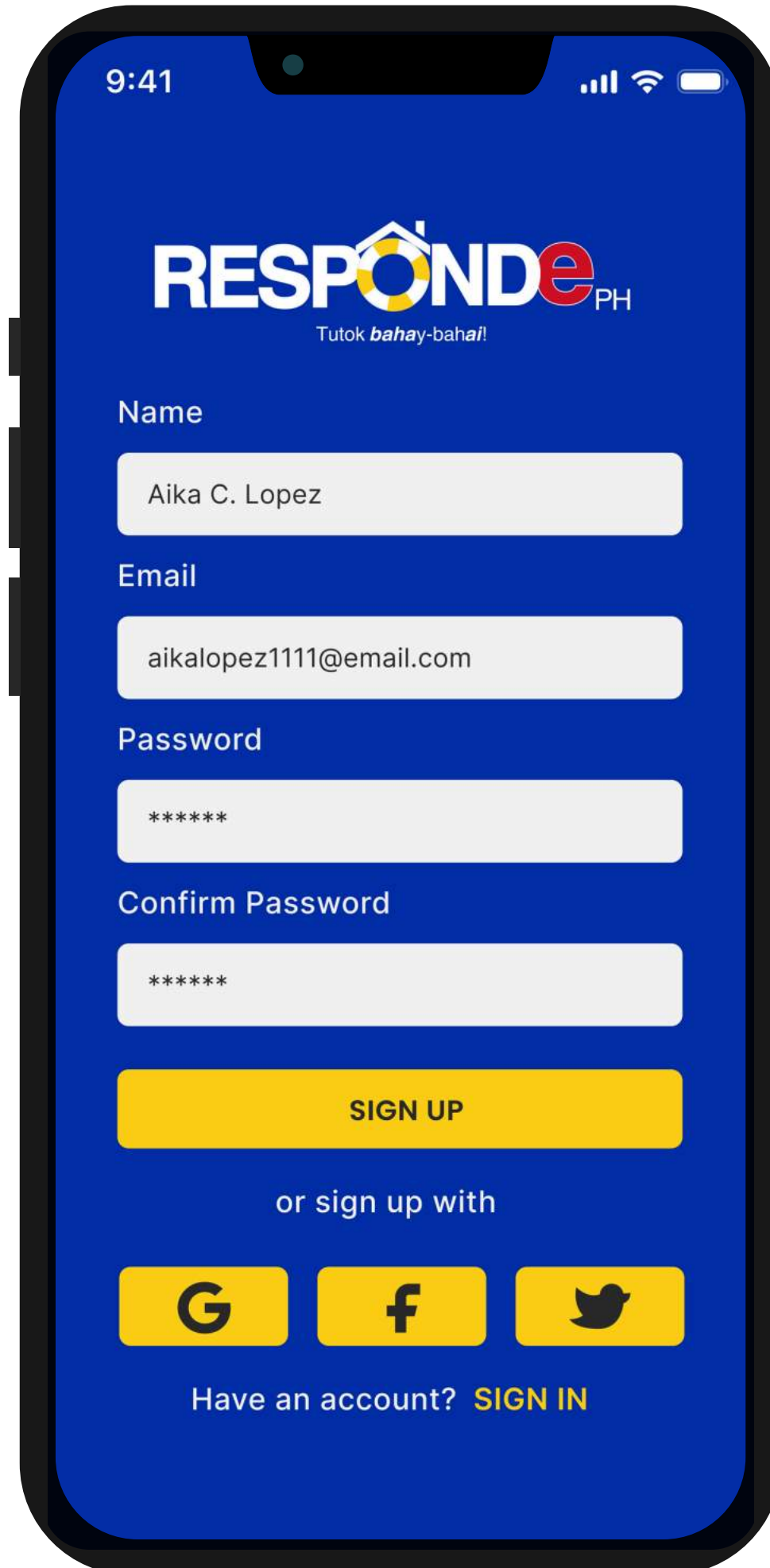
Forecasting

Map

Contact Locator

Live Chat

Community Message Board





# CITIZEN'S PORTAL

Sign Up

Info Page

Flood Alert Notification

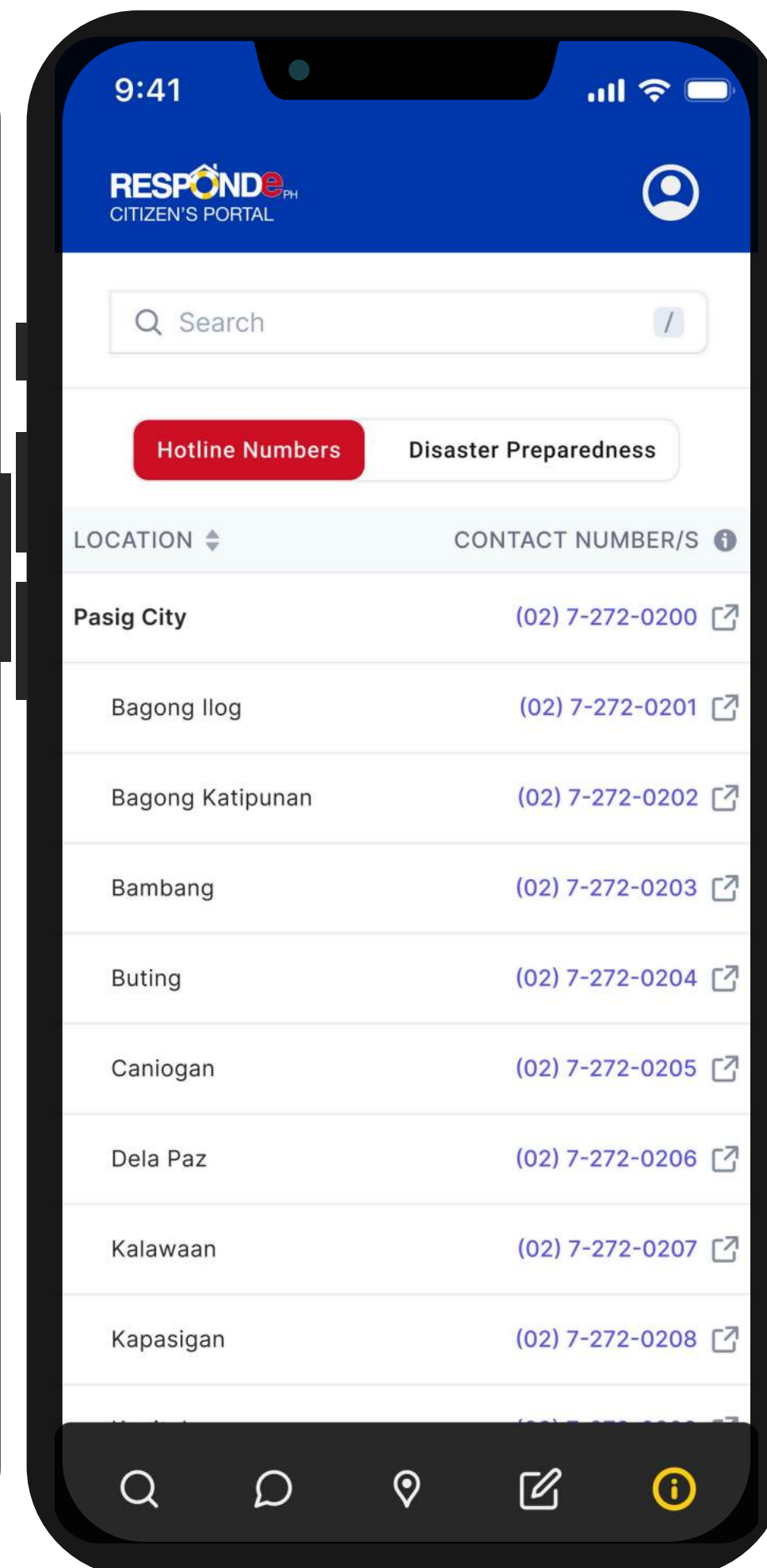
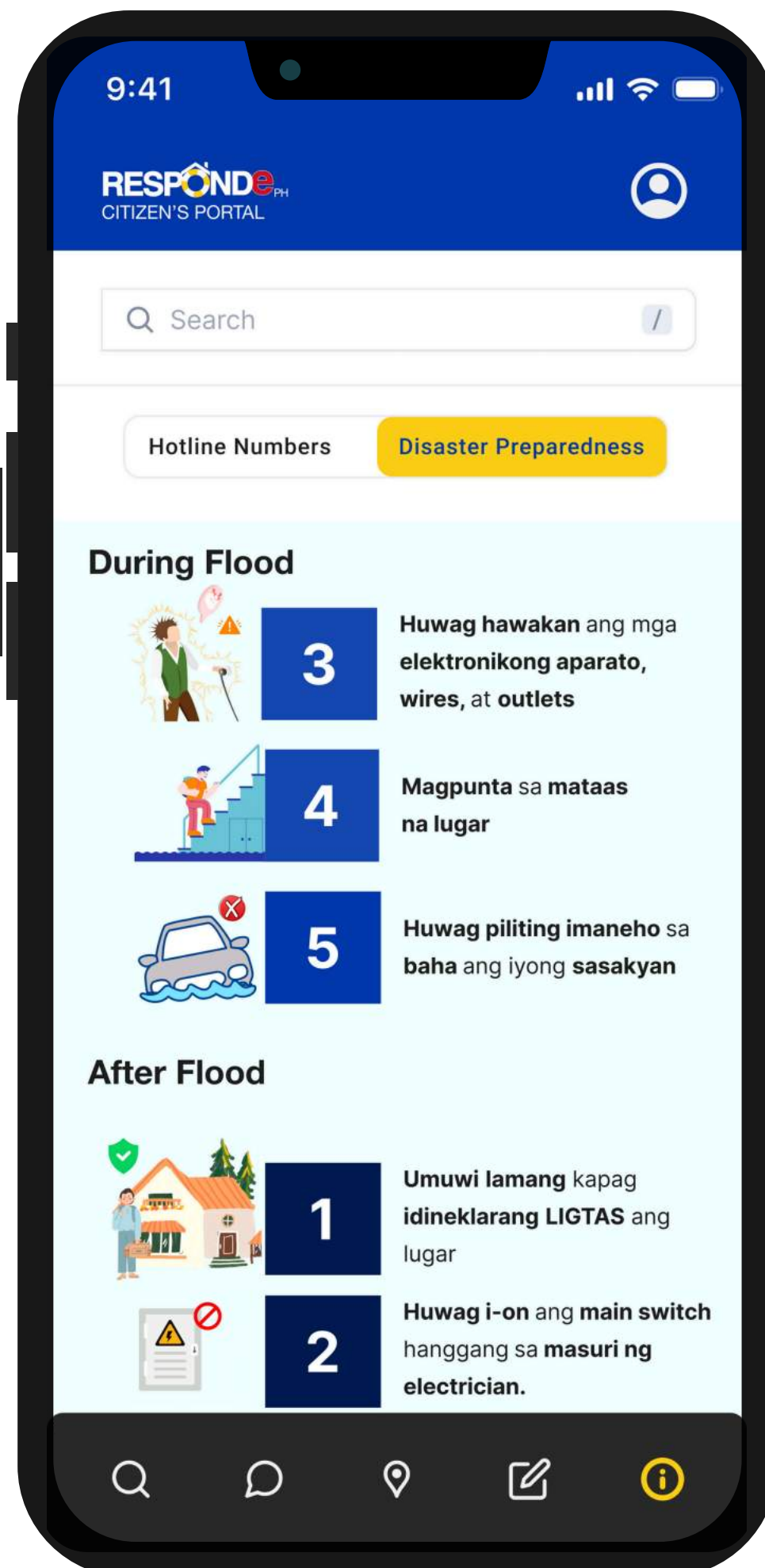
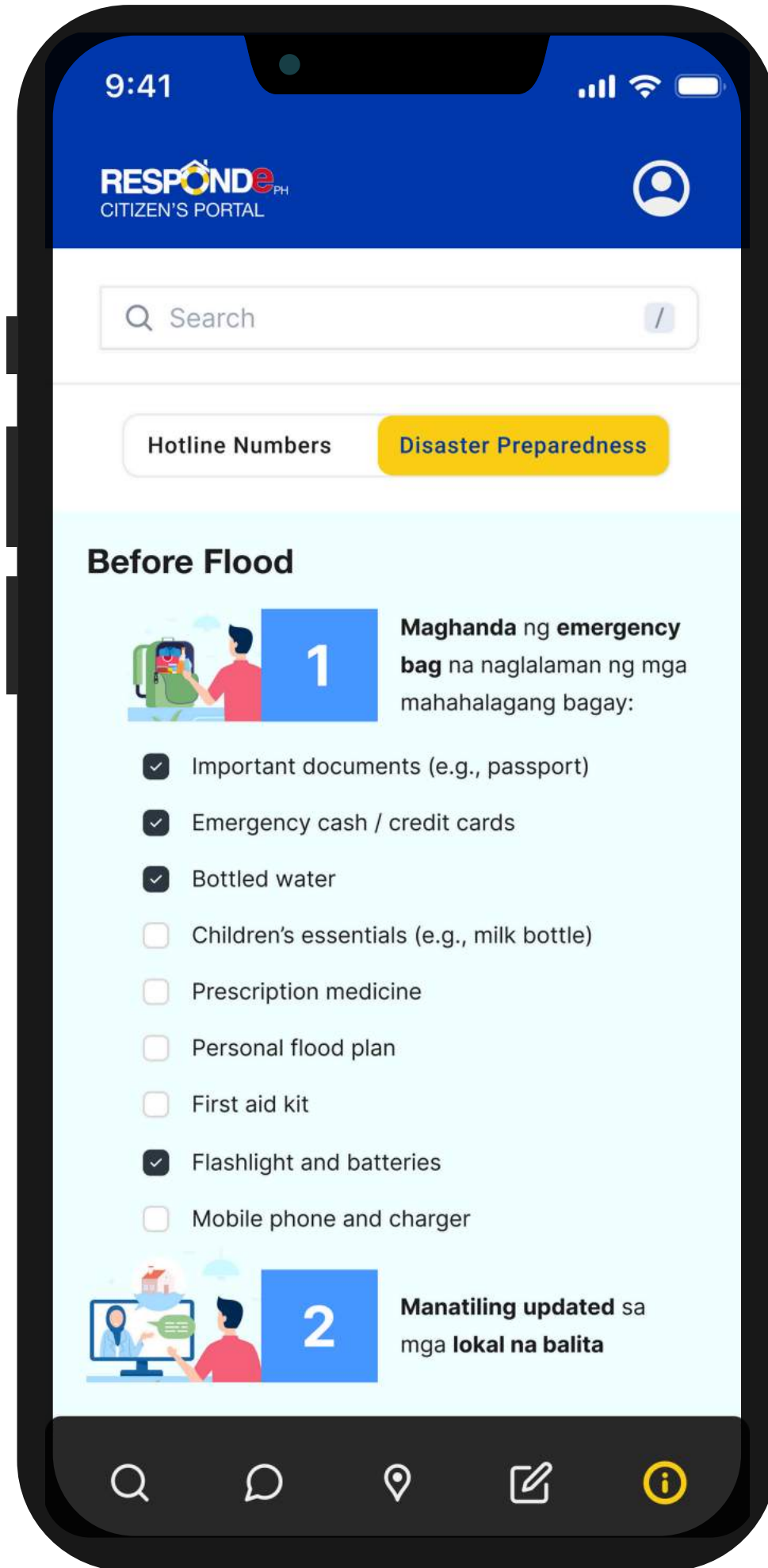
Forecasting

Map

Contact Locator

Live Chat

Community Message Board



# CITIZEN'S PORTAL

Sign Up

Info Page

**Flood Alert Notification**

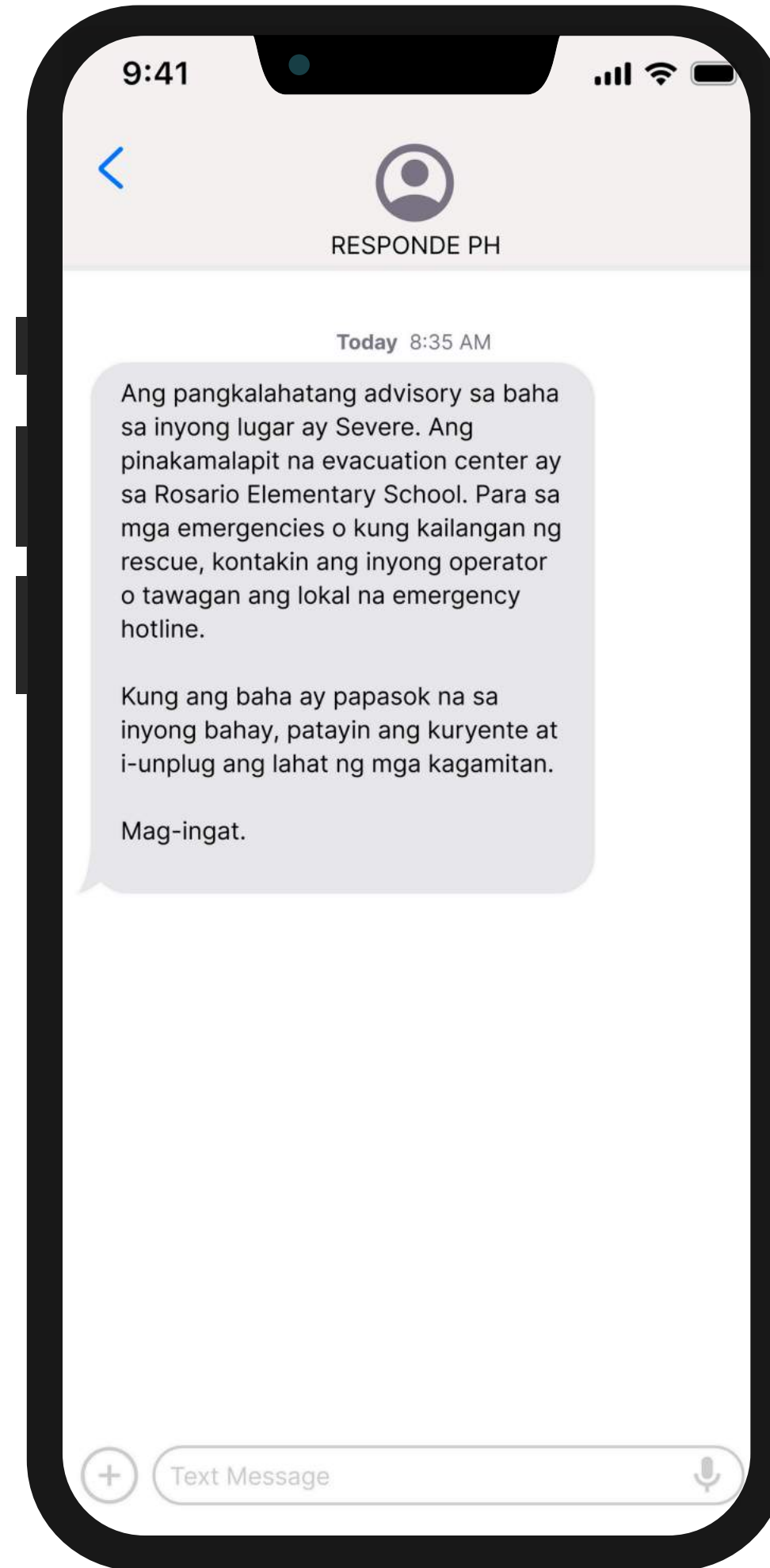
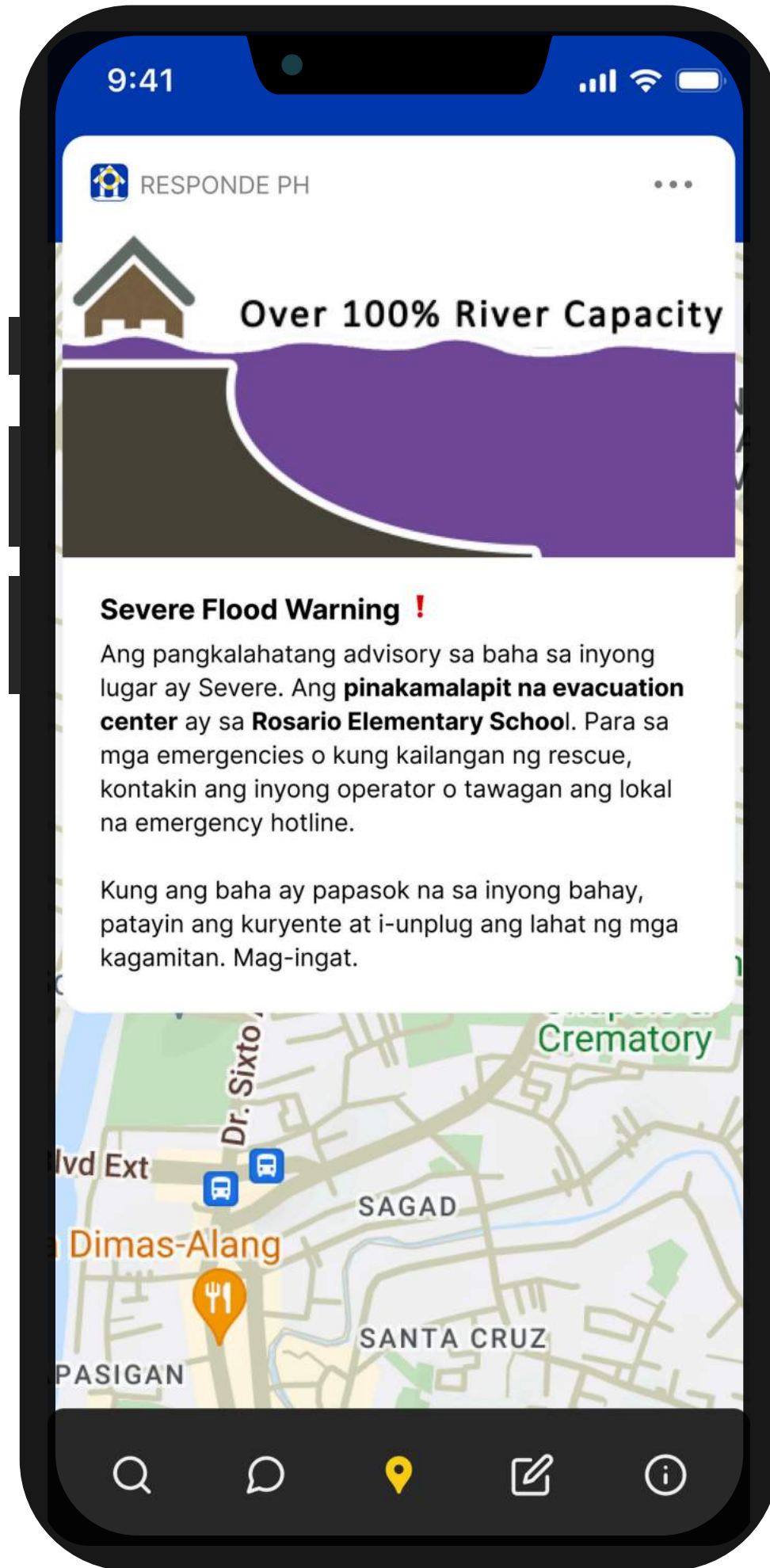
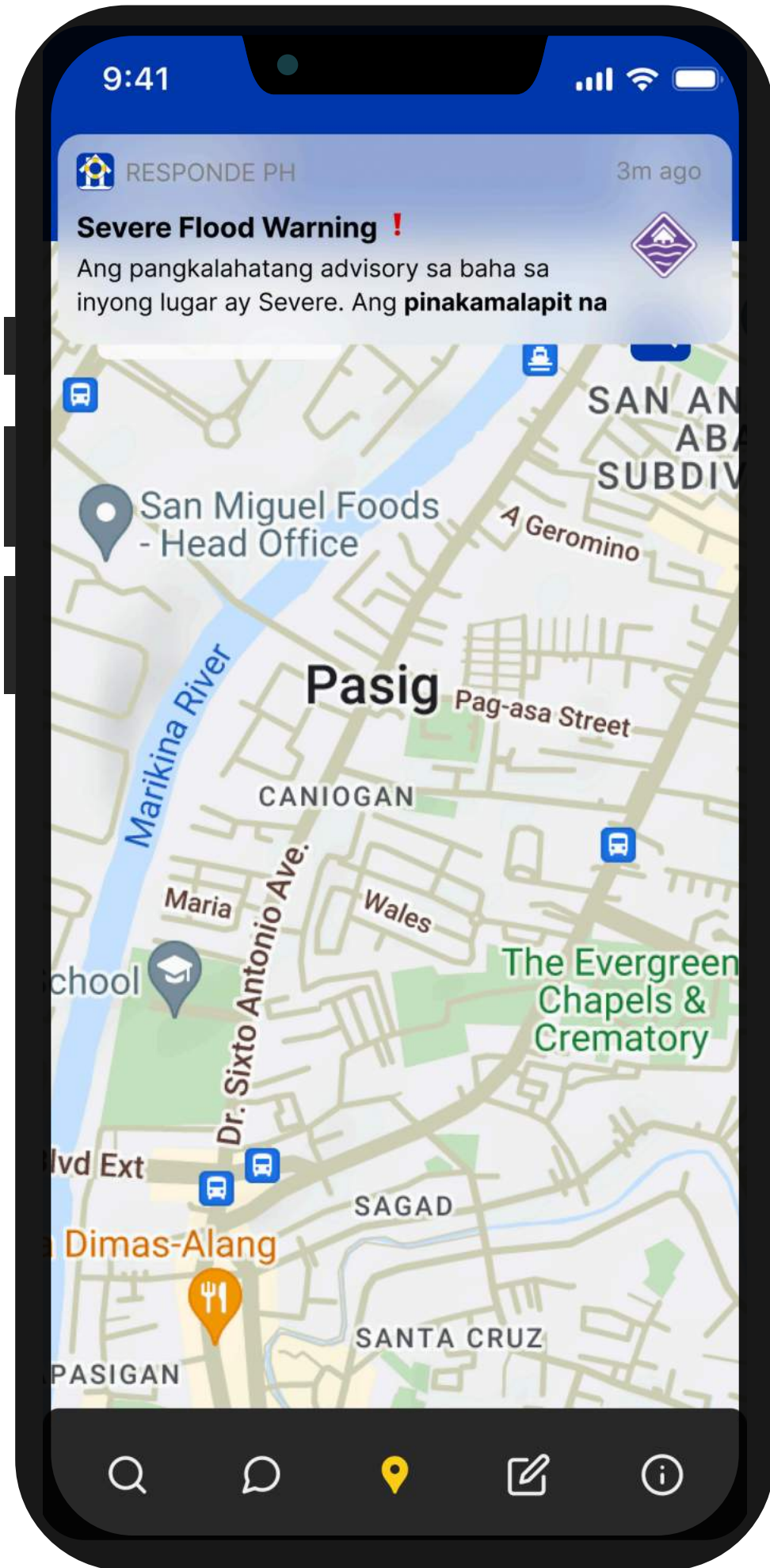
Forecasting

Map

Contact Locator

Live Chat

Community Message Board



# CITIZEN'S PORTAL

Sign Up

Info Page

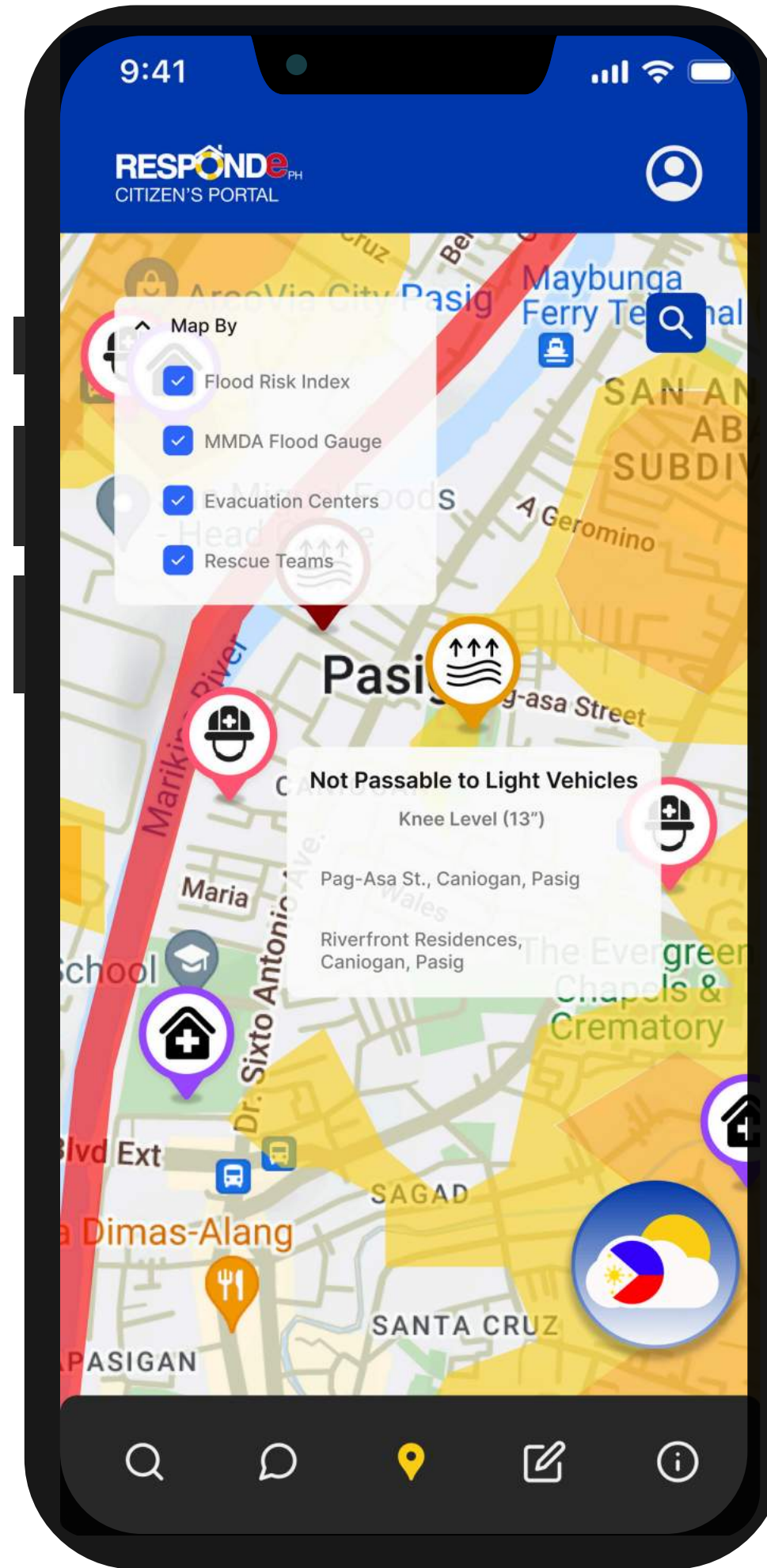
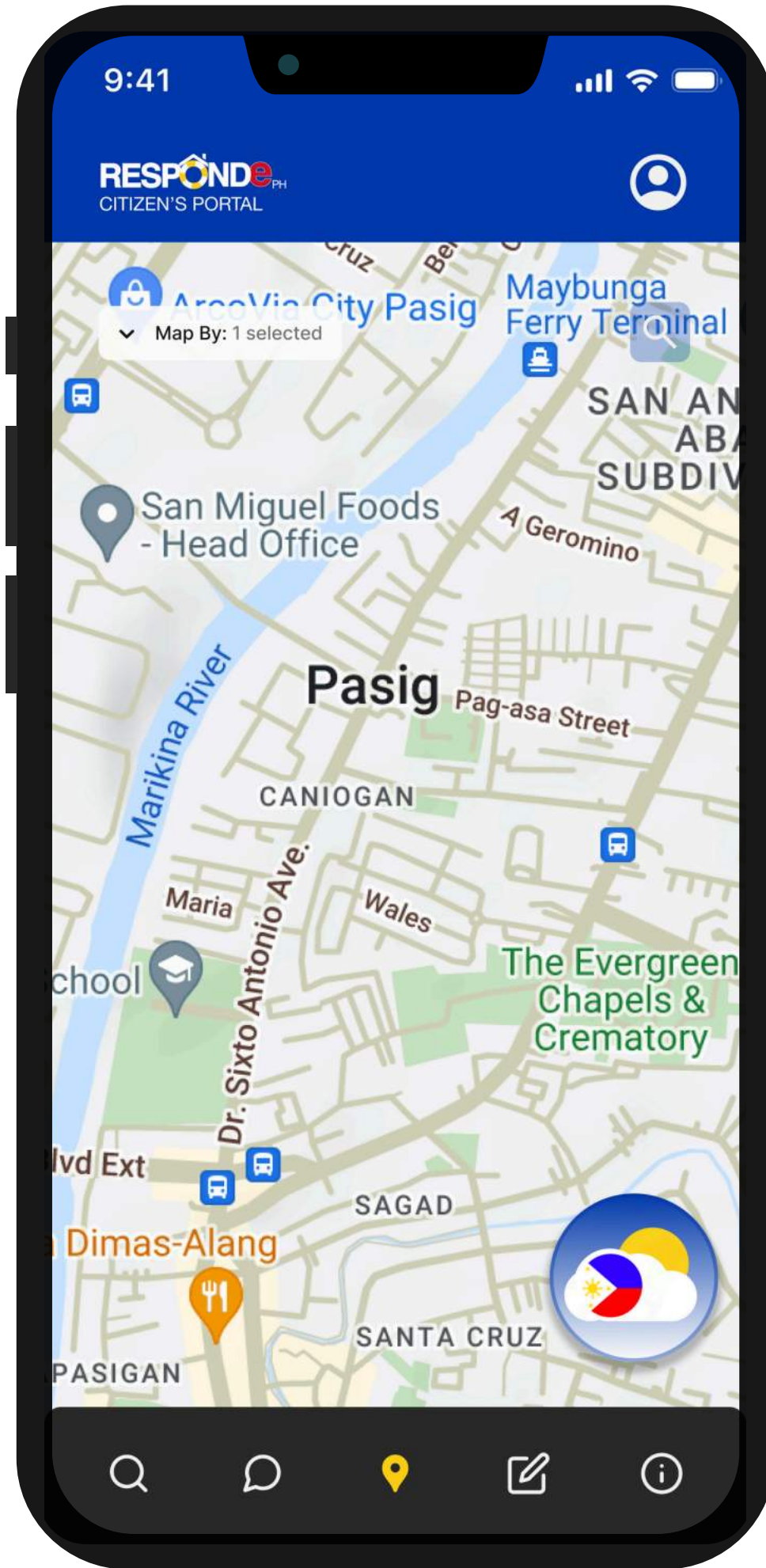
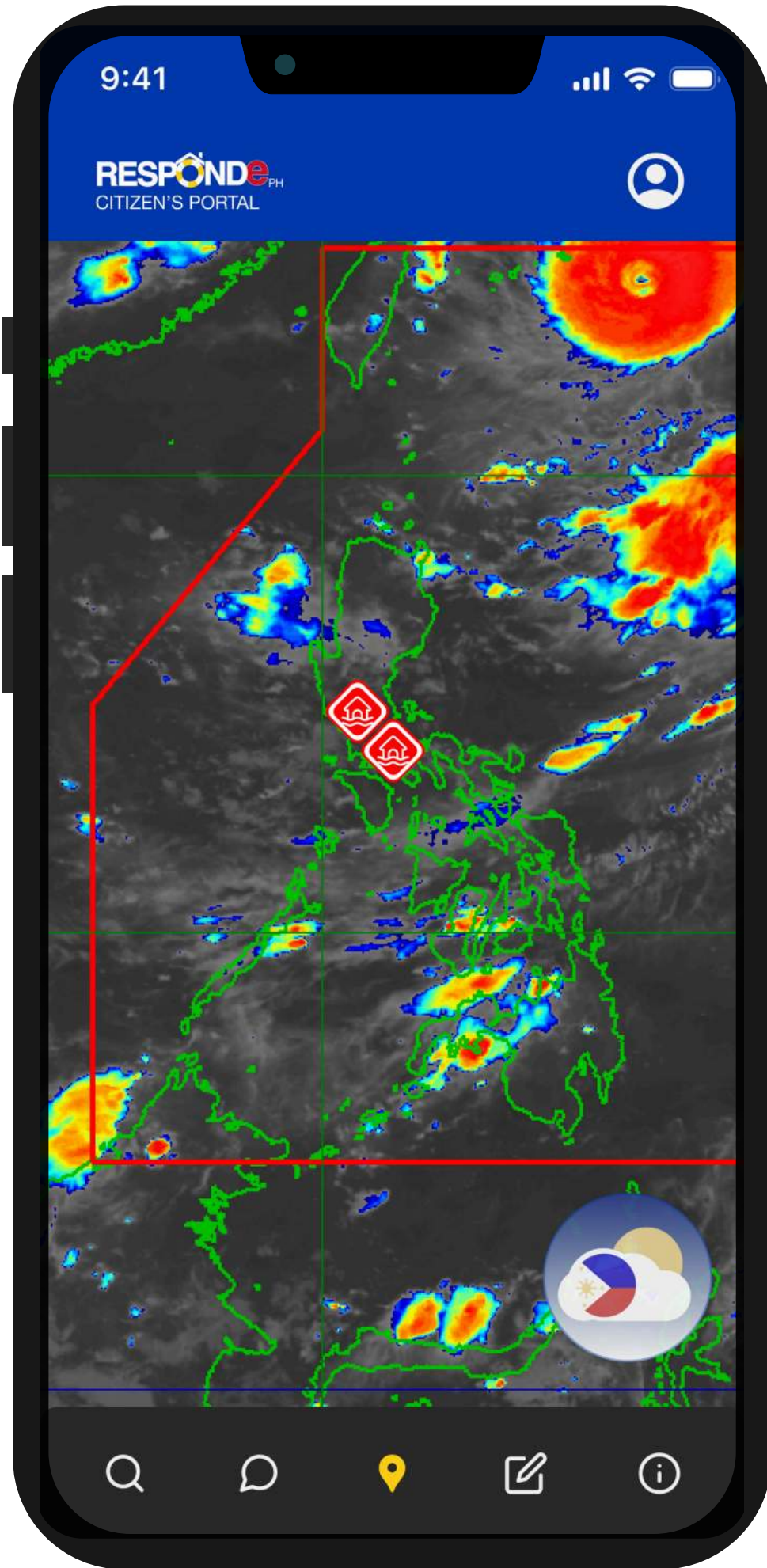
Flood Alert Notification

**Forecasting Map**

Contact Locator

Live Chat

Community Message Board



# CITIZEN'S PORTAL

Sign Up

Info Page

Flood Alert Notification

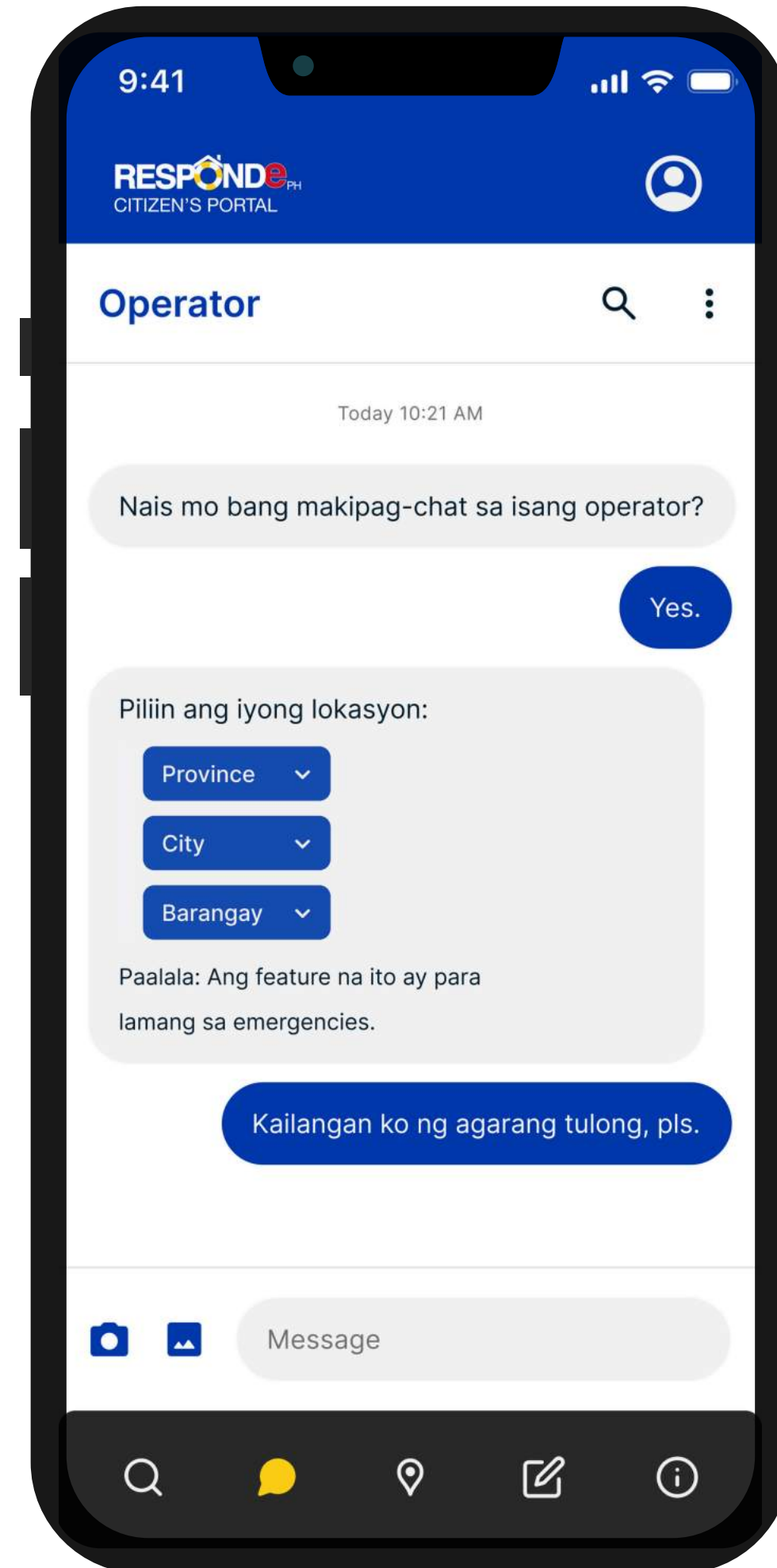
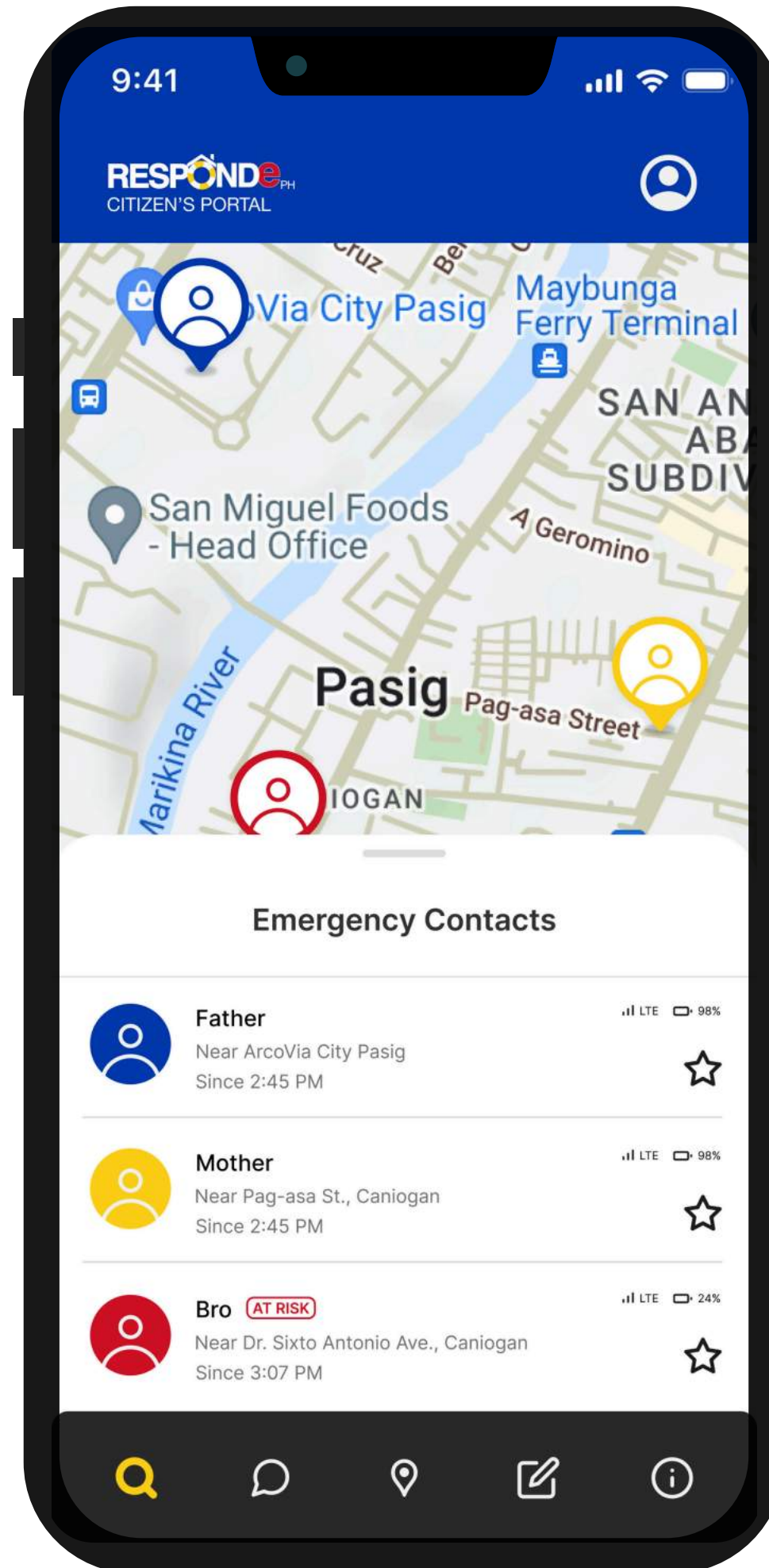
Forecasting

Map

Contact Locator

Live Chat

Community Message Board



# CITIZEN'S PORTAL

Sign Up

Info Page

Flood Alert Notification

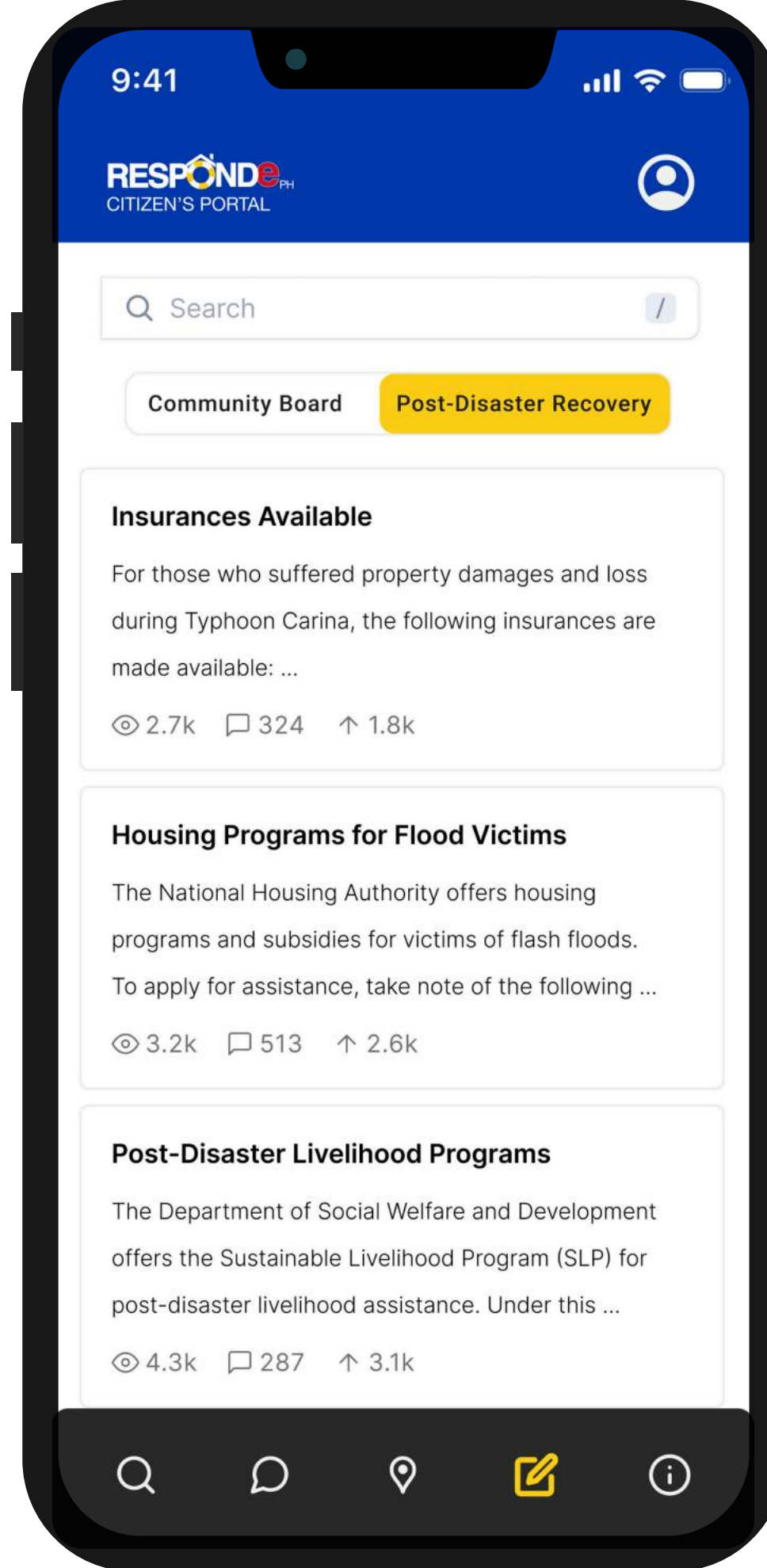
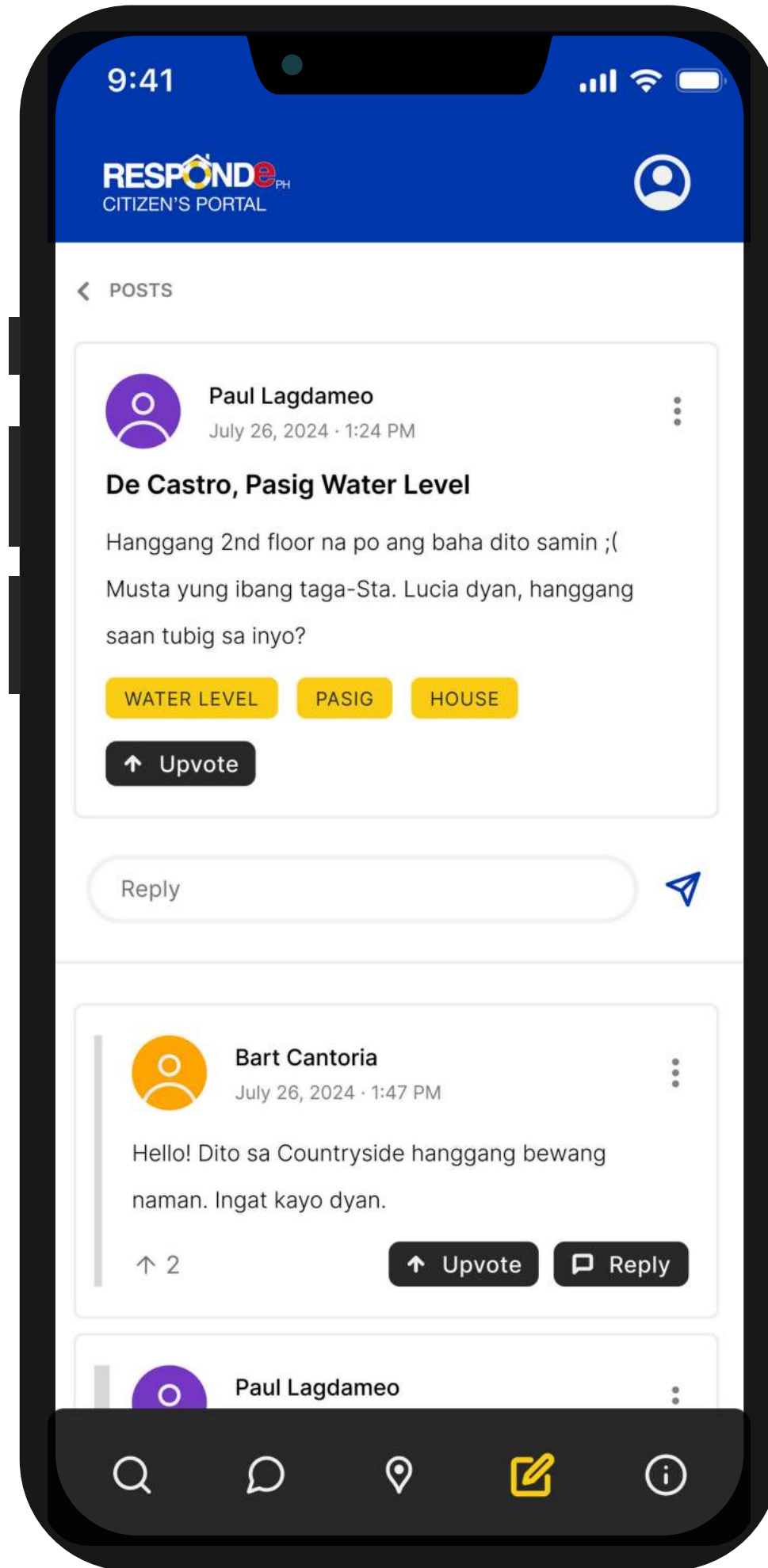
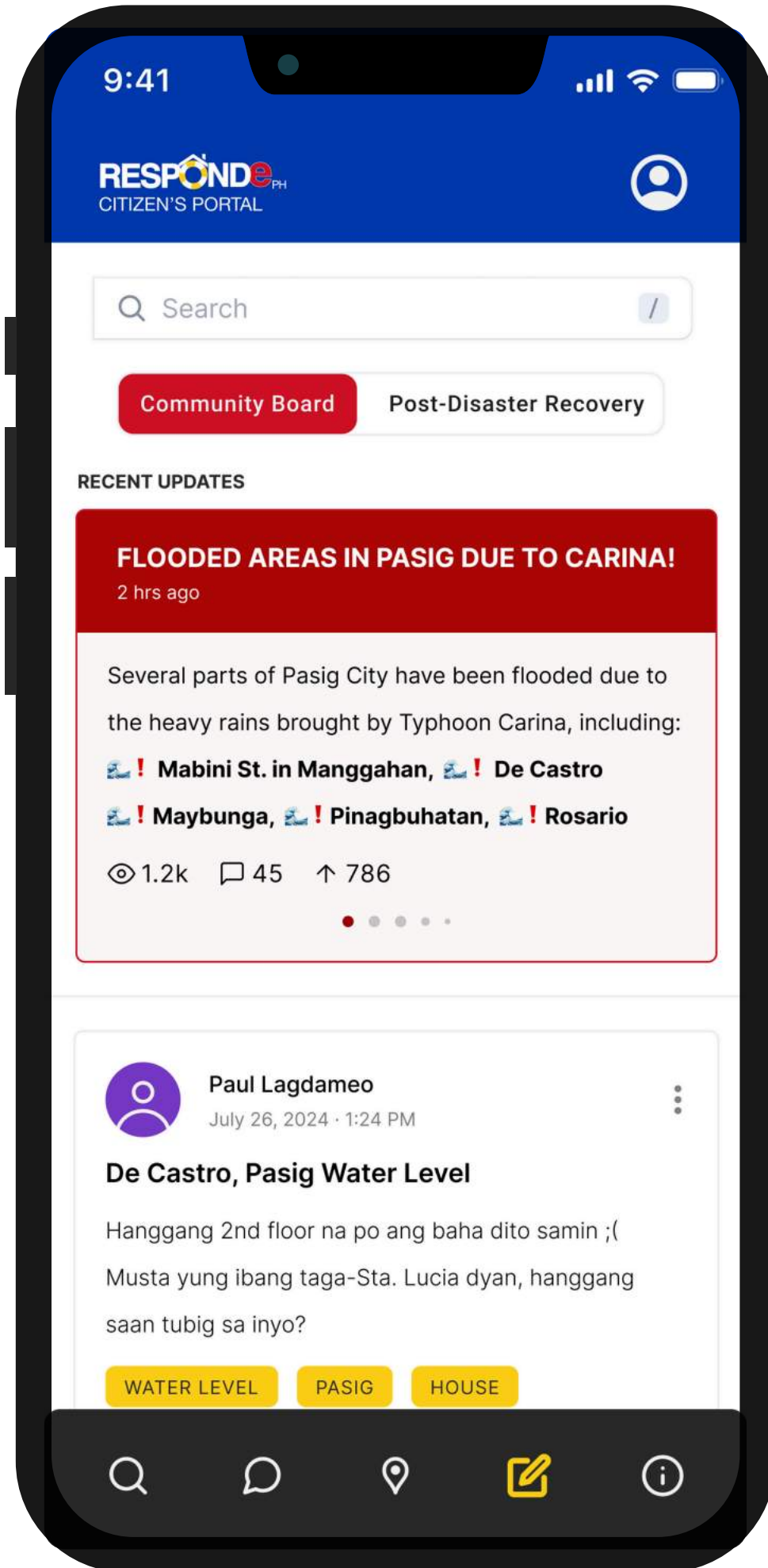
Forecasting

Map

Contact Locator

Live Chat

**Community Message Board**



# Alignment

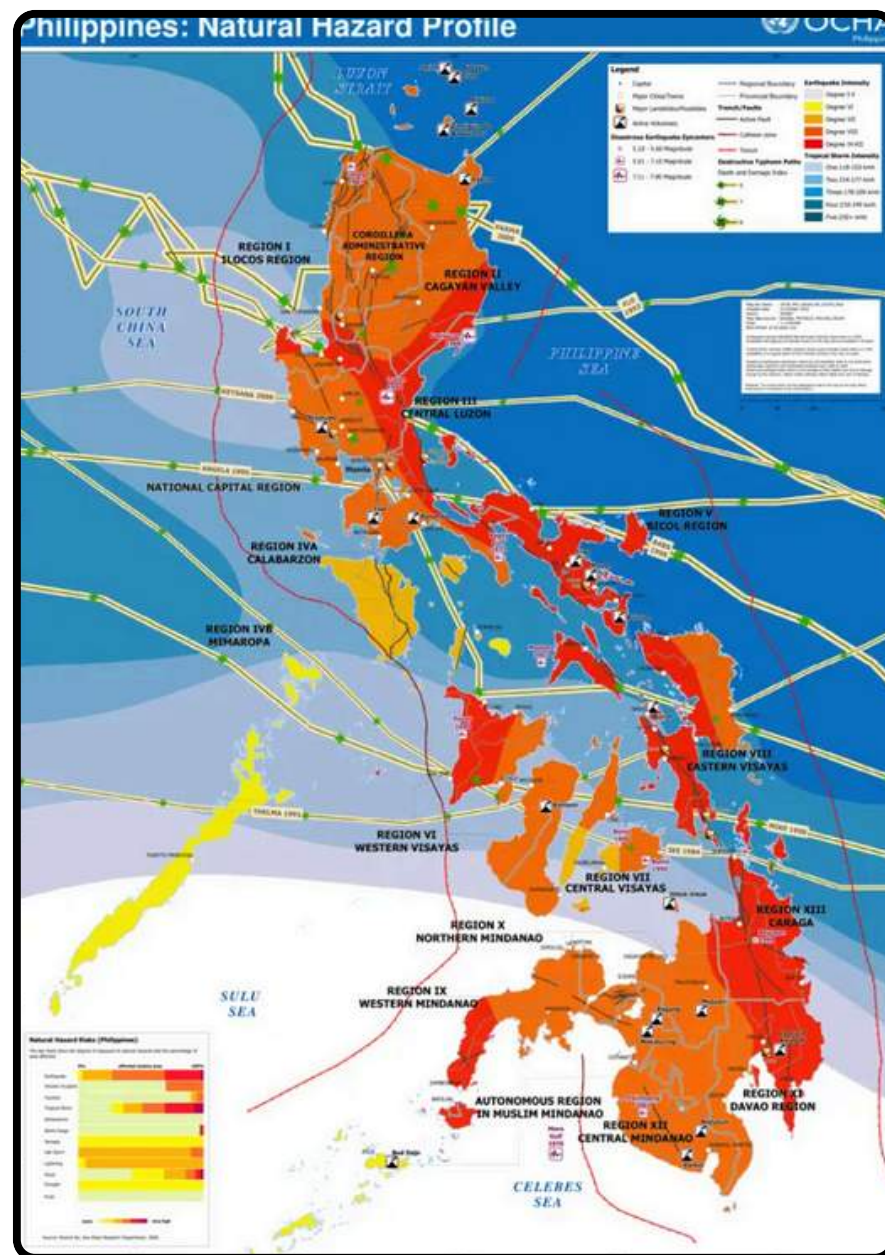


## SDG 11: Sustainable Cities & Communities

- 11.8: Support positive [national](#) and regional [development planning](#) by **gathering data for flood-resistant infrastructure and planning**
- 11.9: Implement policies for [inclusion](#), [resource efficiency](#), and [disaster risk reduction](#) in **building the foundation for flood response** (see [Lean Principle appendix](#))
- 11.A: Support least developed countries in [sustainable and resilient building](#) by **developing a flood resilience technology specifically for the Philippines**

# Implementation

## Phase 0: Trial



The screenshot shows the "LGU DASHBOARD" interface for "Pasig City, NCR". The dashboard includes a navigation menu on the left with options: Home Page, Forecasting, Map View, Incident Summary, Live Chat, and Rescue Navigator. The main content area features the "RESPONDe<sub>PH</sub>" logo and the slogan "Tutok bahay-bahai!".

**LGU DASHBOARD MVP TEST PHASE**

- <5% margin of error
- 30 waterproof cameras
- 3 drones

Successful implementation in 1 very high-risk city (e.g., Marikina)

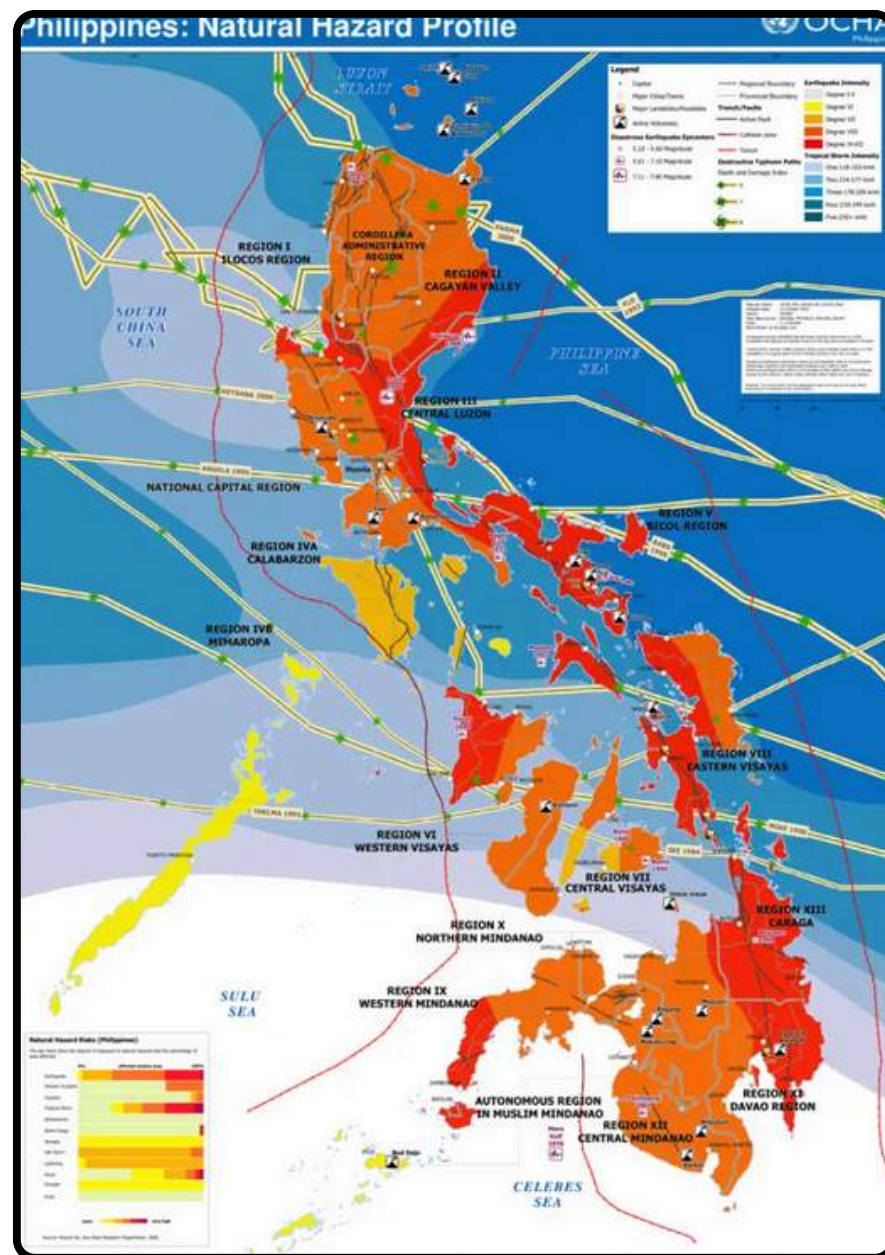
- Relies on forced evacuation processes, not EWS

DEPARTMENT OF SCIENCE AND TECHNOLOGY  
**PHILIPPINE COUNCIL FOR INDUSTRY, ENERGY AND EMERGING TECHNOLOGY RESEARCH AND DEVELOPMENT (DOST-PCIEERD)**

- Funds ~200 projects annually, worth **P3-5M** each
- Grants known to be very generous with contributions even from senators
- Interest in IoT systems

# Implementation

## Phase 1: Launch



The screenshot shows the LGU DASHBOARD for RESPONDE PH. The dashboard is titled "LGU DASHBOARD" and includes a navigation menu with options: Home Page, Forecasting, Map View, Incident Summary, Live Chat, and Rescue Navigator. The main content area features the RESPONDE PH logo and the tagline "Tutok bahay-bahay!". The dashboard is for Pasig City, NCR, and shows the date July 26, 2024, at 10:12:23 AM. The weather is reported as "Partly Cloudy".

**LGU DASHBOARD LAUNCH**  
<5% margin of error  
600 waterproof cameras  
30 drones

Successful implementation and acquisition of **10 high-risk cities (urban)**

- Can look at vulnerable, urbanized, highly-populated areas
- Malabon, Pasig, Makati, Taguig, Cagayan de Oro, etc.,

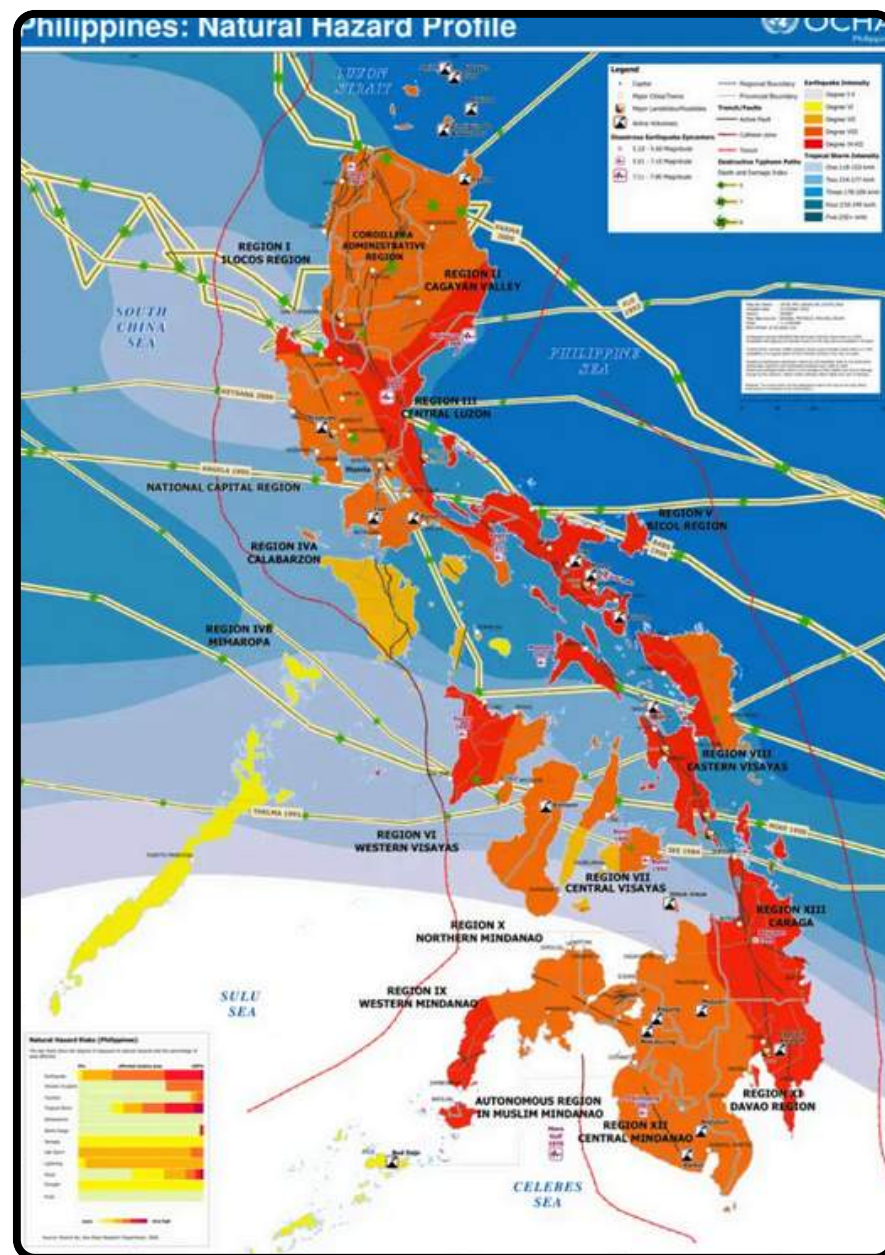
The figure shows the logos of the Metro Manila Development Authority (MMDA) and the Department of the Interior and Local Government (DILG). The MMDA logo includes the tagline "Marangal, Matatag, Disiplinado, Ako." and the DILG logo includes the tagline "REPUBLIC OF THE PHILIPPINES".

- Just this week, given an approved P255B budget for flood control given Carina
- Can implement this at a national level in line with their mandate
- Takes care of most of the work at **P10M**



# Implementation

## Phase 2: Expansion



**LGU DASHBOARD**  
1,500 waterproof cameras  
60 drones

Successful implementation and acquisition of **20 high-risk cities (metro/rural)**

- Can expand to more provincial areas, such as Navotas, Cataman (N. Samar), etc.,



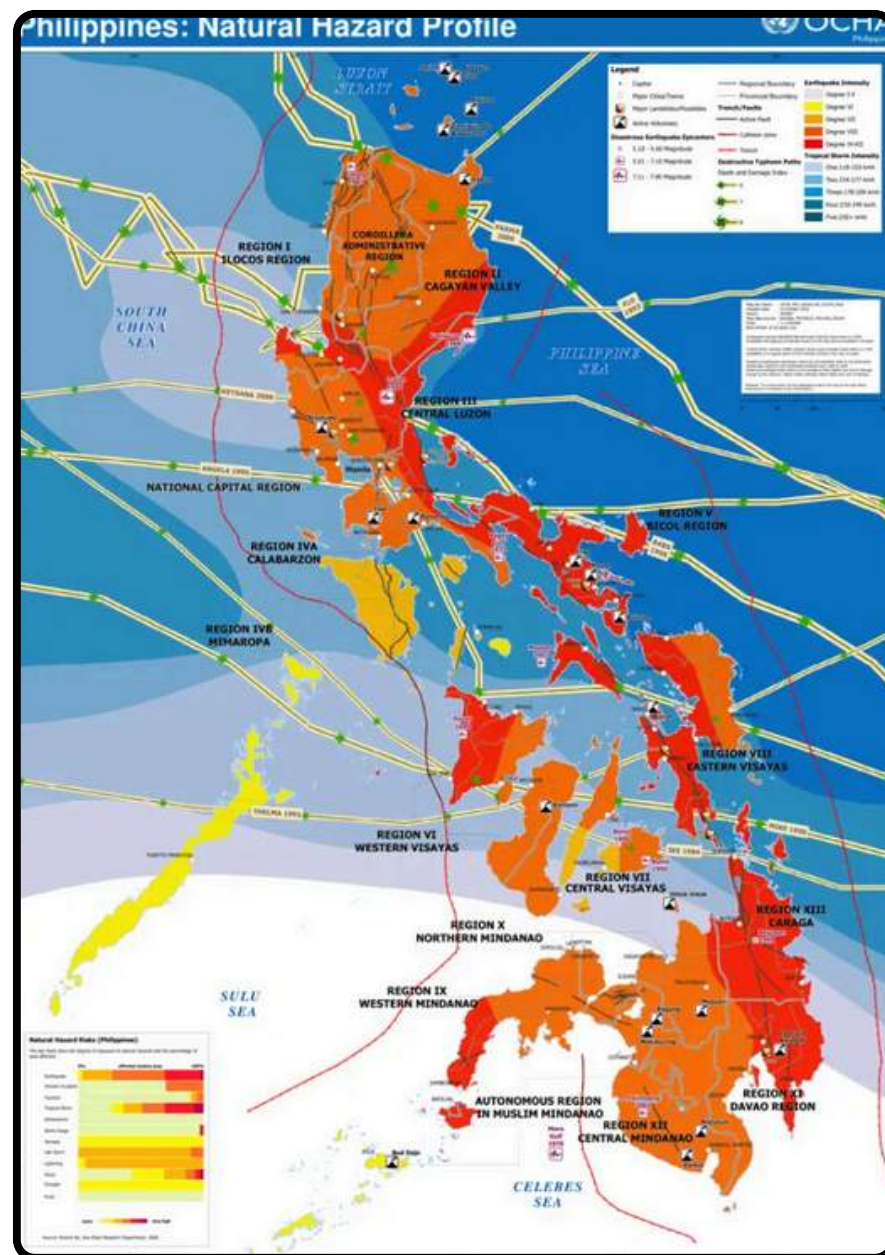
**APP LAUNCH**  
<5% report errors  
4.8% rating from beta testers



- Have stake in getting the information from dashboard and app for rescue operation efficiency
- Takes care of most of the work at a combined **P15M**

# Implementation

## Phase 3-onward: Solidification



**LGU DASHBOARD**  
2,400 waterproof cameras  
120 drones

Successful implementation and acquisition of **40 high-risk to mild-risk cities (rural)**

**APP LAUNCH**  
<5% report errors  
80% download reach

- Continue annual funding
- Can have a developed portfolio offering **climate consulting and relevant services**
- Of interest for highly-climate dependent industries like fishing, forestry, mining, etc.,
- For local and international investors

# Financial Projection

## PRIMARY FUNDING (B2G): Packages based on VBP + Tiering Scheme

**DOST:** Funding for monitoring and mitigating national calamity



**City governments:** Funding for streamlining LGU processes based on tiering (HUCs, metro, rural)

## SECONDARY FUNDING



Implementing the **LGU dashboard** across municipalities



Interest from climate-dependent industries

## EXTERNAL (NGOs) FUNDING

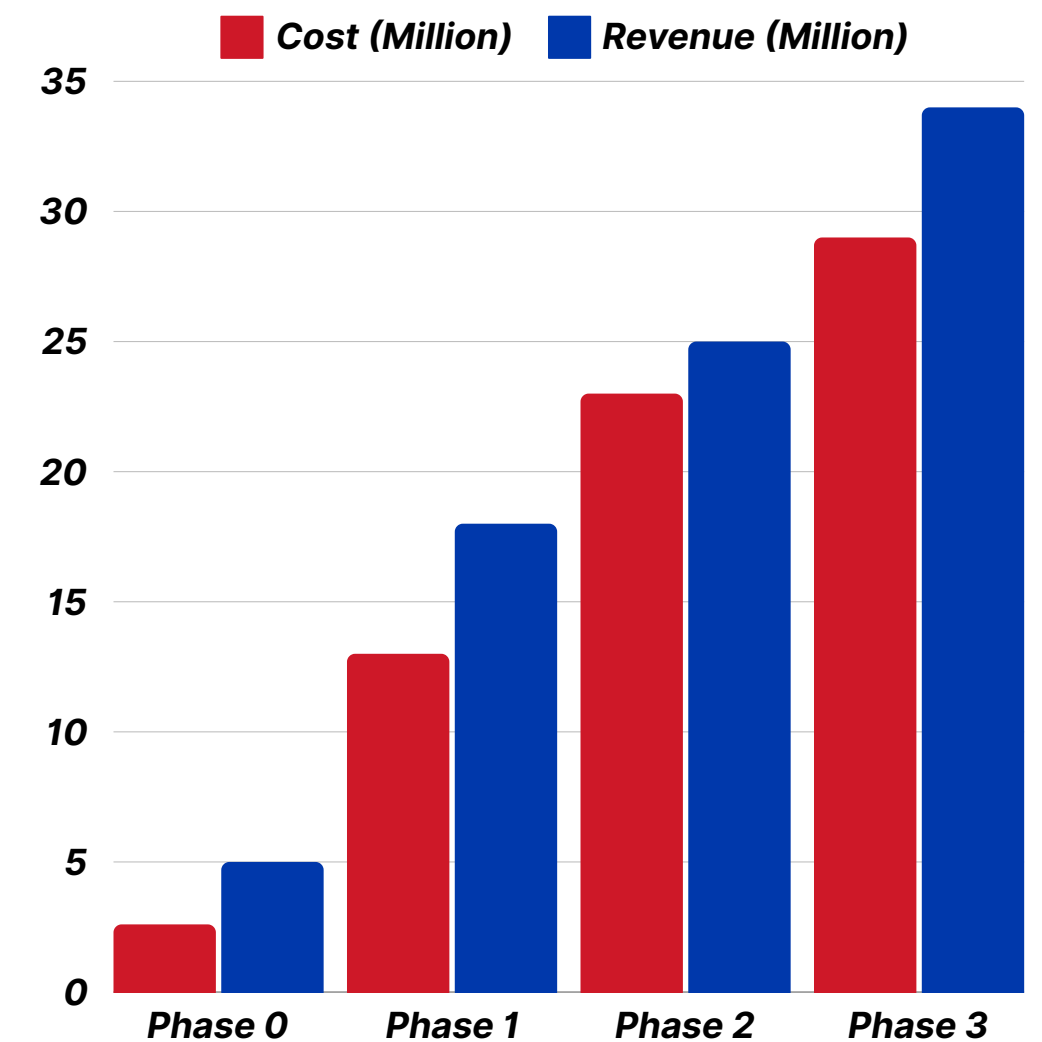
For **aid** distribution and **relief operations**



### Projected Cost vs. Revenue of RESPONDE PH in millions (PHP)

PHASE	COST (PHP)	REVENUE (PHP)
0	2.6M	5M
1	13.1M	17M
2	23.1M	25M
3	29.6M	33M

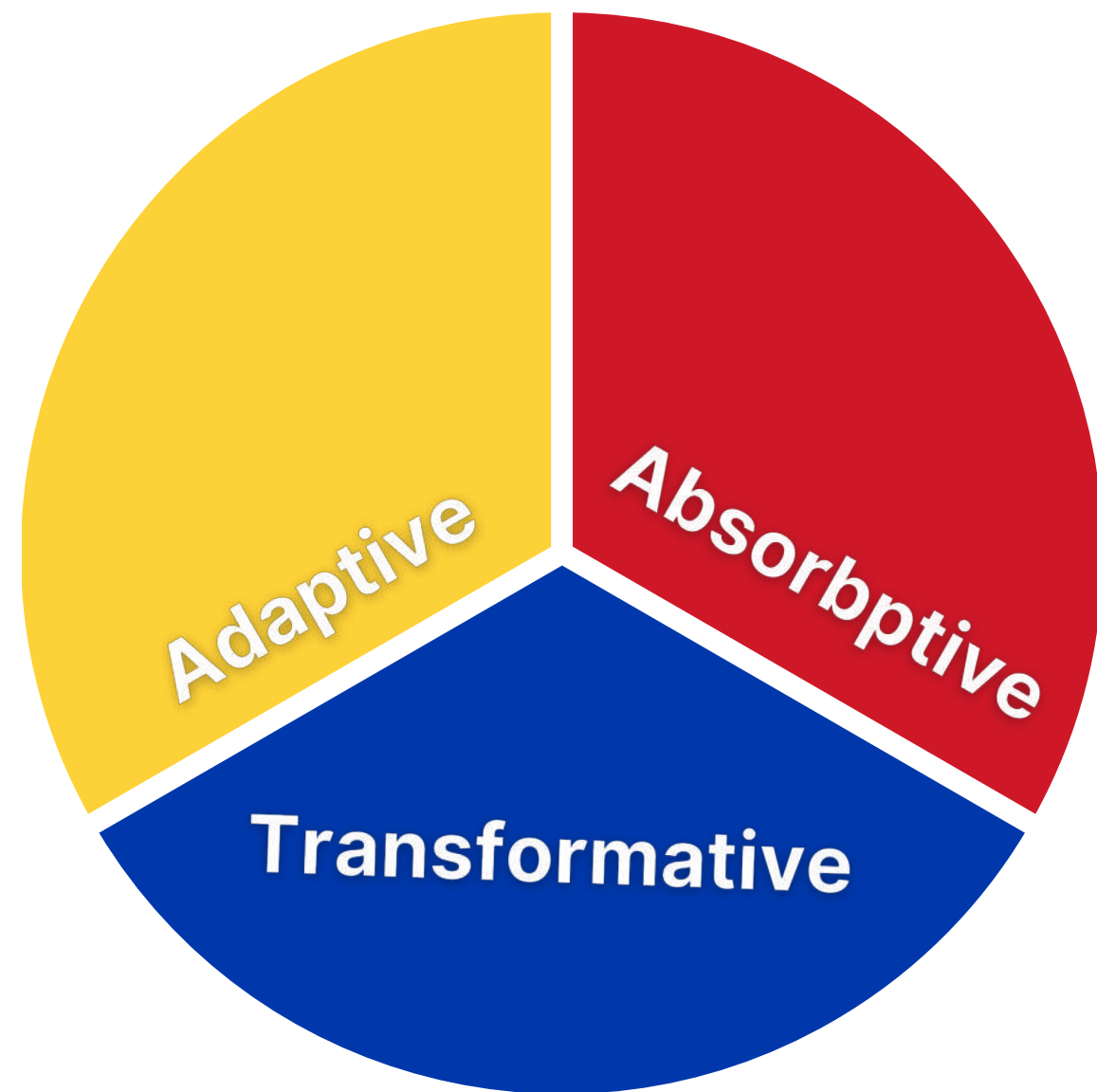
### Projected Cost vs. Revenue of RESPONDE PH in millions (PHP)



see Costing & Funding Appendices

# Climate Resilience

## Fostering **consistent** climate resilience



- **Adaptive**: provide **early warnings** and **real-time updates** for **citizens** navigating calamity.
- **Absorbptive**: develop a robust, integrated emergency responsiveness system that **speeds up emergency dispatch and rescues** from **LGUs**.
- **Transformative**: build a **multistakeholder** foundation for a disaster preparedness ecosystem and infrastructure **before, during, and after** calamity.

With all of these, we can affect and effect the following:

**5M**

PINOYS

**190**

LGUS

**25**

CROSS-SECTORAL  
PARTNERSHIPS

Figure inspired by Lanlan et al., 2023

# Emergency Responsiveness

## Developing **holistic** emergency responsiveness

With our forecasting, live feed, and integrated community system, we can be **equipped** with the requisite tools to affect and effect the following:

 **Half the time** FOR RESCUE OPERATIONS

 **Double the efficiency** FOR DISPATCH AND RELIEF

 **Mitigate potential damages** BY ONE FOURTH

**PHP 100M**

IN AGRICULTURE DAMAGE

**PHP 15B**

IN PROPERTY DAMAGE  
(Balita, 2024; Clapano, 2024)

**PHP 300M**

IN INFRASTRUCTURE DAMAGE

# Ecocity Model

## Move toward an **ecocity**

According to the World Bank (2018), ecocities enhance the **well-being of citizens** and society through **integrated urban planning and management** to protect and **nurture these ecosystems for future generations**. We can affect and effect:



Lessening the **harsh impact of calamity** through **efficient allocation and rescue operations**.



Pooling information and resources for **adaptive, data-driven planning** at an LGU-level city-planning.



Set the grounds for **research and implementation** of green infrastructure and disaster reduction.



Foster **collaborative, multisectoral interests** in awareness of calamity.

Let's change the ending of our story with

**RESPOND****ND****e**<sub>PH</sub>

Tutok *bahay-bahai!*

# Team BahAI



**Maxine V. Caparas**  
Ateneo de Manila University  
BS in Electronics Engineering



**Ma. Angelika C. Regoso**  
Ateneo de Manila University  
BS in Electronics Engineering



**Chanel Cerise G. Ang**  
Ateneo de Manila University  
BA in Political Science &  
BA Communication (Ad-PR)



**Pamela Anne C. Serrano**  
Ateneo de Manila University  
BS in CS-DGDD  
Minor in Education



# References

- Balita, C. (2024). Philippines: number of people affected by flood. Statista. <https://www.statista.com/statistics/1307224/philippines-number-of-people-affected-by-flood/>
- Clapano, J. R. (2024). Agriculture, infrastructure damage breaches P100 million. Philstar.com. <https://www.philstar.com/nation/2024/01/24/2328040/agriculture-infrastructure-damage-breaches-p100-million>
- Lanlan, J., Sarker, M.D., Ali, I., Firdaus, R.B., & Hossin, M.D. (2023). Vulnerability and resilience in the context of natural hazards: a critical conceptual analysis. *Environment, Development and Sustainability*. <https://doi.org/10.1007/s10668-023-03440-5>
- Mangaluz, J. (2024). "Carina" aftermath: 1.3 million affected, 211,000 displaced. Philstar.com. <https://www.philstar.com/headlines/2024/07/26/2373139/carina-aftermath-13-million-affected-211000-displaced>
- Martinez, R. E., Go, J. J., & Guevarra, J. (2016). Epidemiology of drowning deaths in the Philippines, 1980–2011. *Western Pacific Surveillance and Response Journal*, 7(4), 1–5. <https://doi.org/10.5365/wpsar.2016.7.2.005>
- Oxfam. (2022, May 25). Philippines hit by over half a billion dollars in damages from Typhoon Rai; farming and fishing hardest hit. Oxfam International. <https://www.oxfam.org/en/press-releases/philippines-hit-over-half-billion-dollars-damages-typhoon-rai-farming-and-fishing>
- Save the Children Philippines. (2024, February 12). Nearly 100,000 families displaced in areas hit by floods, landslides, as concerns over wellbeing of children rise - Philippines | ReliefWeb. <https://reliefweb.int/report/philippines/nearly-100000-families-displaced-areas-hit-floods-landslides-concerns-over-wellbeing-children-rise#:~:text=Philippines>
- Tomacruz, S. (2018, July 24). How NDRRMC issues its emergency mobile warnings. Rappler. <https://www.rappler.com/environment/disasters/208117-how-ndrrmc-issues-emergency-warnings-mobile-alerts/>
- World Bank Group. (2011). Eco2 Cities – a Guide for Developing Ecologically Sustainable and Economically Viable Cities. World Bank. <https://www.worldbank.org/en/news/press-release/2011/11/08/eco2-cities-guide-for-developing-ecologically-sustainable-and-economically-viable-cities>
- Xairylle, A. (2013). Tech in Asia - Connecting Asia's startup ecosystem. *Www.techinasia.com*. <https://www.techinasia.com/6-apps-prepare-natural-disasters-asia>

# Appendices

# Tech Stack

## Backend

- **Python**: data preprocessing and machine learning
- **Keras + PyTorch**: deep learning models
- **Django**: API developments

## Frontend

- **Vue.js**: web application
- **React Native**: mobile application (Android + IOS)

## Database

**PostgreSQL**: structured + unstructured data storage

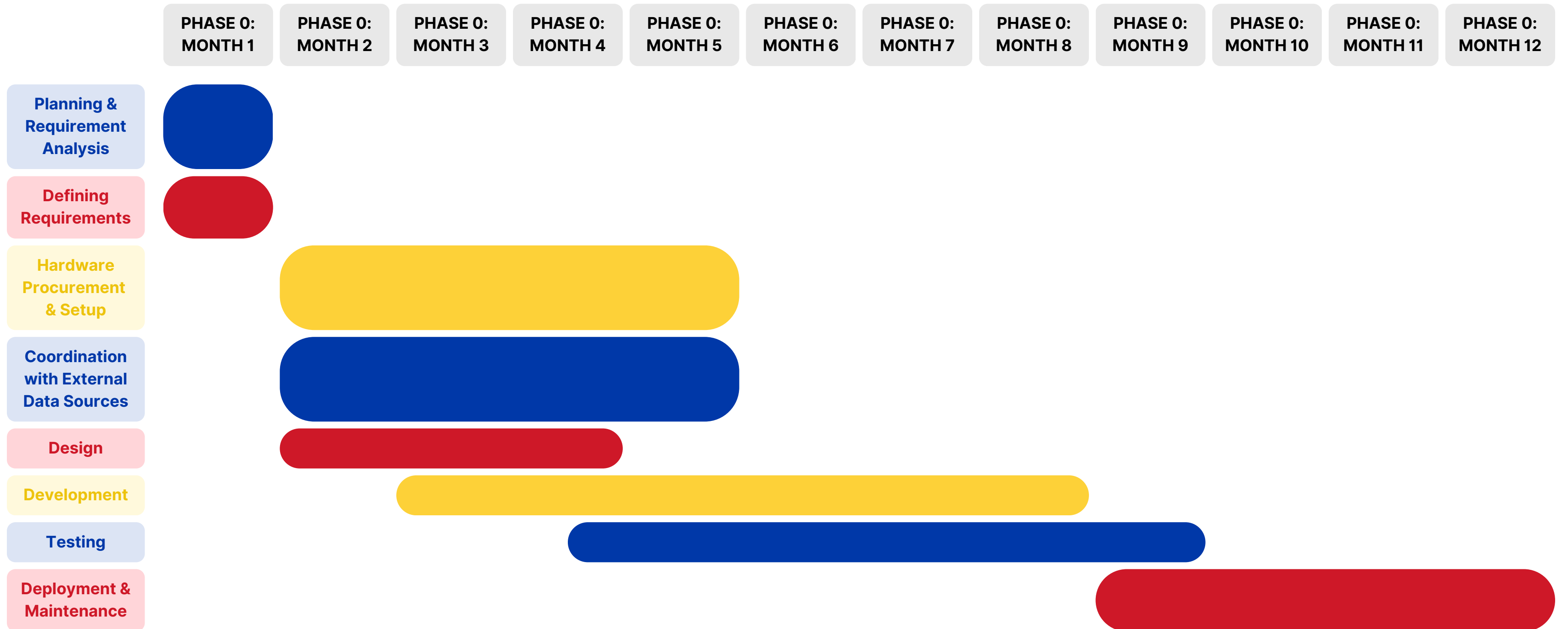
## Cloud Services

**AWS**: secure and scalable deployment

## Models

**MMDetection / RetinaNet**: object detection

# Development Plan



# Technological Breakdown

## Object detection AI

### A Real Time YOLO Human Detection in Flood Affected Areas Based On Video Content Analysis

Keerthana T, Kala L

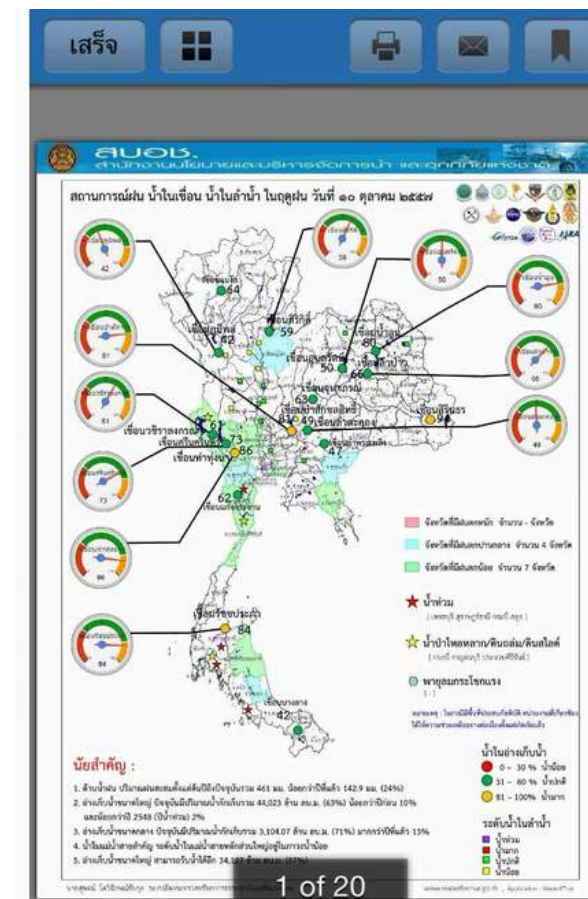
Person detection and tracking is a dynamic and widely researched area in computer vision. Keerthana and Kala (2019) demonstrated the effectiveness of the YOLO object detection algorithm in identifying humans in flood-affected areas using surveillance video feeds, successfully achieving human recognition and detection with the COCO dataset.



## Early Warnings

### Water4Thai (Thailand)

Water4Thai is an iOS app that offers real-time updates on Thailand's water situation from the Office of National Water and Flood Management Policy, including rainfall reports, daily tide information, weather charts, as well as water level statistics for rivers and dams. **It utilizes API Integration, Geospatial Technology: Geographic Information Systems (GIS), and Cloud Services.**



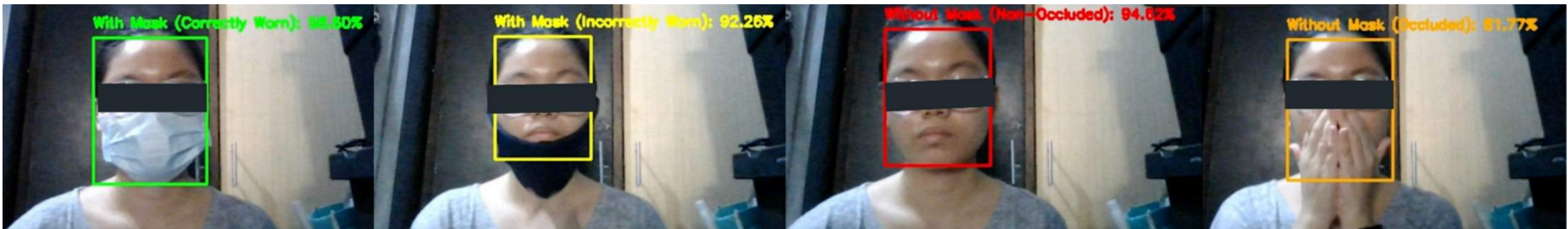
# Technological Breakdown

## Object detection AI

### CMD: Real-Time Compliant Mask Detection using Transfer Learning

*Serrano P, Mendoza J, Tarun I, Lopez V, Abu P*

This study offers an enhanced approach to the automated monitoring of mask-wearing compliance by developing models that identify correctly masked, incorrectly masked, occluded unmasked, and non-occluded unmasked faces through transfer learning and deploying them in real time. A curated dataset was first prepared by selecting and relabeling images from publicly available datasets. Transfer learning was then performed on the pre-trained models MobileNetV3 Small, ResNet50V2, VGG16, Xception, and YOLOv5 Small Classification.



# Technological Breakdown

## Live Updates & Alerts

### CITIZEN

The Citizen App boosts personal safety by offering real-time alerts for nearby incidents such as crimes, fires, and accidents. It enables users to receive notifications, stream live videos, report incidents, share their location with trusted contacts, and utilize incident mapping to view ongoing and recent incidents in area.

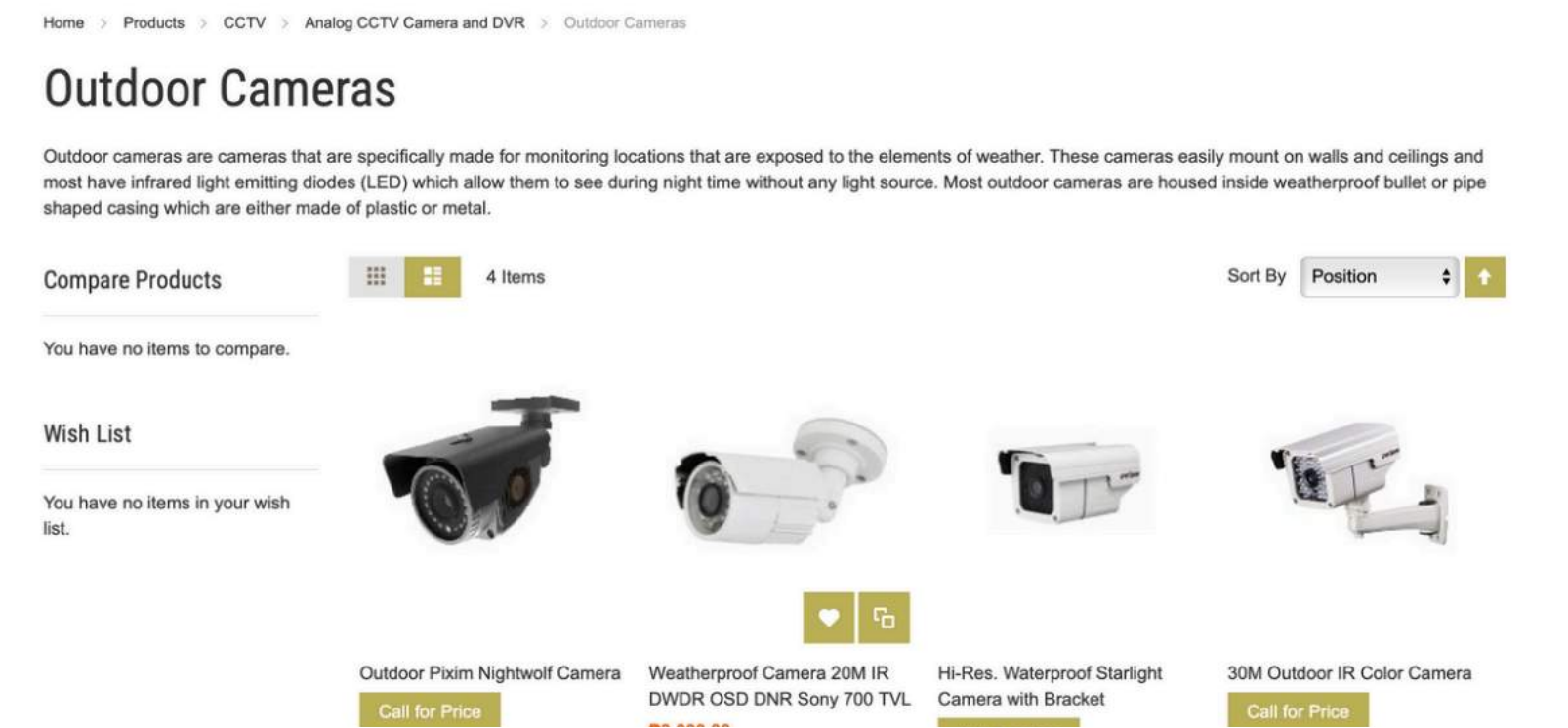
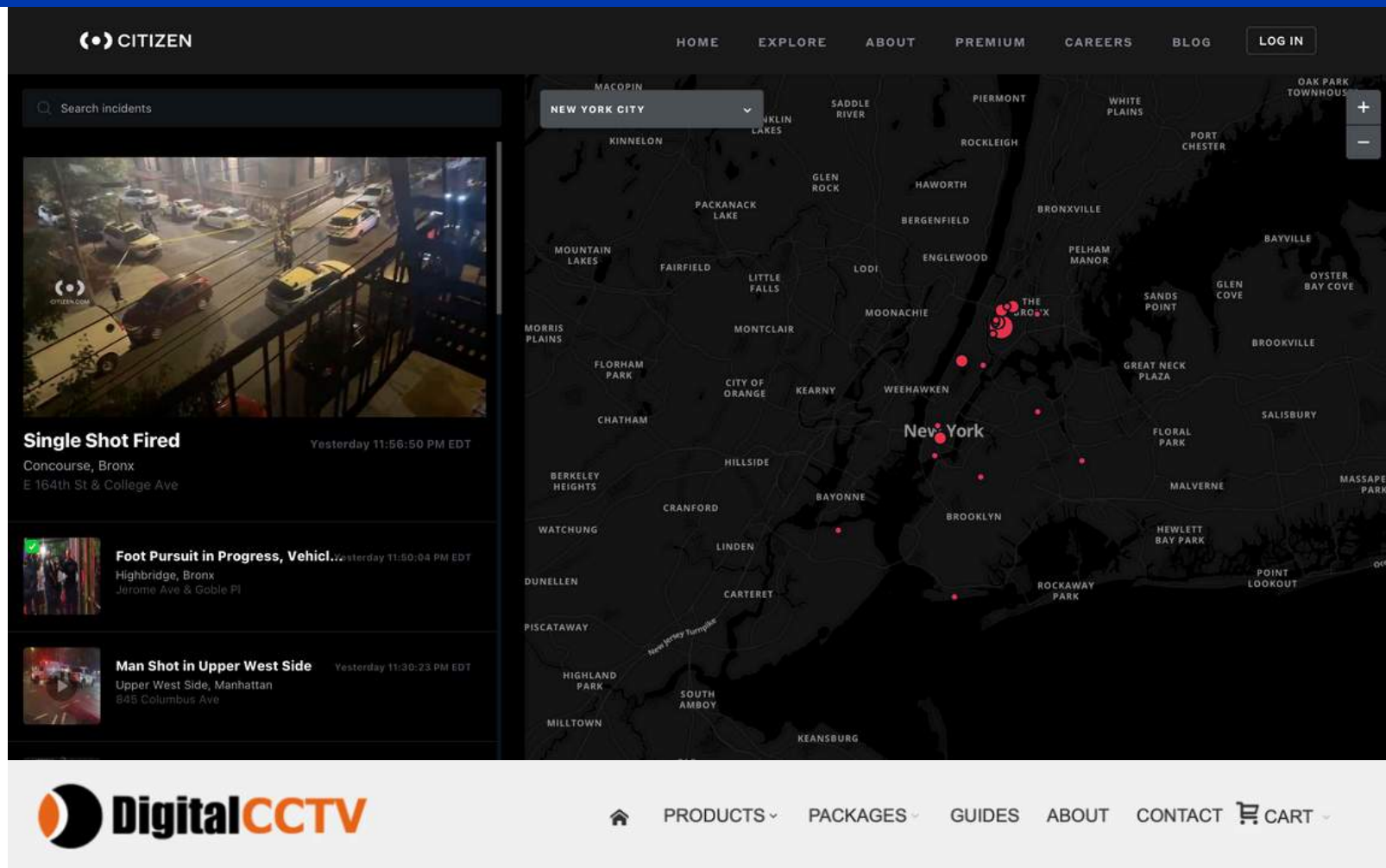
It utilizes GIS technology, live video streaming, geolocation services, GIS for incident mapping, cloud services, and data analytics.

## Waterproof Cameras

### OUTDOOR Cameras

Digital CCTV offers outdoor cameras designed for monitoring areas exposed to weather conditions. These cameras are easy to mount on walls and ceilings and typically feature infrared LEDs for night vision.

They are usually housed **in weatherproof bullet or pipe-shaped casings made of plastic or metal.**



# Technological Breakdown



## Waterproof Drones

- Level 7 Wind Resistance
- Waterproof rating: IP67
- Floatable & Fippable
- Corrosion-resistant

- Real-time HD Video Streaming
- IP66 Waterproof Remote Controller
- Sandproof
- Rugged Body



# LGU Value Proposition



More **centralized** real-time flood monitoring



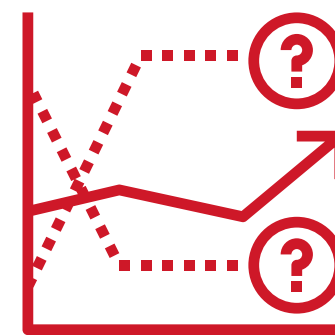
More individuals **saved** from flood onslaught



More **cost-efficient, accurate** flood response



Enhanced **coordination** between LGU & citizens

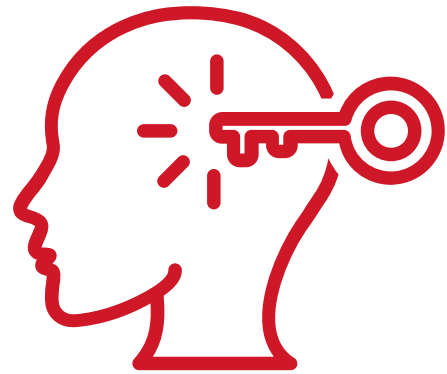


Crucial data for **forecasting** & **relief** operations initiatives

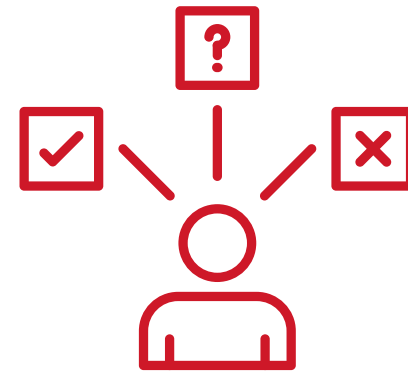


Improved **trust** from constituents

# App Value Proposition



Greater **awareness**  
surrounding floods



Further capacity to make  
**informed** decision-making



More avenues to **receive**  
**and monitor** help



Enhanced **coordination**  
between LGU & citizens



Increased **preparedness**  
against calamity



Stronger **community**  
**initiatives** & engagement

# Lean Canvas

## Key Problem

- Inefficient warning and hazarding systems for floods
- Delayed emergency and rescue operations
- Lack of centralization in emergency response operations
- Lacking flood infrastructure and weathering technology
- Underutilized forecasting technology for floods
- Lack of communication and information avenues during calamity

## Solution

- All-in-one flood resilience response system
- LGU rescue operations dashboard for dispatch, priority rescue, and live chat
- Citizen app for flood alerts, evacuation mapping, locating loved ones, and live chat
- Development of forecasting technology and flood information storage

## Success Metrics

- Number of downloads (app)
- User retention rate (app)
- User feedback ratings (app)
- Amount of trained partners (LGU)
- Amount of public partners
- Amount of private partners
- Revenue gained from all phases

## Unique Value Proposition

- Centralized system for flood response
- High-technology LGU monitoring mechanisms
- Live operations and engagement between residents and LGUs
- All-in-one rescue and response system
- Integrated predictive technology and forecasting platform
- Accurate and end-to-end alert systems for residents
- Tracking system for residents and their loved ones
- Community communication platform for residents

## Customer Relationship

- Consumer feedbacking feature
- Information sessions and trainings with LGUs
- Product showcases and interactive booths in strategic locations

## Channels

- Partnerships with LGUs for information sessions
- Training modules and sessions with LGUs
- Integration via advertisements on key websites
- Ongoing promotions through interactive booths and showcasing

## Customer Segments

- Residents in flood-prone areas
- Flood-vulnerable LGUs
- Telecommunication companies
- Insurance companies
- Investors
- MNCs
- Government clients

## Cost Structure

- Seed fundraising
- National government agency contributions
- Risk and climate consulting premiums
- Crowdfunding

## Revenue Streams

- Funding from VCs
- Financial support from national government agencies
- Private funding and consulting with interested partners (TelCos, insurance companies, etc.,)

# Lean Principle

Responde PH uses the Lean Methodology to streamline flood emergency responses, cutting waste and delays to deliver swift, **effective support and ensure residents' safety and resilience.**

Type of Waste	How the Platform Helps	Benefits
<b>Waiting</b>	Provides immediate updates and data.	<b>Efficiency:</b> Faster processes, reduced delays, and quicker response times.
<b>Motion</b>	Streamlines evacuation routes, minimizing unnecessary movement.	<b>Safety:</b> Better coordination and safer evacuations.
<b>Overprocessing</b>	Automated identification of people in severe risk, reducing manual report.	<b>Cost Savings:</b> Less manual labor and fewer errors.
<b>Inventory</b>	Manages resources more effectively, avoiding surplus.	<b>Resource Optimization:</b> Better use of supplies.

# KPI Computation

Hardware Premises				
<i>Hypothetical 1: assuming each very high to high risk city has at least 20 vulnerable streets</i>				
<i>Hypothetical 2: assuming each vulnerable street will have least 3 cameras each</i>				
<i>Hypothetical 3: assuming we target very high risk streets with a drone (mobile)</i>				
Phase 0 (Year 1)				
Cities	Streets	Standard Camera Amount	Total Cameras: Cities*Streets*Standard Amt	Total Drones: Cities*3 (Most high risk areas)
1	10	3	30	3
Phase 1 (Year 1)				
Cities	Streets	Standard Camera Amount	Total Cameras: Cities*Streets*Standard Amt	Total Drones: Cities*3 (Most high risk areas)
10	20	3	600	30
Phase 2 (Year 2)				
Cities	Streets	Standard Camera Amount	Total Cameras: Cities*Streets*Standard Amt	Total Drones: Cities*3 (Most high risk areas)
20	20	3	1200	60
Phase 3 (Year 3)				
Cities	Streets	Standard Camera Amount	Total Cameras: Cities*Streets*Standard Amt	Total Drones: Cities*3 (Most high risk areas)
40	20	3	2400	120

# Business Costing (Phase 0)

COMPONENT	COST DRIVER	CPU (PHP)	UNIT AMOUNT	ANNUAL COST (PHP)
Hardware costs	Waterproof cameras	2,000	30	60,000.00
	Drone	50,000	3	150,000.00
	PCs / CPUs for employees	50,000	5	250,000.00
	Contingency fee	500,000		500,000.00
Employee costs	Salaries	20,000 / month	5 employees	100,000.00
Operational costs	Office space (rented)	140,000 / month	12 months	1,680,000.00
	Electricity and utilities	17,000 / month	12 months	204,000.00
<b>TOTAL</b>				<b>2,944,000.00</b>

# Business Costing (Phase 1)

COMPONENT	COST DRIVER	CPU (PHP)	UNIT AMOUNT	ANNUAL COST (PHP)
Hardware costs	Waterproof cameras	2,000	600	1,200,000.00
	Drone	50,000	30	1,500,000.00
	PCs / CPUs for employees	50,000	20	1,000,000.00
	Contingency fee	500,000		500,000.00
Employee costs	Salaries	30,000 / month	10 employees	3,600,000.00
	Senior/manager salaries	40,000 / month	5 managers (Product, TechOps, Marketing, Finance, R&D)	2,400,000.00
	LGU training and development	100,000 contingency fee		500,000.00
Operational costs	Office space (rented)	140,000 / month	12 months	1,680,000.00
	Electricity and utilities	17,000 / month	12 months	204,000.00
Training costs	Training program and development of multi-modal tutorials	590,000		590,000.00
<b>TOTAL</b>				<b>13,174,000.00</b>

# Business Costing (Phase 2)

COMPONENT	COST DRIVER	CPU (PHP)	UNIT AMOUNT	ANNUAL COST (PHP)
Hardware costs	Waterproof cameras	2,000	1,500	3,000,000.00
	Drone	50,000	60	3,000,000.00
Technology maintenance	Hosting and cloud services (AWS)	10,000	12 months	10,000.00
	App Store fees	500 / month	12 months	6,000.00
Employee costs	Salaries	30,000 / month	15 employees	5,400,000.00
	Senior/manager salaries	40,000 / month	5 managers (Product, TechOps, Marketing, Finance, R&D)	3,000,000.00
	Initial training and development	100,000 contingency fee		500,000.00
Operational costs	Office space (rented)	140,000 / month	12 months	1,680,000.00
	Electricity and utilities	17,000 / month	12 months	204,000.00
Marketing costs	Digital advertising fees	375,000 / campaign (Meta)	4 quarters	1,500,000.00
	Onground activations (billboards, demos, etc.,)	1,000,000 / campaign	4 quarters	4,000,000.00
R&D costs	Training program and development of multi-modal tutorials	590,000		590,000.00
	Beta testing and user support per area	15,000	20	300,000.00
<b>TOTAL</b>				<b>23,190,000.00</b>



# Business Costing (Phase 3)

COMPONENT	COST DRIVER	CPU (PHP)	UNIT AMOUNT	ANNUAL COST (PHP)
Hardware costs	Waterproof cameras	2,000	2,400	4,800,000.00
	Drone	50,000	120	6,000,000.00
	Contingency fee	500,000		500,000.00
Technology maintenance	App Store fees	500 / month	12 months	6,000.00
Employee costs	Salaries	35,000 / month	15 employees	6,300,000.00
	Senior/manager salaries	50,000 / month	5 managers (Product, TechOps, Marketing, Finance, R&D)	3,000,000.00
	Initial training and development	100,000 contingency fee		500,000.00
Operational costs	Office space (rented)	140,000 / month	12 months	1,680,000.00
	Electricity and utilities	17,000 / month	12 months	204,000.00
Marketing costs	Digital advertising fees	375,000 / campaign (Meta)	4 quarters	1,500,000.00
	Onground activations (billboards, demos, etc.,)	1,000,000 / campaign	4 quarters	4,000,000.00
R&D costs	Training program and development of multi-modal tutorials	590,000		590,000.00
	Beta testing and user support per area	15,000	40	600,000.00
<b>TOTAL</b>				<b>29,680,000.00</b>

# Costing Plan

## VBP + TIERING

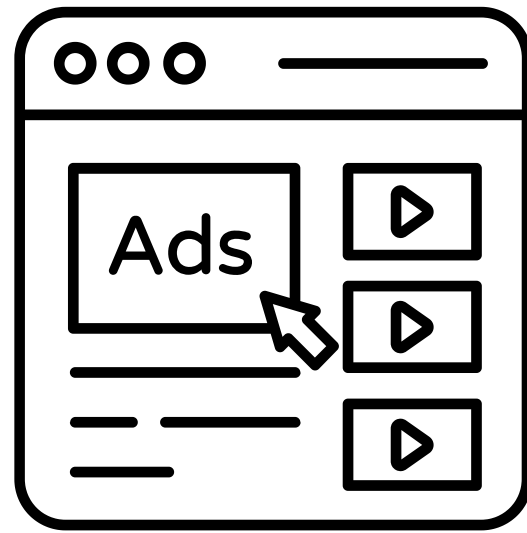
Base costs			
Basic Formula	Driver	Amount	Initial Cost
$P = \text{Costs} \times (1 + M) + V$	Cameras	60	2,000
Where:	Drones	3	150,000
P = Price	LGU installation fees	20	50,000
M = Profit Margin % (20%)	LGU maintenance fees	4	160,000
V = Value-based premium based on the LGU's perceived or actual benefit	LGU training fees		100,000
	Value		200,000
			<b>662,000</b>

TIER	Base Charge	Profit	Total
HUCs	662,000	30%	<b>860,600</b>
Metropolitan	662,000	20%	<b>794,400</b>
Rural	662,000	10%	<b>728,200</b>

\*Over time, can do VBP

Revenue	Package	Cities Amount	LGU revenue
Phase 1	<b>860,600</b>	10	<b>8606000</b>
Phase 2	<b>794,400</b>	20	<b>15888000</b>
Phase 3	<b>728,200</b>	40	<b>29128000</b>

# Marketing Plan



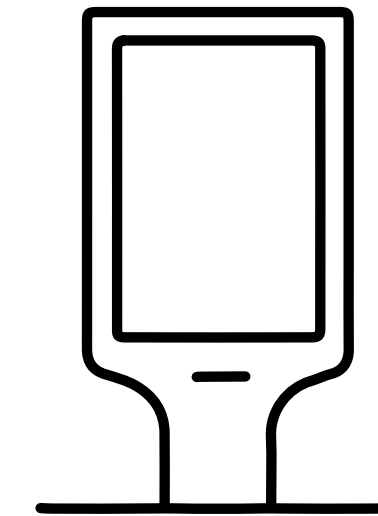
Integrated website ads with public and private partners

*Similar to Tenki, promoting the app through website ads and tutorials (e.g., YouTube)*



Social media marketing and digital promotions

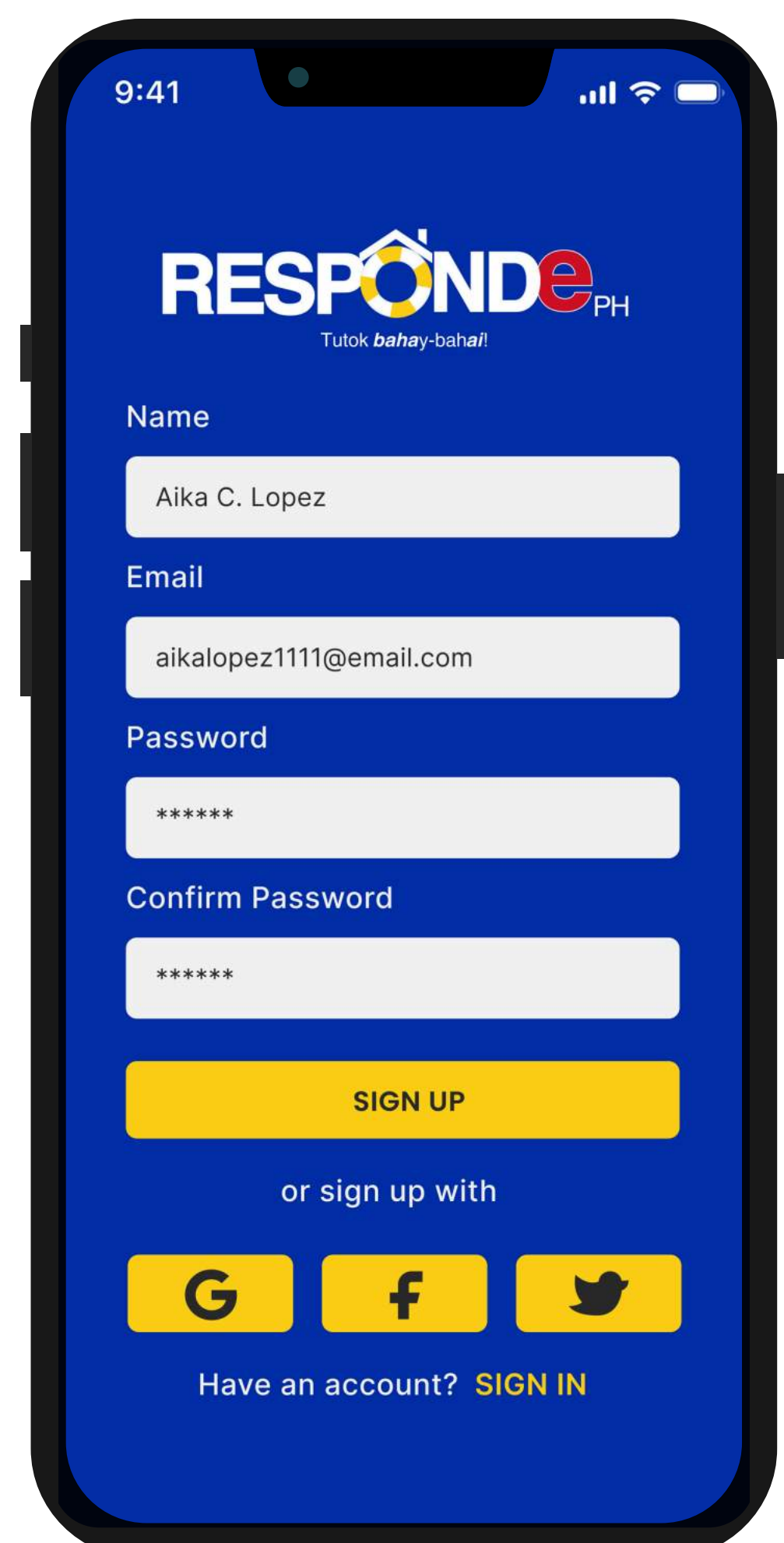
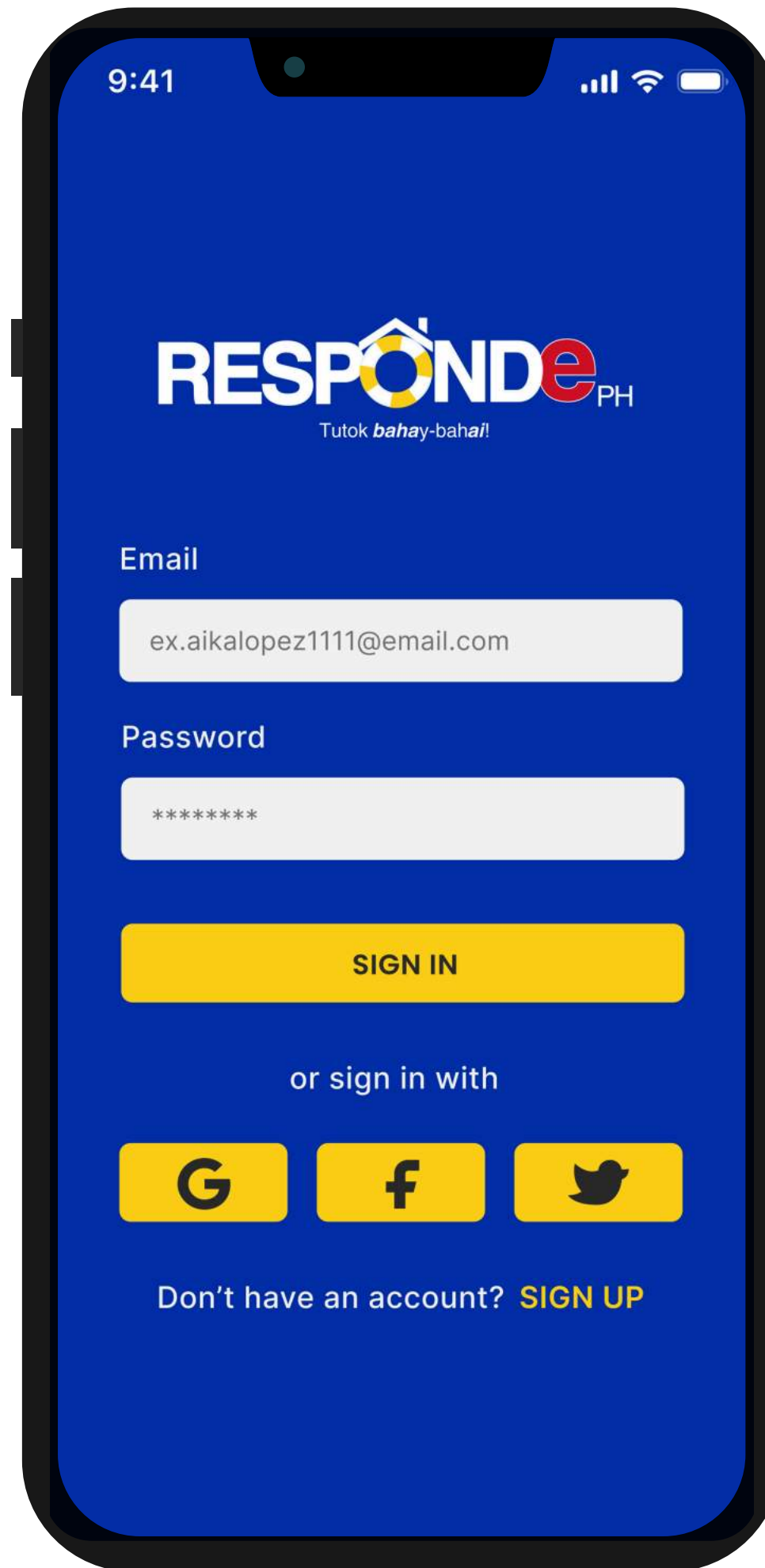
*Marketing through commonly used social media with interviews, testimonials, etc.,*



Strategic billboards and onground activations

*Have interactive ads at city halls & strategic locations (residential areas, lots, etc.,) that have a CTA to download*


# APP UX



# APP UX

9:41

ACCOUNT




**Aika C. Lopez**  
aikalopez1111@email.com

**Edad**  
22

**Address**  
12 Jenny's Ave., Rosario, Pasig City

**Contact Number**  
0917-839-2054

**Emergency Contact**   
Tricia Yap  
0998-344-7465

**Mayroon po ba kayong mga partikular pangangailangan o akomodasyon na kailangan naming malaman? (hal. PWD, Senior, Buntis, atbp.)**  
PWD

UPDATE PROFILE

SIGN OUT

9:41

RESPONDE<sup>PH</sup>  
CITIZEN'S PORTAL

Search

Hotline Numbers Disaster Preparedness

LOCATION	CONTACT NUMBER/S
Pasig City	(02) 7-272-0200
Bagong Ilog	(02) 7-272-0201
Bagong Katipunan	(02) 7-272-0202
Bambang	(02) 7-272-0203
Buting	(02) 7-272-0204
Caniogan	(02) 7-272-0205
Dela Paz	(02) 7-272-0206
Kalawaan	(02) 7-272-0207
Kapasigan	(02) 7-272-0208


9:41

RESPONDE<sup>PH</sup>  
CITIZEN'S PORTAL


Search

Hotline Numbers Disaster Preparedness

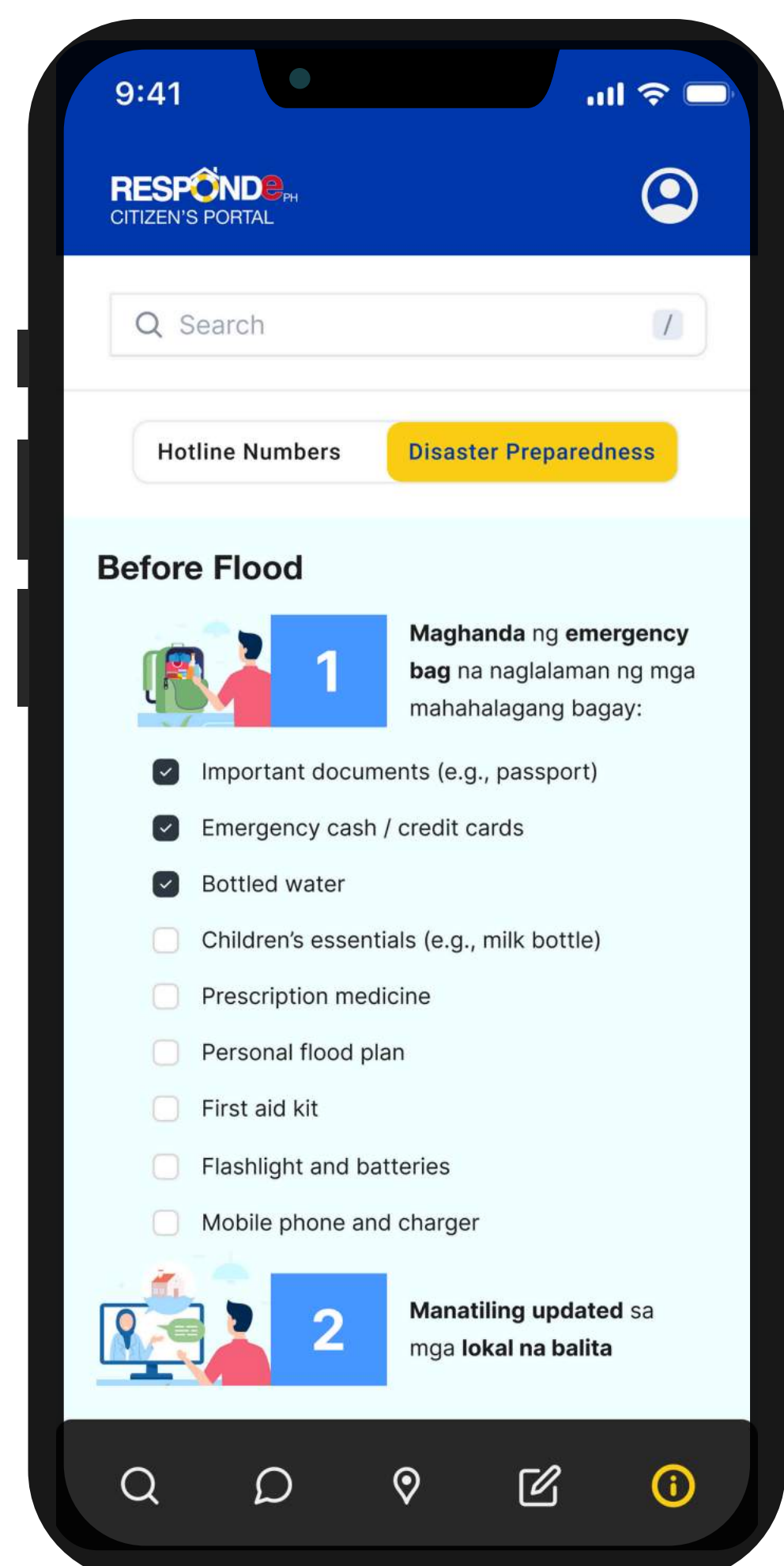
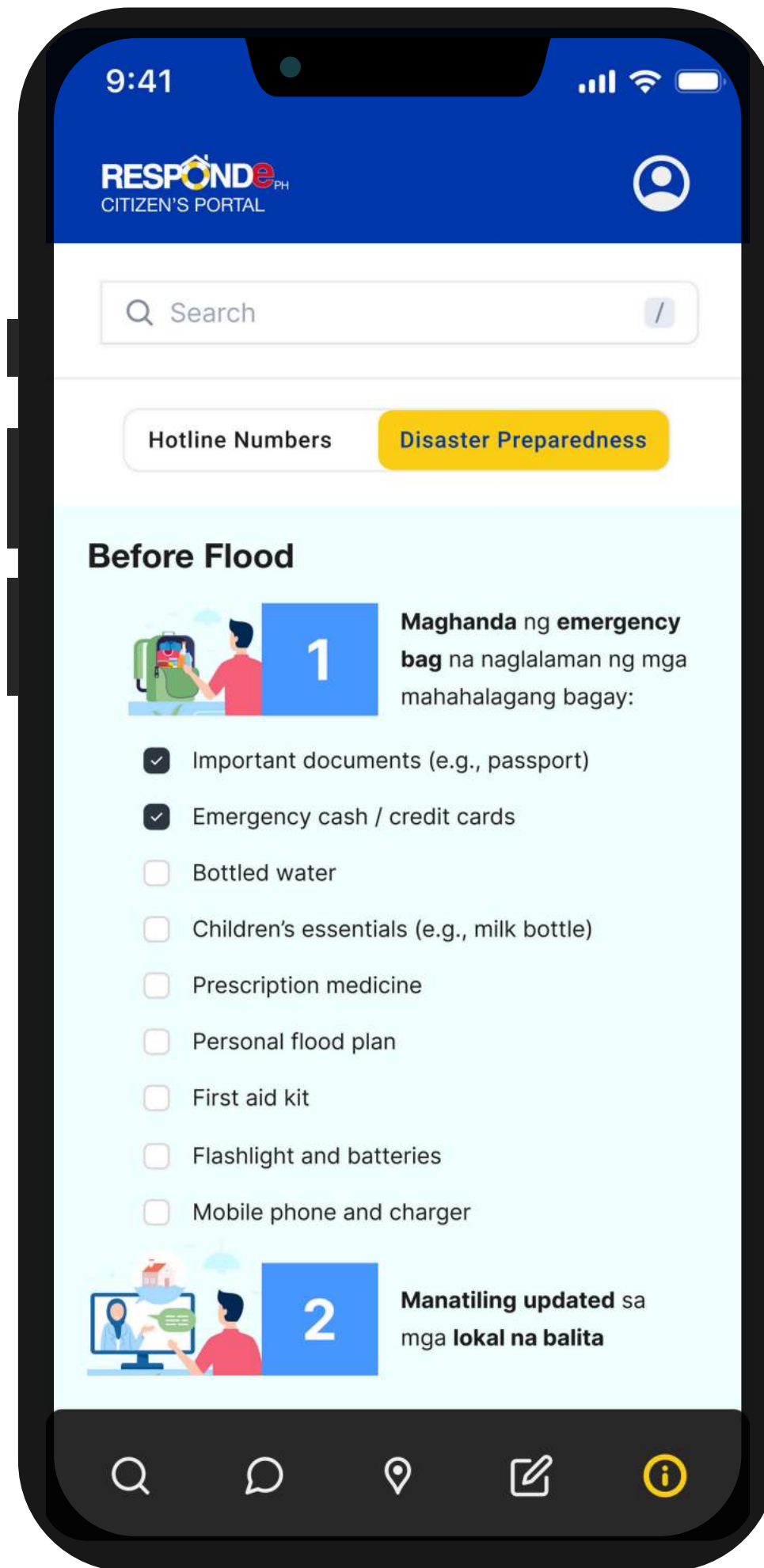
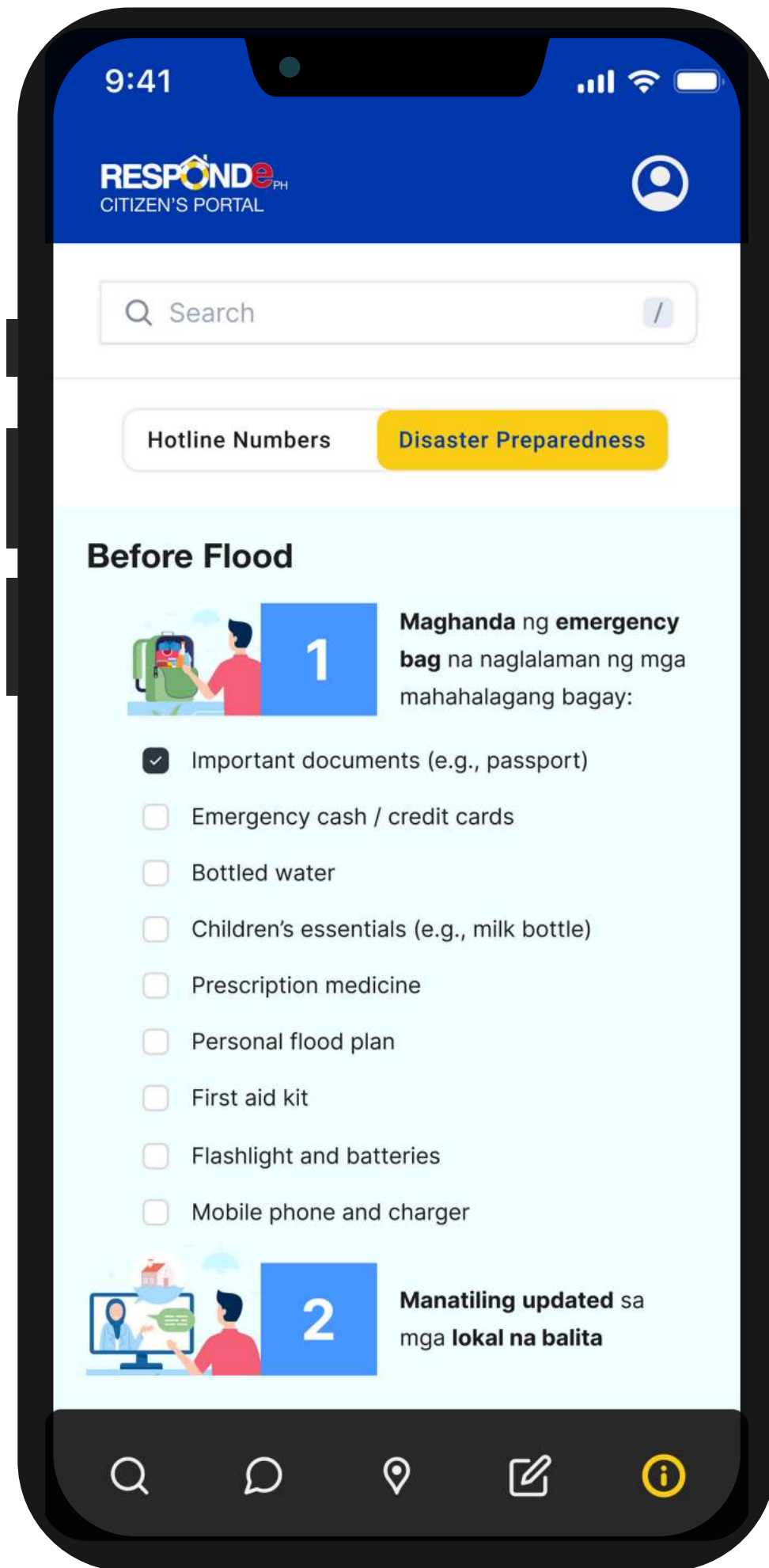
**Before Flood**

 **1** **Maghanda ng emergency bag** na naglalaman ng mga mahahalagang bagay:

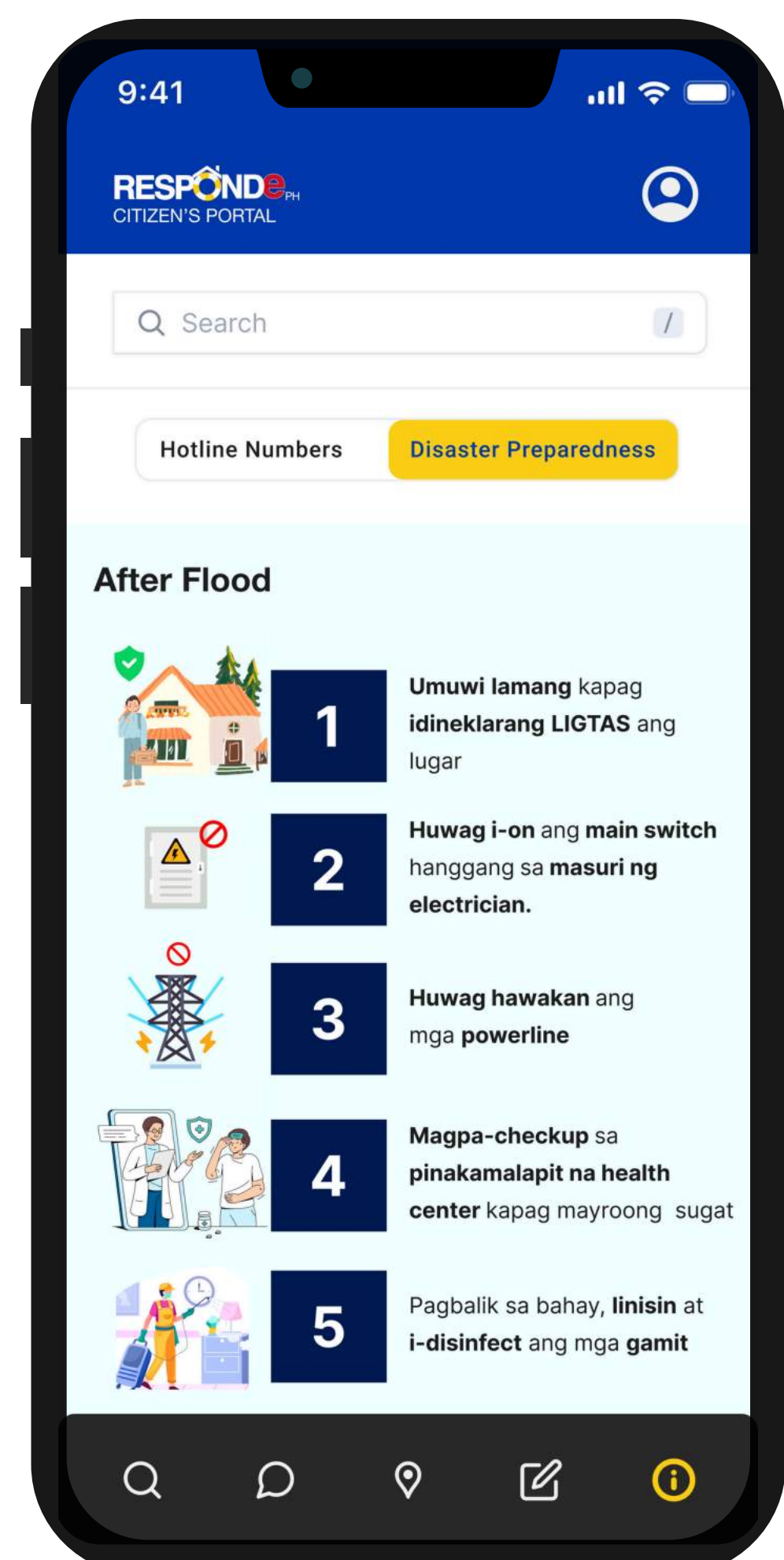
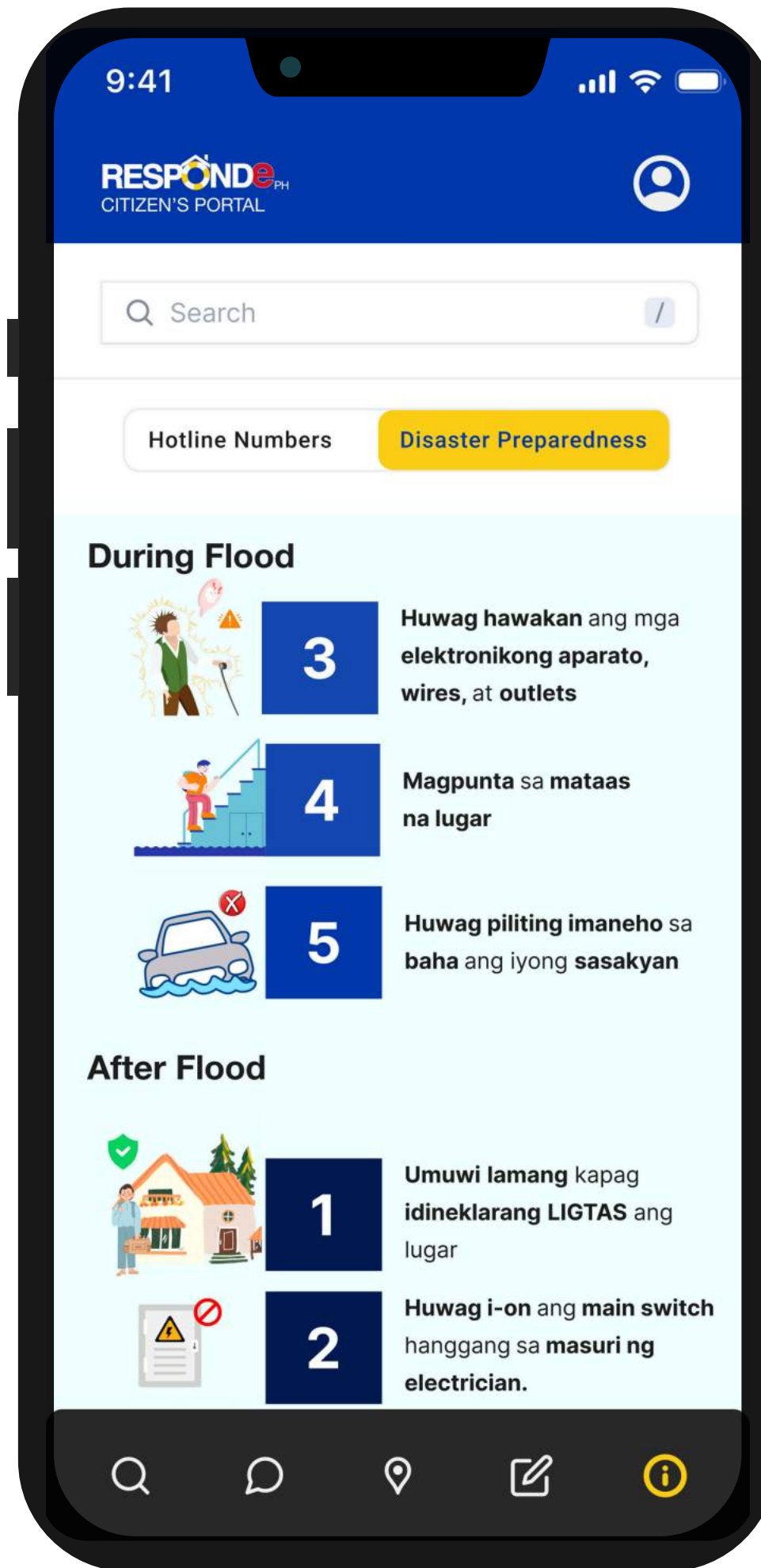
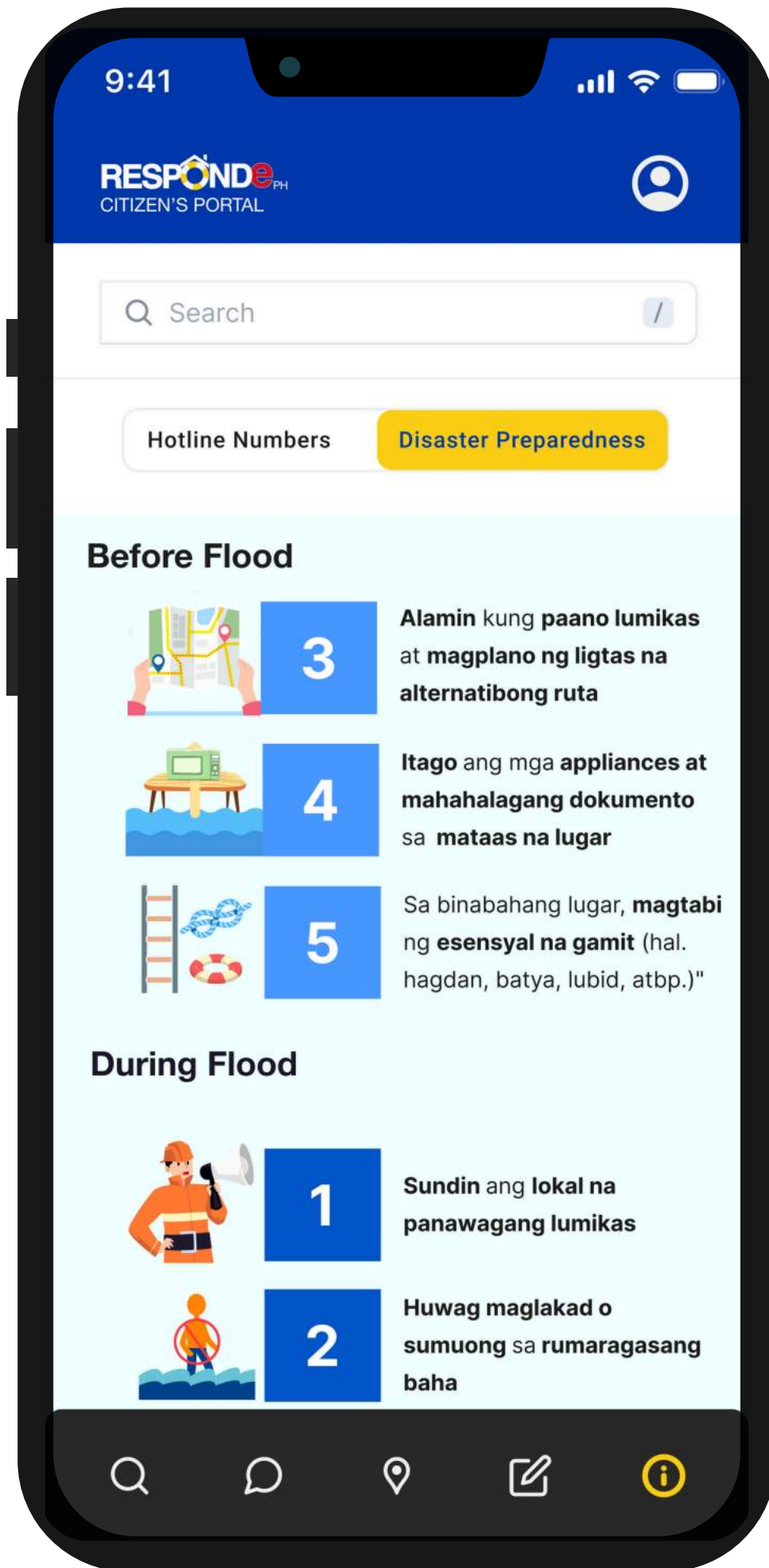
- Important documents (e.g., passport)
- Emergency cash / credit cards
- Bottled water
- Children's essentials (e.g., milk bottle)
- Prescription medicine
- Personal flood plan
- First aid kit
- Flashlight and batteries
- Mobile phone and charger

 **2** **Manatiling updated** sa mga lokal na balita

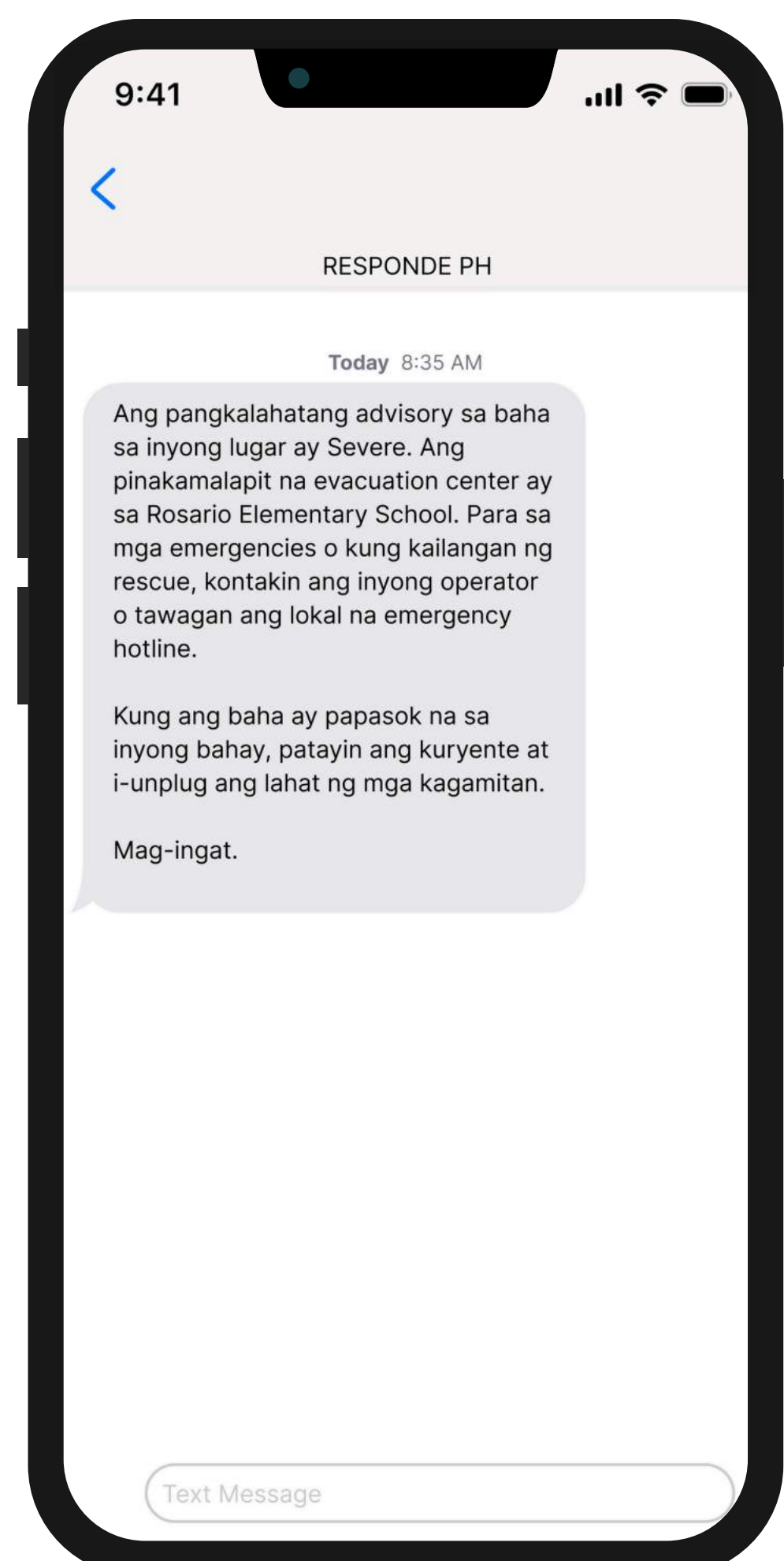
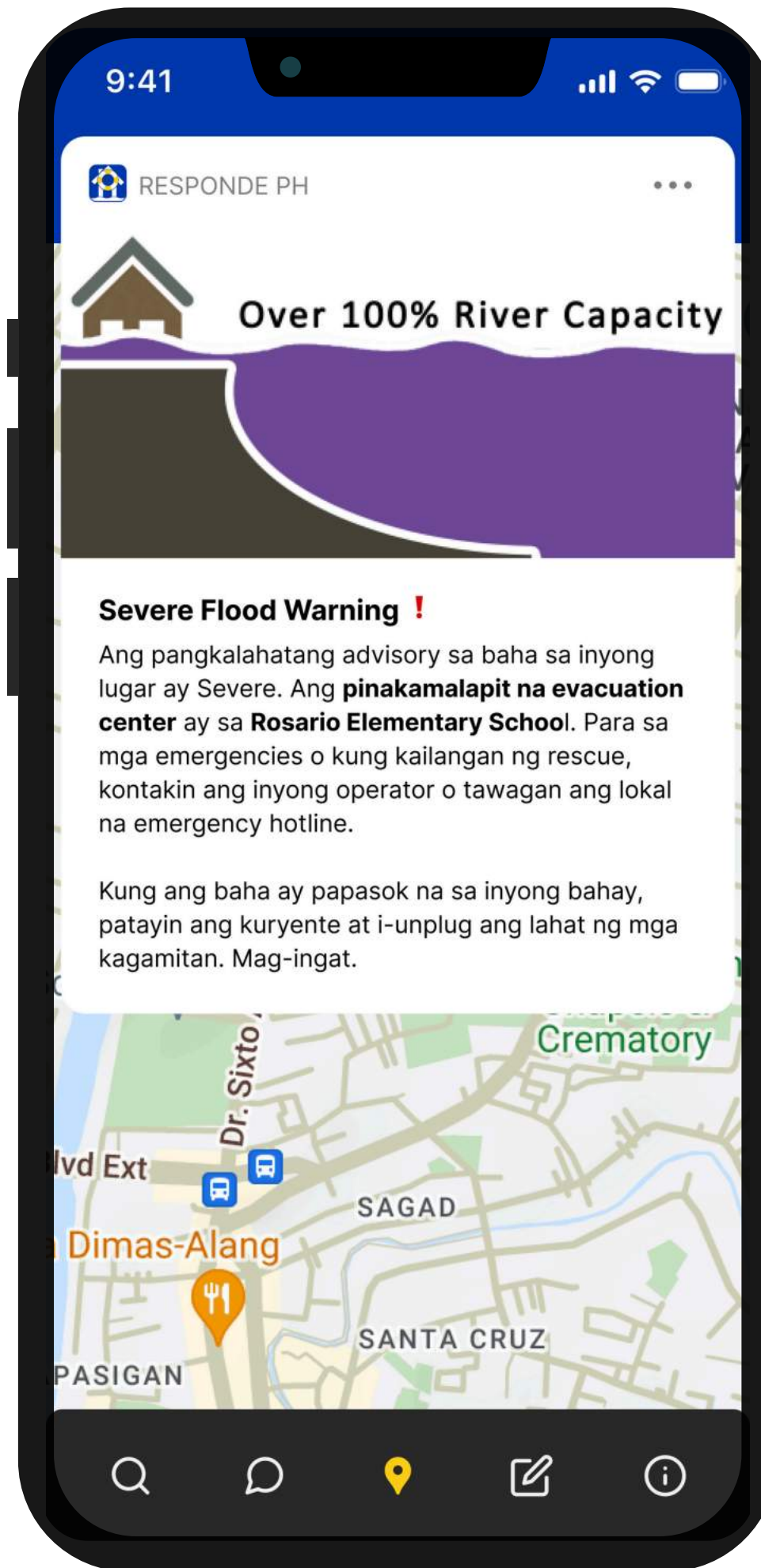
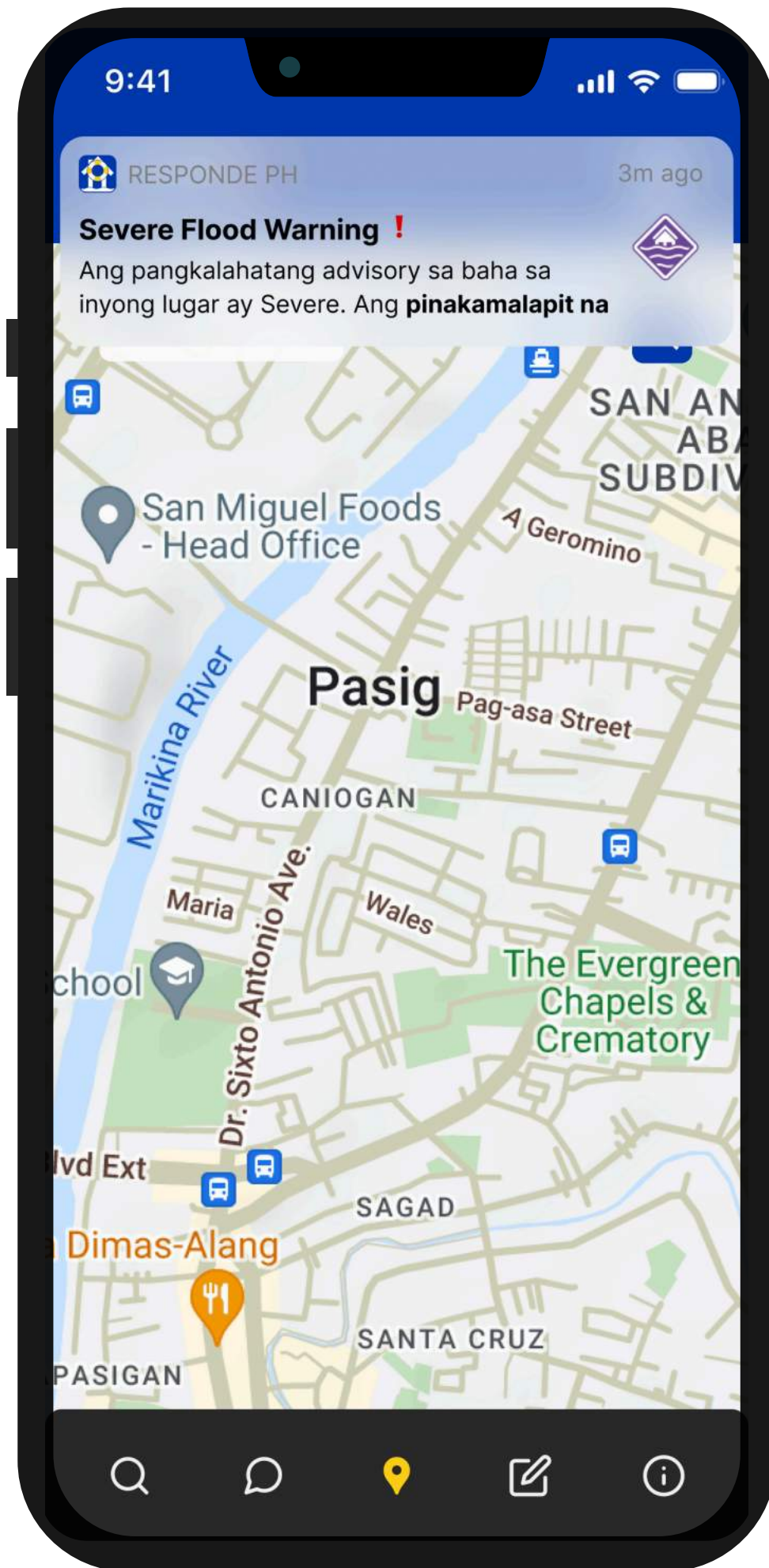
# APP UX



# APP UX

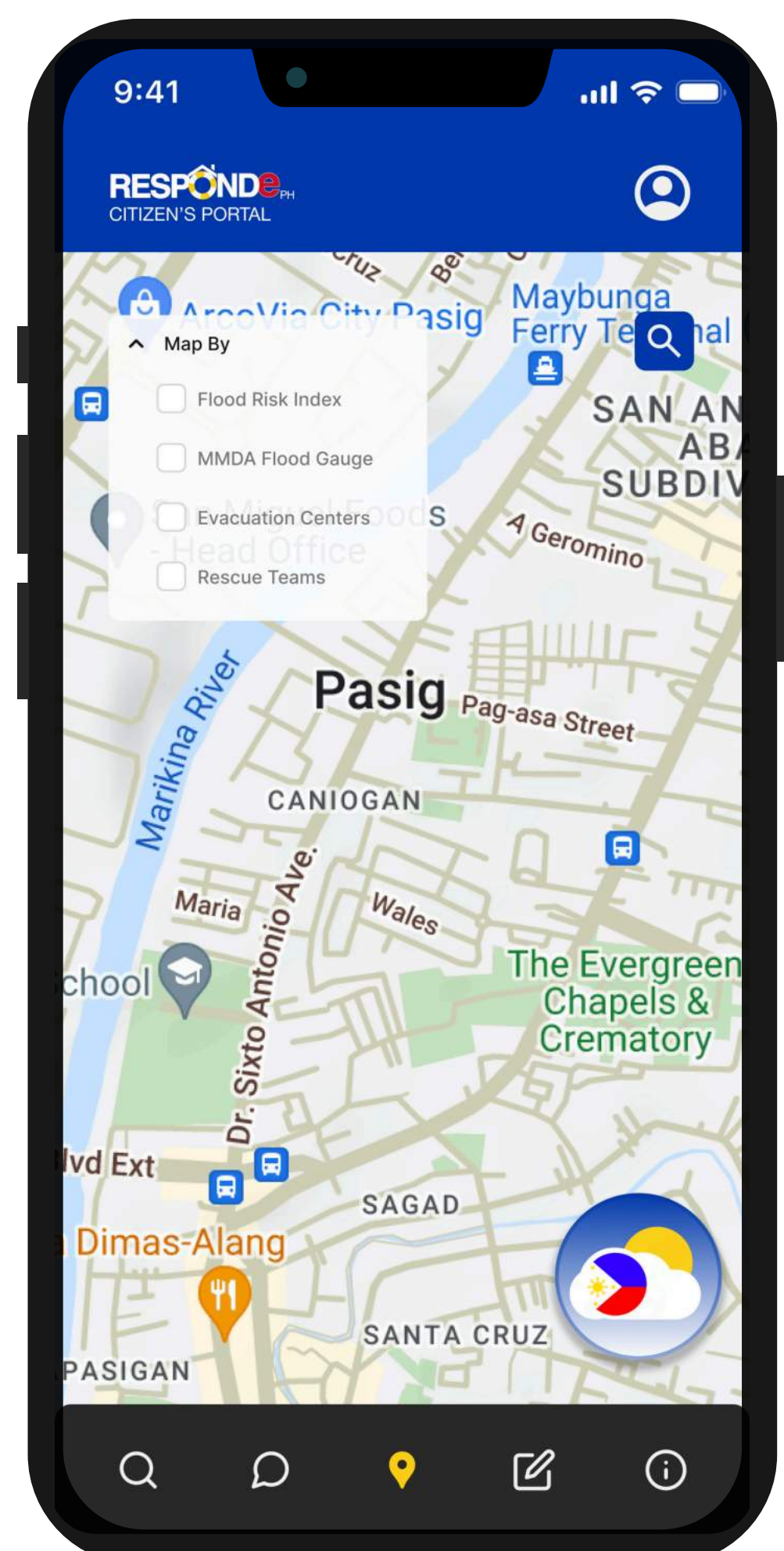
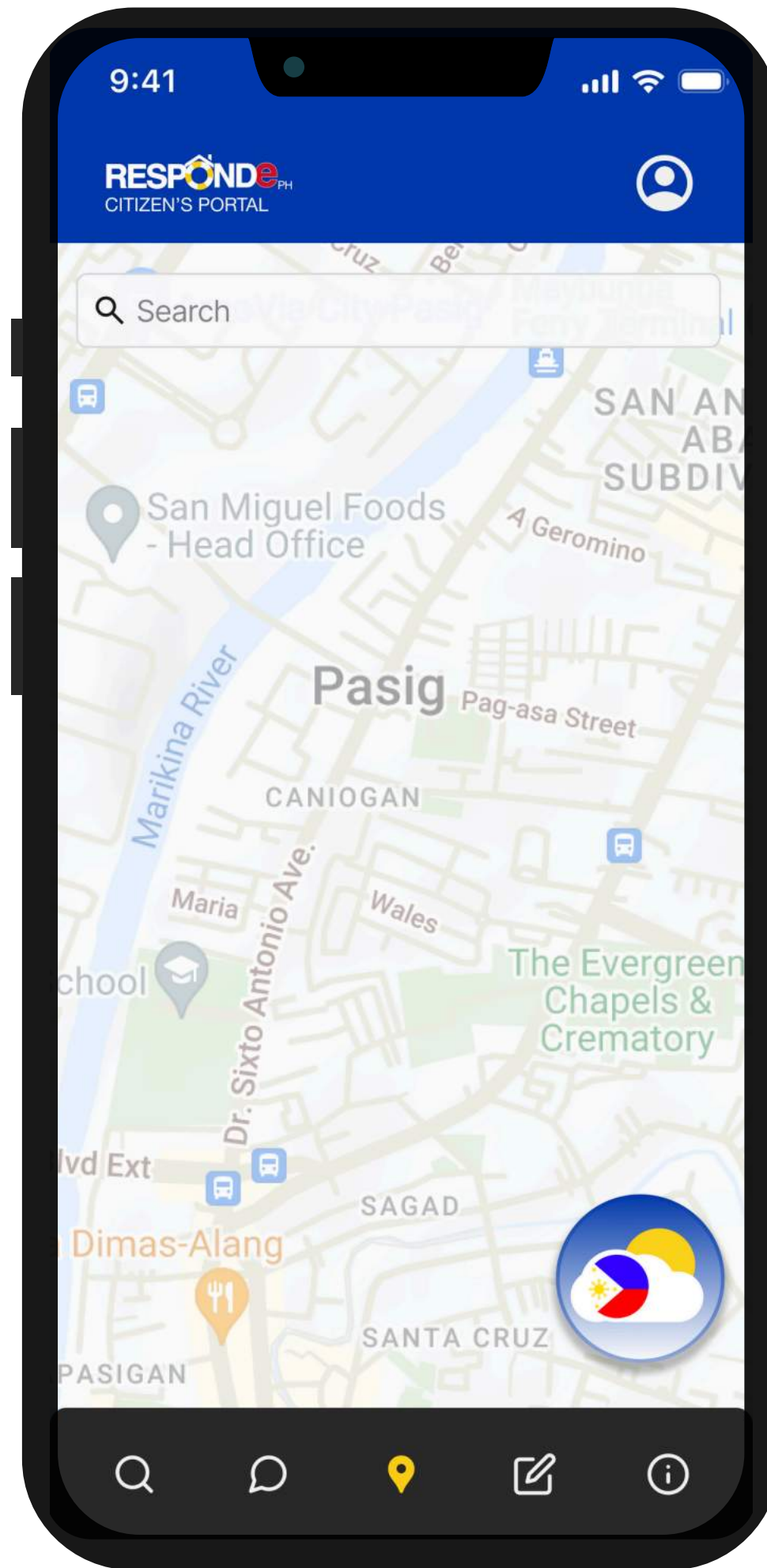
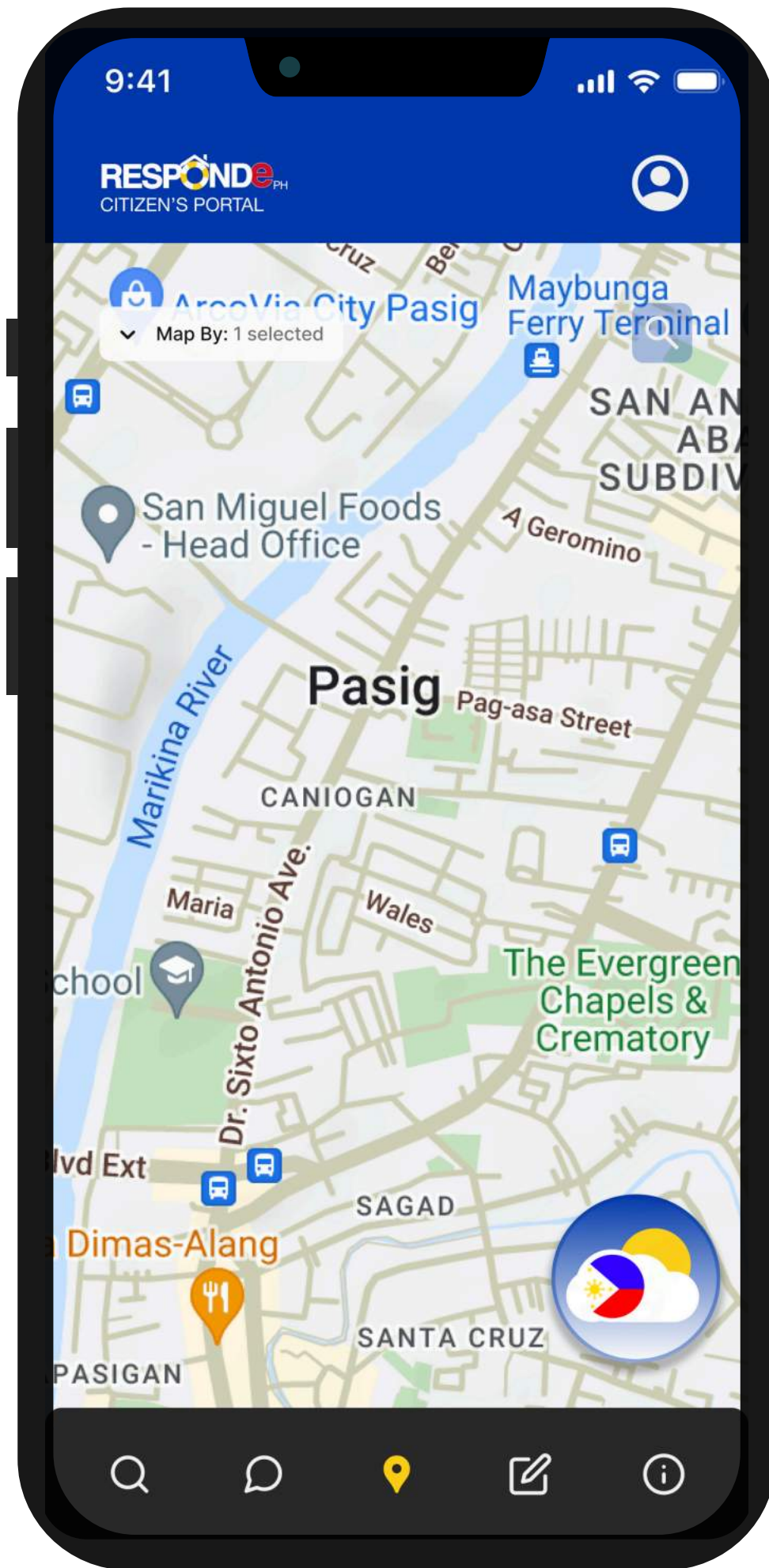


# APP UX

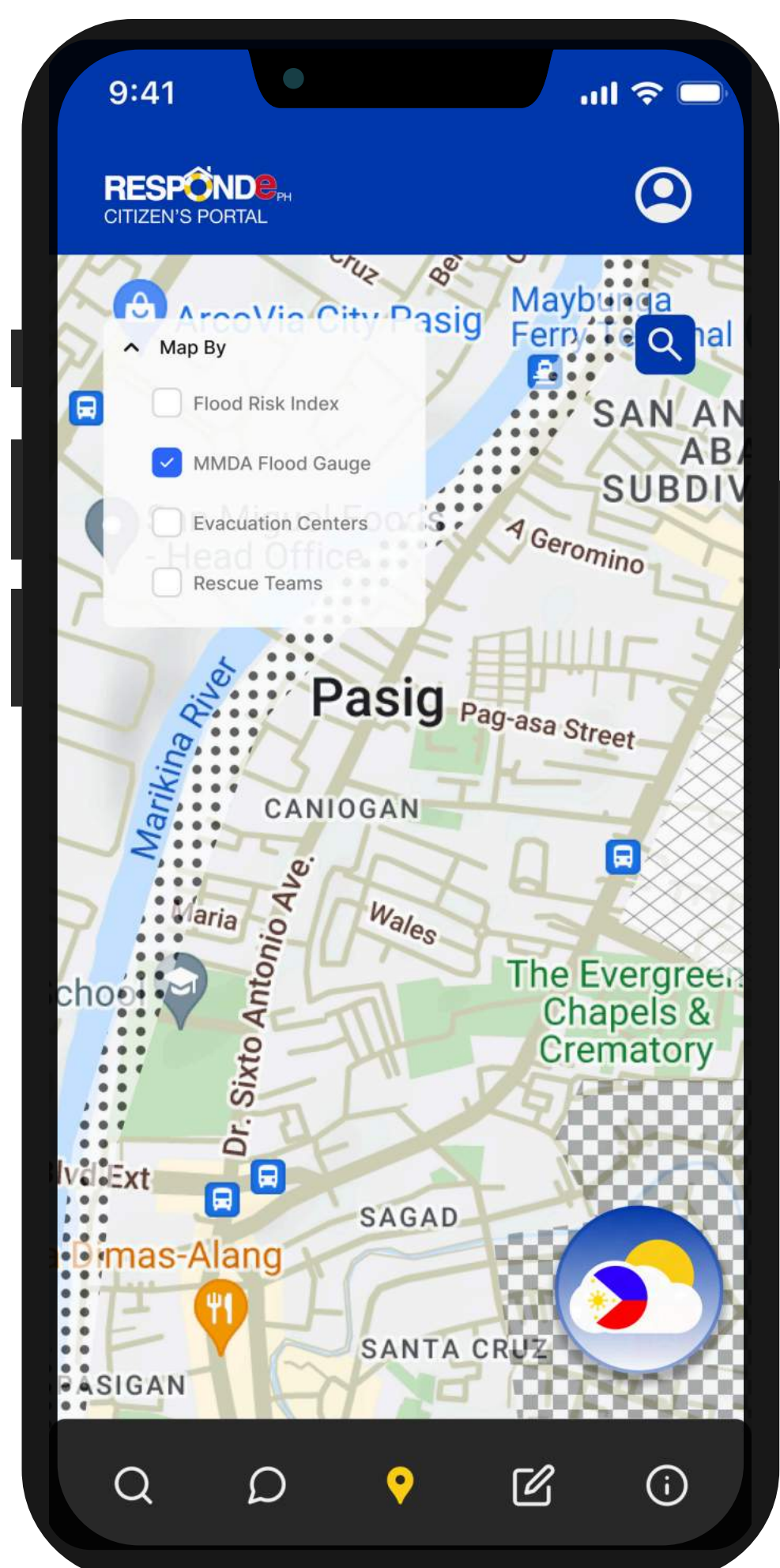
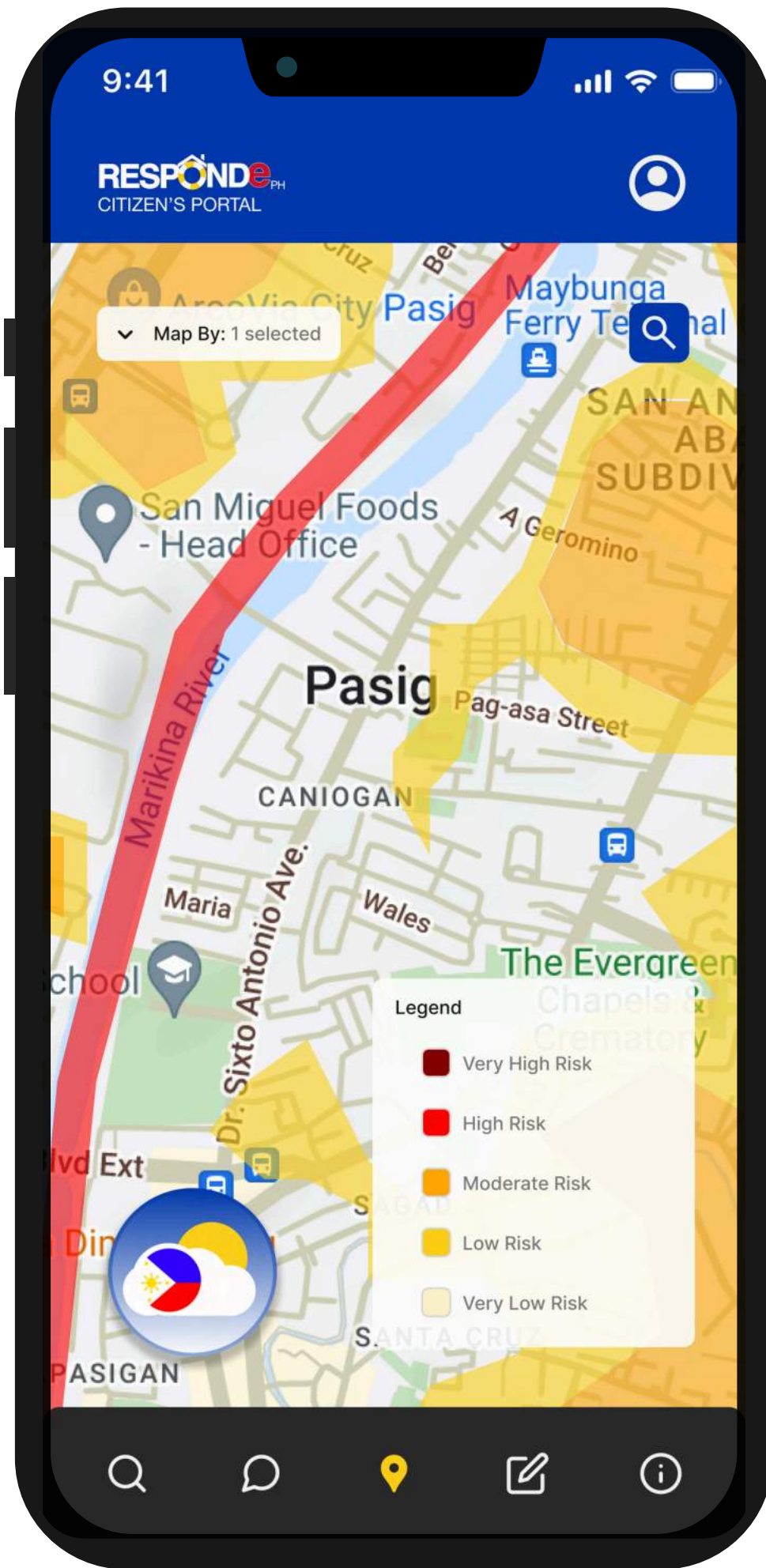
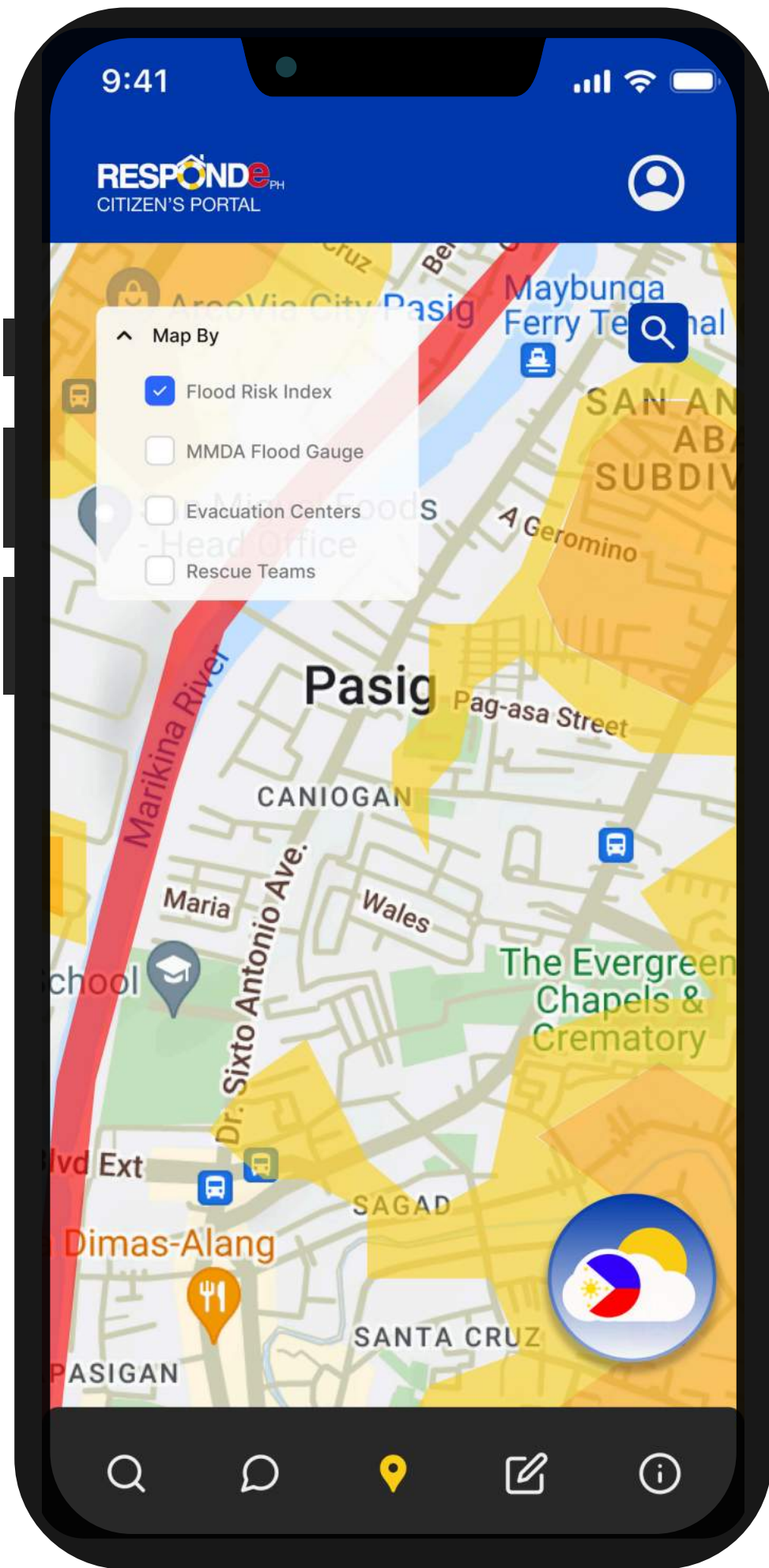




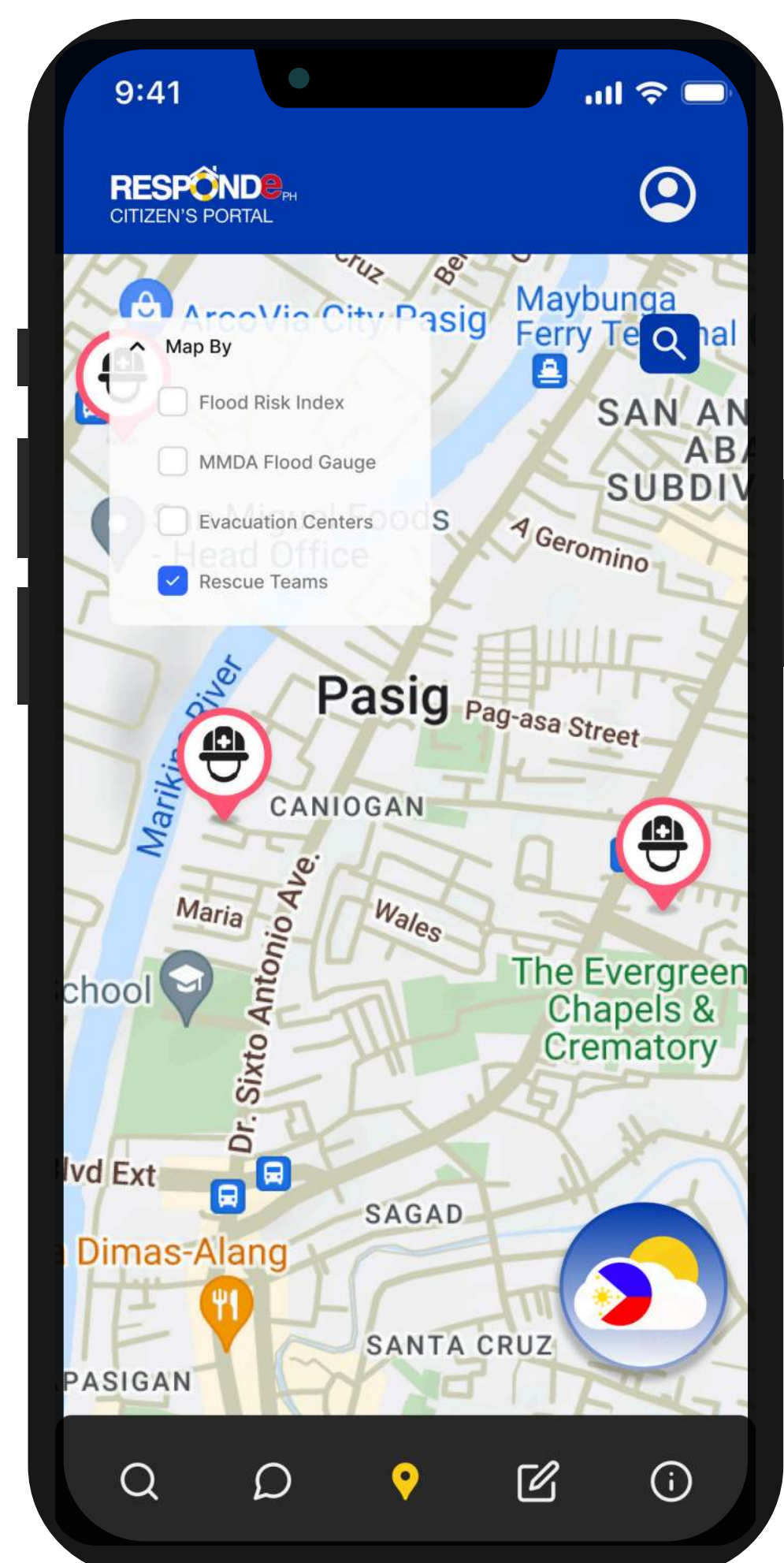
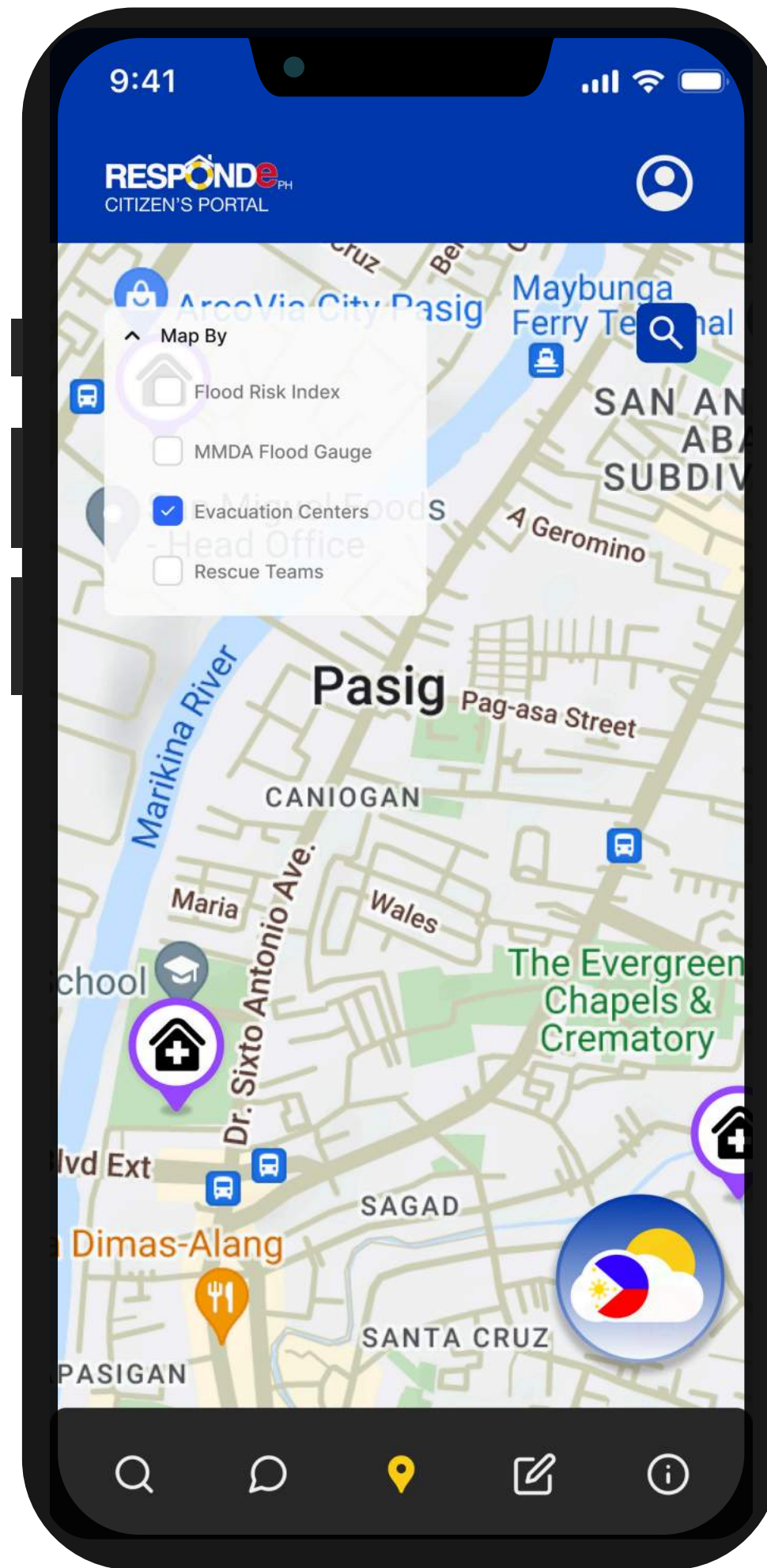
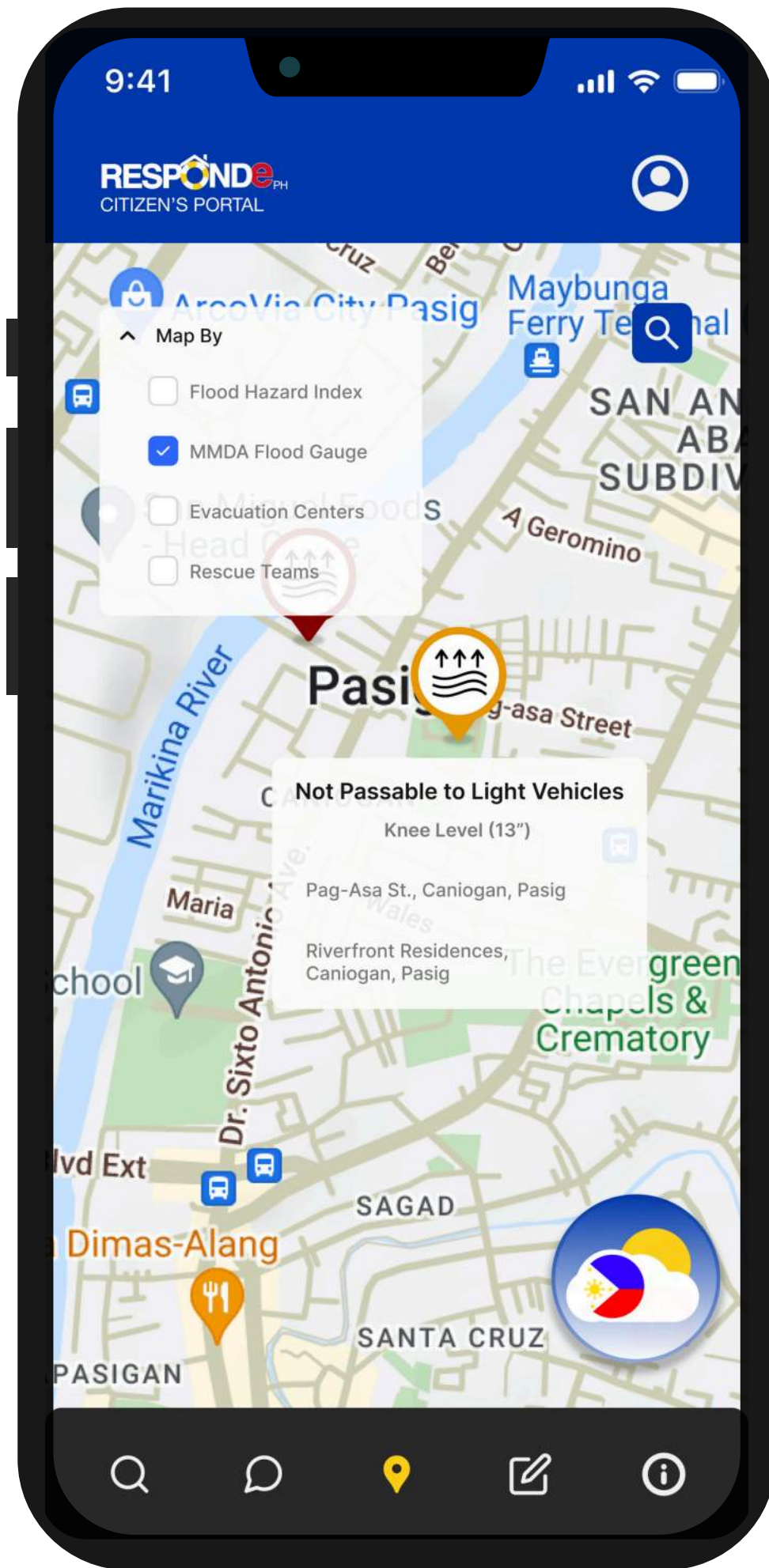
# APP UX



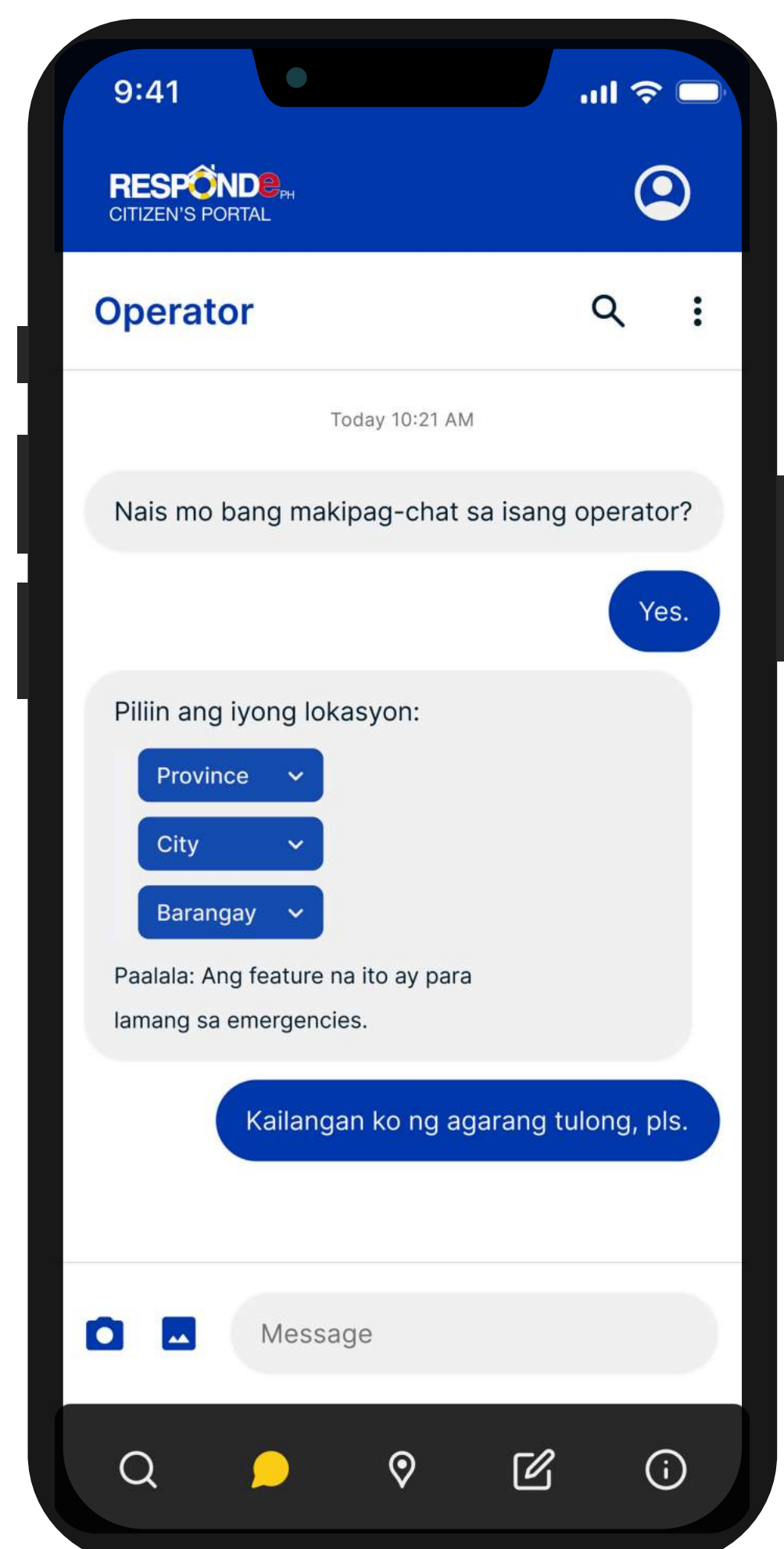
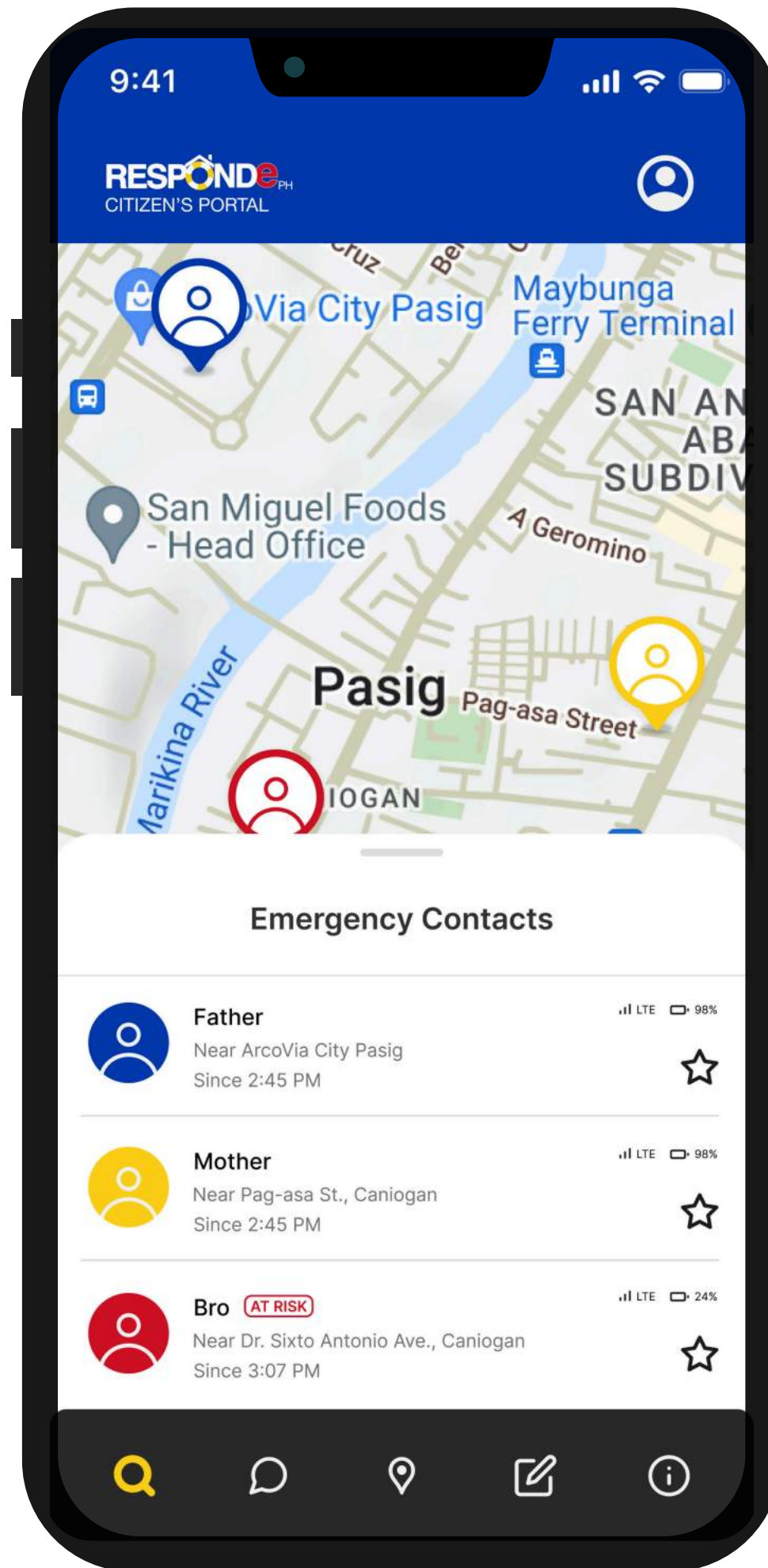
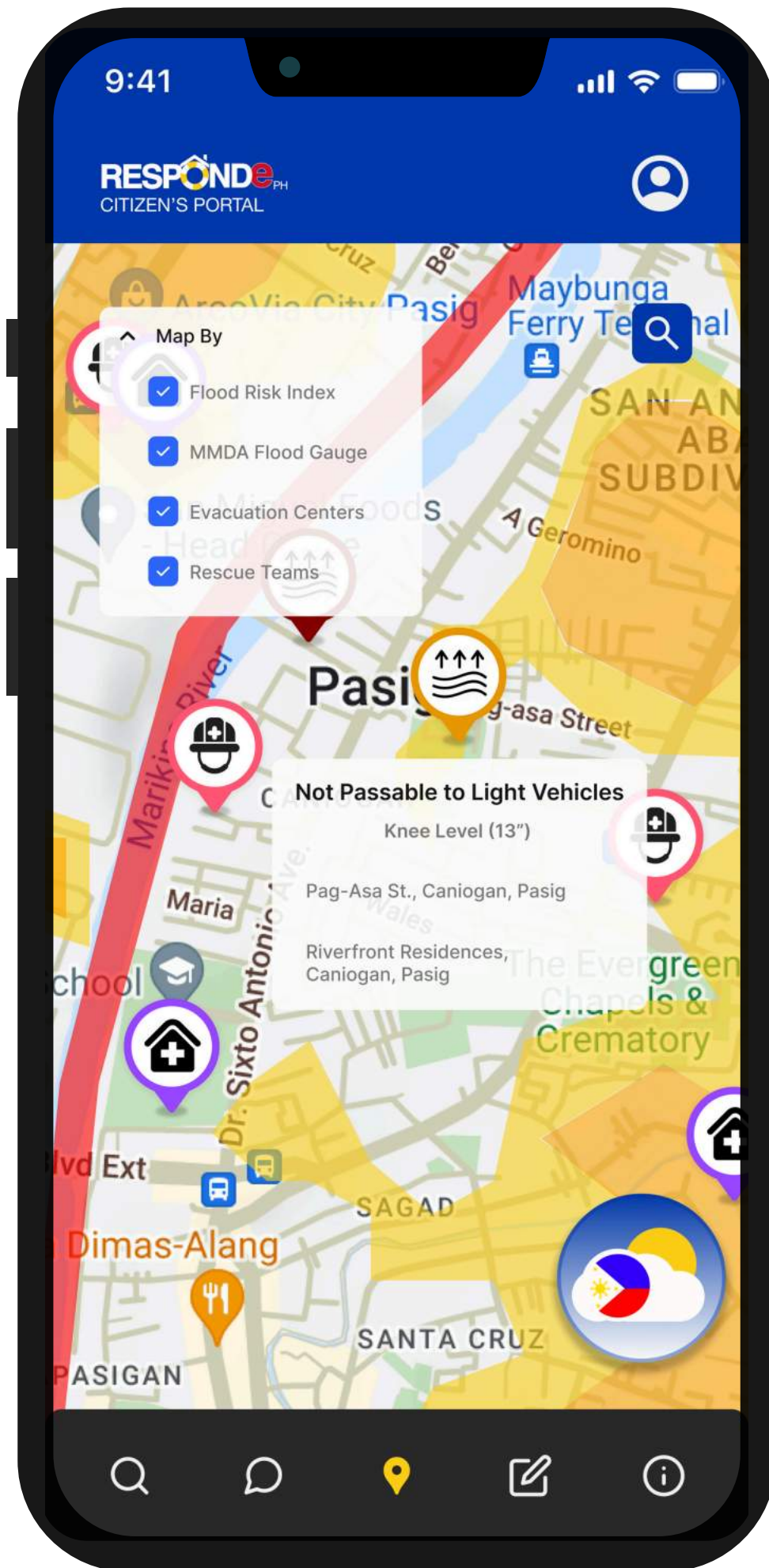
# APP UX



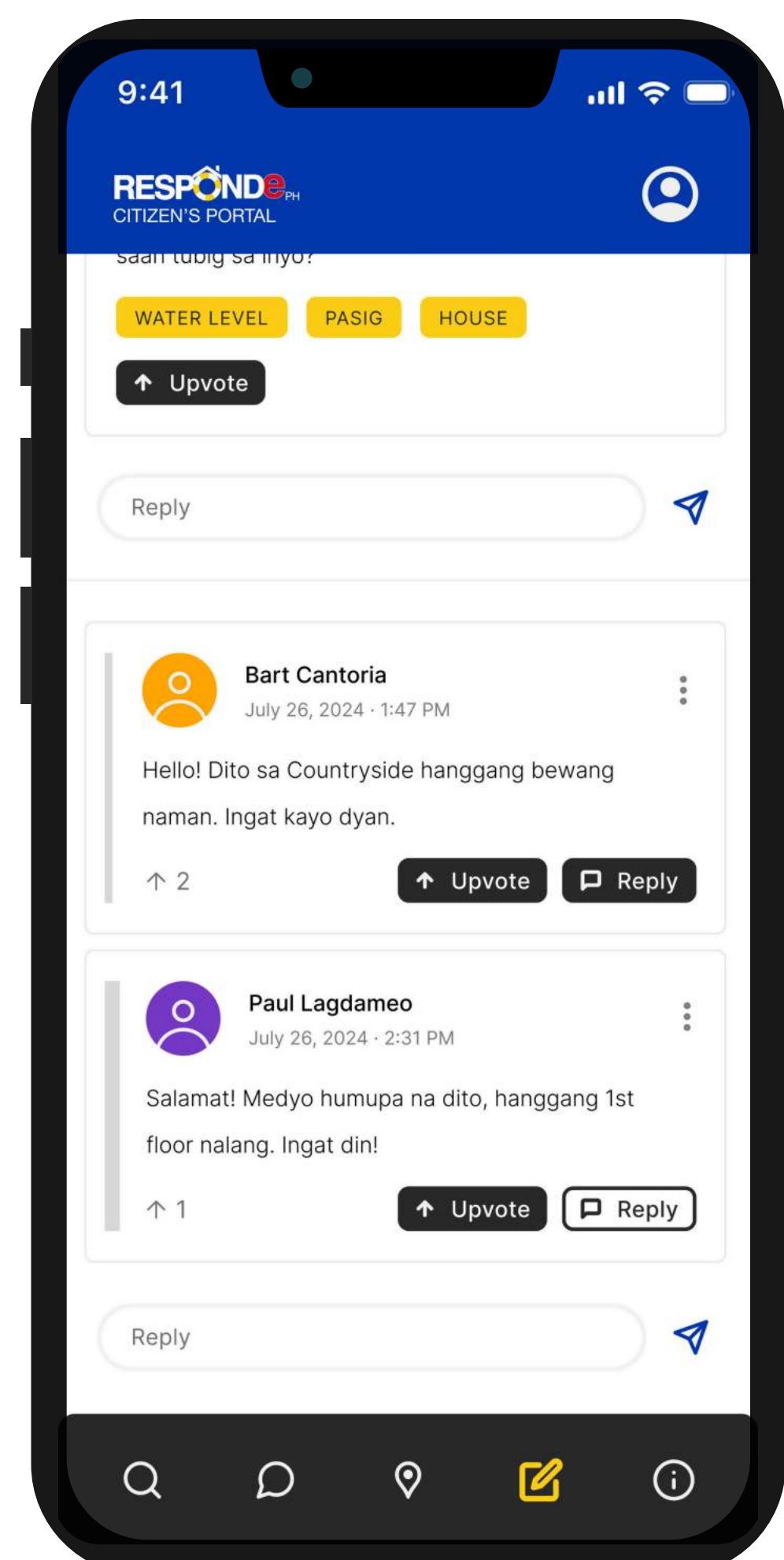
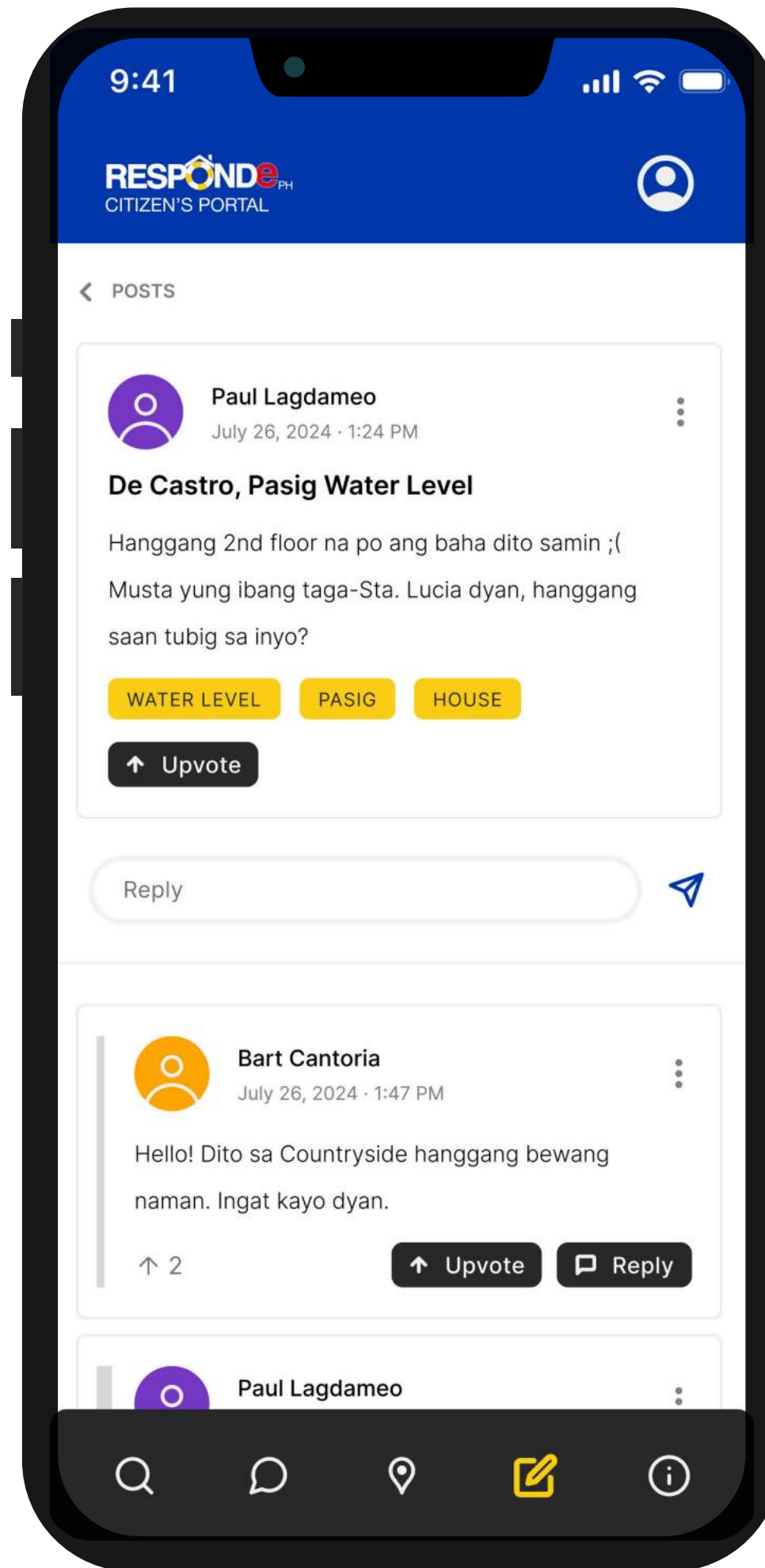
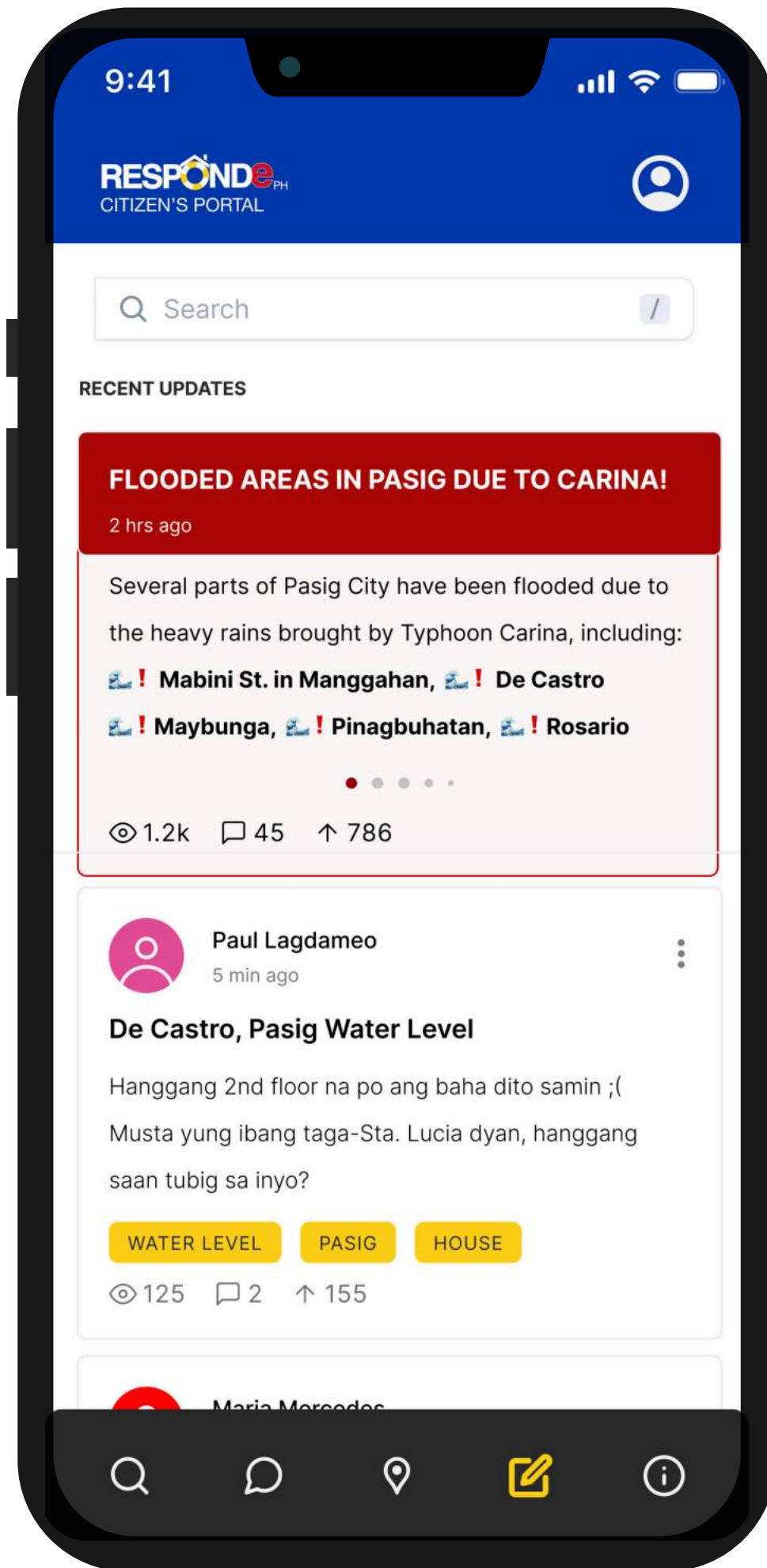
# APP UX



# APP UX



# APP UX



LGU  
UX



**RESPONDE**<sub>PH</sub>  
Tutok *bahay-bahai!*

Pasig City, NCR

July 26, 2024

10:12:23 AM

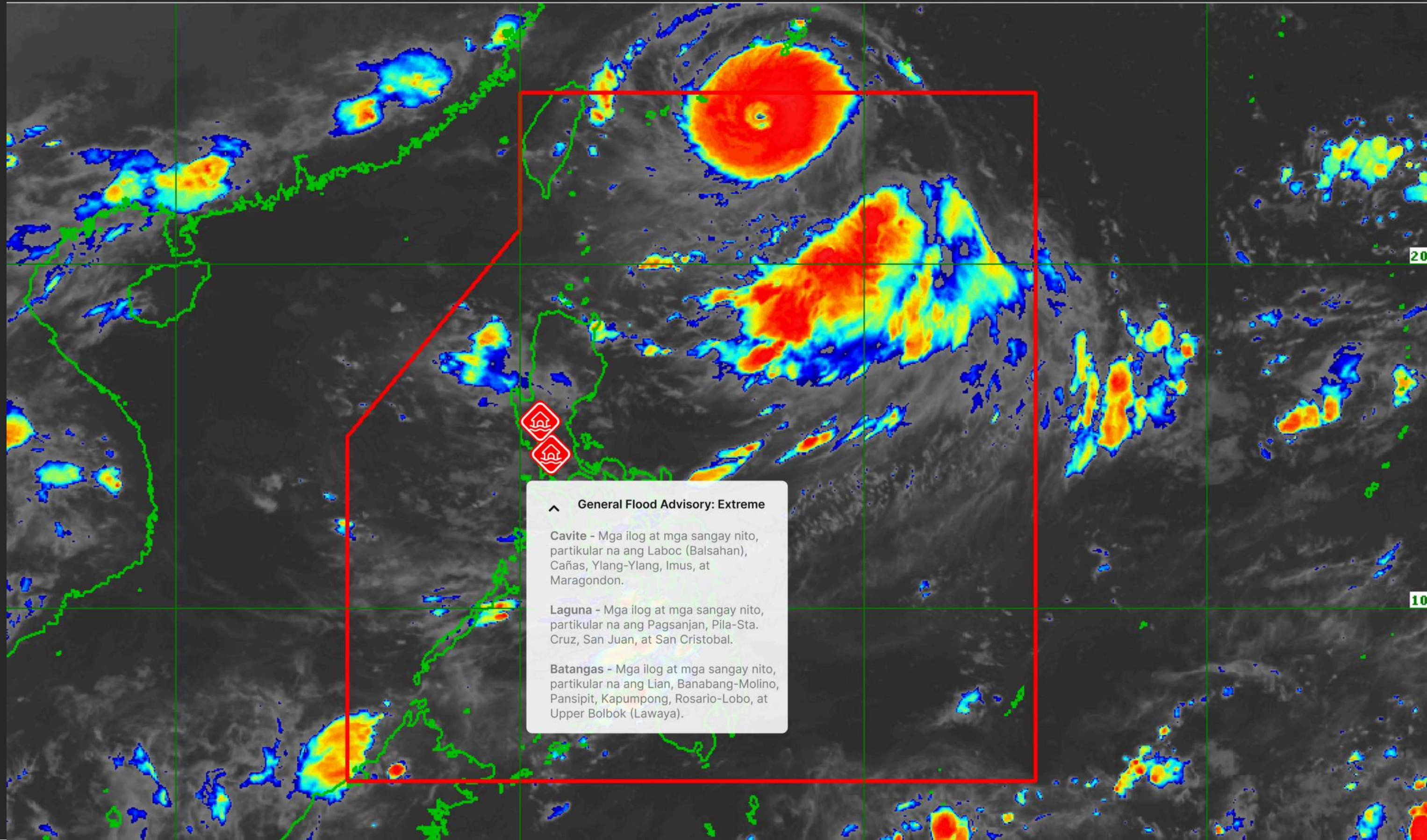
Partly Cloudy

[Sign In](#)

[Register](#)

**RESPONDE**<sub>PH</sub>

Tutok *bahay-bahai!*





Forecasting

Map View

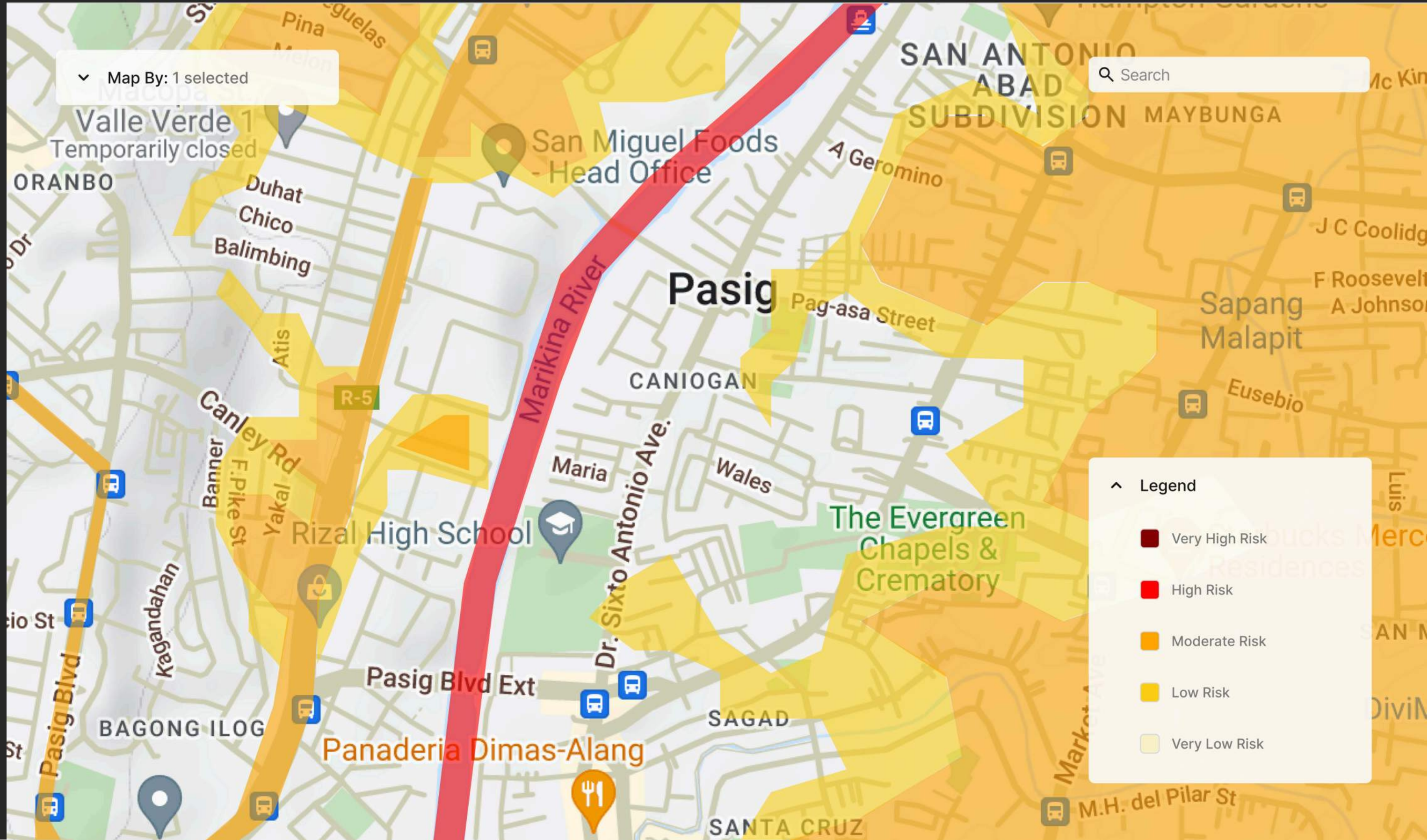
Incident Summary

Live Chat

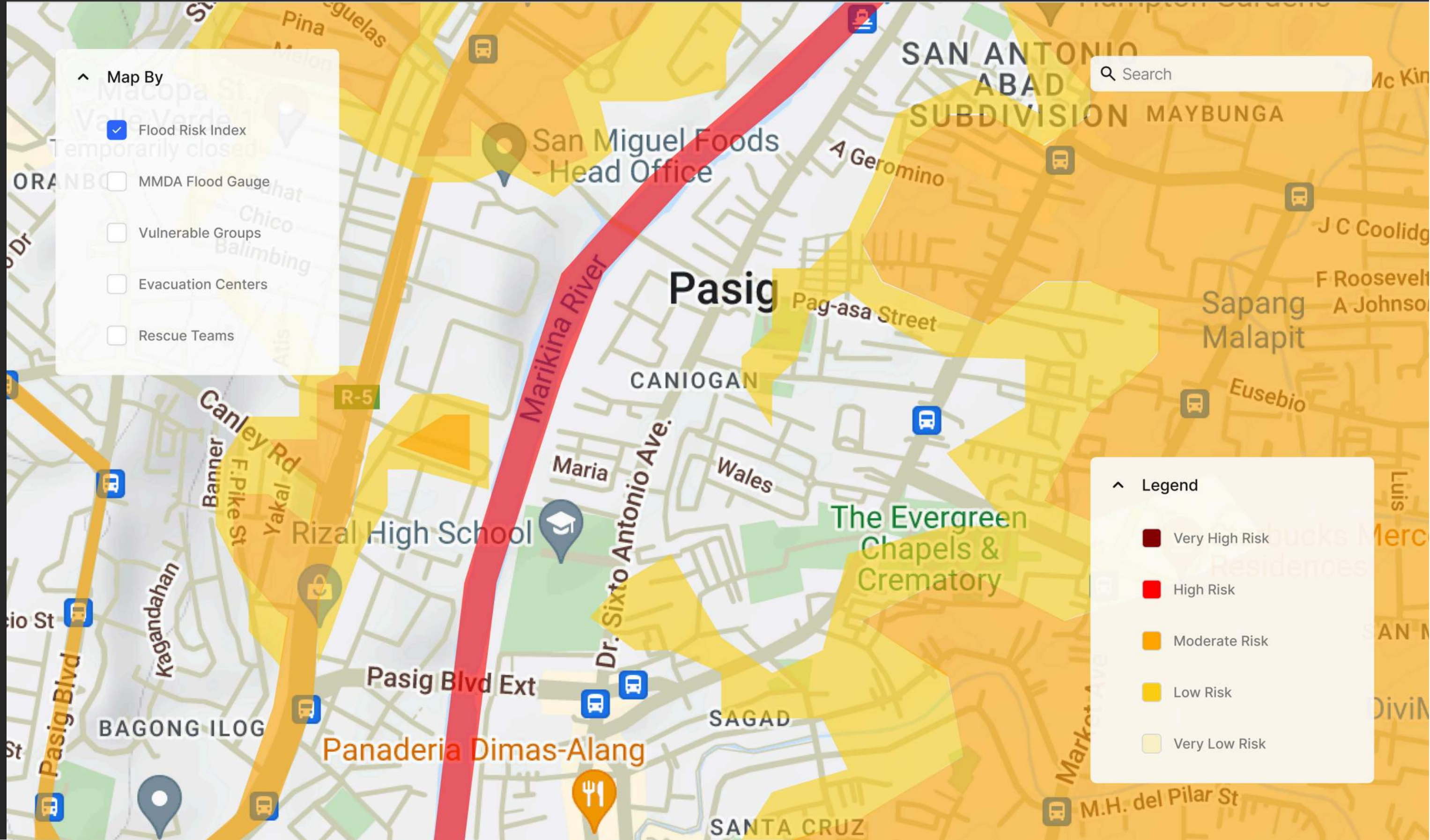
Rescue Navigator

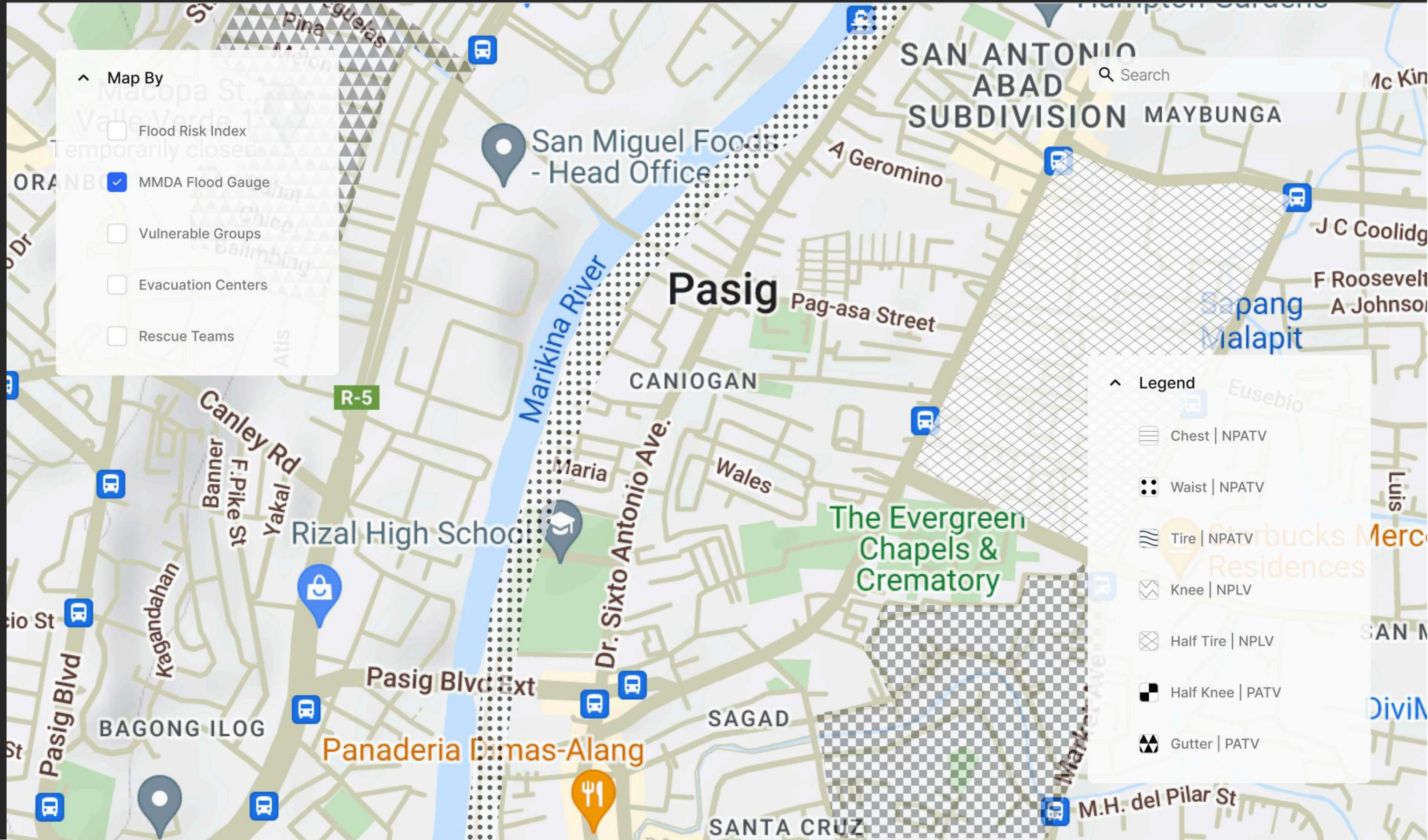
Supplies and Distribution

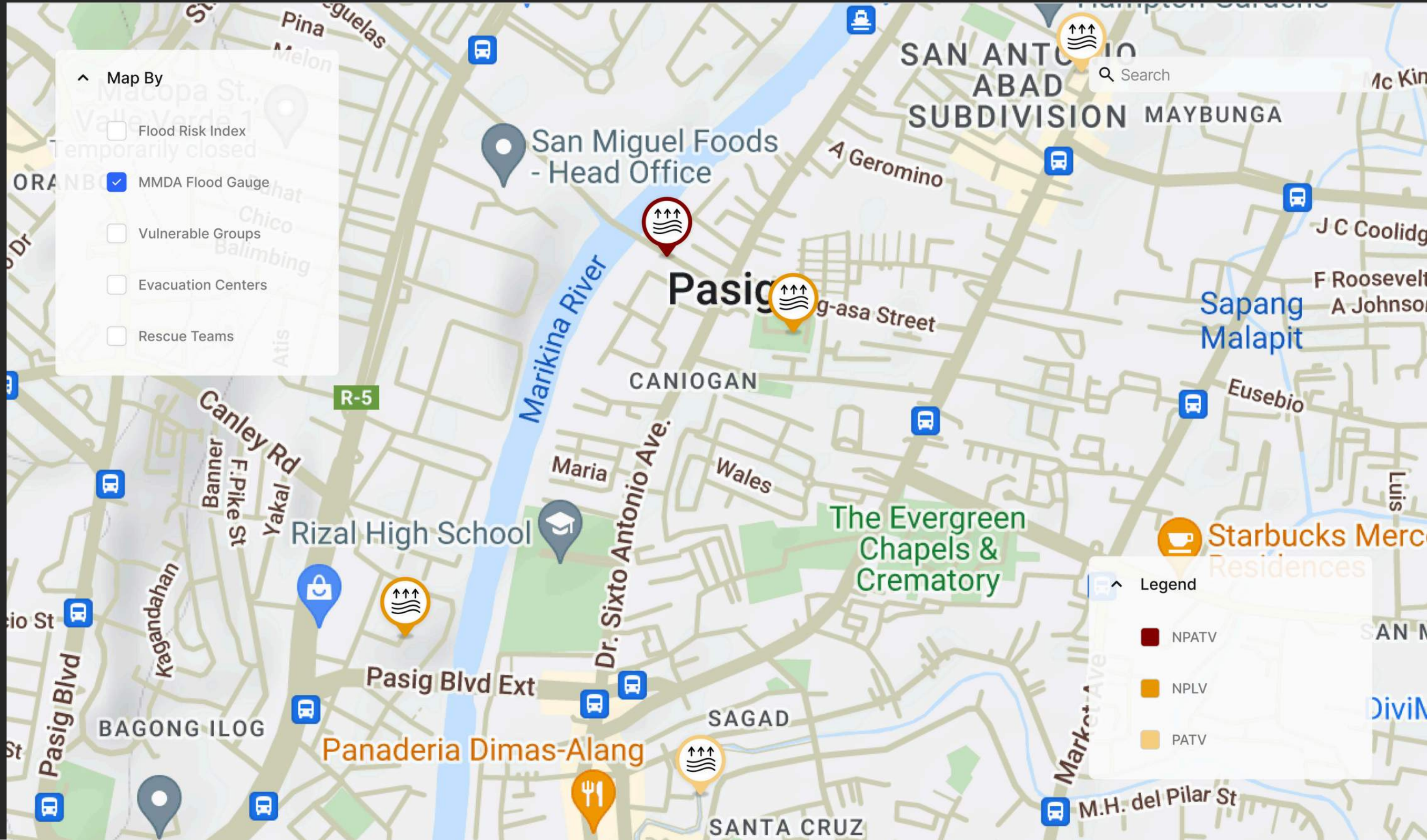
Live Feed

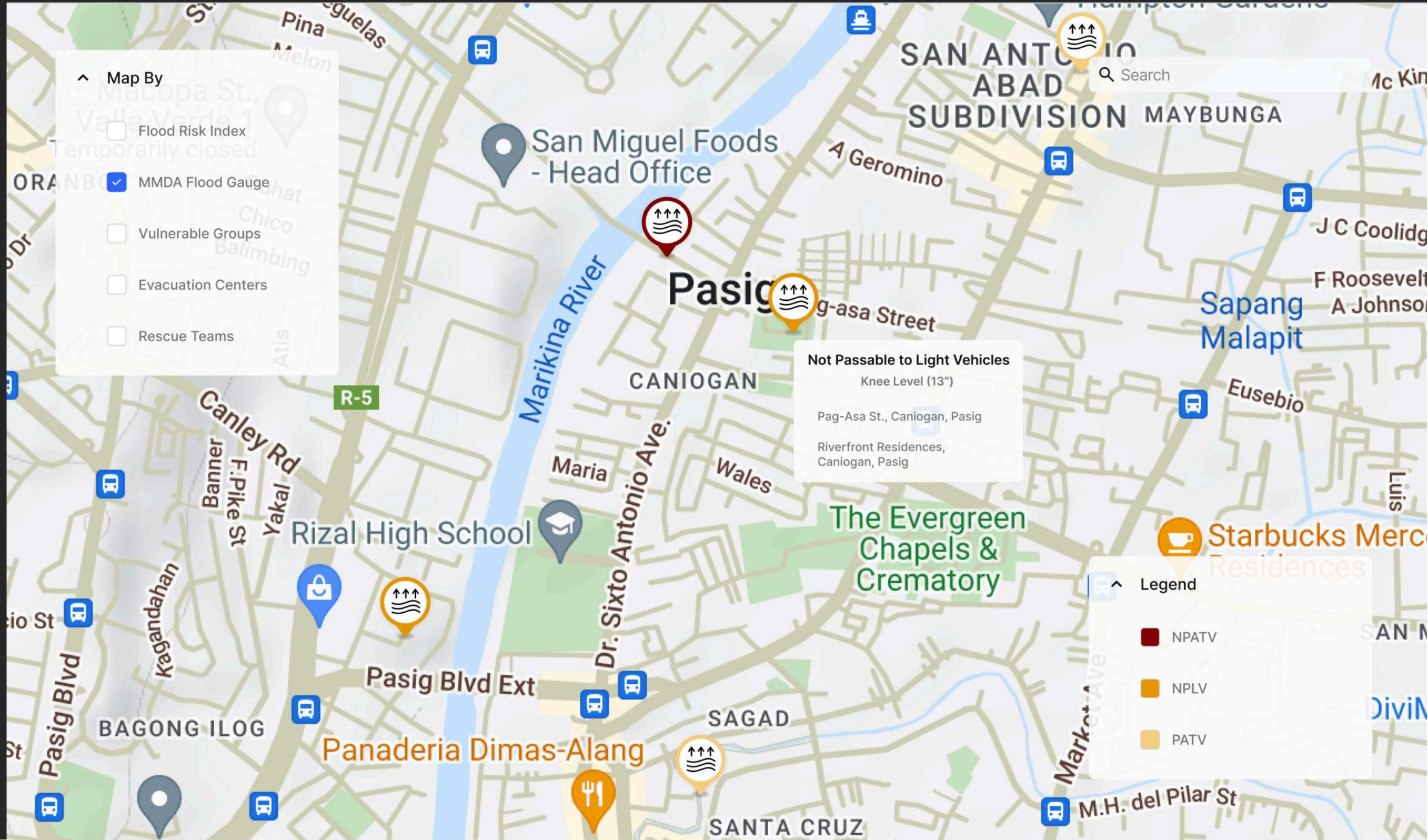


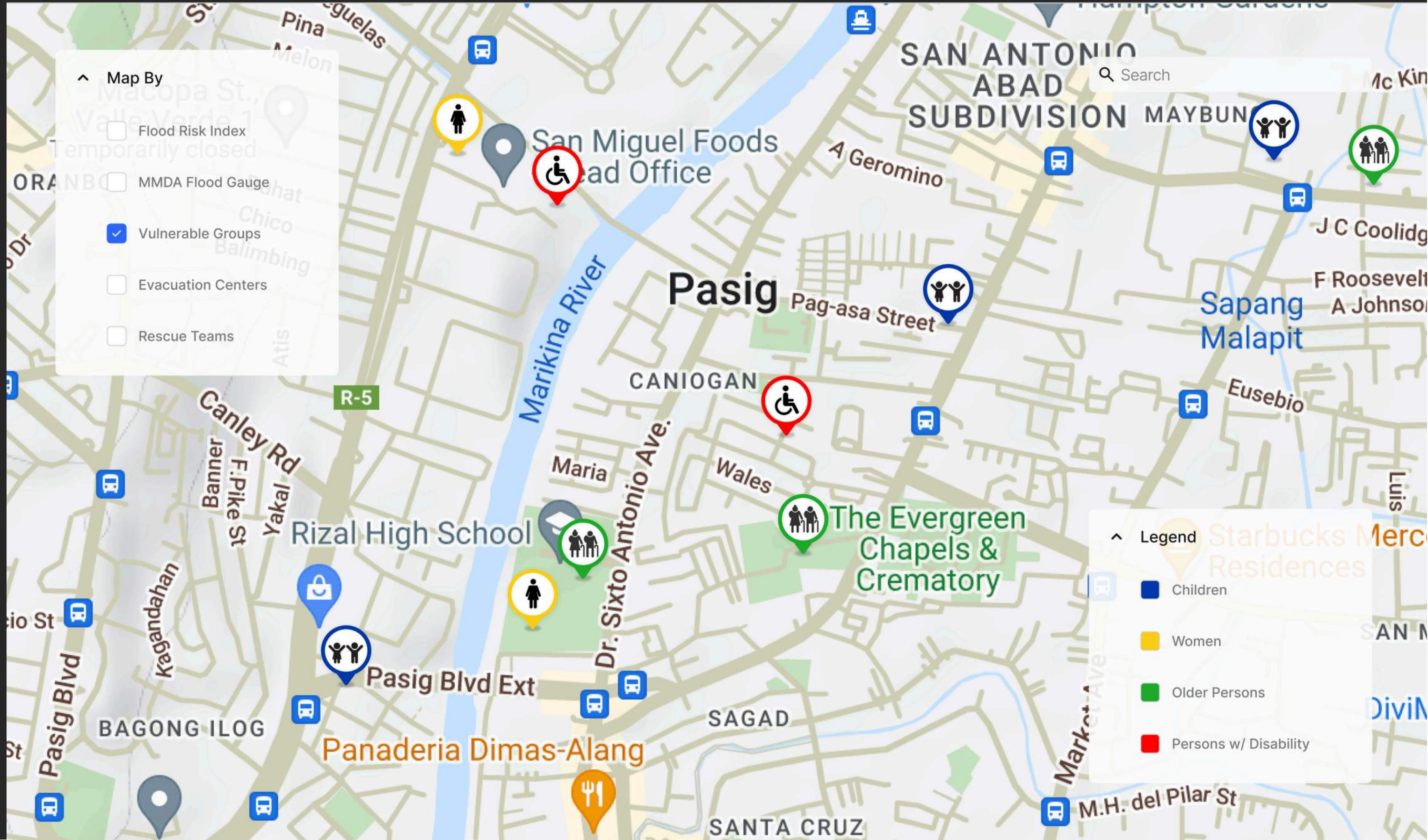


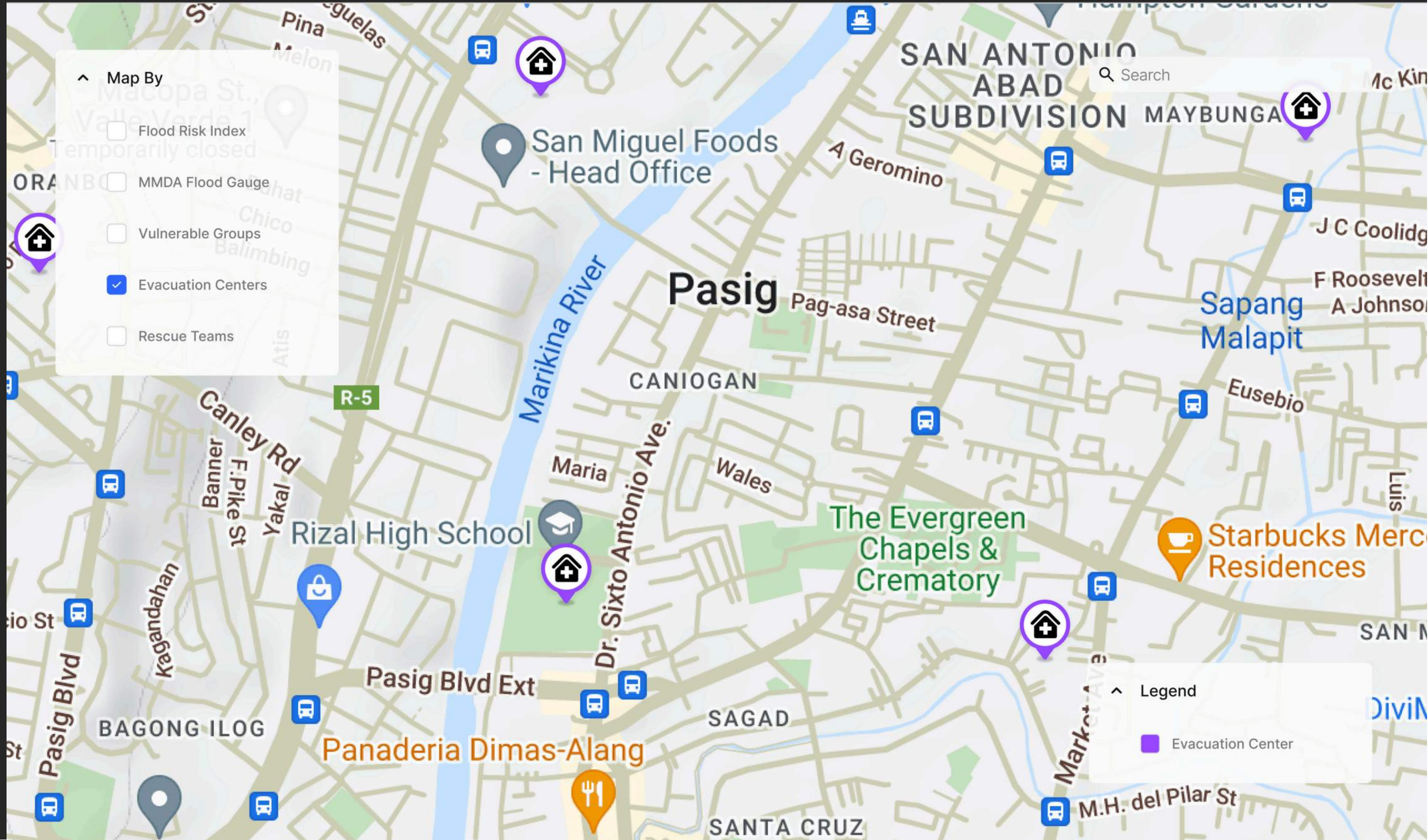


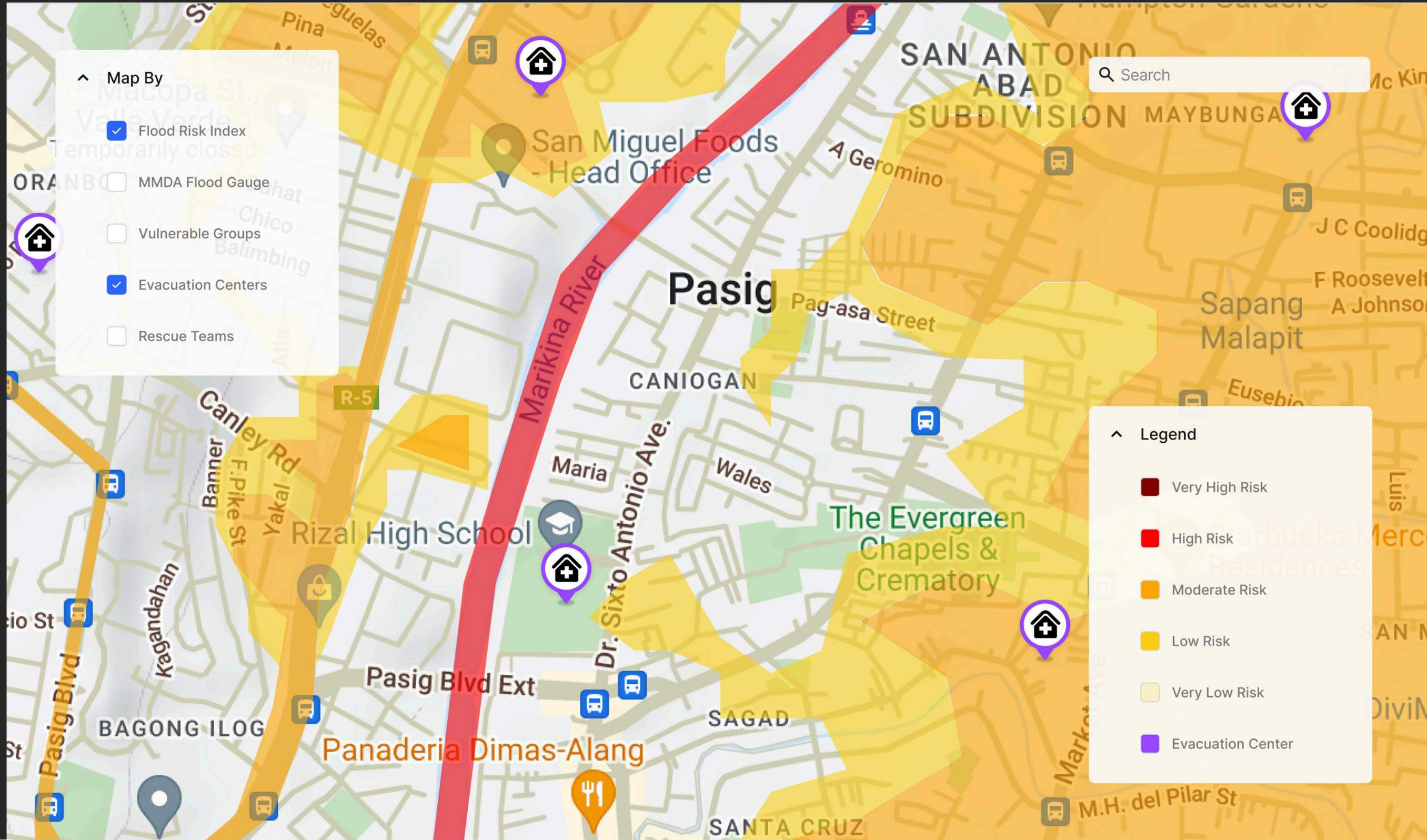












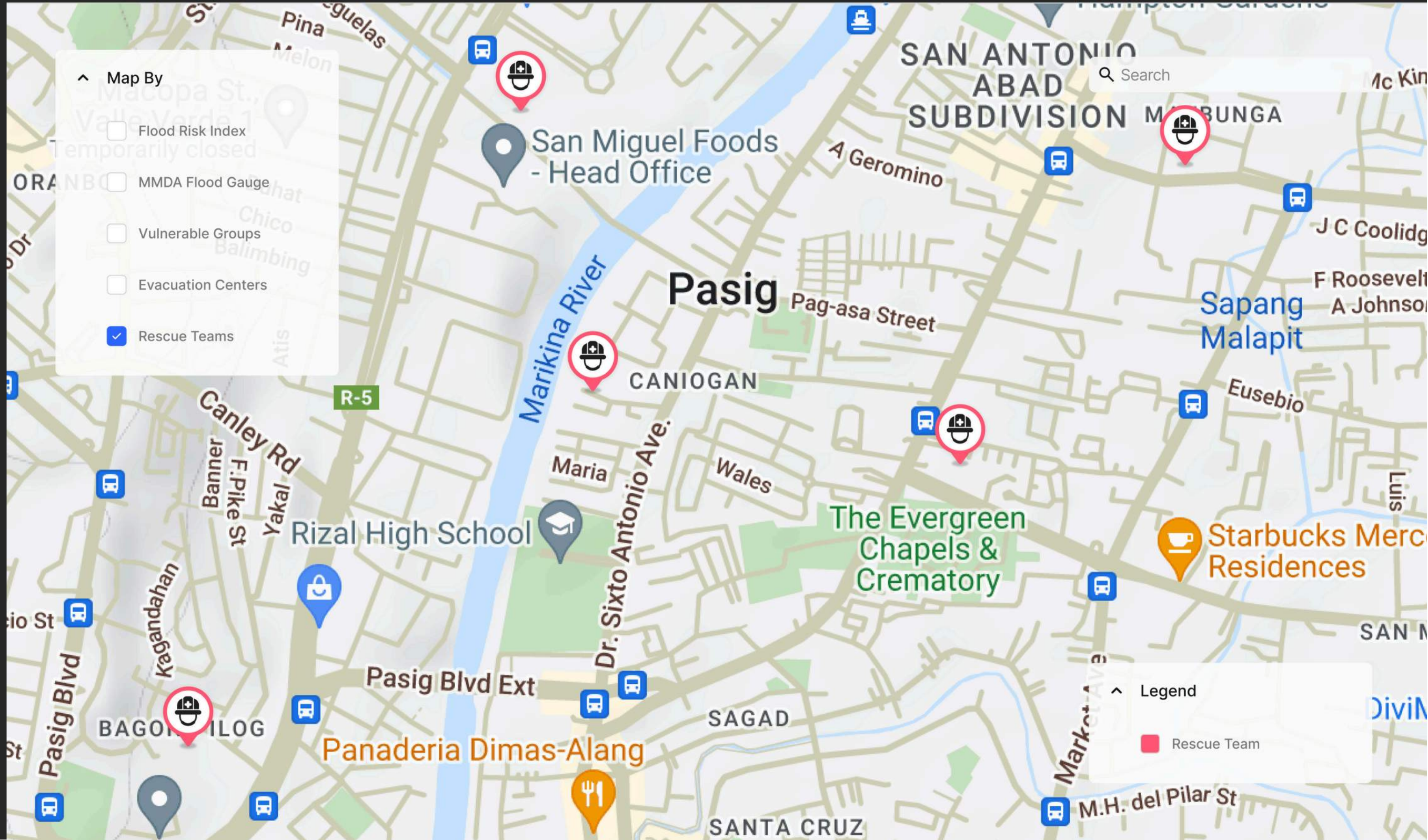
Map By

- Flood Risk Index
- MMDA Flood Gauge
- Vulnerable Groups
- Evacuation Centers
- Rescue Teams

Search

Legend

- Very High Risk
- High Risk
- Moderate Risk
- Low Risk
- Very Low Risk
- Evacuation Center



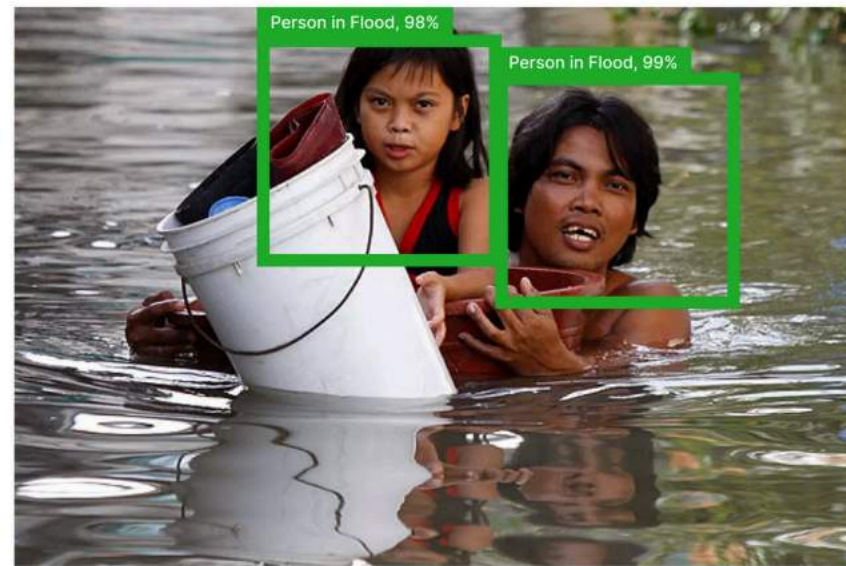




## INCIDENT SUMMARY

Detail | Table

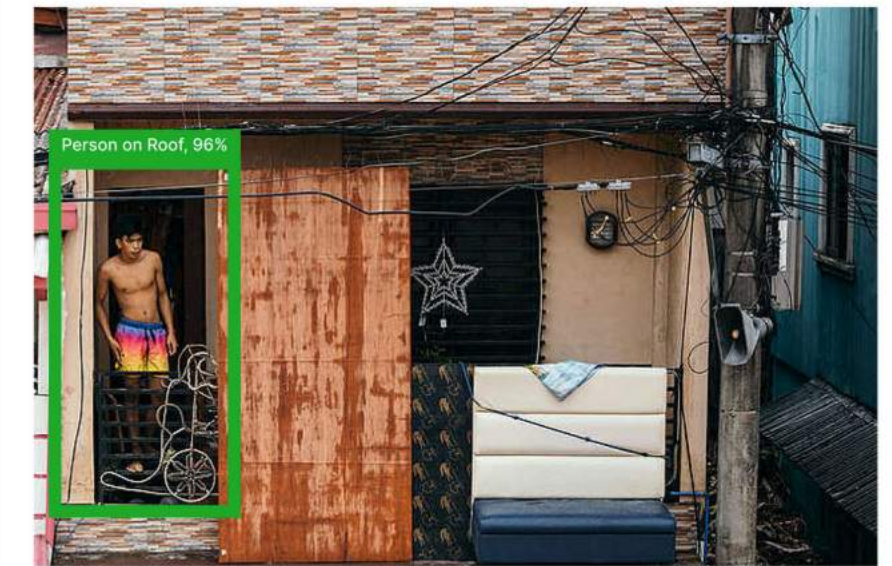
Search



DATE & TIME: July 11, 2024; 2:37 PM  
PLACE: Floodway, Manggahan



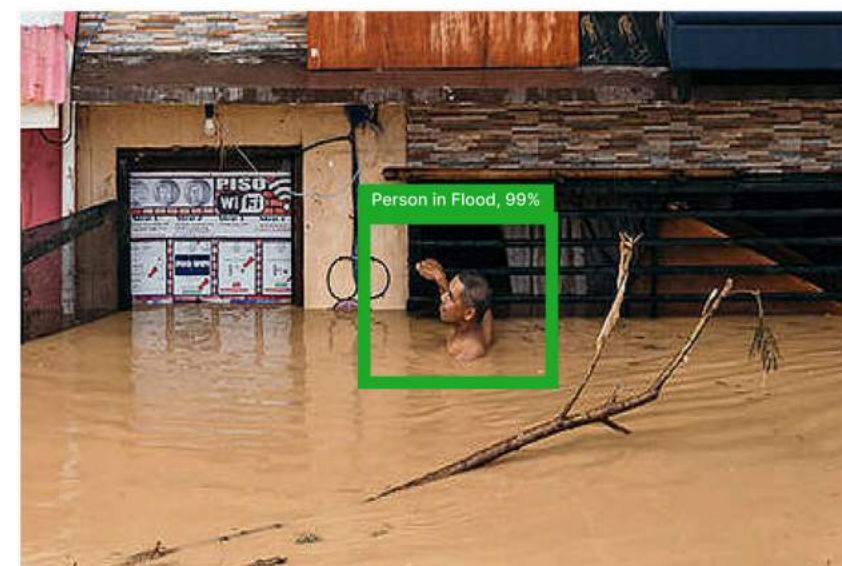
DATE & TIME: July 9, 2024; 12:16 PM  
PLACE: Tramo, Rosario



DATE & TIME: July 14, 2024; 10:52 AM  
PLACE: Bliss, Sta. Lucia



DATE & TIME: July 14, 2024; 10:52 AM



DATE & TIME: July 14, 2024; 10:52 AM



DATE & TIME: July 21, 2024; 5:49 PM



Forecasting Map View

Incident Summary

Live Chat

Rescue Navigator

Supplies and Distribution

Live Feed

# INCIDENT SUMMARY

Detail Table

<input type="checkbox"/>	#	DATE	TIME	PLACE	LINK TO SCREENSHOT
<input type="checkbox"/>	1	July 11, 2024	2:37 PM	Floodway, Manggahan, Pasig City	<a href="link-to-pic.com/image/0000001">link-to-pic.com/image/0000001</a>
<input type="checkbox"/>	2	July 9, 2024	12:16 PM	Tramo, Rosario, Pasig City	<a href="link-to-pic.com/image/0000002">link-to-pic.com/image/0000002</a>
<input type="checkbox"/>	3	July 14, 2024	10:52 AM	Bliss, Sta. Lucia, Pasig City	<a href="link-to-pic.com/image/0000003">link-to-pic.com/image/0000003</a>
<input type="checkbox"/>	4	July 14, 2024	10:52 AM	Bliss, Sta. Lucia, Pasig City	<a href="link-to-pic.com/image/0000004">link-to-pic.com/image/0000004</a>
<input type="checkbox"/>	5	July 14, 2024	10:52 AM	Bliss, Sta. Lucia, Pasig City	<a href="link-to-pic.com/image/0000005">link-to-pic.com/image/0000005</a>
<input type="checkbox"/>	6	July 21, 2024	5:49 PM	Jenny's Avenue, Rosario, Pasig City	<a href="link-to-pic.com/image/0000006">link-to-pic.com/image/0000006</a>



Q Search

## Inbox



**Aika C. Lopez** • PWD

You: Hello Aika, naitala ko na ang... 2m



**Maxine Gomez**

Maxine: Papasok na sa second fl... 5m



**Tom B. Dela Cruz**

Tom: Family of 4, isang newborn ... 9m



**Angel L. Castro**

Angel: Stuck po ako sa aking stal... 10m



**Zoe Y. Soriano**

You: OTW na po ang rescue tea... 12m



**Carol R. Garcia** • PWD

You: Naitala po ang inyong conc... 15m



**Jennifer E. Zamora**



**Aika C. Lopez**

Barangay Santolan, Pasig



Today 11:11 AM

Hello, si Mavy ito mula sa Pasig Emergency Response Unit. Ano ang iyong emergency?

Hello Mavy, ako si Aika, taga-Barangay Santolan. Nakawheelchair ako at mayroong dalawang maliit na anak. Hanggang dibdib na ang baha sa amin at mukhang di titigil sa pagtaas. Kailangan po namin ng tulong sa paglilikas agad! Nahihirapan po akong ilikas sila dahil ako po ay nakawheelchair.

Today, 11:12 AM

Hello Aika, naitala ko na ang iyong lokasyon at sitwasyon. Nagpapadala na kami ng team sa iyong lugar agad. Bibigyan kita ng update tungkol sa ipinadalang rescue team. Manatiling makipag-ugnayan sa amin hangga't di dumadating ang rescue team.

Sent 2m ago



Type your message here...



# PRIORITY RESCUE IDENTIFIER



▼ All

+ New Entry

All 19 | Vulnerable 4 | Healthy Adult 4 | Pet or Plant 2 | Archived 9

<input type="checkbox"/>	#	NAME	PROFILE	CATEGORY	LOCATION
<input type="checkbox"/>	1	Jieun Lee	Female, Senior Citizen, With Comorbidities	Vulnerable	Rainforest Drive, Maybunga, Pasig City
<input type="checkbox"/>	2	Chappell Roan	Female, Middle-Aged, Mother of 2	Healthy Adult	Jenny's Avenue, Rosario, Pasig City
<input type="checkbox"/>	3	Solar	Dog: Shih-Tzu, Brown and White Fur	Pet or Plant	Camia St., De Castro Subdivision, Sta. Lucia, Pasig City
<input type="checkbox"/>	4	Sean Catacutan	Male, Young Adult	Healthy Adult	Nile Bldg., Riverfront Residences, Caniogan, Pasig City
<input type="checkbox"/>	5	Mary Loi Yves Ricalde	Female, PWD: Difficulty Hearing, Young Adult	Vulnerable	Monggo St., Napico Subdivision, Manggahan, Pasig City
<input type="checkbox"/>	6	Kai	Cat: Siamese, White Fur	Pet or Plant	Nile Bldg., Riverfront Residences, Caniogan, Pasig City
<input type="checkbox"/>	7	Justin Paolo Canlas	Male, Middle-Aged, Father of 3	Healthy Adult	Camia St., De Castro Subdivision, Sta. Lucia, Pasig City
<input type="checkbox"/>	8	Ma. Nicolette Vergara	Female, Child	Vulnerable	Monggo St., Napico Subdivision, Manggahan, Pasig City
<input type="checkbox"/>	9	Ignatius Loyola III	Male, Senior Citizen, With Comorbidities	Vulnerable	Jenny's Avenue, Rosario, Pasig City
<input type="checkbox"/>	10	Ian Arceta	Male, Young Adult	Healthy Adult	Rainforest Drive, Maybunga, Pasig City



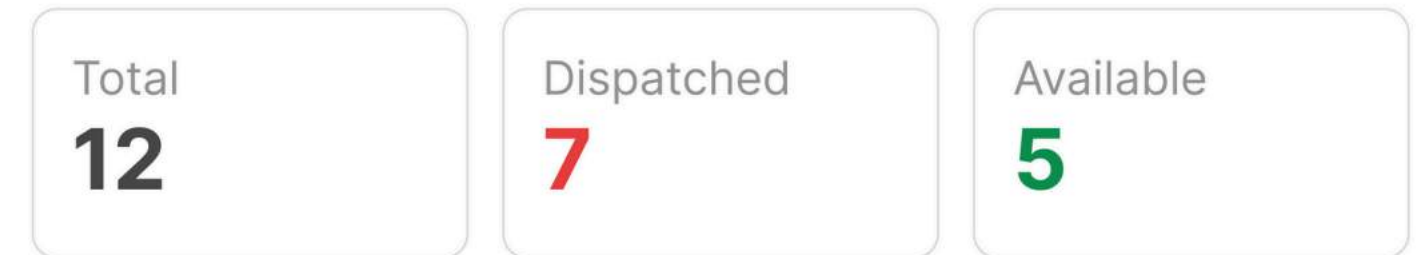
## PRIORITY RESCUE IDENTIFIER

## RESCUE RESOURCES

### RESCUE TEAMS



### RESCUE BOATS



## RESCUE TEAM UPDATES

 All

+ New Entry

All **143** Dispatched **57** Available **86**

<input type="checkbox"/>	#	TEAM MEMBERS	CATEGORY	CONTACT NUMBER/S	LAST LOCATION	LAST UPDATE
<input type="checkbox"/>	1	Juan dela Cruz, Tom Reyes	Dispatched	09981213452	Rainforest Drive, Maybunga, Pasig City	15 Jul 2024, 12:47 PM
<input type="checkbox"/>	2	Maria Tolentino, Rod Sanchez, ...	Available	09157265399	Rainforest Drive, Maybunga, Pasig City	14 Jul 2024, 2:36 AM
<input type="checkbox"/>	3	Wil Idefonso, Peter Santos, Erik ...	Dispatched	09230973434	Jenny's Avenue, Rosario, Pasig City	15 Jul 2024, 6:12 PM
<input type="checkbox"/>	4	Patricia Jimenez, Jansen Cruz, ...	Dispatched	09982327656	Rainforest Drive, Maybunga, Pasig City	13 Jul 2024, 1:25 AM



## PRIORITY RESCUE IDENTIFIER ▼

## RESCUE RESOURCES ▼

## REAL-TIME RESCUED PEOPLE DATABASE ▲

/

+ New Entry

<input type="checkbox"/>	#	NAME	RESCUE TIME	RESCUE LOCATION	EVACUATION LOCATION	DETAILS ON MEDICAL ACTION TAKEN
<input type="checkbox"/>	1	Sabrina Plumber	14 Jul 2024, 12:51 AM	Jenny's Avenue, Rosario, Pasig City	Rainforest Park, Maybunga, Pasig City	N/A
<input type="checkbox"/>	2	Conan Peach	22 Jul 2024, 10:10 PM	Rainforest Drive, Maybunga, Pasig City	Rainforest Park, Maybunga, Pasig City	First aid given
<input type="checkbox"/>	3	Saekyeong Shin	5 Jul 2024, 1:35 AM	Camia St., De Castro Subdivision, ...	Rainforest Park, Maybunga, Pasig City	CPR performed
<input type="checkbox"/>	4	Jolina Madrigal	7 Jul 2024, 7:47 PM	Marietta Romeo Village, Sta. Lucia, ...	Rainforest Park, Maybunga, Pasig City	N/A
<input type="checkbox"/>	5	Bryan Magpantay	16 Jul 2024, 12:06 AM	Jenny's Avenue, Rosario, Pasig City	Rainforest Park, Maybunga, Pasig City	First aid given
<input type="checkbox"/>	6	Priscilla Tan-Ching	21 Jul 2024, 9:11 AM	Rainforest Drive, Maybunga, Pasig City	Rainforest Park, Maybunga, Pasig City	N/A
<input type="checkbox"/>	7	Jongsuk Lee	10 Jul 2024, 3:56 PM	Marietta Romeo Village, Sta. Lucia, ...	Rainforest Park, Maybunga, Pasig City	N/A



## RESOURCE SUPPLIERS



+ New Entry

<input type="checkbox"/>	#	NAME	CONTACT NUMBER/S	LOCATION	SUPPLIES	NOTES
<input type="checkbox"/>	1	Boat Shop	(02) 7-265-9234	Jenny's Avenue, Rosario, Pasig City	Rubber Boats, Life Vests	N/A
<input type="checkbox"/>	2	Bahay Bangka	(02) 7-347-1526	Nagpayong, Pinagbuhatan, Pasig City	Rubber Boats, Life Vests	Closed on Wednesdays
<input type="checkbox"/>	3	Evac-Etivac	09271278193	Cavite City, Cavite	Modular Tents	Delivers on Mondays and Tuesdays

## RELIEF GOODS DISTRIBUTION TRACKER





## RESOURCE SUPPLIERS








## RELIEF GOODS DISTRIBUTION TRACKER



Q Search



+ New Entry

<input type="checkbox"/>	# 	SCHEDULE 	CONTACT NUMBER/S 	LOCATION 	AVAILABLE GOODS 	STATUS 
<input type="checkbox"/>	 1	M - F, 8:00 AM - 5:00 PM	(02) 7-272-0226	Jenny's Avenue, Rosario, Pasig City	Packed Rice, Canned Goods, Noodles	Fully operating
<input type="checkbox"/>	 2	MWF, 9:00 AM - 9:00 PM	09987223627	Rainforest Park, Maybunga, Pasig City	Fresh Meat and Vegetables, Rice	In need of personnel
<input type="checkbox"/>	 3	Daily, 10:00 AM - 8:00 PM	(02) 7-473-2165	Bliss, Sta. Lucia, Pasig City	Packed Rice, Canned Goods, Noodles	Accepting donations





## CAMERA FEED

