Node( )

Process Book

UXDG 490 | Winter 2022 | Professor BC Hwang

Node( )

Reliable Disaster Communication

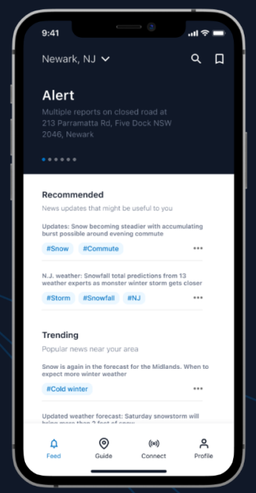
Problem

Natural disasters are very unpredictable and the ways information is spread and communication is handled only make a bad situation worse. On top of that, when the power goes out and cell service is down people are left without the use of the technology they depend on so much.

Solution

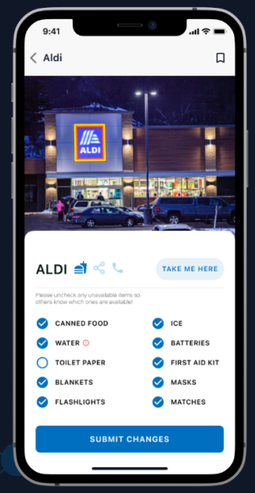
Node uses mesh network technology to form a self-sufficient wireless network that users can access even when normal systems fail. Using our network, users can send emergency messages, see up-to-date news and alerts, find important resources, and find the safest routes all on one, reliable platform.

Key Features:



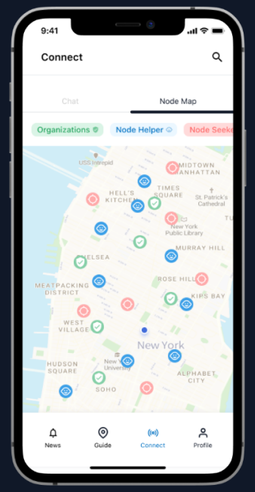
News Update

Users recieve credible, up-to-date news and alerts



Guide

Provides users with a way to find necessary resources in their area vetted by members of the community



Connect

Using our network, users can message with others users, volunteers, and organizations for help and guidance

Class Description

Over a span of 20 weeks, we were challenged to create a UX design that brings about social impact. During the first 10 weeks, we focused on pinpointing the problems space and all its factors through various research methods, as well as form our initial concept. In the last 10 weeks, we developed our concept and finalized our designs.

Table of Contents

1. Discover

- Project Background
- Problem Space & Target Audience
- Secondary Research
- Primary Research
- Sensory Cue

2. Define

- Affinitization
- HMWs
- Personas
- User Journey Maps
- Competitive Analysis

3. Design

- Initial Concept: Ezra
  - Branding & Business
  - Mid-fi
  - Mid-fi User Testing
- Ezra to Node
- Final Concept: Node
  - App Lo-fi
  - App Lo-fi User Testing
  - App Mid-fi
  - App Mid-fi User Testing
  - App Hi-fi User Testing

4. Deploy

- Final Concept
  - Product
  - Final Concept
  - Product
  - App
  - Branding
  - Business
- Final Deliverables
  - Vision Video
  - Lookbook, Poster, Selected Images
  - Website and Social Media

The Naturalists

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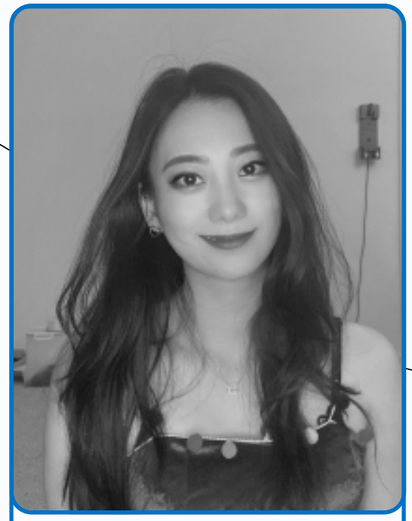
Project Lead

Mikayla Kim
UX Researcher & UI Designer

Sathvik Kotha
Product Designer



Jiyoung Lee
Visual Designer

Tang Tantivirun
UX Engineer

1.

Discover

Project Background

What are Natural Disasters?

> A natural disaster is a phenomenon of nature that causes damage or loss of life, having an impact on the environment or community.
>
> -James Halpern PhD & Mary Tramontin

Relevance

In 2021 (as of July 9), there have been **8** weather/climate disaster events with losses exceeding **$1 billion each to affect** the United States… these events resulted in the **deaths of 331 people** and had **significant economic effects** on the areas impacted.

—NOAA National Centers for Environmental Information (NCEI)

NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2021). https://www.ncdc.noaa.gov/billions/, DOI: 10.25921/stkw-7w73

Common Problems in Natural Disasters

Communication

Loss of Power

Property Damage

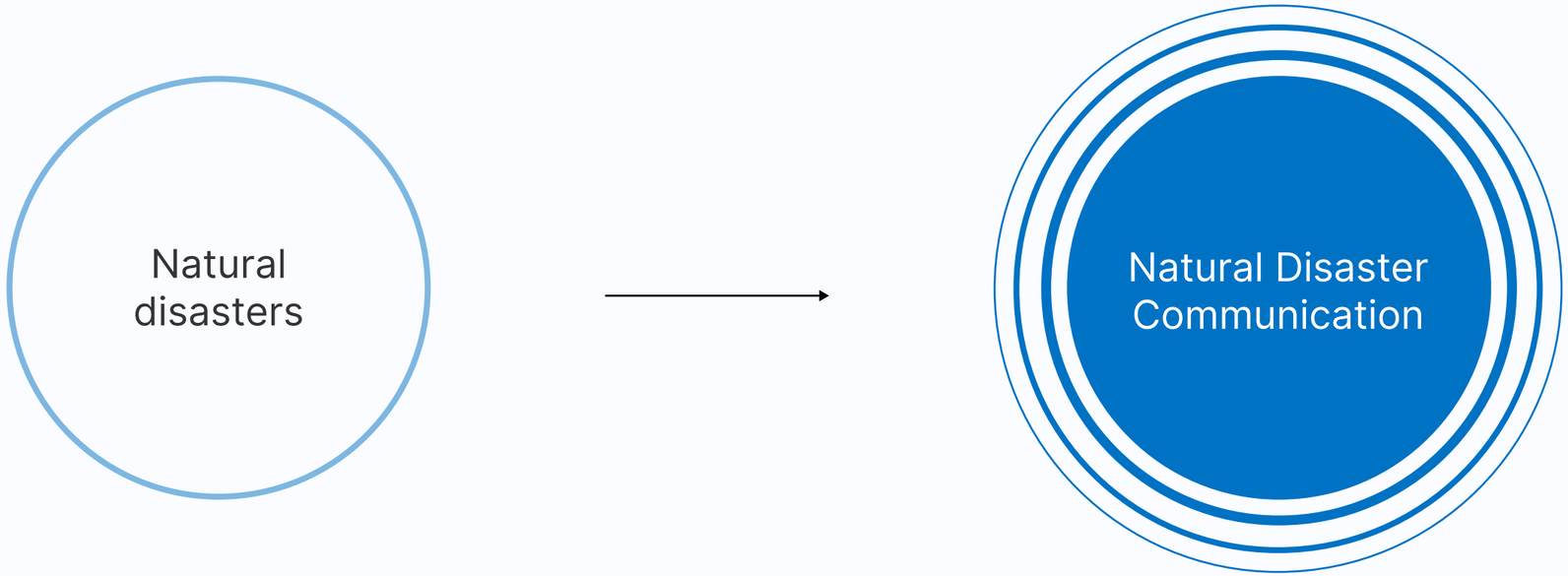
Loss of Life

Forced Displacement

Weather Exposure

Natural Disasters Protecting the Public's Health. PAHO, 2000, Health Library for Disasters, http://helid.digicollection.org/en/d/Jh0204e/4.1.html.

Topic of Interest



Communication in Natural Disasters

> **Communication is a key component to any disaster** response plan. Widespread power outages and cell service failures such as those seen in Hurricane Michael and the California wildfires will **cause significant communication issues**.
>
> ZAHP

Problem Space

Problem Space

Why Communication?

Effective communication connects first responders, support systems, and family members with the communities and individuals immersed in the disaster. **Reliable communication** also **plays a key role** in a community's resilience.

- Effective Communication During Disasters

Effective Communication During Disasters: Making Use of Technology, Media, and Human Resources. United States, Apple Academic Press, 2016.

Why Communication an Issue?

Disaster communication requires...

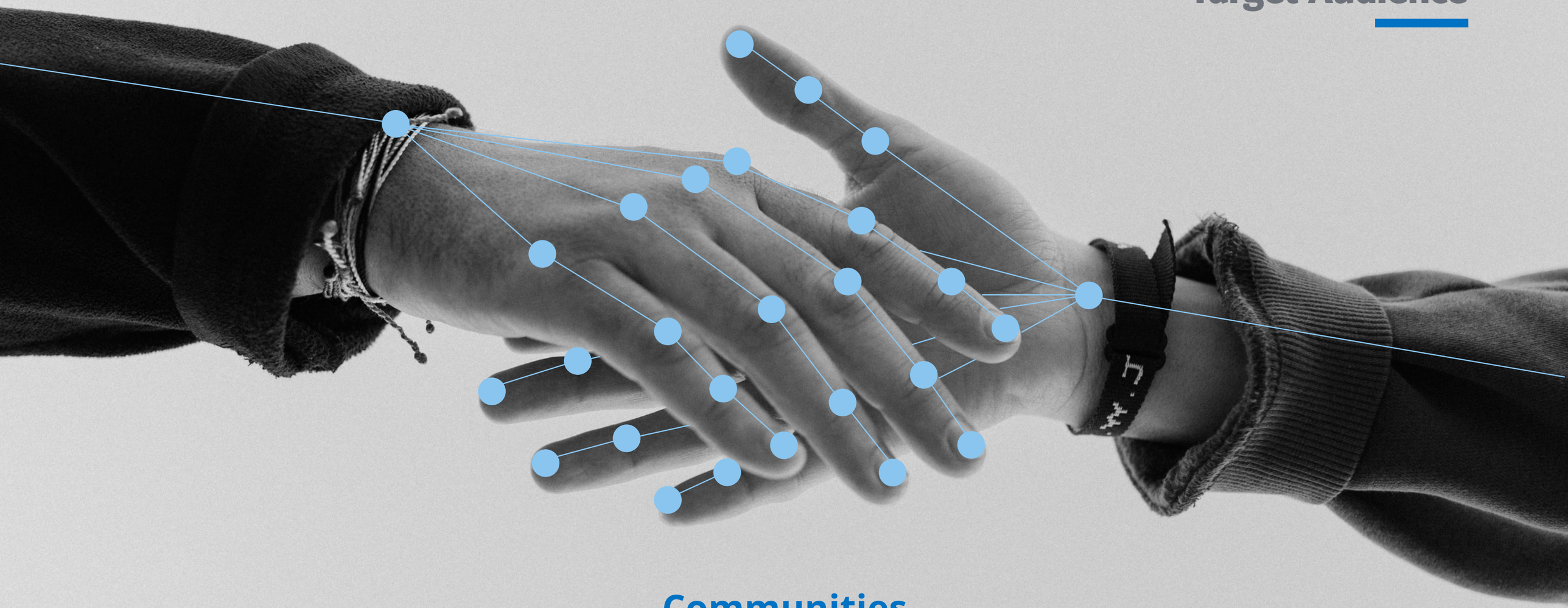
- Message prioritization
- High performance
- Fast delivery
- Flexibility
- Resilience

Without these,
people **can't** get the information
they need or contact others

Effective Communication During Disasters: Making Use of Technology, Media, and Human Resources. United States, Apple Academic Press, 2016.

Target Audience

Target Audience



Communities

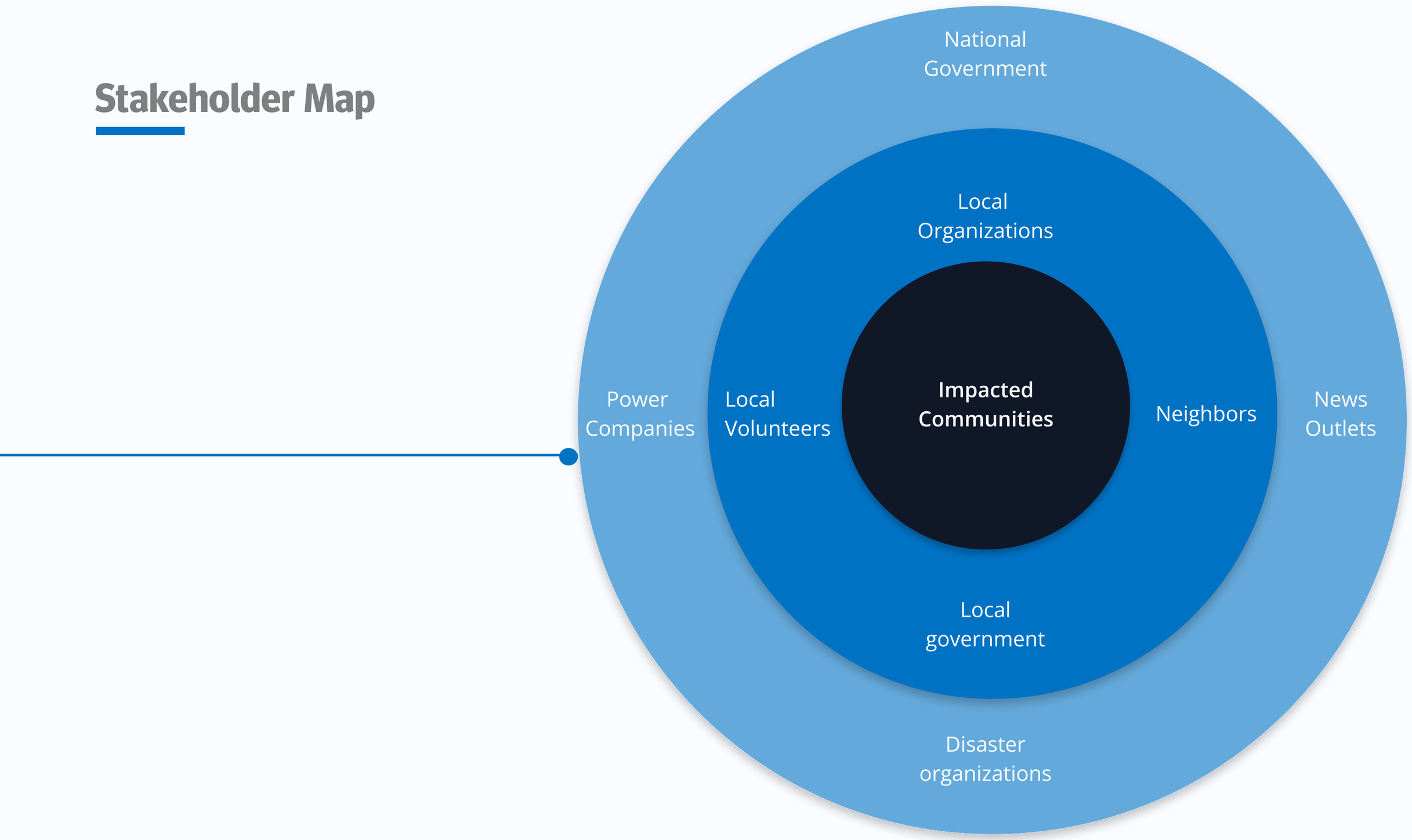
Organizations do not properly provide the help and information people need, so they look to their communities for assistance

Why Communities?

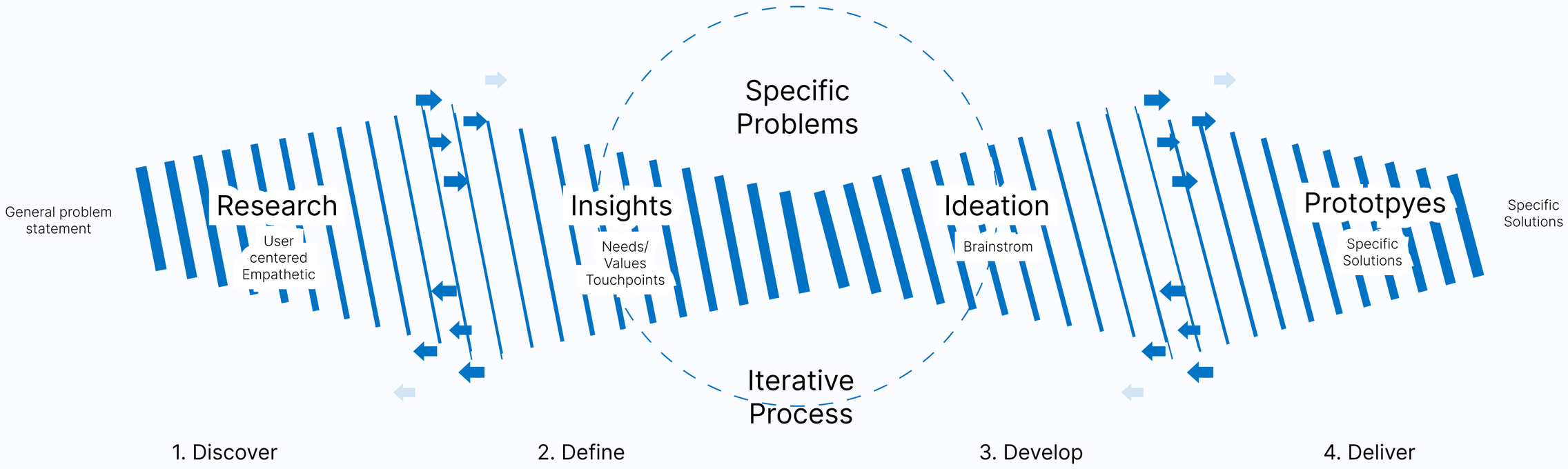
People are hard-wired to come together as a community after disasters... **most search and rescue** after a disaster is done by people in their communities, long **before professionals arrive**.

- Mitch Stripling, assistant commissioner of Agency Preparedness and Response

Stakeholder Map



Double Diamond



Secondary Research

Two Main Aspects of Disaster Communication

Finding necessary information

Staying Connected

Finding Information

People struggle to find reliable, objective information,
Constantly having to look at multiple platforms to stay up to date.

"Communication that is transparent, credible, and trustworthy is critical because that's what keeps people safe."

-Elizabeth Andrade, DrPH, MPH, an assistant professor of prevention and community health at Milken Institute SPH

"Communication Failures Led to Confusion, Rumors and Widespread Public DISTRUST after Hurricane Maria's Devastation of Puerto Rico: Milken Institute SPH." Publichealth.gwu.edu, 9 Mar. 2020, https://publichealth.gwu.edu/content/communication-failures-led-confusion-rumors-and-widespread-public-distrust-after-hurricane.

Staying Connected

Primary form of communication is cell phones,
but when power and cell service goes down it becomes **impossible to contact**
loved ones and emergency services

“Preparing for Communications Challenges during Disaster.” Zoo and Aquarium All Hazards Partnership, ZAHP, 12 Feb. 2021, https://zahp.org/preparing-for-communications-challenges-during-disaster/.

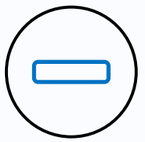
Why does Communication Break Down?

Congestion

After a disaster, so many people are trying to contact loved ones and get emergency help that it causes a lot of congestion and stops people from being able to use cell service.

Lack of Electricity

Cell phones depend on a network of receivers and transmitters which relies on power systems and computers.



Replace Cellular Towers

Losing just one cell phone tower site can cause localized dead spots in the area where you need to communicate.

EL Khaled, Zayan, and Hamid Mcheick. “Case Studies of Communications Systems during Harsh Environments: A Review of Approaches, Weaknesses, and Limitations to Improve Quality of Service.” International Journal of Distributed Sensor Networks, Feb. 2019, doi:10.1177/1550147719829960.

Consequences of Communication Breakdowns

On March 11, 2011, a 9.0 magnitude quake hit Tohoku, Japan...
A total of 15,893 people died while 6,152 people were injured. Another **2,567 people were reported missing**.

-EKU

"4 Important Grant Programs for Emergency Preparedness and Relief." EKU Online, 21 July 2020, https://safetymanagement.eku.edu/blog/when-disaster-strikes-technologys-role-in-disaster-aid-relief/.;
EL Khaled, Zayan, and Hamid Mcheick. "Case Studies of Communications Systems during Harsh Environments: A Review of Approaches, Weaknesses, and Limitations to Improve Quality of Service." International Journal of Distributed Sensor Networks, Feb. 2019, doi:10.1177/1550147719829960.

Consequences of Communication Breakdowns

After the Japan tsunami in March 2011, approximately **8000 mobile base stations were immediately disabled**. Within **24 hours, this number almost doubled** when backup power systems became exhausted.

-International Journal of Distributed Sensor Networks

"4 Important Grant Programs for Emergency Preparedness and Relief." EKU Online, 21 July 2020, https://safetymanagement.eku.edu/blog/when-disaster-strikes-technologys-role-in-disaster-aid-relief/.;
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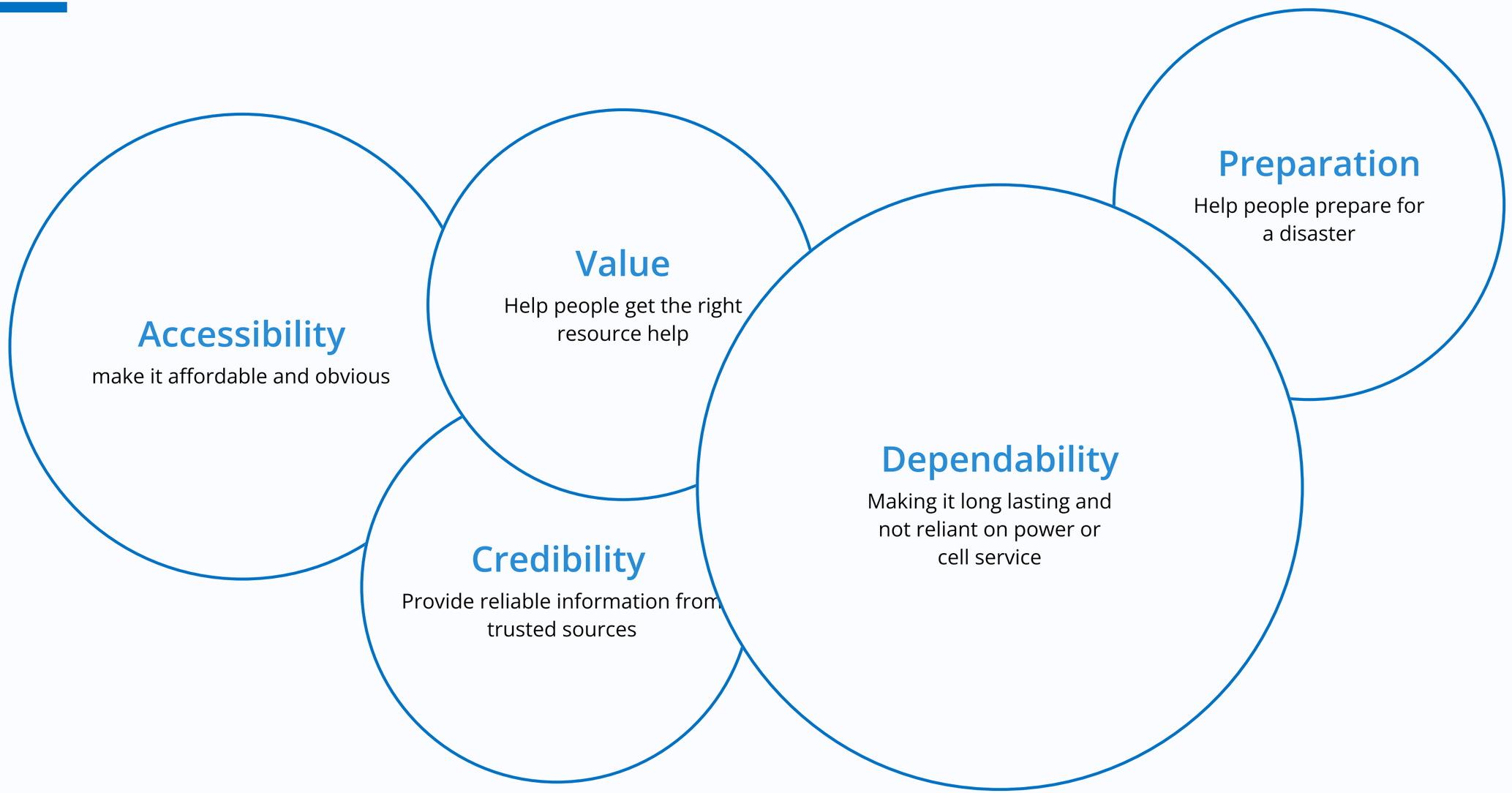
Current Solutions

Pros	Provides reliable emergency information, alerts, and tips	Can follow multiple sources and see what others are saying	Have official, up-to-date information	Has all the necessary information
Cons	Doesn't provide information from multiple sources; relies on cell service and power; Not well known; technical issue; lack of trust	Lots of unreliable information and rumors; relies on cell service	Requires people to go search for them and constantly flip through multiple pages; relies on wifi	Doesn't guide people where to look for information or resources; relies on wifi

Key Takeaways for Our Solution



Opportunities

- Current solutions aren’t accessible to everyone
- No new technology has been designed for this space
- Communication and preparation are key in emergency situations

Primary Research

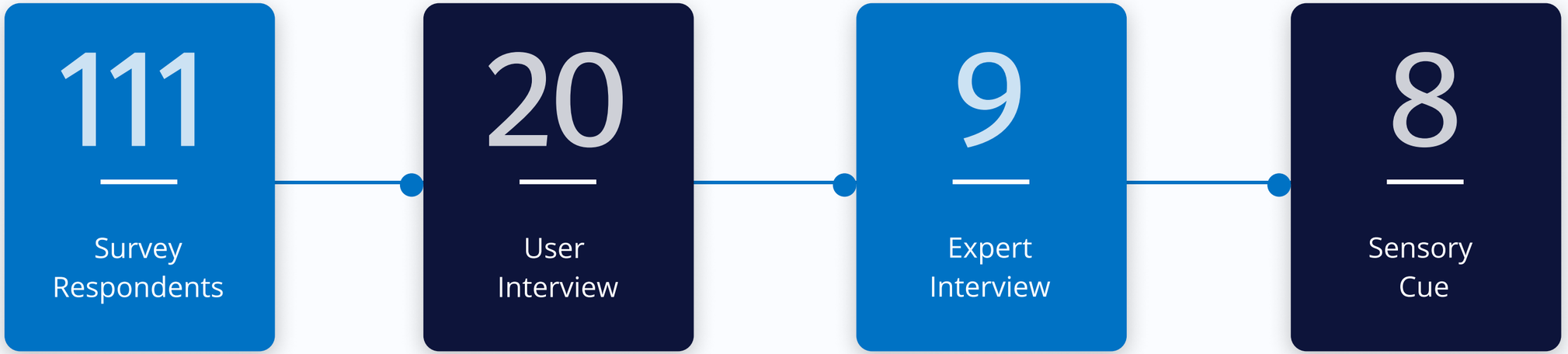
Hypothesis

Improving disaster communication will help people **feel safer** and **better prepared** before, during, and after natural disasters

Research Questions

- How do people **plan** for natural disasters? (e.g. supplies, evacuation e.t.c.)
- How do people **communicate** during a natural disaster?
- Where do they **get information** from?
- How **intense** does a situation have to be in order to need communication support?
- How can we help give people a **safe environment during** natural disasters?

Methods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Survey Respondents
20
User Interview
9
Expert Interview
8
Sensory Cue

Survey

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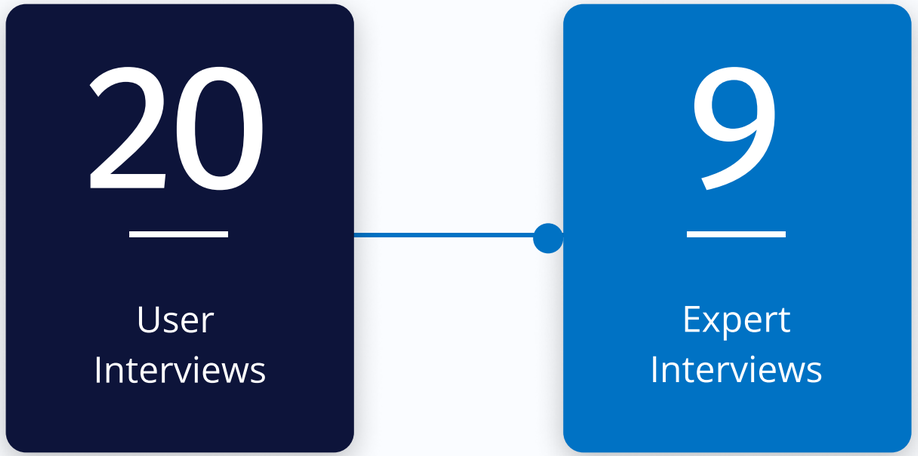
Survey Respondents

We conducted a survey specifically designed for college students when they were our target audience. Because the information was so specific to them we decided to disregard the insights we got from these responses

Interviews



Interview Insights

- People don’t feel prepared for natural disasters
- Most people feel scared and concerned about natural disasters
- They don’t know where to find resources or help
- Family and close friends typically make up someone’s support system
- People wish they recieved disaster education, as well as information and resources when a disaster hits
- Most rely on their friends for help and guidance

Expert Interview Key Insights

- **Local volunteers** and **organizations** are the **true first responders**

- The **relief** and **recovery** process takes a **very long time** to start

- Information from the top is **ineffectively spread** to the general population

- The **relief** and **recovery** process takes a **very long time** to start

- **Planning** is extremely important

- There is a lot of **good information** out there, but it's **hard to find** what you need

Key Interview Insights

- People don't know where to find **trustworthy information** or how to judge a **credible source**
- **Transparent information** from **reliable sources** is critical for effective disaster communication
- People want **quick**, **concise information** that they actually need
- **Planning** and **preparation** are key
- People have a very hard time **finding information** and **resources** before, during, and after a disaster
- **Lack of communication** is a huge obstacle in disaster recovery and relief

Sensory Cue

Sensory Cue

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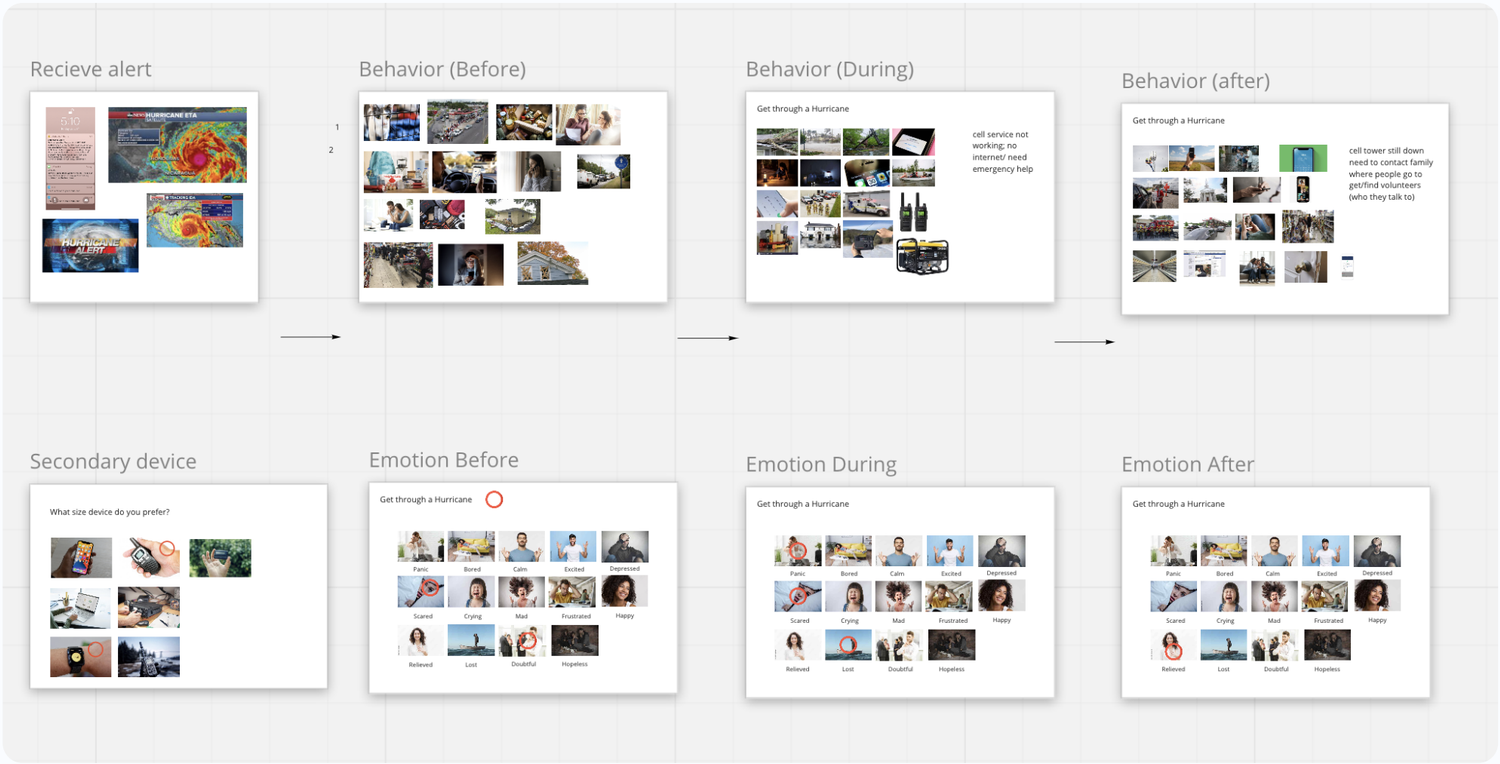
Sensory Cue

Purpose:
Simulate a natural disaster event to learn more about people's actions and emotions during natural disasters



Sensory Cue Insights

- Getting in **contact with family and friend** is important to people

- **Gathering as much information** as possible is a top priority for people

- Most people **don’t own or use a secondary device** that does not rely on cell service, but would be willing to use a radio device

- **Gathering as much information** as possible is a top priority for people

- People lean on their **community for information** and **support** before, during, and after natural disasters

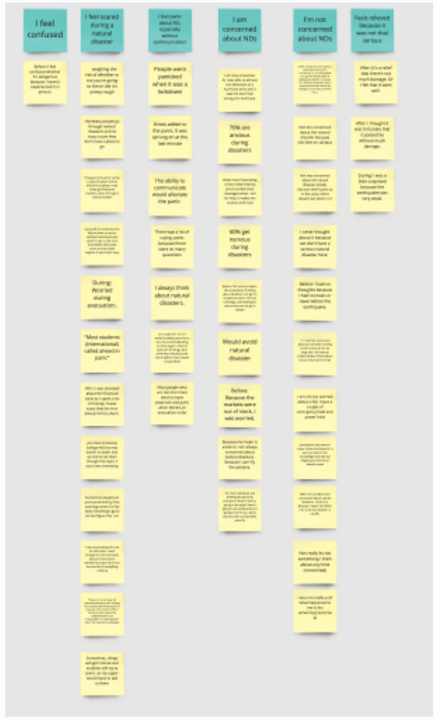
2.

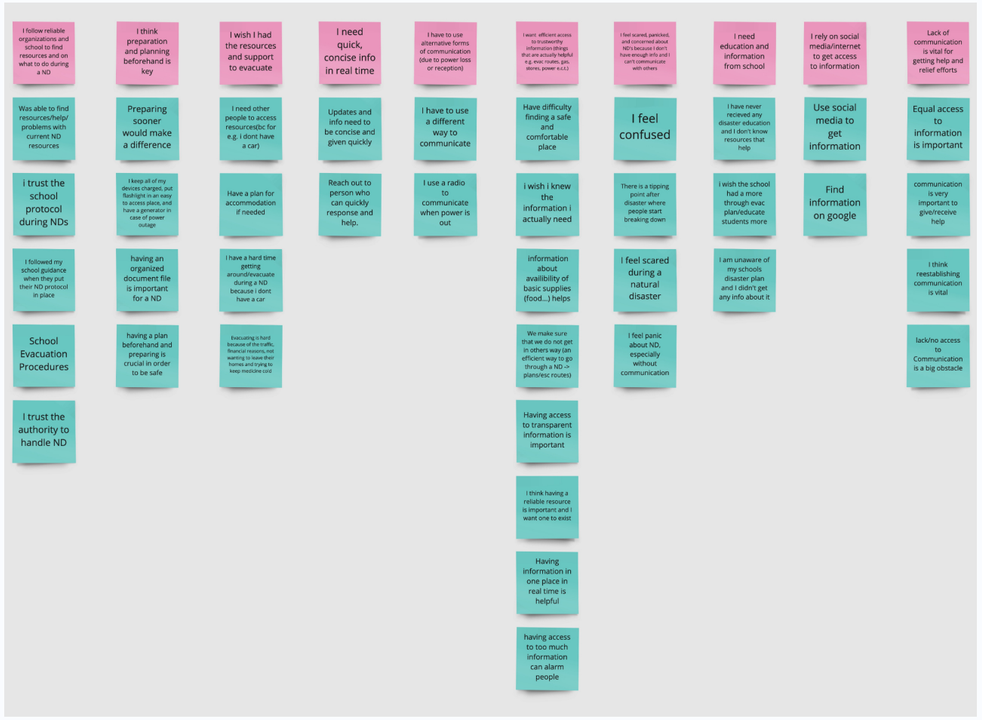
Define

Affinitization

Affinitization

We took all of the insights and affinitized them down to our key insights. We then used these key insights to create our HMW’s and guide our ideation.





Overall Research Takeaways

Lack of communication results in many issues, especially for **rescue and relief efforts**

Having a **plan beforehand** and **preparing sooner** would make a big difference and is crucial for **safety**

People want **quick, concise, trustworthy** information that actually **applies** to them

People look to **local volunteers and organizations** to **find information** and **get help**

People **lack knowledge** on how to get through natural disasters and where to find **resources** and **information**

Most people **don’t have a secondary communication device,** but would be willing to try a radio device

How Might We...

HMW provide **centralized, trustworthy, concise** information in real time?

HMW provide a **reliable, accessible, alternative** form of communication?

HMW help people get the **resources** and **information** they need throughout a disaster?

HMW help people **prepare** and plan for natural disasters effectively?

HMW **connect** people with **local volunteers** and **organizations** for help and information?

Umbrella HMW

HMW provide a **centralized source** for **reliable disaster information** and **communication**?

Personas

Persona

> “ Natural Disasters don’t scare me, but I’ve never had to go through one alone and I don’t know what to do. ”

Monica Jones

25, Lake Charles, LA
Hometown: Ann Arbor, MI

Biography

Monica is a 25 year old nurse living in Lake Charles, Louisiana. She is originally from Michigan and has no prior experience dealing with natural disasters. She finds out a hurricane is coming and she feels very worried and doesn’t know what to do.

Painpoints

- Has never dealt with a natural disaster on her own
- Doesn’t know where to look for reliable information
- Living in an unfamiliar place on her own
- Doesn’t know local disaster procedures

Needs

- Centralized, reliable source of information
- Help finding resources in the area
- Guidance from locals
- A way to contact help in an emergency

Current information channels

UJM

What do We Want to Learn?

We wanted to **evaluate all of the different factors** before, during, and after a disaster to see where all of the problems lie at each step of the disaster process, so can get a better understanding and accurately form Monica’s journey

Before a Natural Disaster

Timeline	Arrived on Campus	Alert about natural disaster	Storm Arriving
Task & Activities	• Recieve information on the school's evacuation plan in the orientation packet • Unsure of what to do	• Check updates from school (email ,text) • People start to get water and gas • Too much random information and rumors from non credible sources	• Not sure of when its safe to come back
Emotions	Excited, but nervous	Afraid & Alone	Overwhelmed & Upset
Painpoints	Unfamiliar with the area and don't really know anyone	• School's disaster plan isn't comprhhensive and was not properly relayed • People start hoarding resources and there's a supply shortage	Can't find necessary resources or information
Opportunities	-	• Detailed information on what to do/where to go • What you need • Make sure you got everything? checklist? reminder? • Track footprint to see how busy a grocery store or gas station is • Provide credible information	Provide information on what to do and where to find resources

During a Natural Disaster

Timeline	Disaster Hits	Power/ Cell Service Goes Out	Storm Ends
Task & Activities	• Get a text message about the natural disaster	• Tries to contact mom, but can't get through	• Check for cellular service • Update current state Restrictions (Curfew,Laws implemented)
Emotions	Concerned & Aprehensive	Scared & Bored	happy it ended but traumatized because phone run out of battery
Painpoints		Unable to contact loved ones or emergency services	• Taking a while to get service/call someone • Phone out of battery
Opportunities	Documents to be collected basic informatoin/contacts give info on where they need to go	A secondary communication method that is durable and reliable	Automatically let people in EC know they are safe/need help

After a Natural Disaster

Timeline	Day after the storm	A week later	3 weeks later
Task & Activities	Tries to contact friends, but calls won't go through	• Most places aren't open and others are out of the th • Local authorities are busy and are not responding quick enough • No power but cell service is available. she is trying to get more resources?food	• Power recently came back on • Most stores are open, but they are out of a lot of resources
Emotions	Overwhelmed & Upset	Fed up & annoyed	Calm & Frustrated
Painpoints	Don't know what to do or where to look for information	• She can't buy food and water because she can't find a place to go • The power is still out and her devices are dead traffic jams	Still no access to a lot of resources
Opportunities	help calm down what to do/not to do list further safety instructions	Suggest locations/alternatives based on how crowded a place is	Show local stores that have what she needs

Journey Before, During, and After

Before a Natural Disaster

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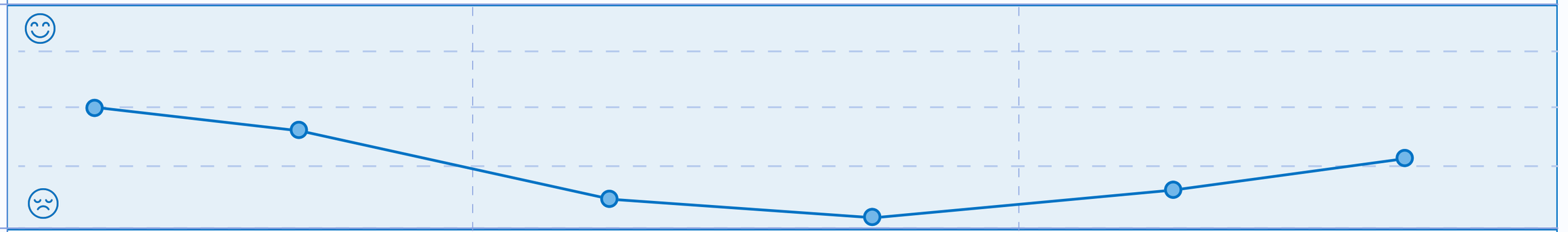
We realized that a lot of the problems overlapped and decided that rather than focus on one, any solution we made would end up impact every part.

Monica's Journey

	Before disaster		During disaster		After disaster	
Actions	Monica receives an alert about an incoming hurricane	She tries to find out how to prepare and what's going on, but there is too much conflicting information	As the storm gets worse, the power goes out and she can't get a signal	A window breaks and she doesn't know what to do. She wants to call 911, but her phone is dead	She needs help covering her window, but she doesn't know who to ask	She needs to get food and water, but she can't find a store with what she needs
Emotion						
Pain Points	Doesn't know what to do or where to find information		Can't use her phone to get help or information		Doesn't know who to ask for help	Doesn't know where to get resources or anyone who could tell her
Design Oportunity	A platform that provides streamlined, up-to-date information and alerts		Reliable connection that users can use even when service is down or busy	A secondary way to call for help	A way to find organizations and volunteers that can help	Ability to connect with people in the community for help and resources

Competitive Analysis

Competitive Analysis

Best Overall

	ND App	SNS	News	Amature Radio	HF Radio
Accurate Information	2.0	3.0	4.0	1.0	4.0
Real time	3.0	3.0	4.0	3.0	5.0
Reliability	1.0	5.0	1.0	5.0	5.0
Cost	5.0	5.0	5.0	4.0	1.0
Accessibility	3.0	3.0	2.5	3.5	2.0

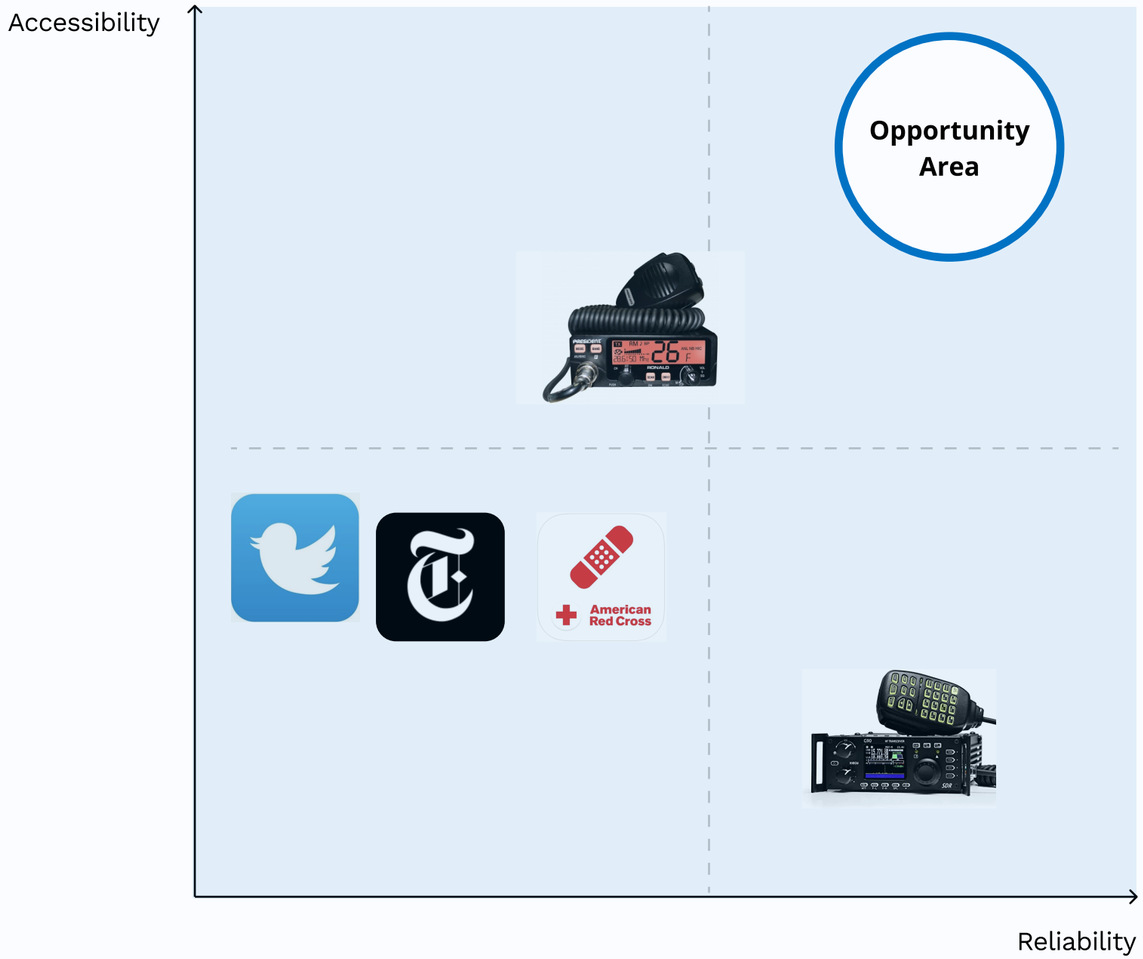
However, the cost is too expensive, as well as usability and accessibility issues

1: Poor 3: Acceptable 5: Excellent

Design Space

Opportunity Area

A reliable, cost-effective product that provides accurate, real-time information to help users navigate through a natural disaster



3.

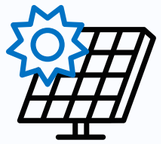
Design

Initial Concept: Ezra

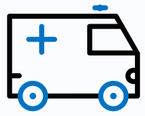
Must Have Features

Core features we must include based on our research in any concept we create

Access to news sources

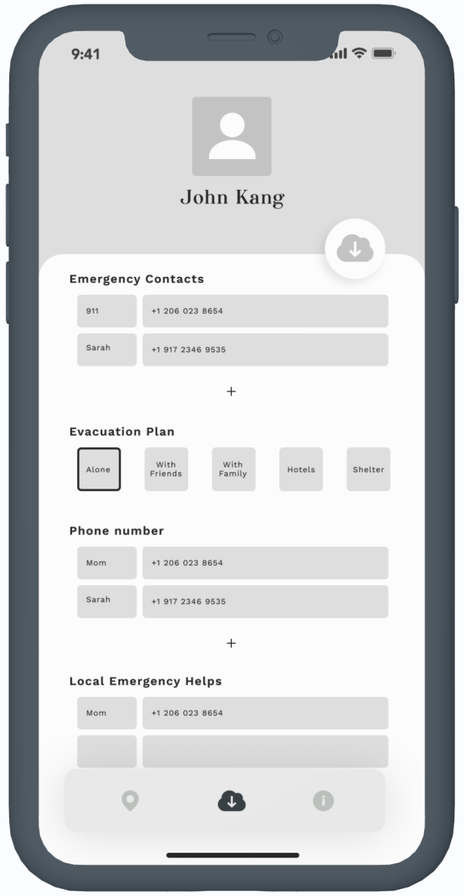


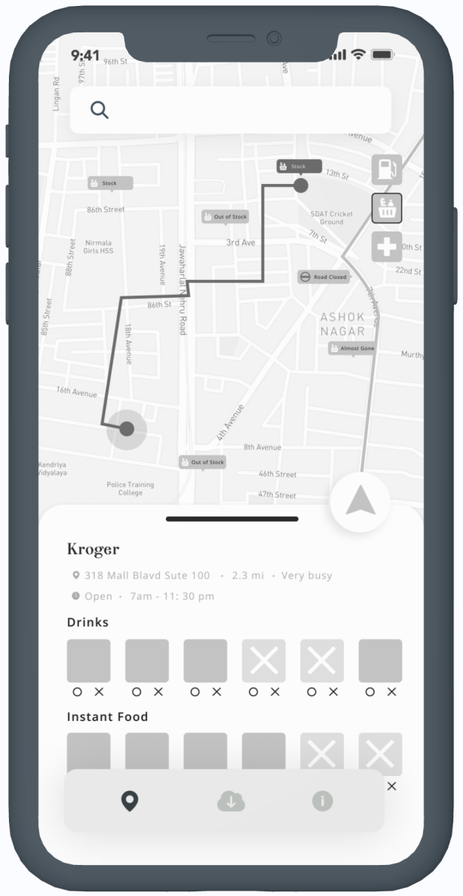
Battery and solar powered

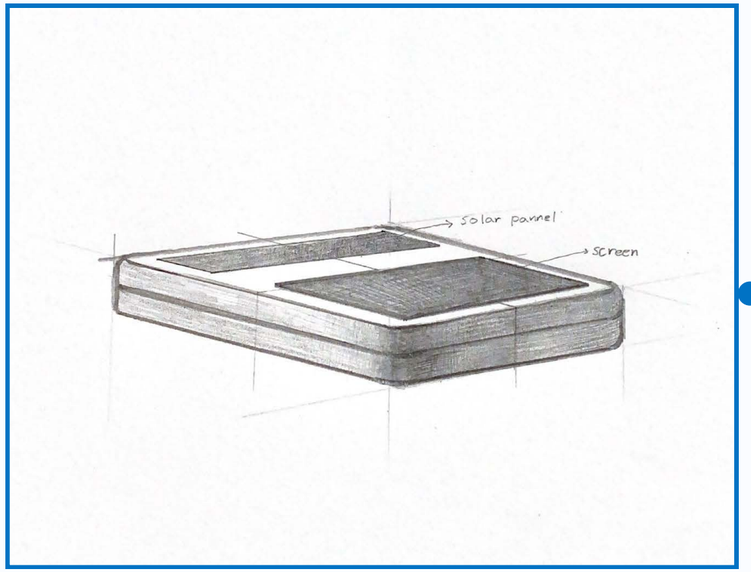


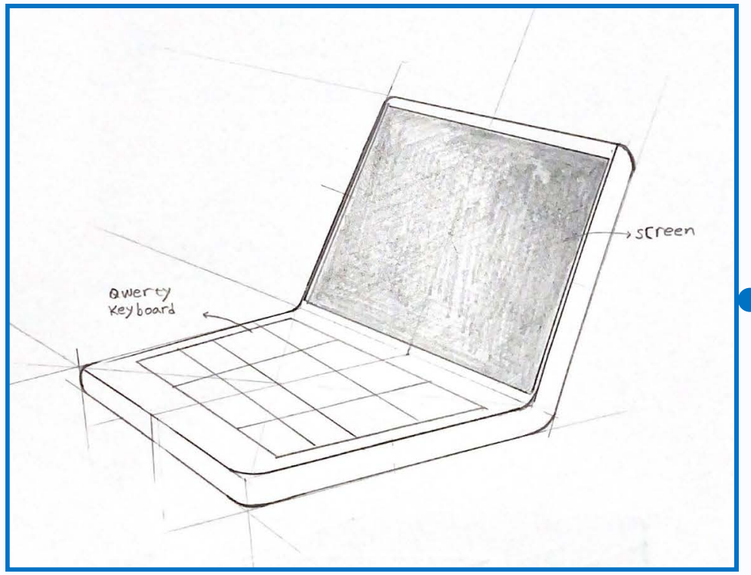
Ability to contact emergency services and emergency contact

Concept 1: Ezra





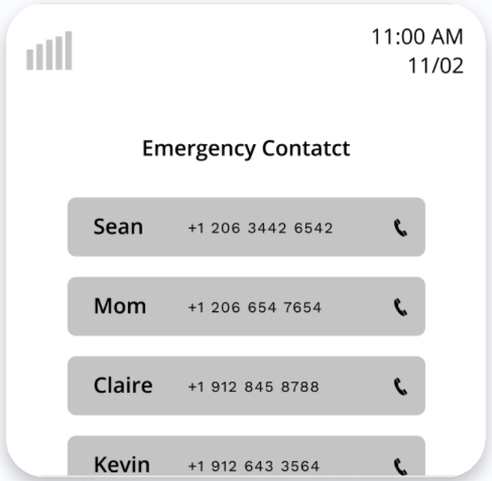


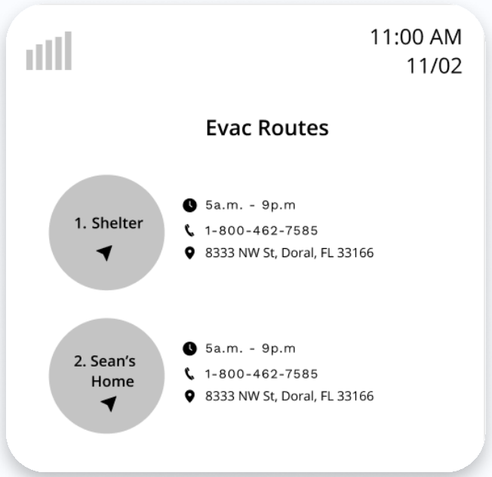


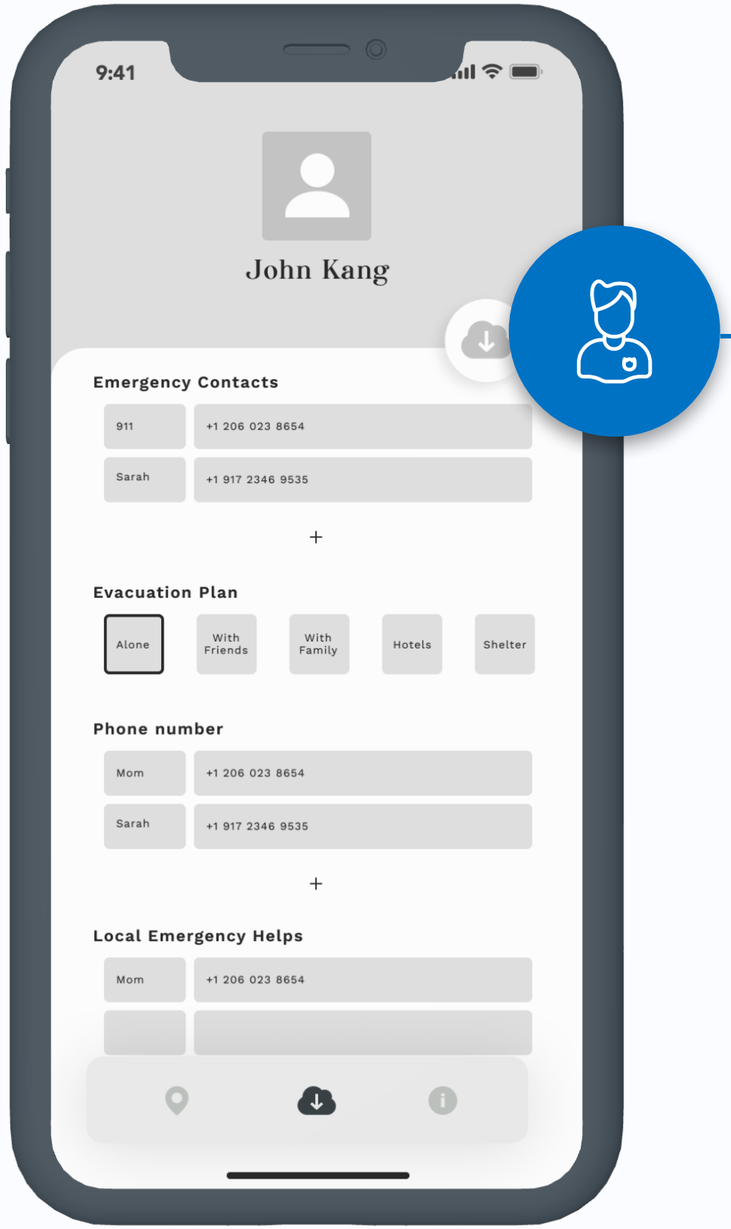
Profile

Save Personal Information

- Emergency contacts
- Evacuation plans
- Important phone numbers
- Local volunteers and organizations





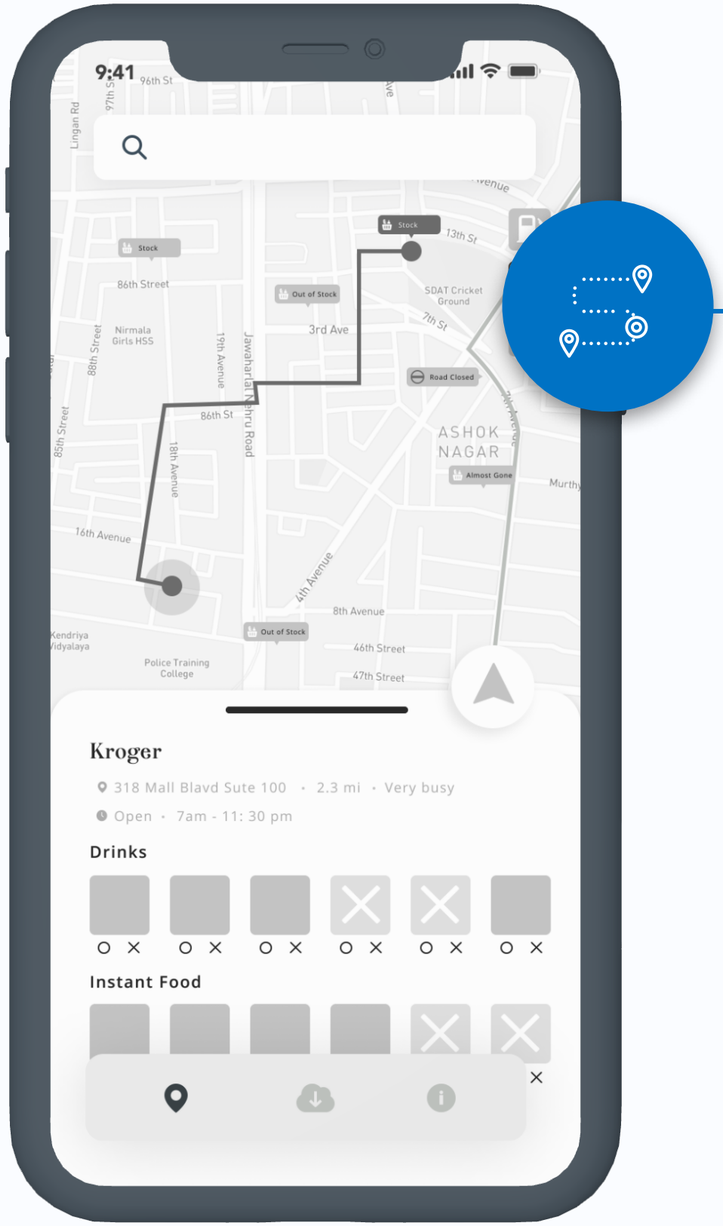


Map

Resource Tracking

Track availability of resources

- Community tracked pins on a map you click on to see what's available
- People put important information (ex:roadblocks) and others up or down vote

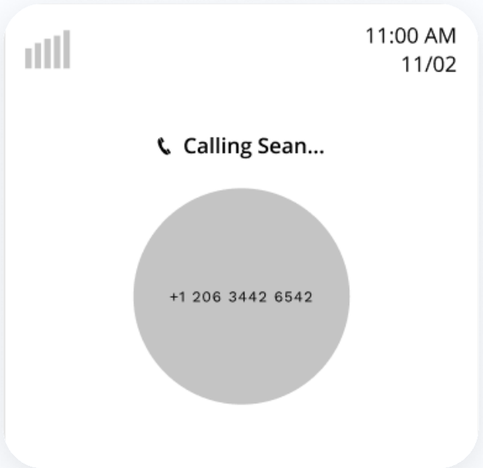


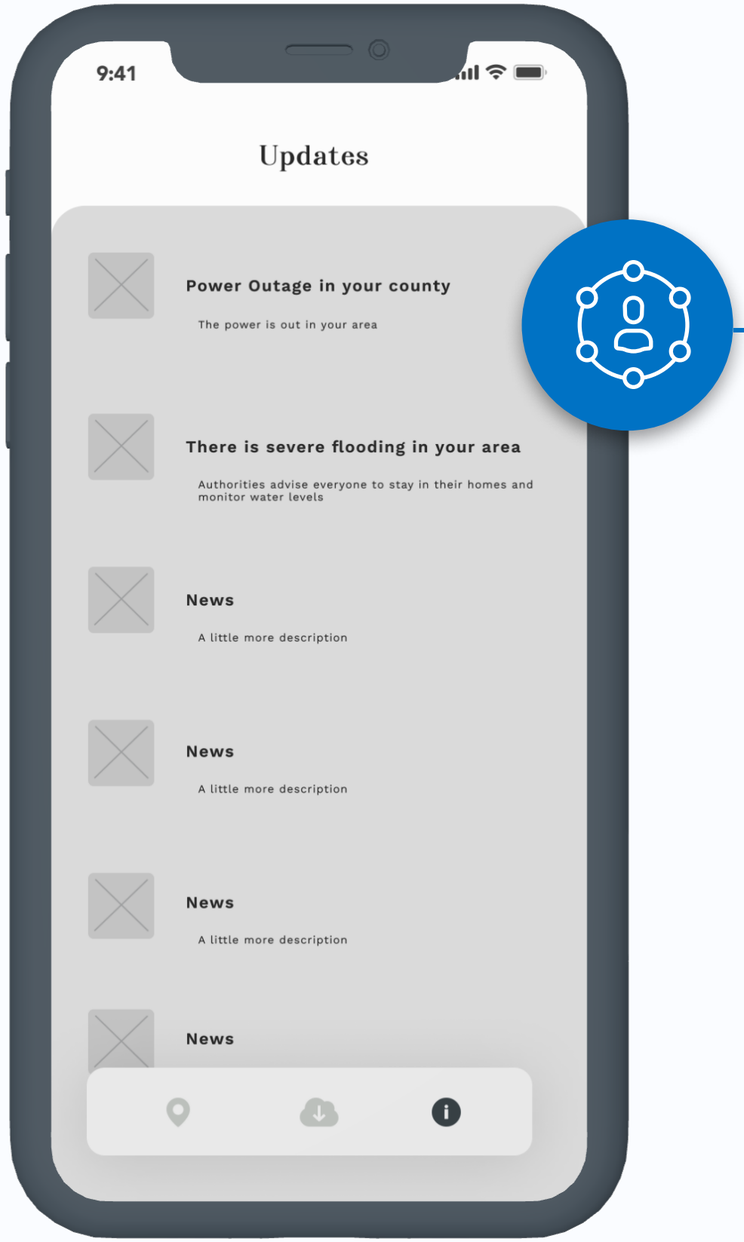
Communication

Communication

Providing reliable communication

- Ability to contact help and other users
- Reliable news updates on both the app and device





Satellite Communication

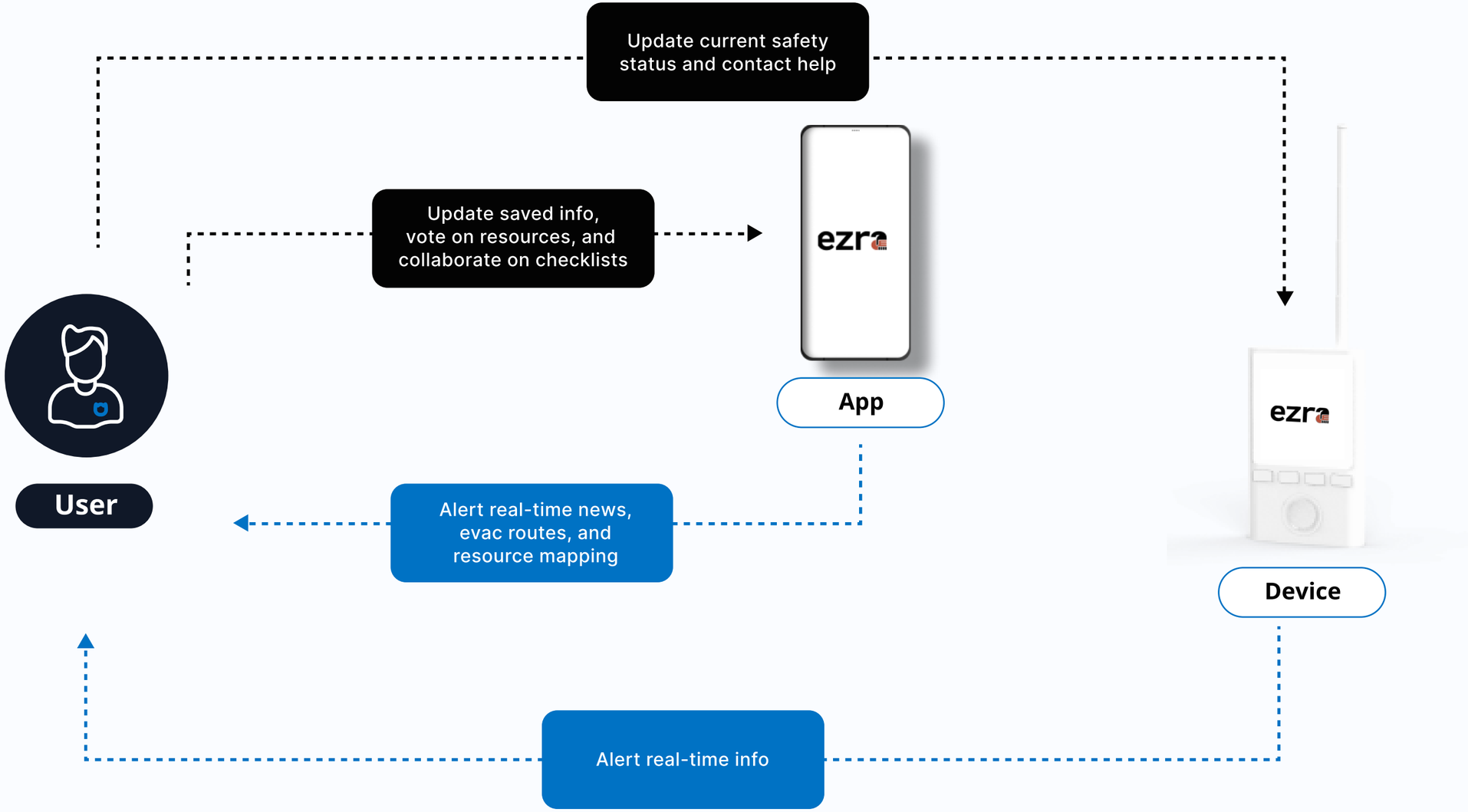
Satellite communication is point to point. They use micro waves which have higher frequencies than radio waves allowing satellites to concentrate all available power into a narrow beam and direct it to an exact point. This helps to reduce bandwidth meaning that they attain more bandwidth and therefore more communication.

- Satellite phones banned in several countries like India, China, and Russia and can be pricey.
- Communication companies provide modules which can be developed in collaboration with them to create a better experience for consumers

Ezra Features and Functions

Features	Functions	Connection to HMW
Prompt and save personal information	• Emergency contacts • Evacuation plans • Personal Information	HMW help people **prepare** and **plan** for natural disasters **effectively**?
Resource Tracking	• Community tracked pins on a map you click on to see what's available • People put important information (ex:roadblocks) and others up or down vote	HMW provide **centralized, trustworthy, concise** information in **real time**?
Providing reliable communication	• Ability to contact help and other users • Reliable news updates on both the app and device	HMW provide a **reliable, accessible, alternative** form of **communication**?

Ezra Interaction Model

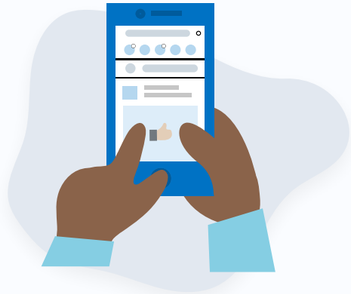


Monica's Journey with Ezra

Monica moved to Lake Charles. She's far away from home and is on her own for the first time.

After 2 weeks, she finds out a hurricane is coming. She opens the app to see what to do and add important information to her device. She also is able to find places in her area to get gas and supplies.

Ezra's app also gives her evacuation route suggestions that she can save onto her device.



Monica went to the grocery store Ezra suggested and was able to find everything she needed. She upvotes it to notify other users that it is a good place to go.

When Monica gets back home, she feels much more prepared and waits for the storm to hit.

After a while, the power goes out, but Monica isn't worried because Ezra notifies her with the latest, necessary information.

Once the hurricane passes, Ezra keeps her in the loop until she can rely on power and cell service again. She is able to send out an SOS alert to local organizations for help with repairs.

Eventually, the storm passes and Ezra let's her know where to get resources and keeps her informed about local organizations and volunteers that can help her.

Tech Research for Ezra

	Iridium Extreme	IsatPhone 2	Globalstar GSP-1700
Data Speed (Uncompressed)	2.4 Kbps	2.4 Kbps	9.6 Kbps
Coverage	Global	Global (Minus Poles)	Regional
Battery Life	4hr talk / 30hrs standby	8hr talk / 160hrs standby	4hr talk / 36hrs standby
Cost	$$$$	$$$	$$$

Ezra Business Model

KEY PARTNERS

- Natural Disaster hotlines
- 911
- Government
- Carriers

KEY RESOURCES

- Evacuation routes
- Resource availability
- Natural Disaster status

VALUE PROPOSITIONS

- Providing reliable updates and resources before, during, and after a disaster with contacts from close local helpers to family members

KEY ACTIVITIES

- Creating optimized evacuation routes
- Providing real time information
- Help users prepare for Natural Disasters

CUSTOMER RELATIONSHIPS

- Automated with personalization

CHANNELS

- County
- Personal Contacts
- Government

CUSTOMER SEGMENTS

- Freshly moved
- People who are not used to natural disasters
- Communities
- Single households
- 18-35

COST STRUCTURE

- Satellite Service
- GPS

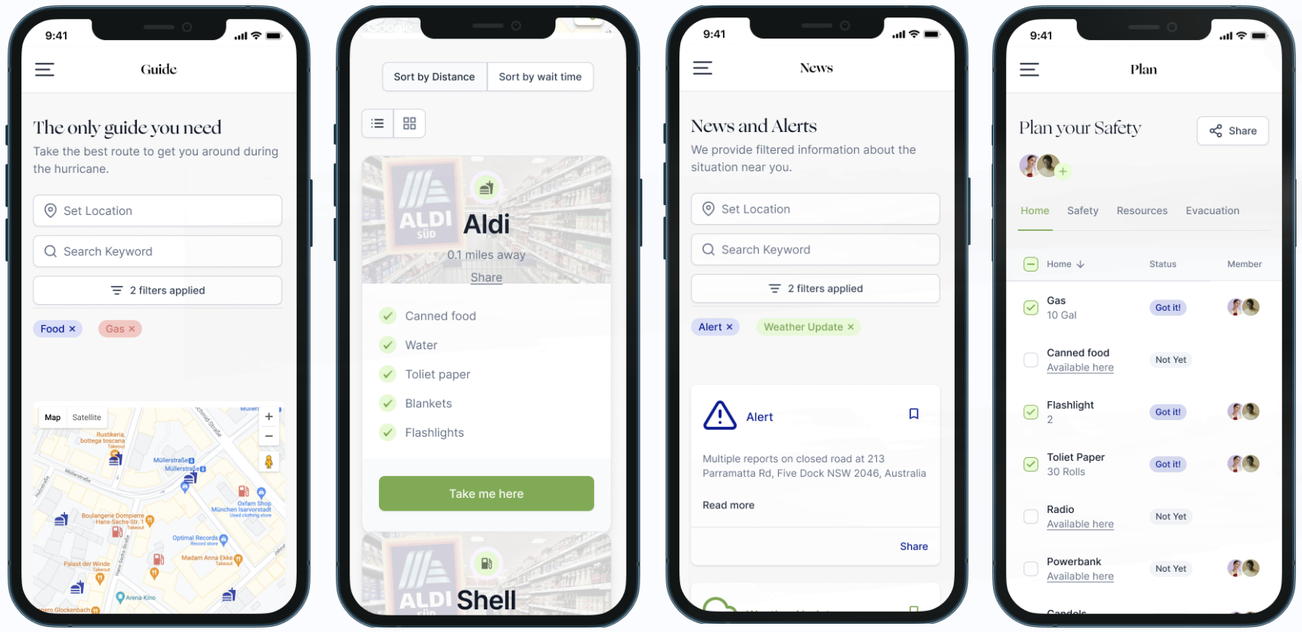
REVENUE STREAMS

- Product Advertisment

Ezra: Branding & Business

Meet Ezra

ezra

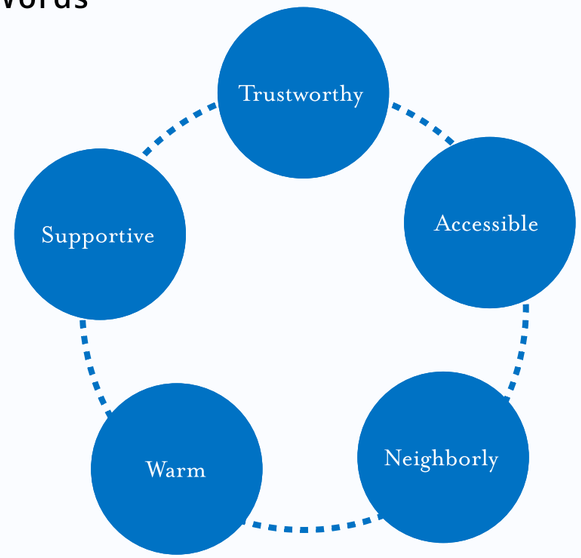


Ezra Branding

Why ezra ?

With inspiration from things like Alexa and Siri, we decided to give our product a human name to make it feel more personal. We want our user's to feel like they're always connected and have someone helping them, which is fitting since Ezra means helper or protector.

Key Words



Color Palette

#BC523C #DA958D #81AA56 #081B95

Typography

Ogg Medium:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 ! @ # $ % ^ & * ( ) _ + { } [ ] : " | ; ' \ < > , . ? /

Inter Regular:

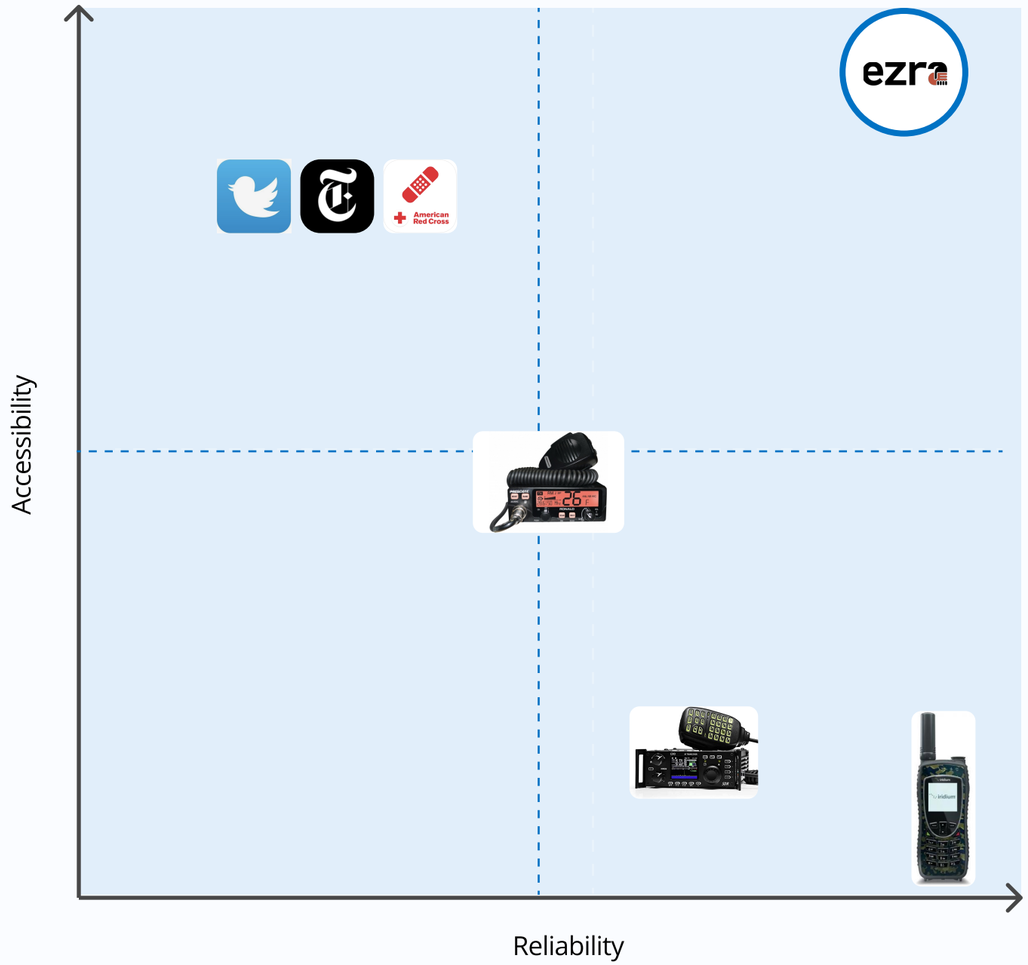
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 ! @ # $ % ^ & * ( ) _ + { } [ ] : " | ; ' \ < > , . ? /

Ezra Vs. Competitors

A reliable, cost-effective product that
provides accurate, real-time information
to help users navigate through natural disasters



Business Model

Key partners

- Natural Disaster hotlines
- 911
- Government Agencies
- Local community volunteers
- local disaster services

Motivations for Partnerships

- Optimization in spreading news and alerts
- Reduction of traffic
- Focus on people who really need help
- Expedited relief and recovery

Value propositions

- Risk reduction during a natural disaster
- Trustworthy and essential information only for users
- Reduce panic and worry by providing checklists for planning, up-to-date, reliable news based on location, and resource mapping
- Reliable form of communication to get help and stay in the loop
- Increased customization and improved usability from current solutions

Key activities

- Platform to connect with necessary resources
- services that can help users go through natural disasters smoothly.
- Providing streamlined information based on location and need

Key resources

- Physical product (ezra)
- Intellectual resources, such as data collection and filtering news
- Human resources; reliable communication to emergency contacts and local resources

Customer relationships

- Co-Creation:

  Interactive map where users can create a better experience, for example voting on whether a store has important resources people are looking for

- Community:

  Radio and app connect users to local community for help, updates, and safety

Customer Segments

Mass market:

People who are not used to going through natural disasters, live far away from support network, want specific disaster guidance, or live alone

Communities using Ezra for help and safety

Channels

- Partner channels: Local disaster services, natural disaster hotlines, resource distribution locations
- Website

Cost structure

- Value driven (focused on value creation)
- Product material: Rubber silicon: $5.8/Kg
- Product screen electronic ink screen: $19/Per screen

Revenue streams

- Dynamic pricing:

  -advertising (digital - social media, news, magazines)

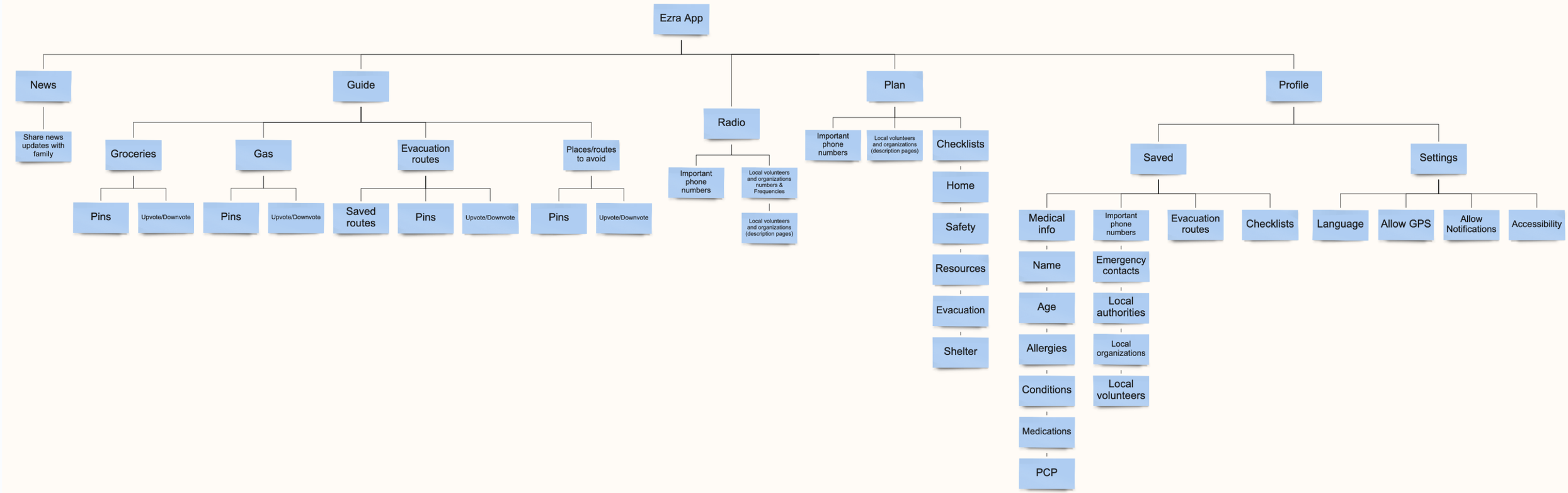
  -Return of Investment (ROI) is estimated at 20% if sales grew by $200 and spent $1000 on marketing

- Fixed pricing:

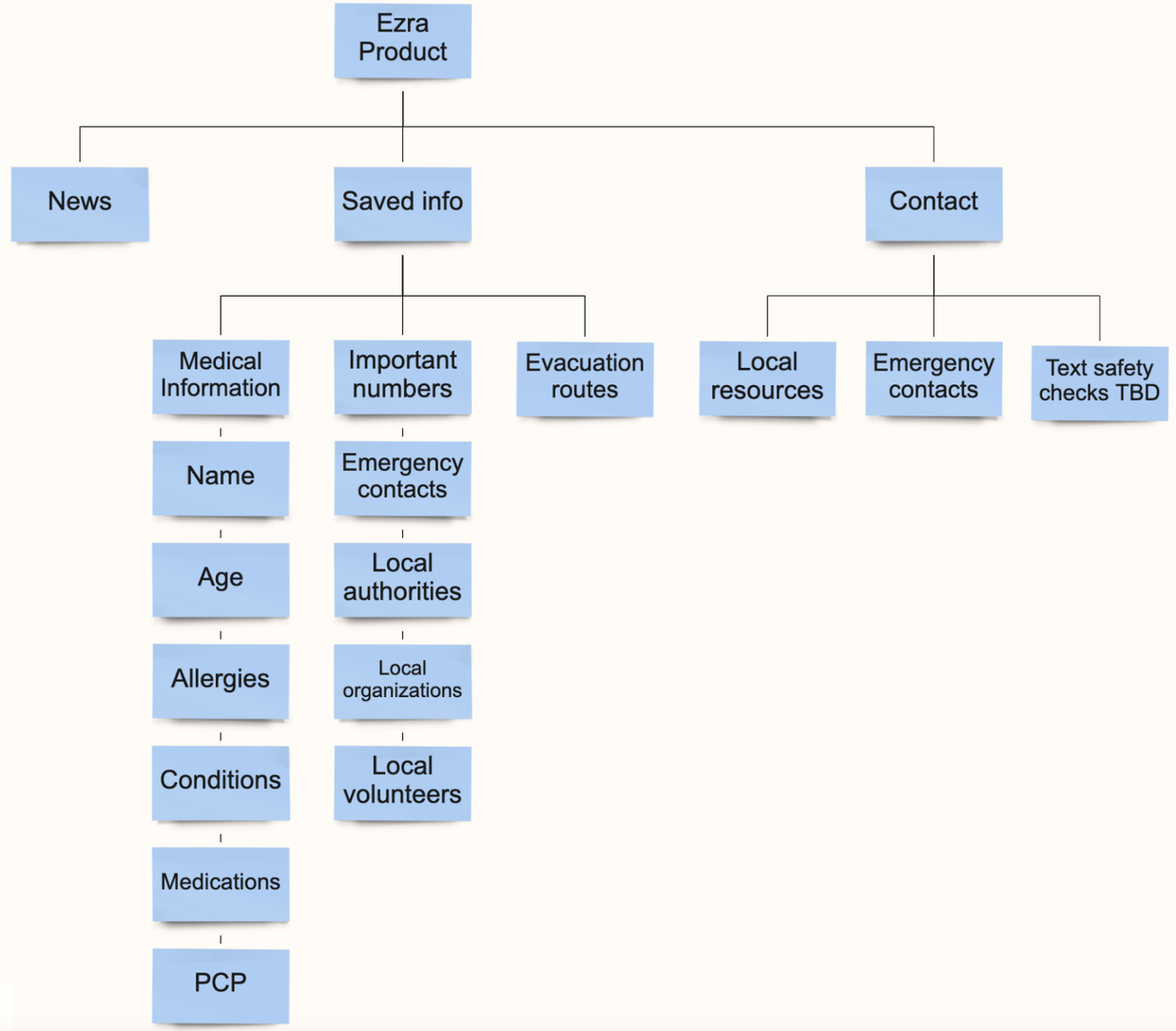
  -Asset sale/List price: $50 Ezra product

Ezra: Mid-fi

Ezra App Sitemap

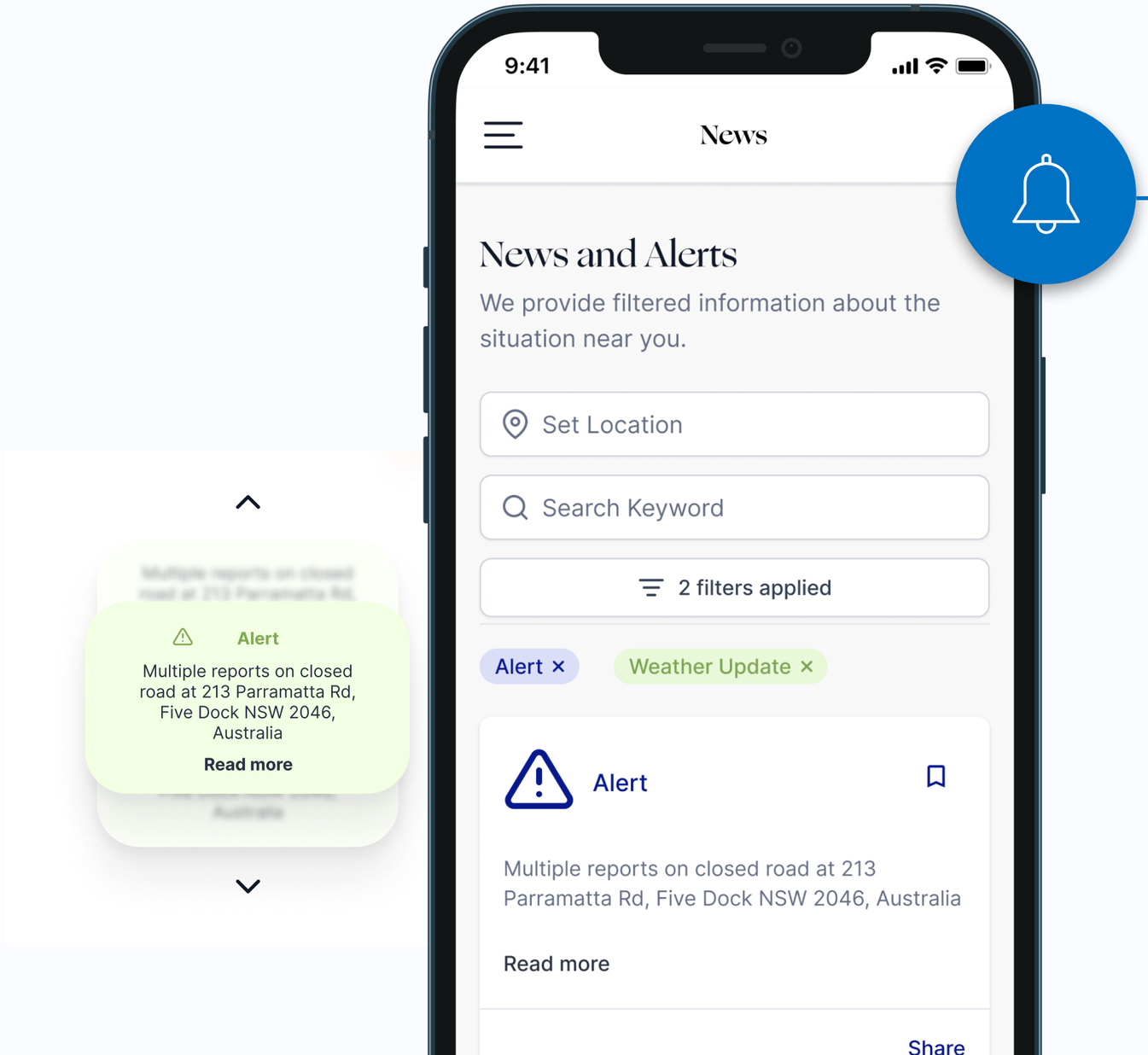


Ezara Device Sitemap



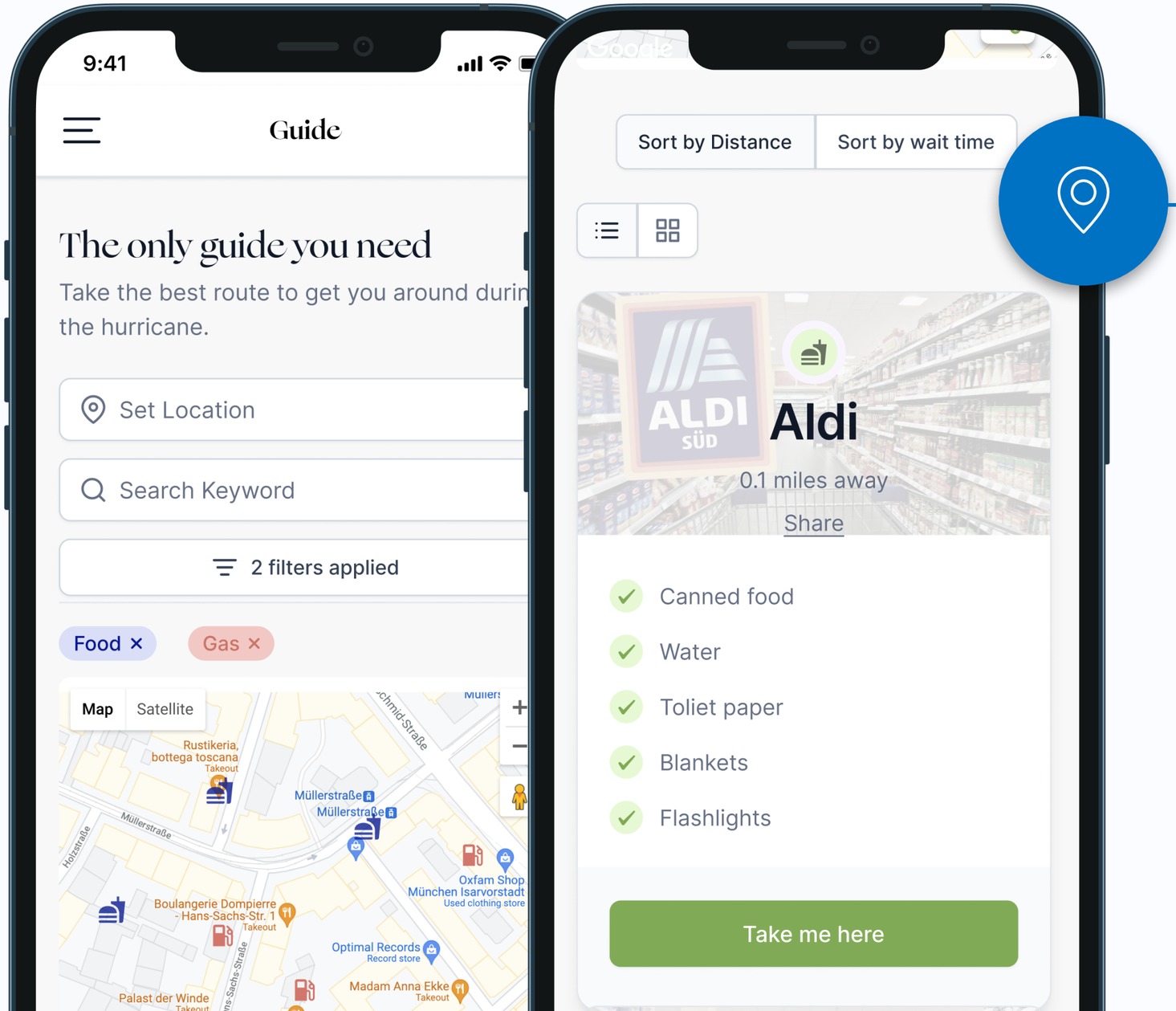
News Updates

Users recieve up-to-date news alerts on both the app and device



Guide

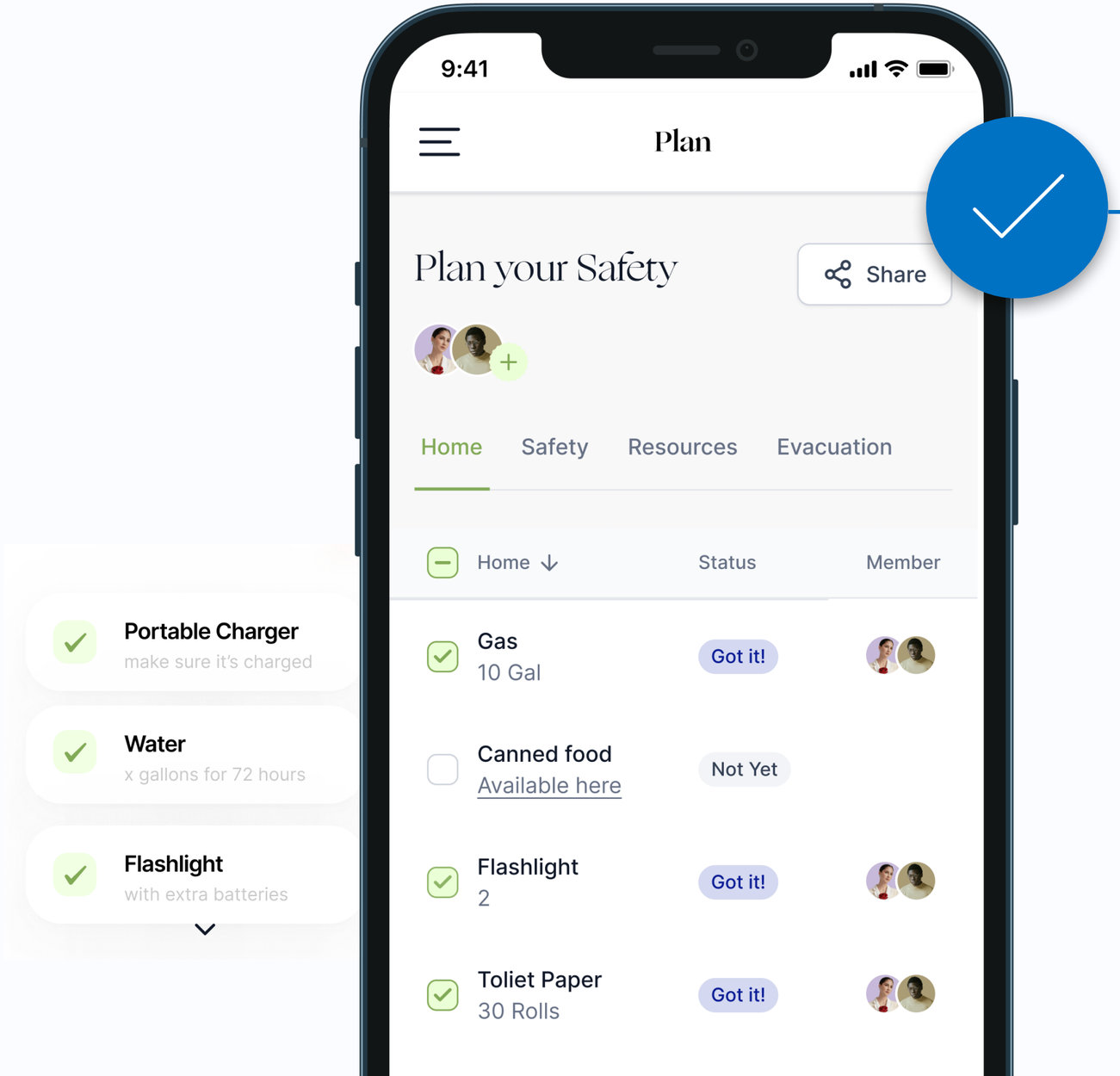
With the guide, users can find necessary resources in their area vetted by members of the community



Planning Checklists

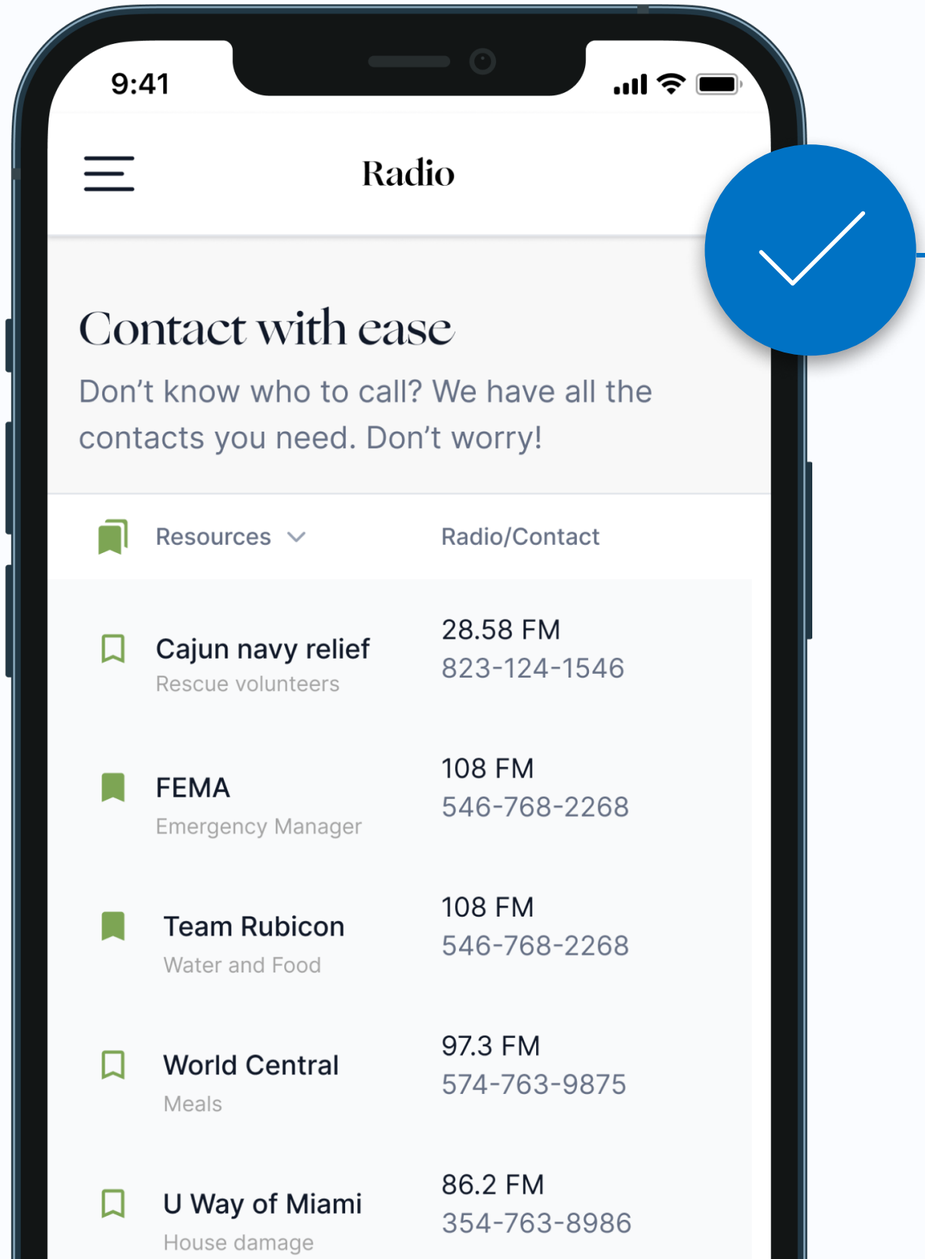
Ezra provides users with checklists to help them plan. These lists can be shared with others and saved to the ezra device for reference

- Home:
  - Put tarp on roof, etc.
- Safety:
  - Don’t use generator inside, etc.
- Resources:
  - Flashlights, water, etc.
- Evacuation:
  - Have a full tank of gas, etc.



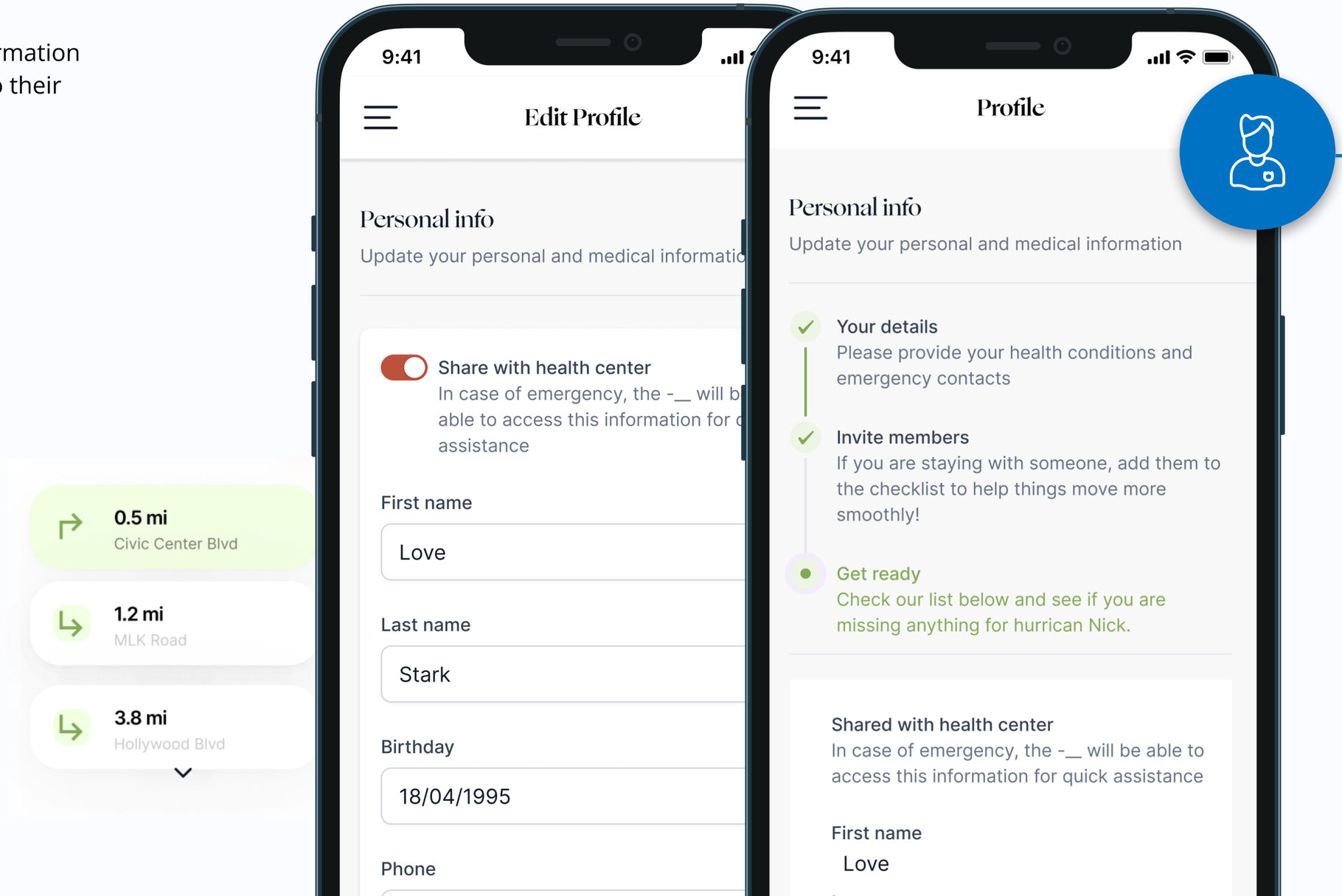
Planning Checklists

Ezra also gives users the phone numbers and frequencies for local disaster organizations that can help in an emergency



Profile

Users can save important information to their profile and save it onto their Ezra device



Radio

The Ezra devices also allows allows for radio communication to get emergency help or just stay in contact with others

Connection to HMW

Connection to HMW	Features
HMW provide **centralized, trustworthy, concise** information in **real time**?	• News Updates • Guide
HMW help people **prepare** and **plan** for natural disasters **effectively**? HMW help people get the **resources** and **information** they need before and after a disaster?	• News Updates • Guide • Checklists
HMW provide a **reliable, accessible, alternative** form of communication? HMW **connect people** with local volunteers and organizations for **help** and **information**?	• Radio

Ezra: Mid-fi User Testing

Goals

9 User Testings

The goal of this UT is to gain insight on potential users.
We want to learn more about what the users want to see on your app (their satisfaction with the content of the app

4. Do you think there is unnecessary information?

Method

The method for this usability testing is going to be a 1:1 user interview. We'll be using figma for visuals. The researcher will be observing virtually through zoom.

Below is a list of the participants.

Conductor	Name	Participant Number	Participant Details
Mikayla	Danyal Facemyer	P1	Film Producer 23 Atlanta, GA
Mikayla	Katsy Garcia	P2	Visual Designer 26 Austin, TX
Tang	Sammy Evans	P3	SCAD Student 21 Omaha, Nebraska
Tang	George Lee	P4	University of South Carolina Beaufort Student 24 Charlotte, NC
Jiyoung	Woolin Jung	P5	VFX 28 Savannah, GA
Jiyoung	SoYoung Park	P6	Animation 25 Savannah, GA
Sathvik	Ajay eluri	P7	Scad Alumni 28 Dallas,TX

Observations

The following is what we observed from users during our testing.

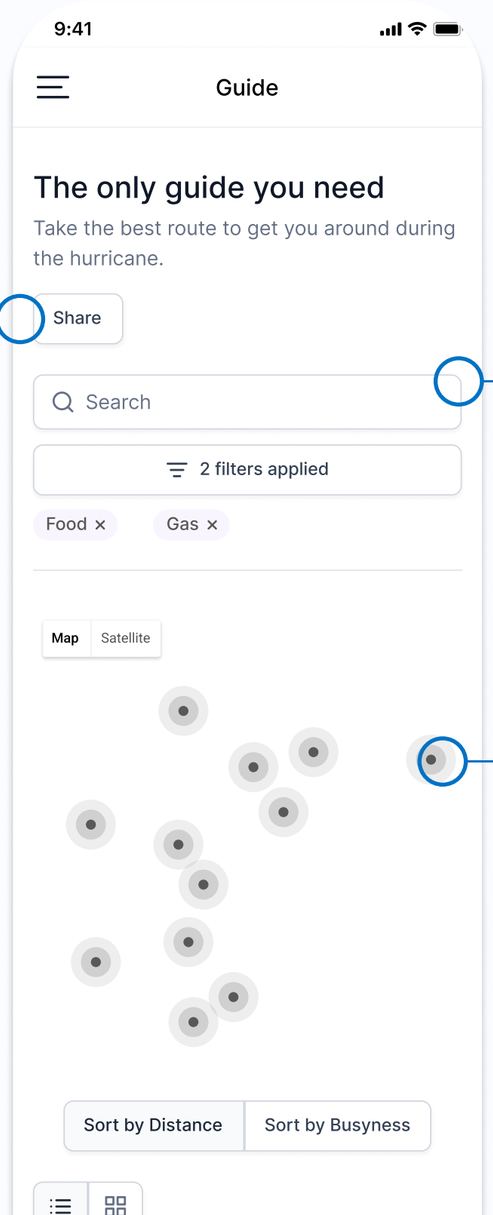
	P1	P2	P3	P5	P6	%
~~e.g. Did not notice the recently deleted icon next to travel history~~	✅	❌	✅			66%
Did not understand the benefit of using this app bc apple watch has simmilar function, and can search those info through other apps.				✅	❌	80%
Was confused with uploading file info on Profile. (need explanation what kind of file he should drop)				✅	❌	100%
Want to see more information and description about which organization/ health center will receive the info				✅	❌	66%
Did not understand why search bar on the map is under the map				✅	❌	33%
						100%
						33%
						66%
						33%

Results

The user testing resulted in the following results.

	P1	P2	P3	P4	P5	P6	P7
O1: What do you think this screen is about? What is your first impression? (Not about colors or ui, this is not the completed version.)	Add comment				It's looks fine, but little confusion on map. Wanted to know which screen would be the first screen ppl see.	it looks great, and clear what those pages are about	Looks good would like to see more options to add things customize
O2: Explain each screen they are looking at							
O3: Opinions after hearing the explanation					Did not understand the benefit of using this app and device as he can search them through other apps or internet. Want to have a button to share his location and share the situation like sending he is safe and update status on the home screen. Provide more beneficial function to ppl who do not want to purchase the product and only use the app. Wanted to know what it provides for those ppl.	Satisfied. Think it has great function because lots of ppl live alone and don't know how to prepare for the natural disaster. Want to have button on the screen to directly call 911 for urgent situation.	
S1: Any other information that should be added?					Profile • Hair color, Skin tone/color- might need more detail about appearance for very urgent situation. Explanation of file	Profile • GPS for current location. If stays at one place and do not move, want to alert ppl or 911 automatically.	profile • if the address section is text but would recommend to have a link or point it out in the map.

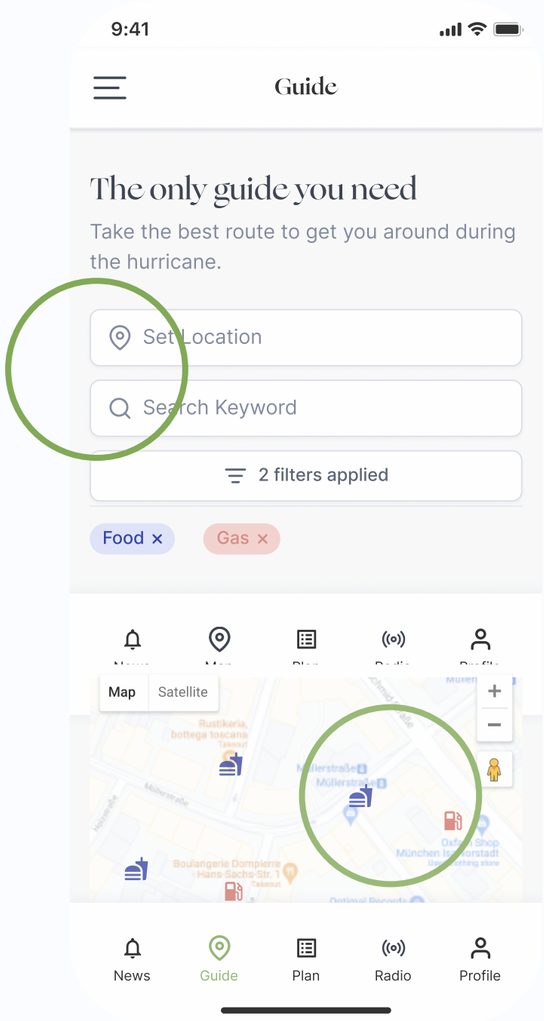
Guide



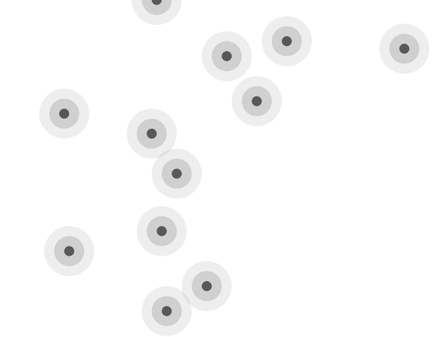
Different sharing options.

More search options

Clear visualization



Guide



Sort by Distance | Sort by Busyness

Improve keyword

Add more information

Aldi

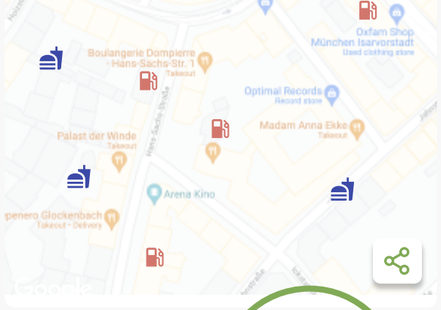
Top rated by users

- Canned food
- Water
- Toliet paper
- Blankets
- Flashlights

Take me here

Shell

- Gas



Sort by Distance | Sort by wait time

Aldi

0.1 miles away

Share

- Canned food
- Water
- Toliet paper
- Blankets
- Flashlights

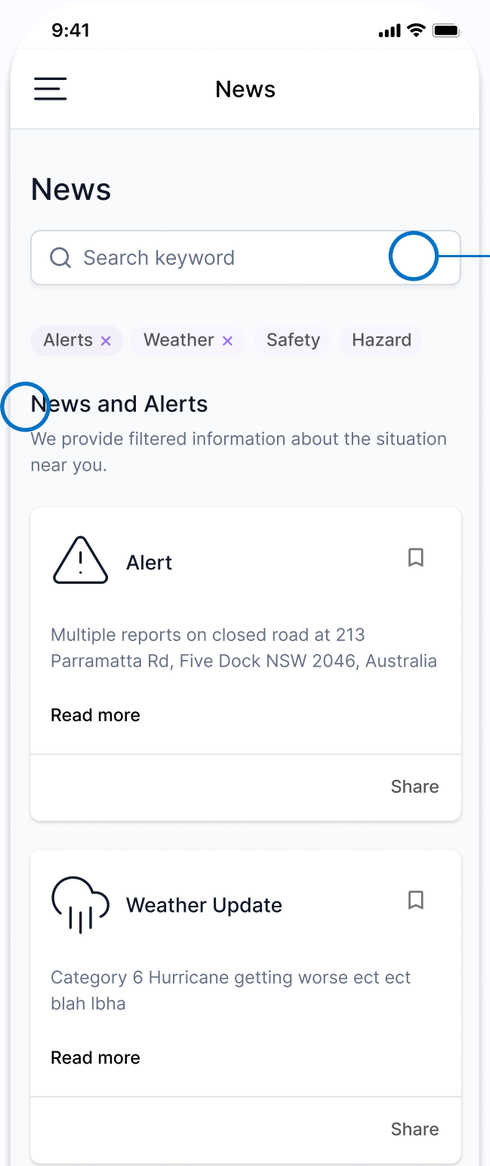
Take me here

Shell

0.5 miles away

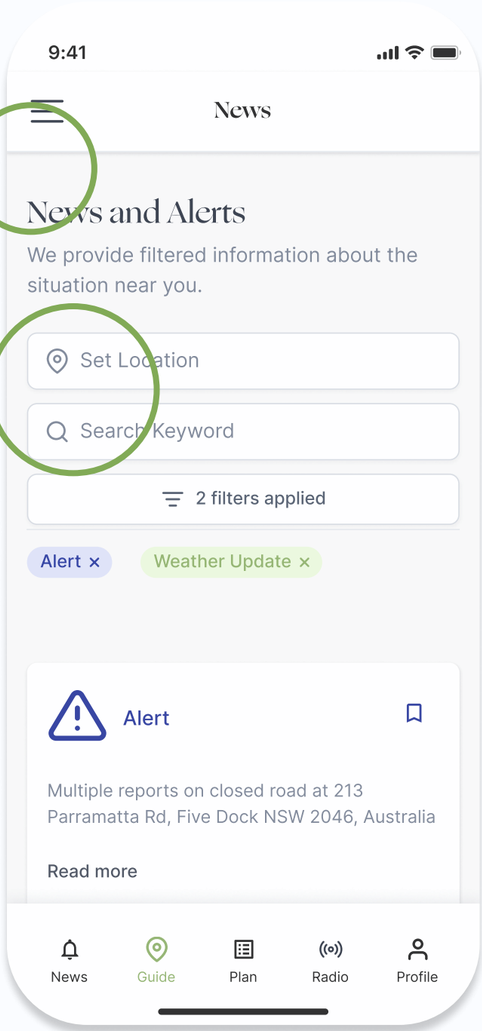
Share

News

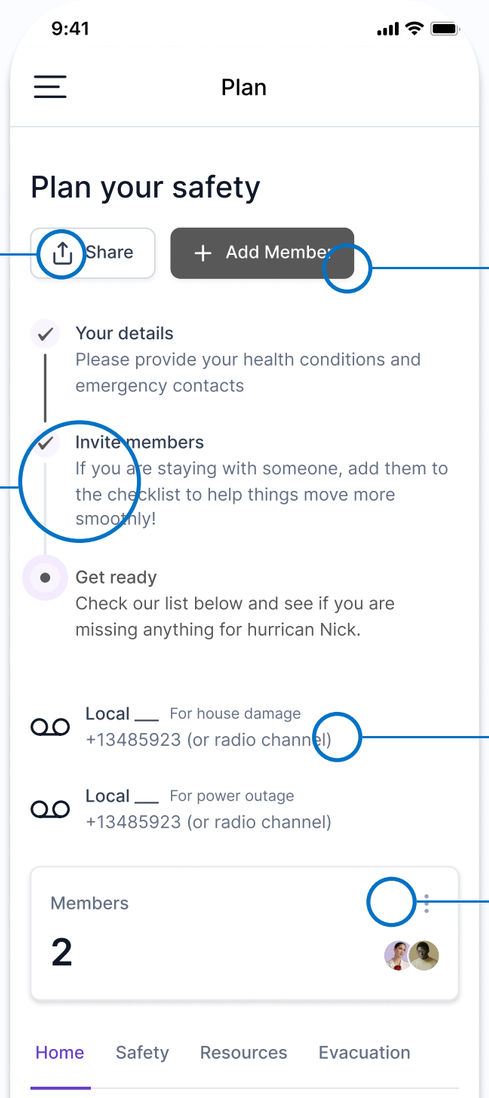


More search options

Inconsistancy in design



Plan



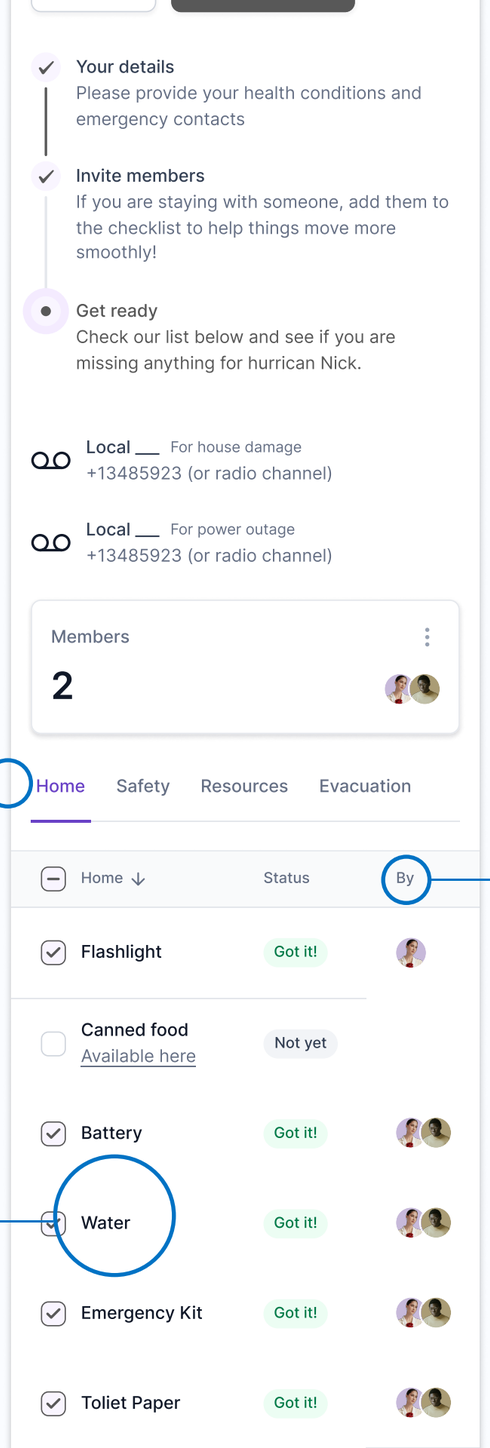
Misleading icon

Confusing button placement

Irrelevant information

Information overload concerns

Sizing

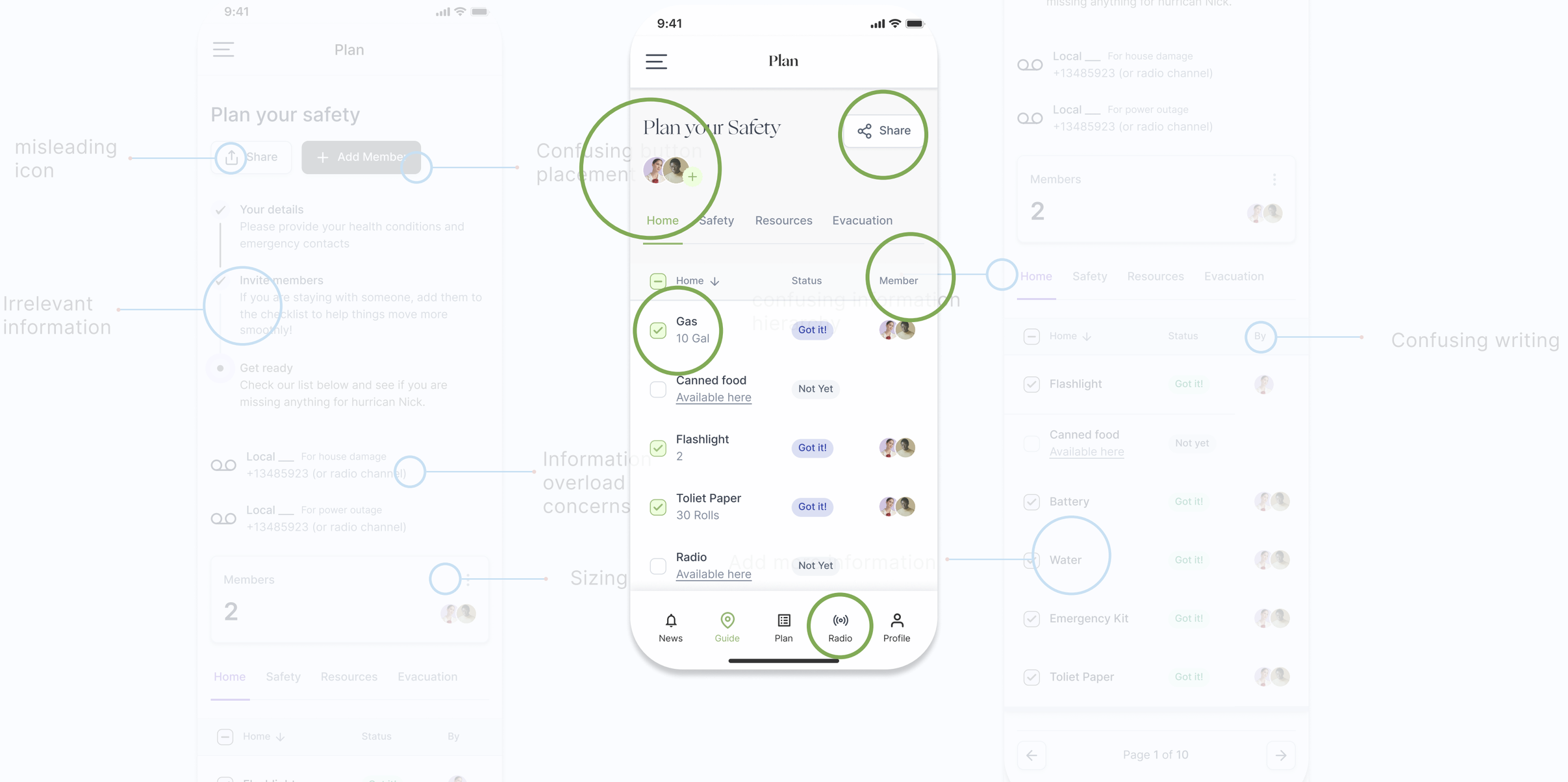


Confusing information hierarchy

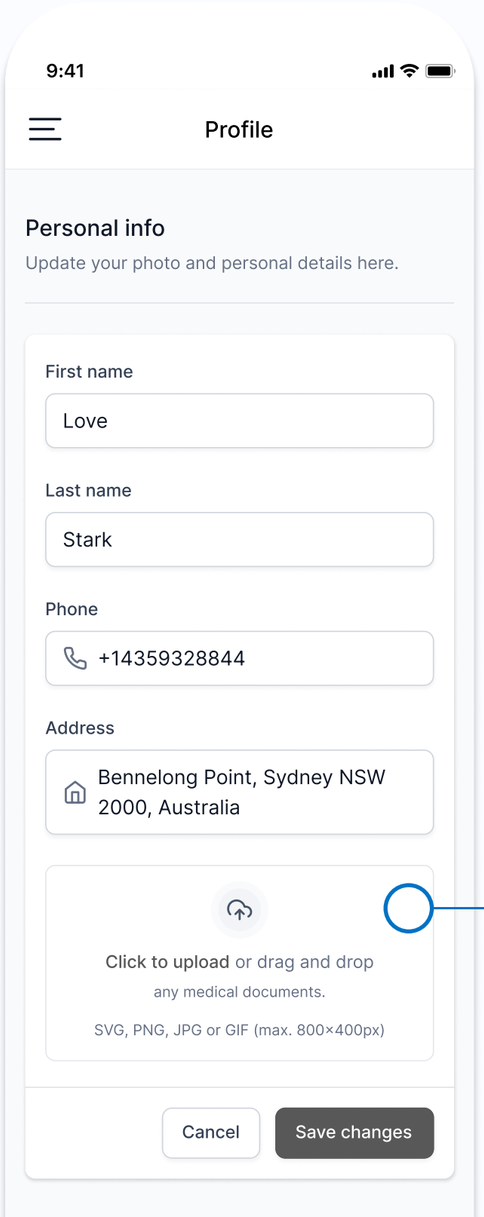
Confusing writing

Add more information

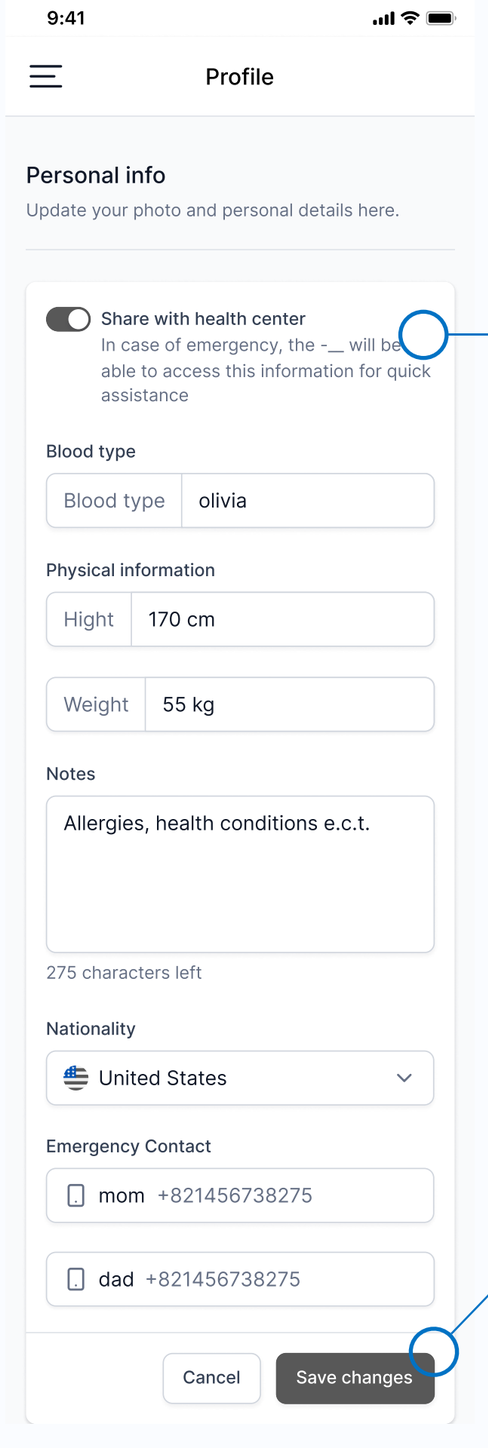
Plan


9:41
Plan
Plan your safety
Share
Add Member
Your details
Please provide your health conditions and emergency contacts
Invite members
If you are staying with someone, add them to the checklist to help things move more smoothly!
Get ready
Check our list below and see if you are missing anything for hurrican Nick.
Local For house damage
+13485923 (or radio channel)
Local For power outage
+13485923 (or radio channel)
Members
2
Home
Safety
Resources
Evacuation
Home
Status
By
Flashlight
Got it!
Canned food
Available here
Not yet
Battery
Got it!
Water
Got it!
Emergency Kit
Got it!
Toliet Paper
Got it!
Page 1 of 10
misleading icon
Irrelevant information
Confusing button placement
Information overload concerns
Sizing
Confusing writing
Plan your Safety
Share
Home
Safety
Resources
Evacuation
Home
Status
Member
Gas
10 Gal
Got it!
Canned food
Available here
Not Yet
Flashlight
2
Got it!
Toliet Paper
30 Rolls
Got it!
Radio
Available here
Not Yet
News
Guide
Plan
Radio
Profile

Profile



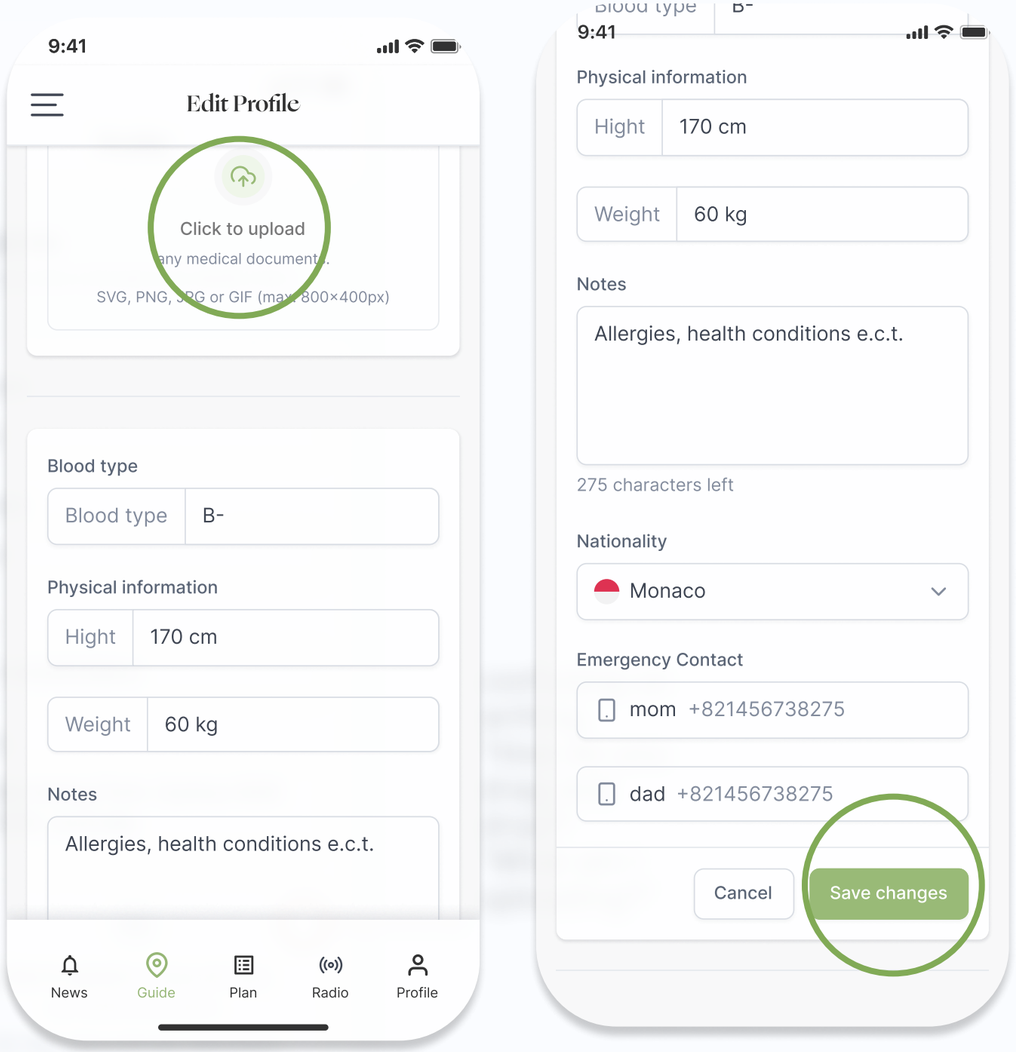
Misleading instructions



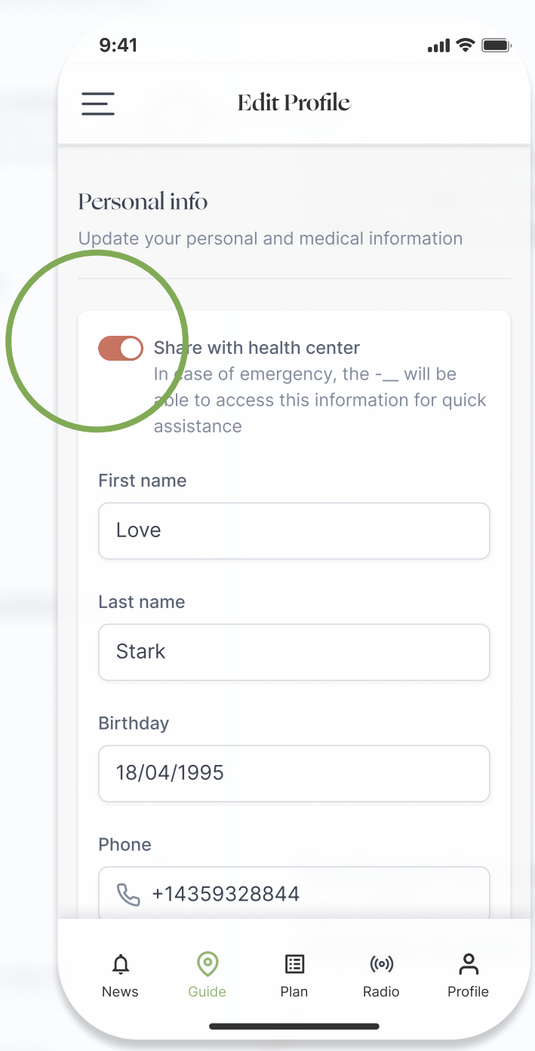
Change in information hierarchy

Confusing layout

Profile


9:41
Edit Profile
Click to upload
any medical document.
SVG, PNG, JPG or GIF (max. 800×400px)
Blood type
Blood type
B-
Physical information
Hight
170 cm
Weight
60 kg
Notes
Allergies, health conditions e.c.t.
News
Guide
Plan
Radio
Profile

9:41
Blood type
B-
Physical information
Hight
170 cm
Weight
60 kg
Notes
Allergies, health conditions e.c.t.
275 characters left
Nationality
Monaco
Emergency Contact
mom +821456738275
dad +821456738275
Cancel
Save changes


9:41
Edit Profile
Personal info
Update your personal and medical information
Share with health center
In case of emergency, the -__ will be
able to access this information for quick
assistance
First name
Love
Last name
Stark
Birthday
18/04/1995
Phone
+14359328844
News
Guide
Plan
Radio
Profile

Ezra to Node

Ezra to Node

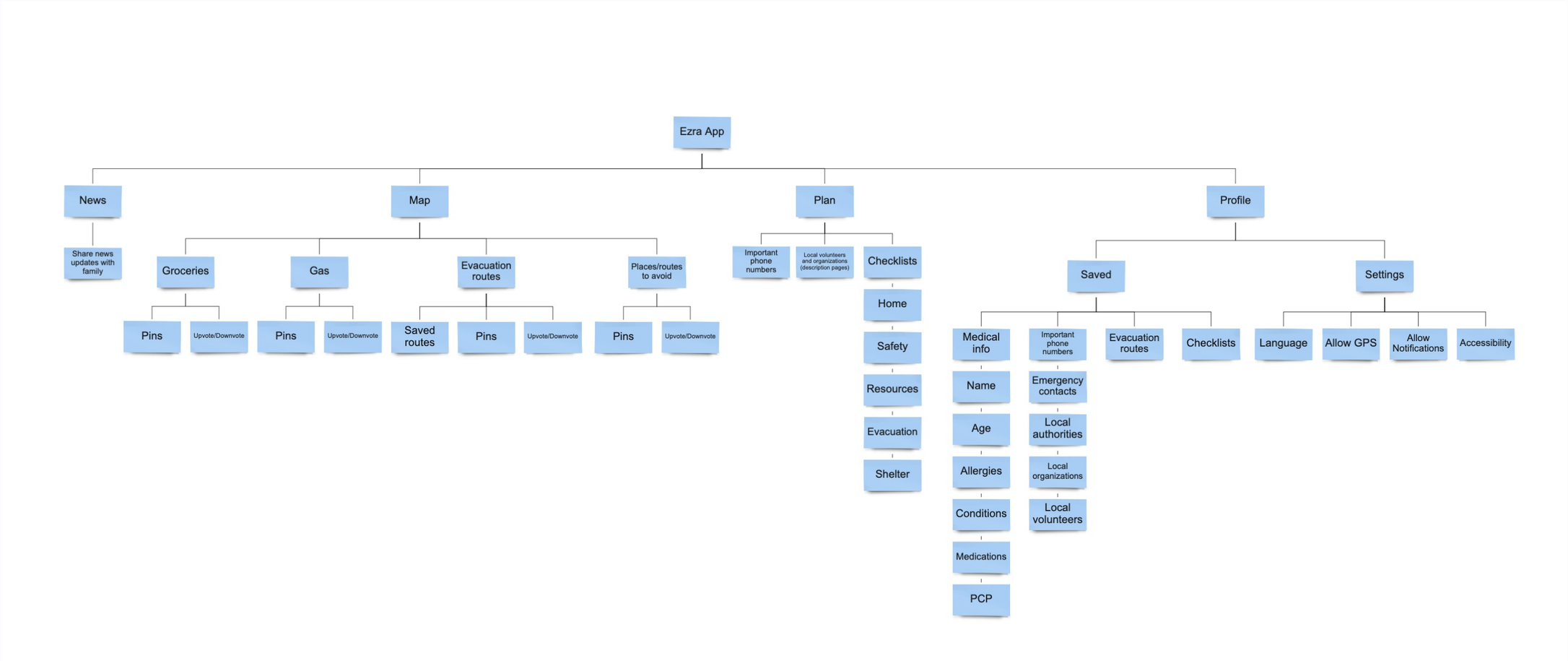
ezra → Node( )

After recieving feedback, we realized Ezra had too many features. Therefore, we decided to cut the excess and focus on core features that are most significant in natural disaster communication

Final Concept: Node

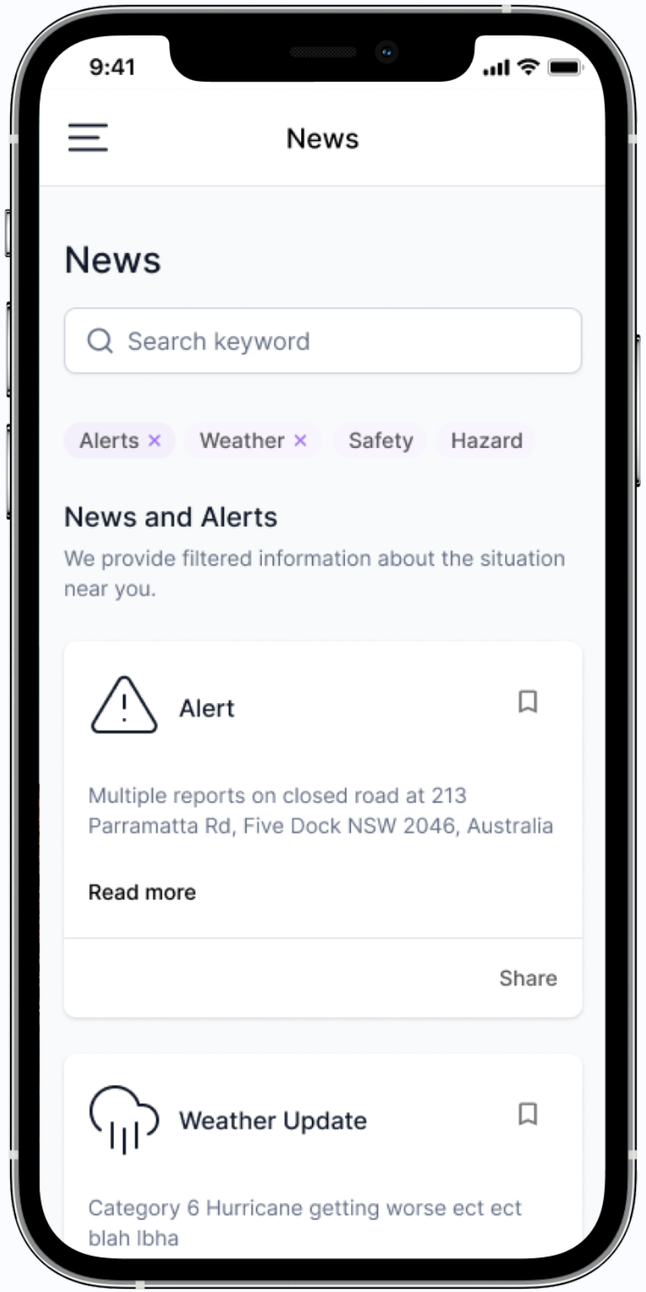
Node: App Lo-fi

App Sitemap (Lo-Fi)

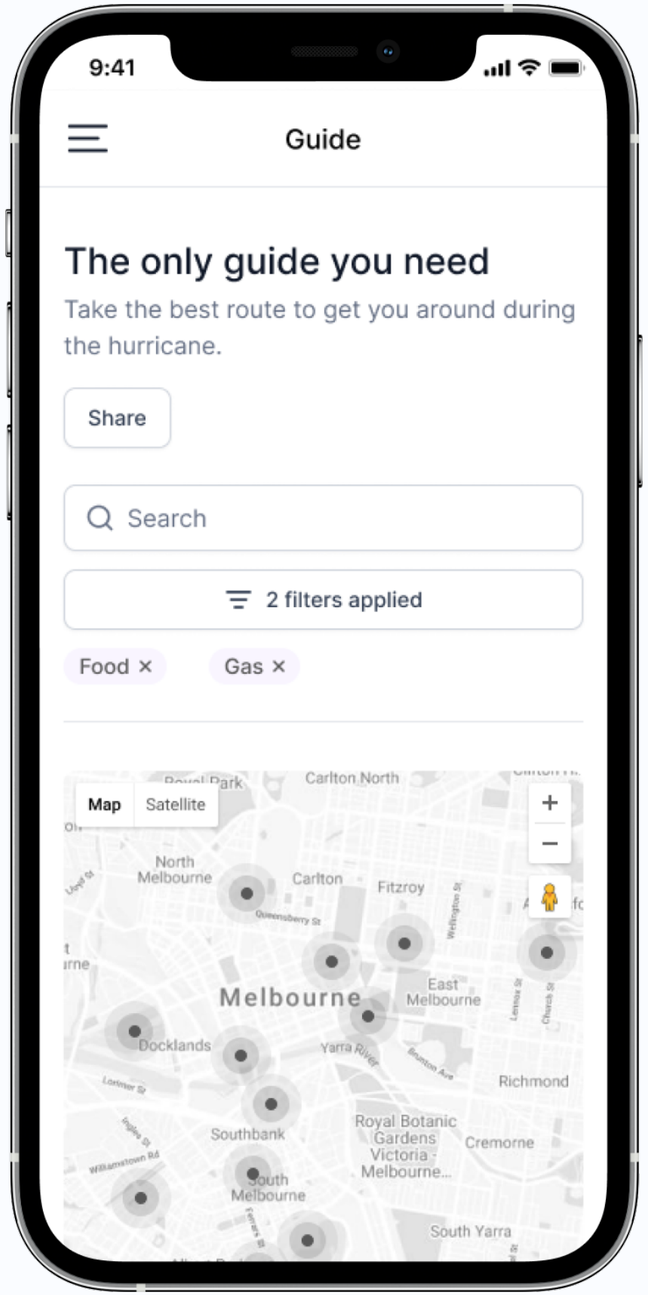


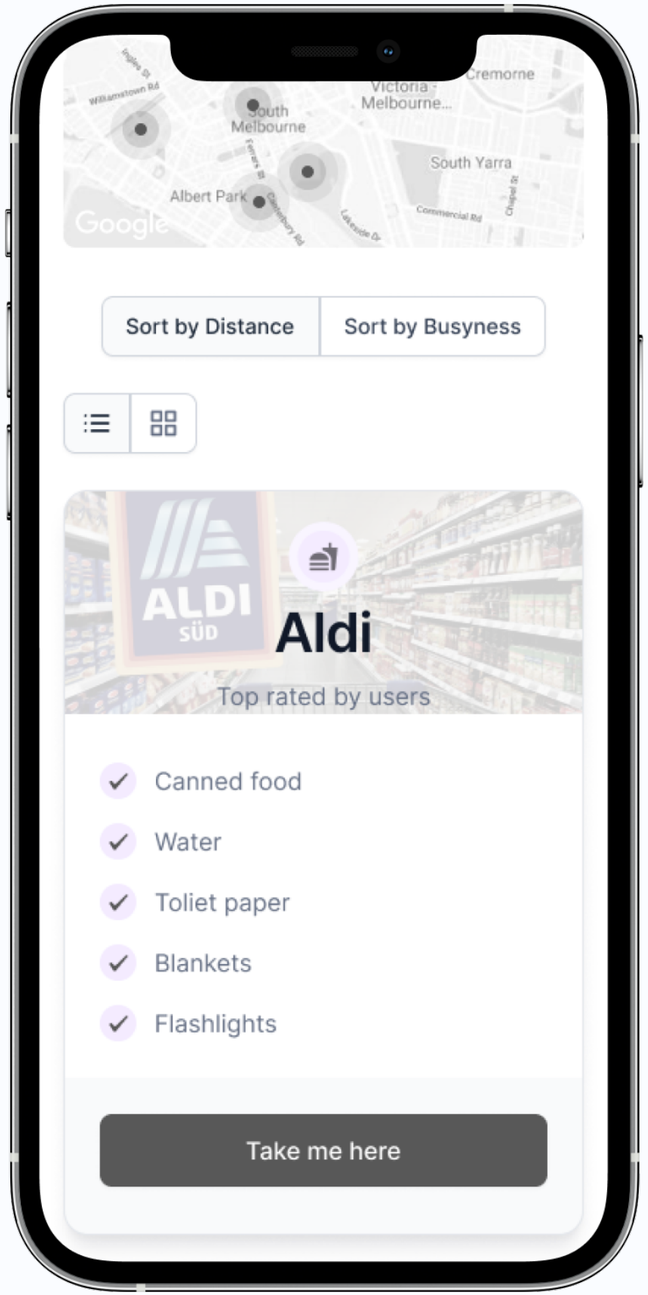
Node application

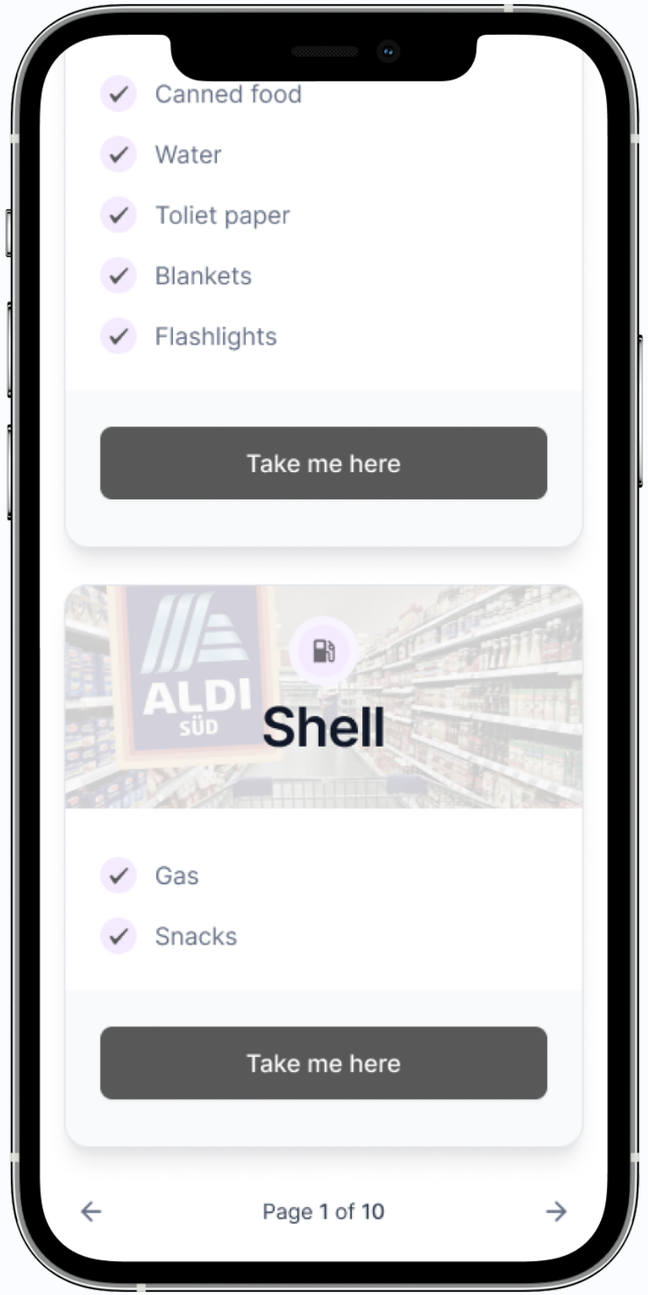
News Updates (Lo Fi)



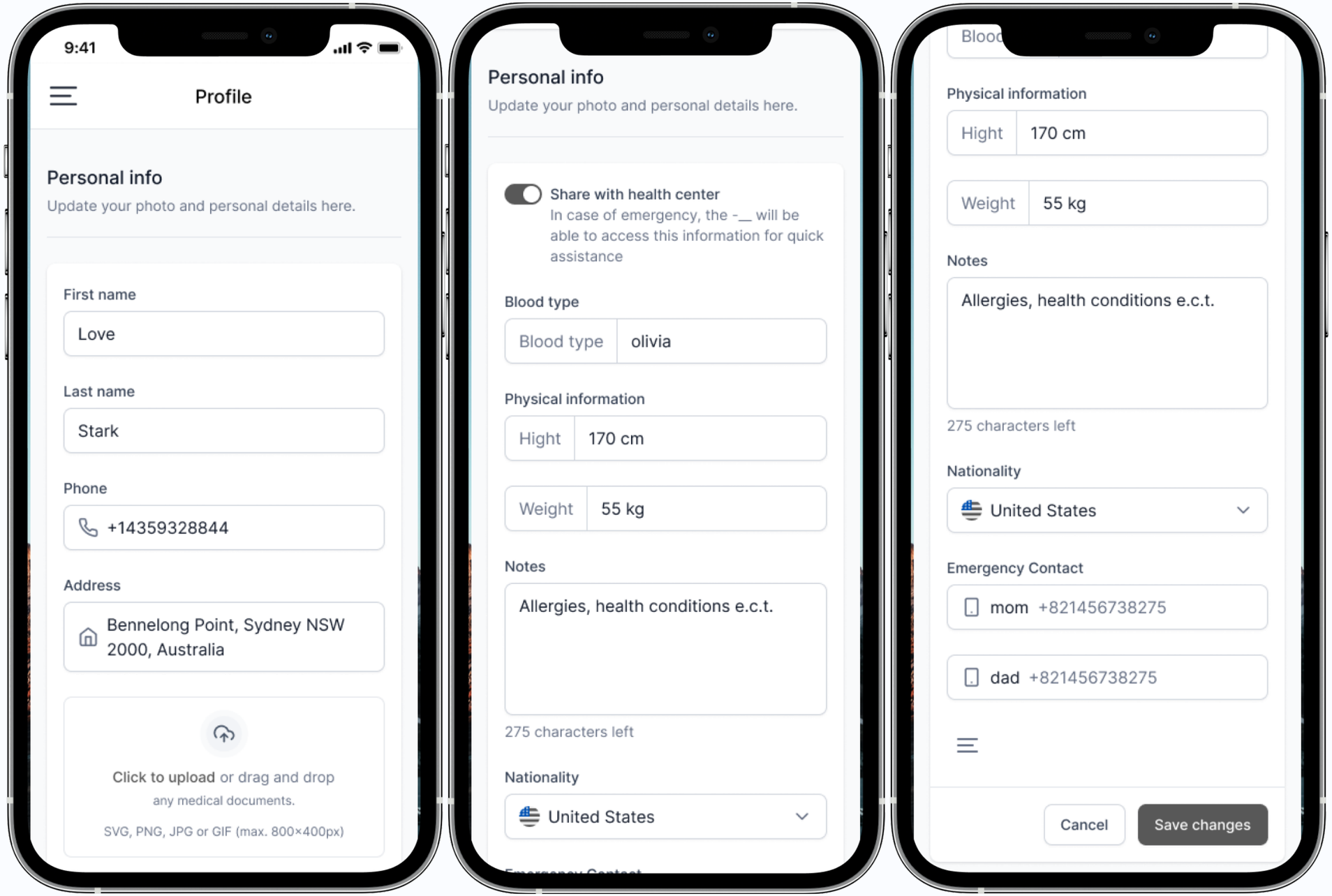
Guide


9:41
Guide
The only guide you need
Take the best route to get you around during the hurricane.
Share
Search
2 filters applied
Food ×
Gas ×
Map
Satellite
Carlton North
North Melbourne
Carlton
Fitzroy
Melbourne
East Melbourne
Docklands
Richmond
Southbank
Royal Botanic Gardens Victoria - Melbourne...
Cremorne
South Melbourne
South Yarra


Cremorne
Victoria - Melbourne...
South Melbourne
South Yarra
Albert Park
Google
Sort by Distance
Sort by Busyness
ALDI SÜD
Aldi
Top rated by users
Canned food
Water
Toliet paper
Blankets
Flashlights
Take me here

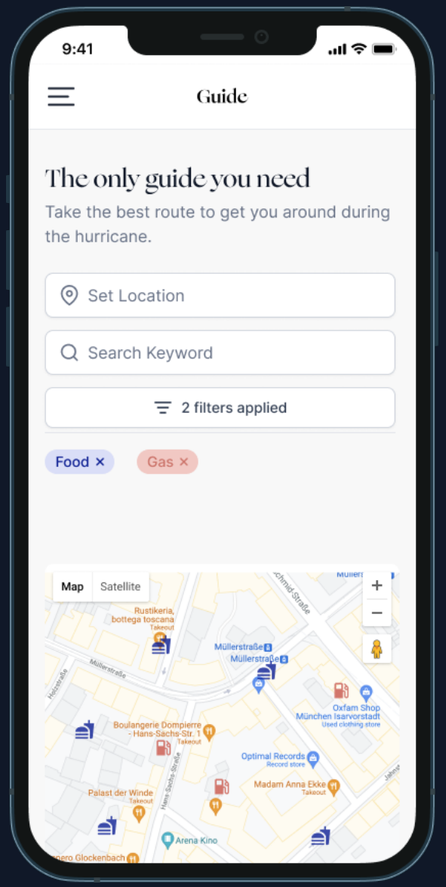

Canned food
Water
Toliet paper
Blankets
Flashlights
Take me here
ALDI SÜD
Shell
Gas
Snacks
Take me here
Page 1 of 10

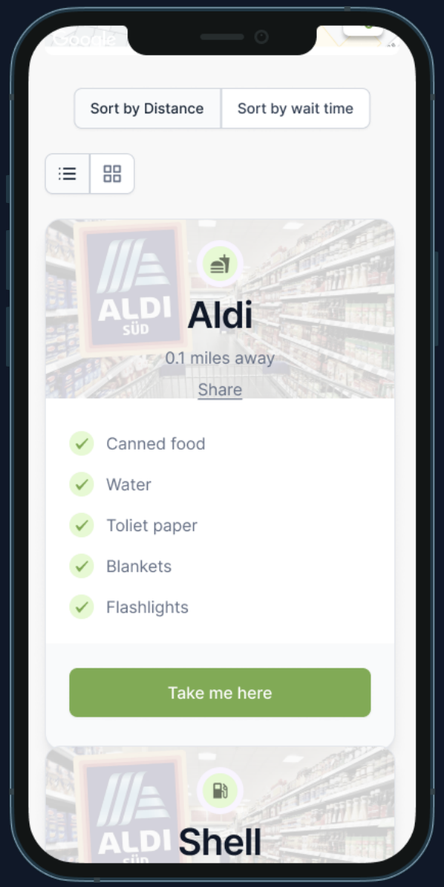
Profile

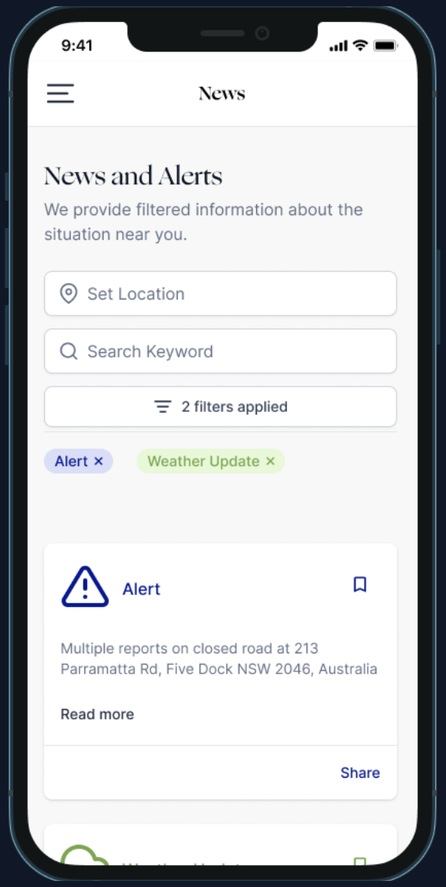

9:41
Profile
Personal info
Update your photo and personal details here.
First name
Love
Last name
Stark
Phone
+14359328844
Address
Bennelong Point, Sydney NSW 2000, Australia
Click to upload or drag and drop
any medical documents.
SVG, PNG, JPG or GIF (max. 800×400px)
Personal info
Update your photo and personal details here.
Share with health center
In case of emergency, the -__ will be able to access this information for quick assistance
Blood type
Blood type
olivia
Physical information
Hight
170 cm
Weight
55 kg
Notes
Allergies, health conditions e.c.t.
275 characters left
Nationality
United States
Blood
Physical information
Hight
170 cm
Weight
55 kg
Notes
Allergies, health conditions e.c.t.
275 characters left
Nationality
United States
Emergency Contact
mom +821456738275
dad +821456738275
Cancel
Save changes

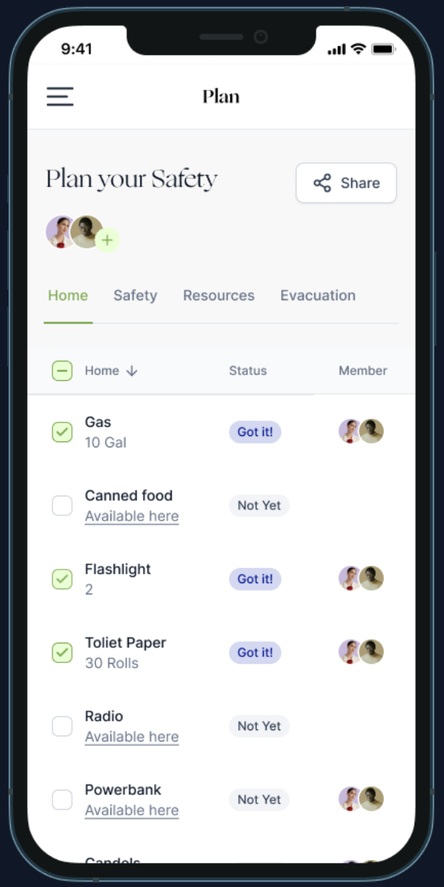
Node: App Mid-fi

News Updates & Guide



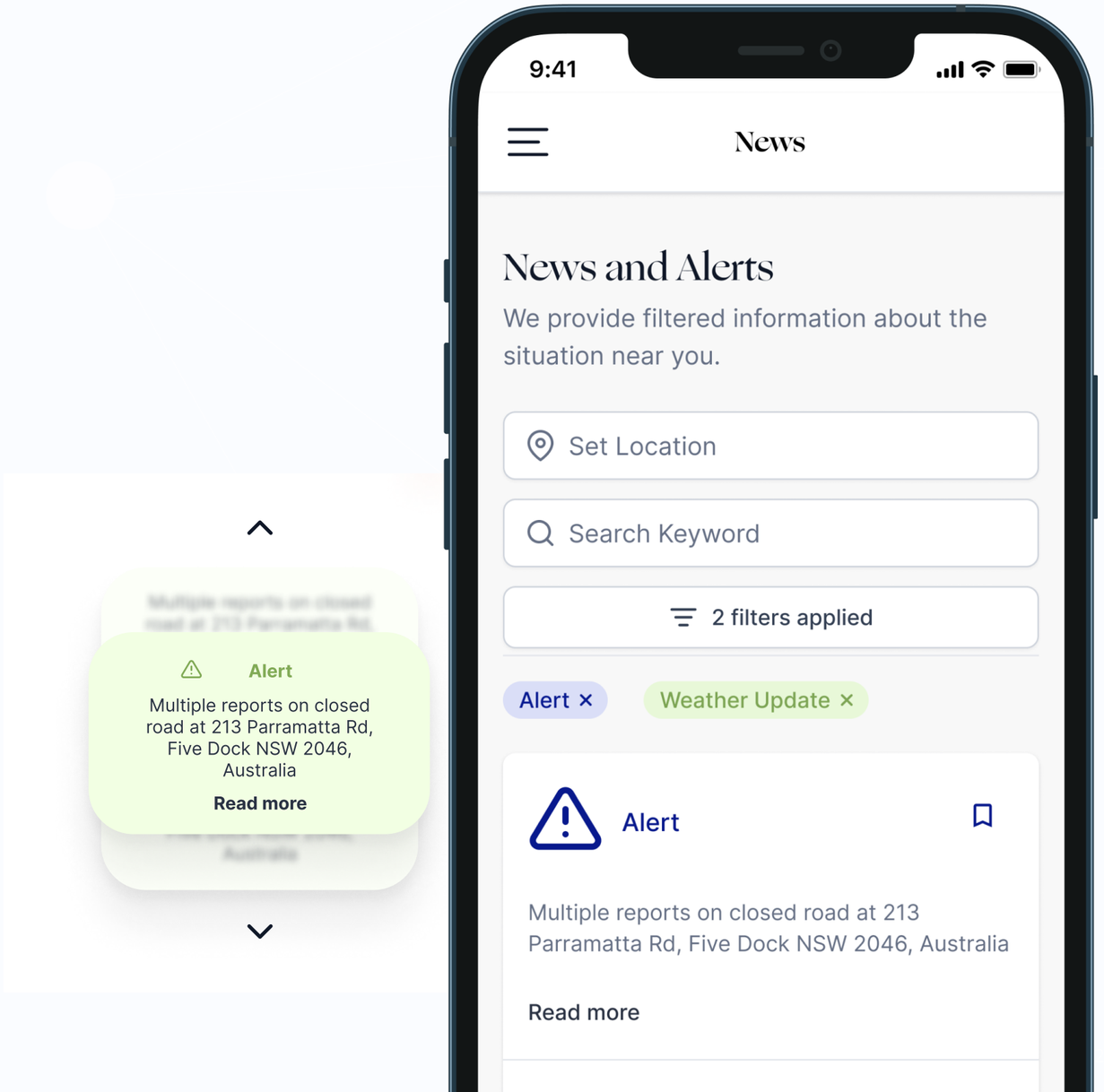






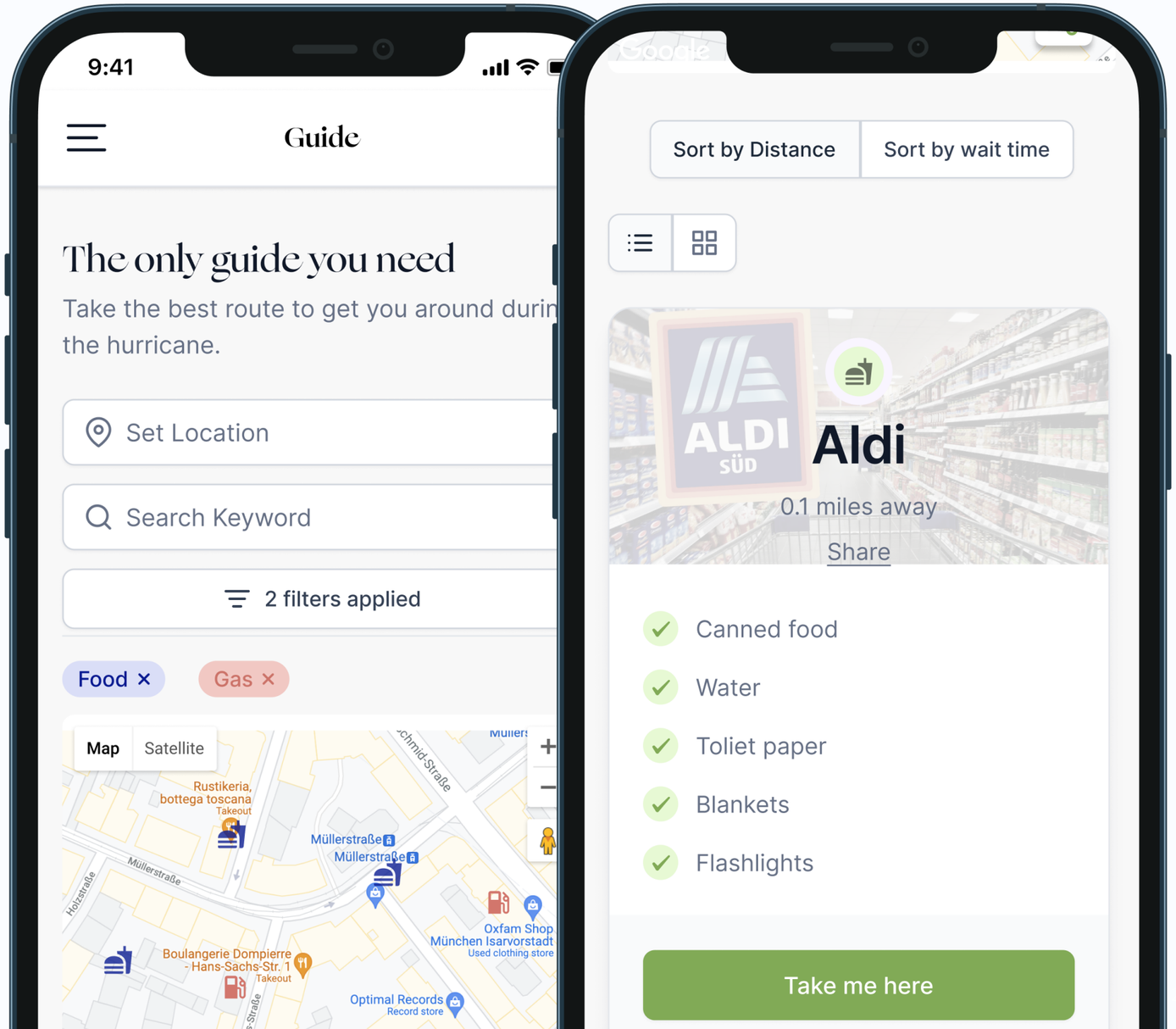
News Updates

Recieve **up-to-date news alerts**
on both the app and device



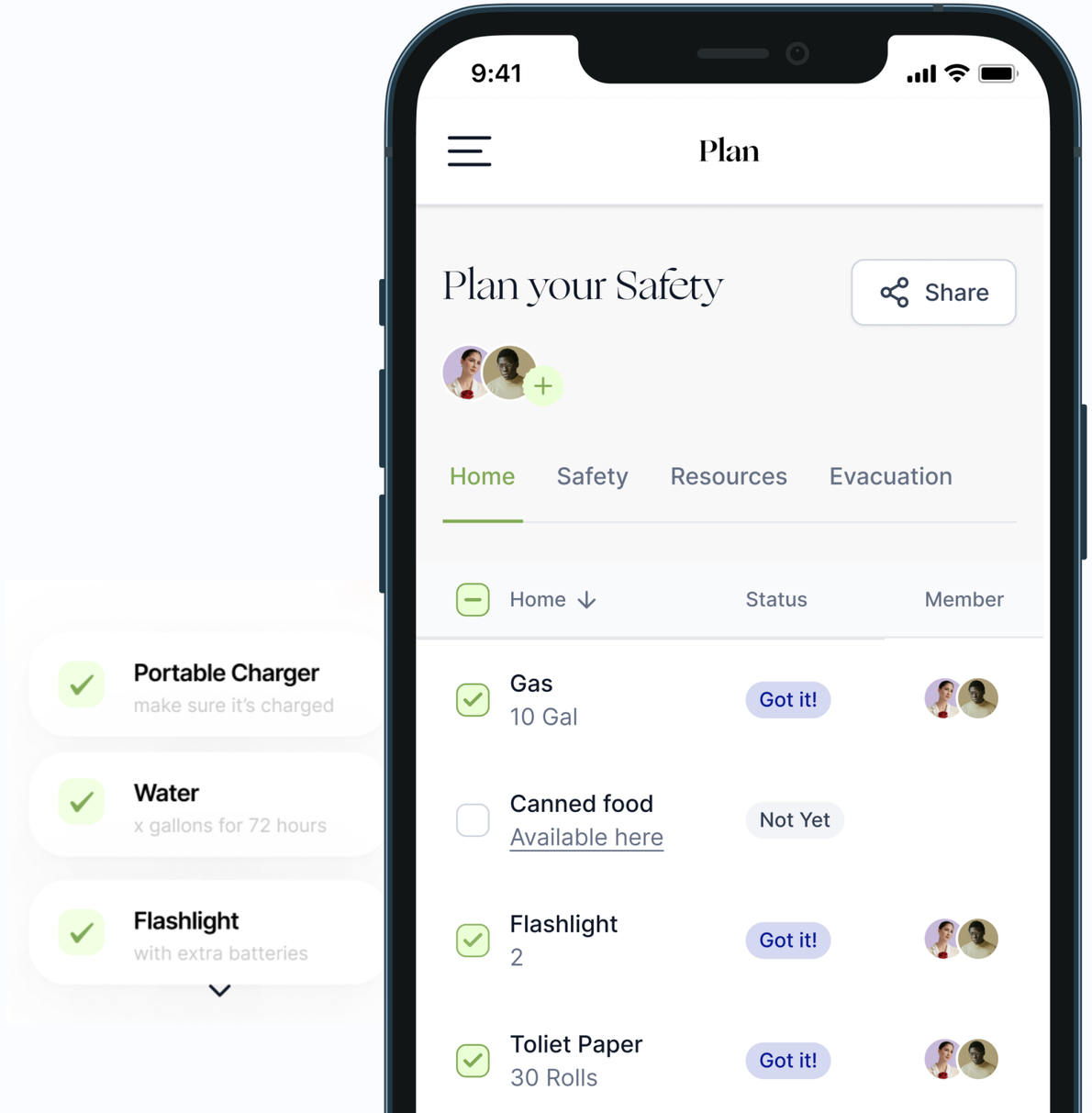
Guide

Find necessary resources in their area vetted by **members of the community**



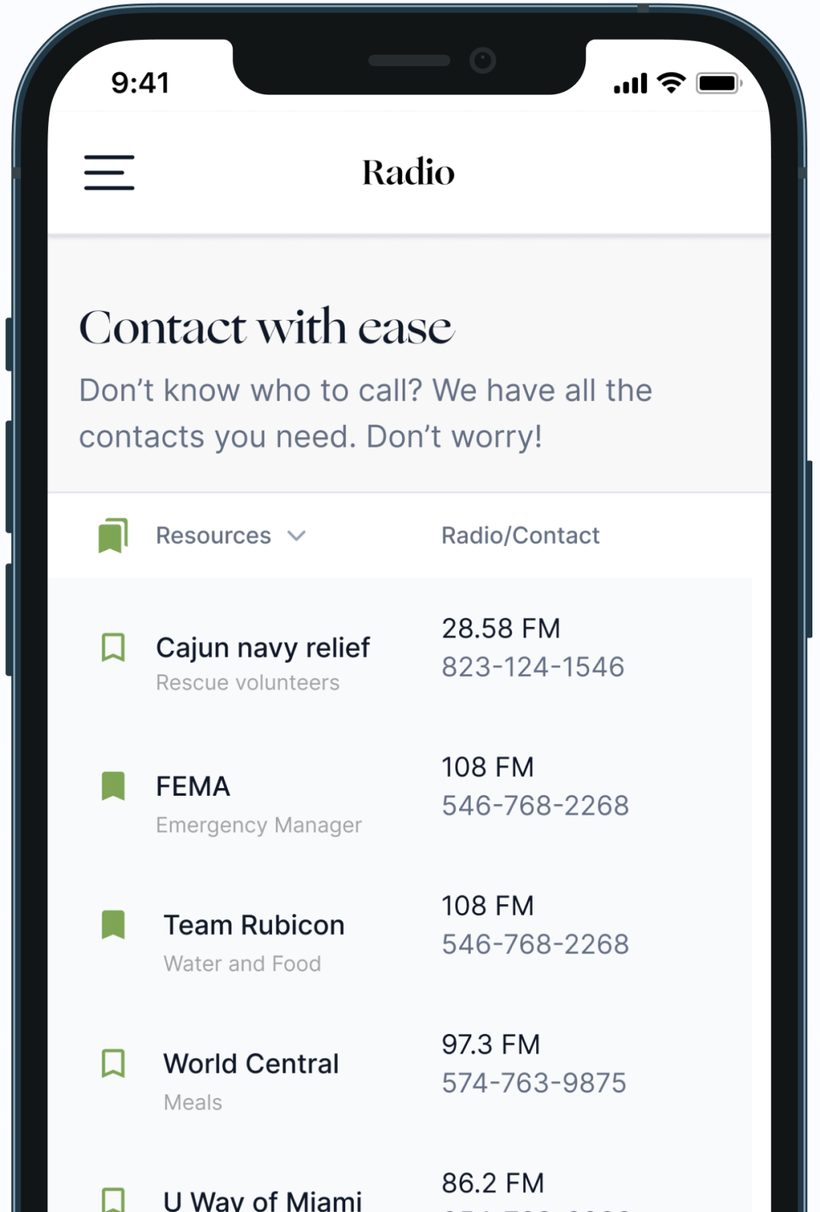
Planning Checklists

Provide users with **shareable checklists** to help them plan



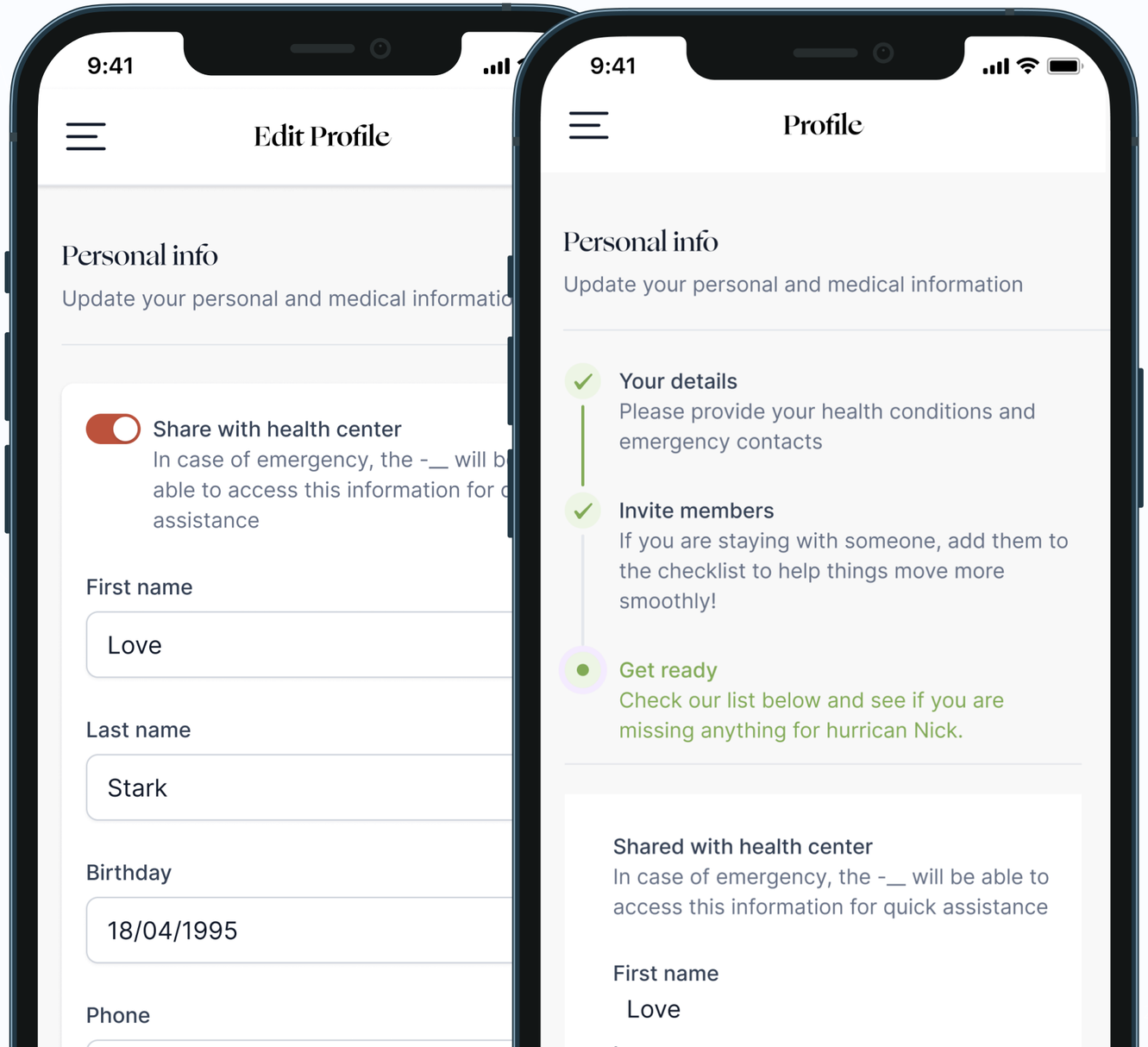
Radio Numbers

Give users the **phone numbers and frequencies** for local disaster organizations



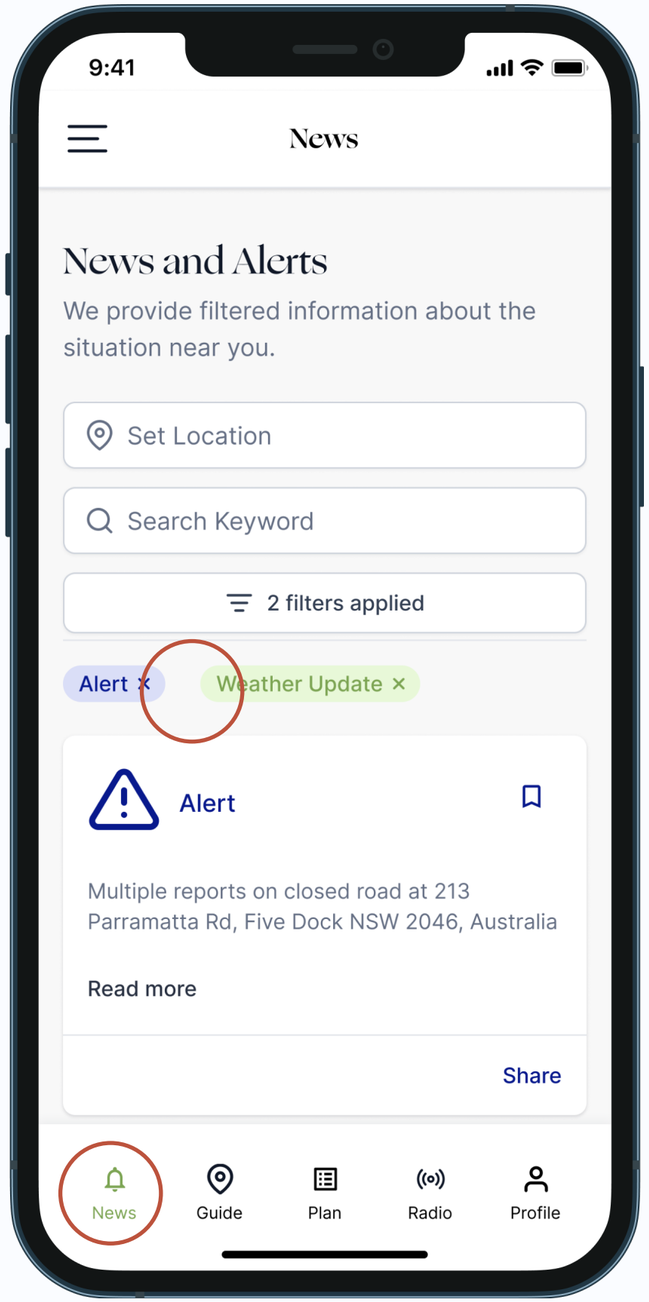
Profile

Save **important personal data** to their app and device



Node: App Mid-fi User Testing

News User Testing

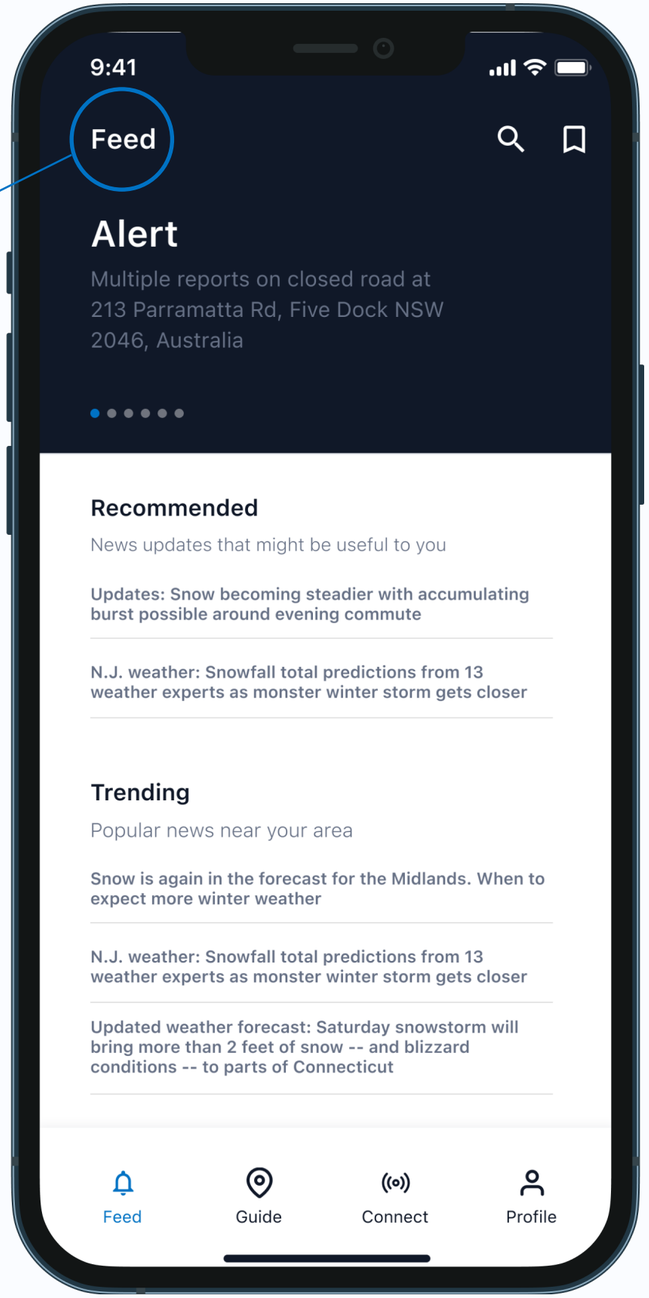


News > Feed

- Better wording
- Separate Alert and News section instead of having filters
- Recommendations based on your area

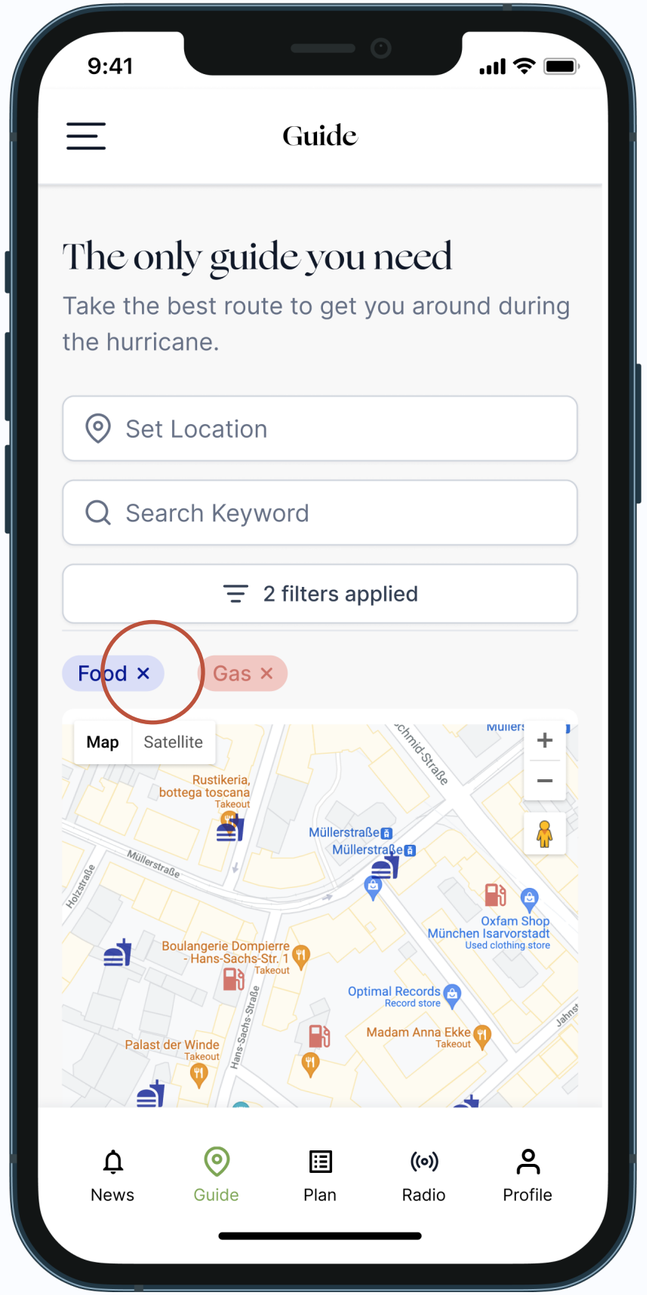
(Or set location)

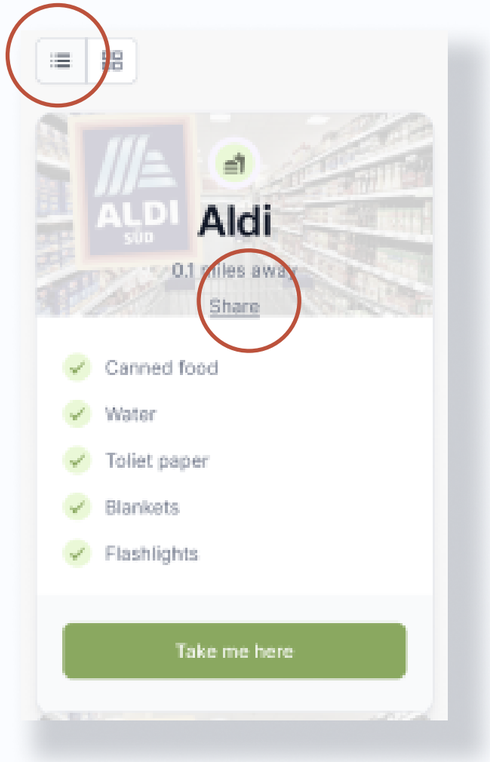
- View saved articles



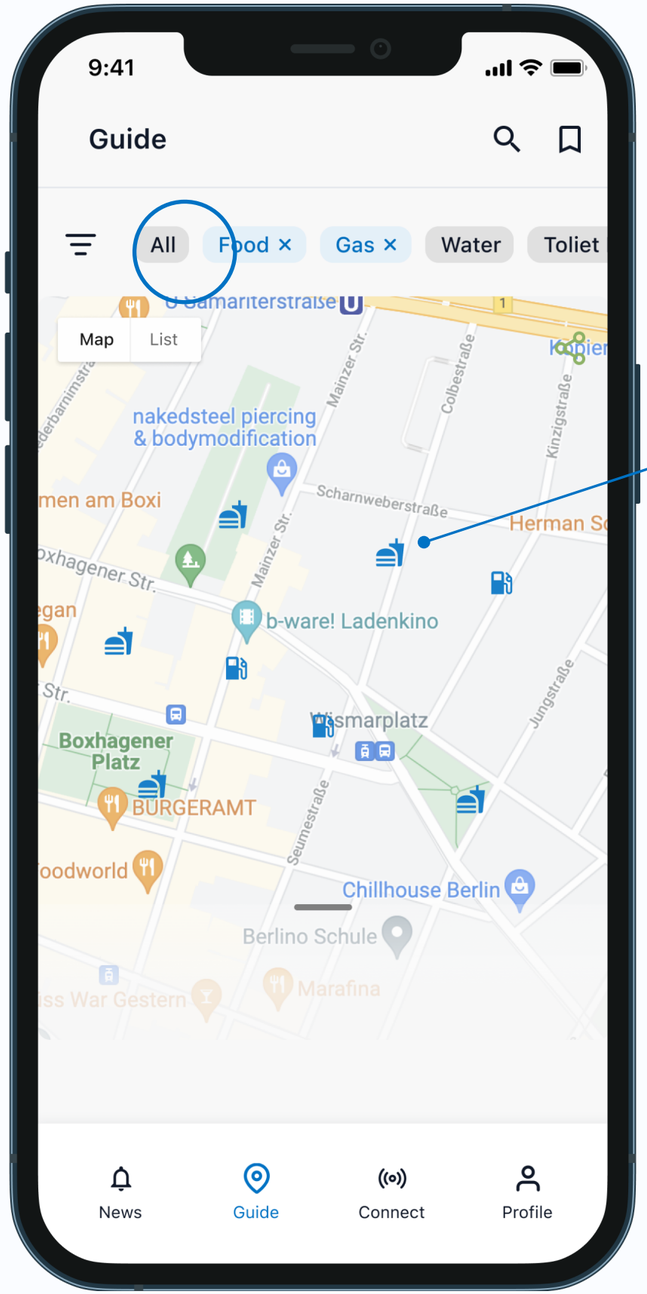
Guide User Testing

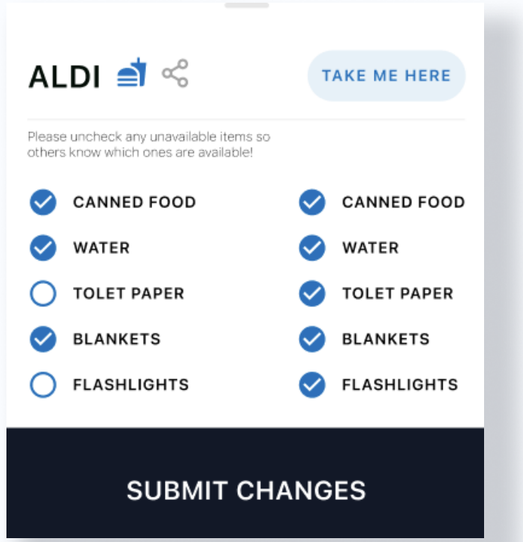
- Concerns with information overload
- Busy UX

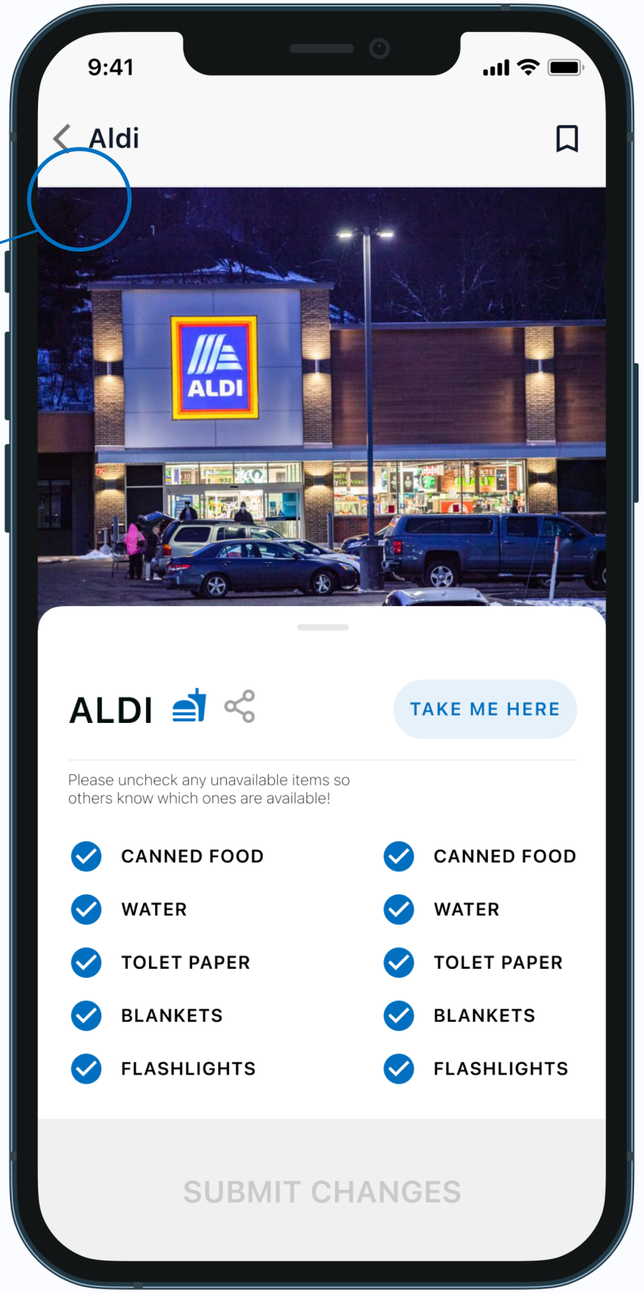




Guide

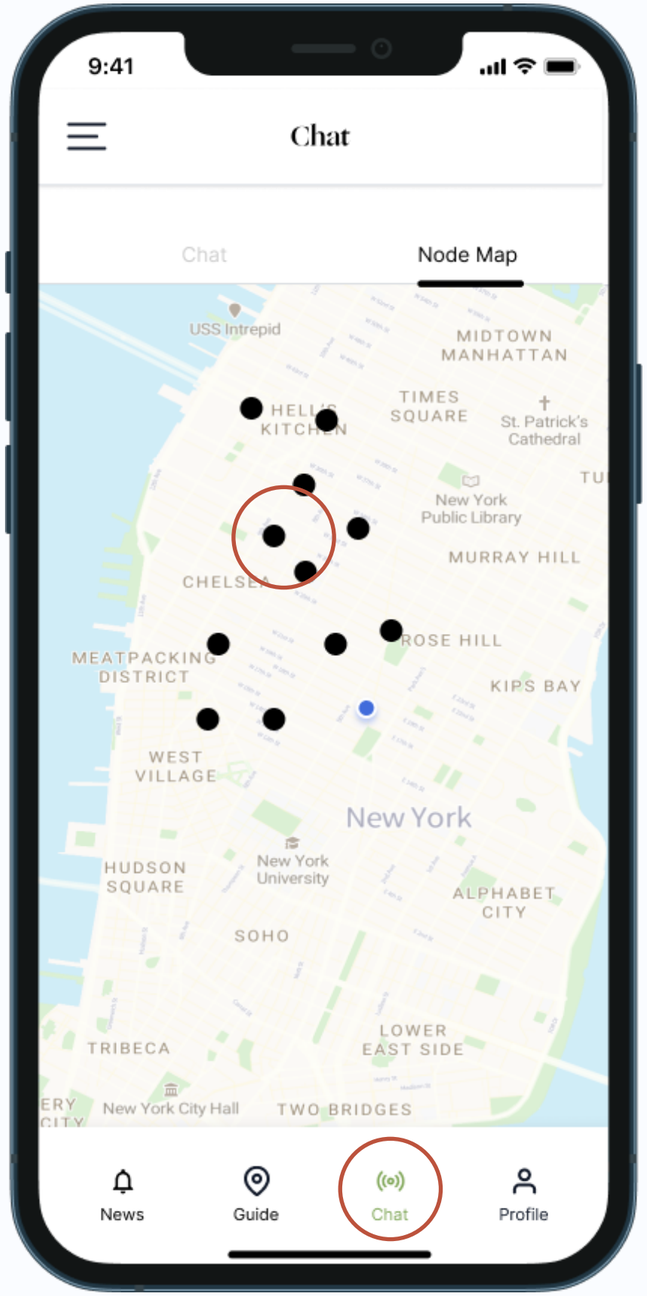

9:41
Guide
All
Food ×
Gas ×
Water
Toliet
Map
List
nakedsteel piercing & bodymodification
Scharnweberstraße
b-ware! Ladenkino
Boxhagener Platz
BURGERAMT
Chillhouse Berlin
Berlino Schule
Marafina
News
Guide
Connect
Profile


ALDI
TAKE ME HERE
Please uncheck any unavailable items so others know which ones are available!
CANNED FOOD
WATER
TOLET PAPER
BLANKETS
FLASHLIGHTS
CANNED FOOD
WATER
TOLET PAPER
BLANKETS
FLASHLIGHTS
SUBMIT CHANGES

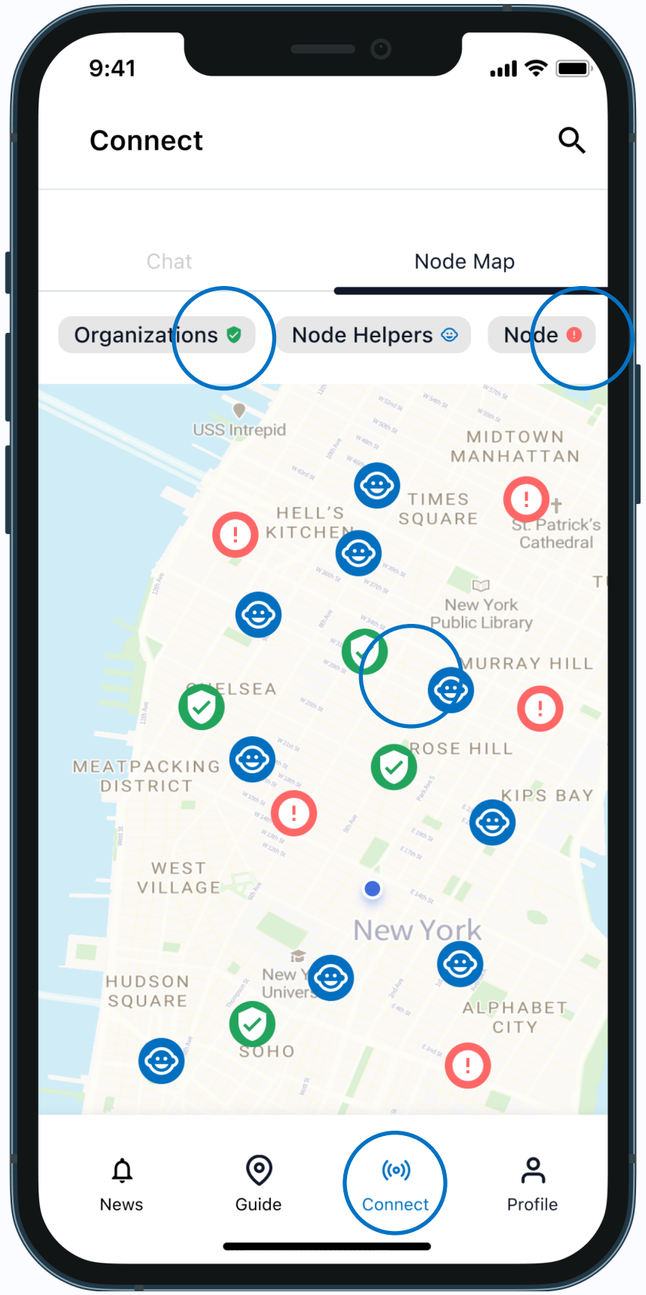

9:41
Aldi
ALDI
TAKE ME HERE
Please uncheck any unavailable items so others know which ones are available!
CANNED FOOD
WATER
TOLET PAPER
BLANKETS
FLASHLIGHTS
CANNED FOOD
WATER
TOLET PAPER
BLANKETS
FLASHLIGHTS
SUBMIT CHANGES

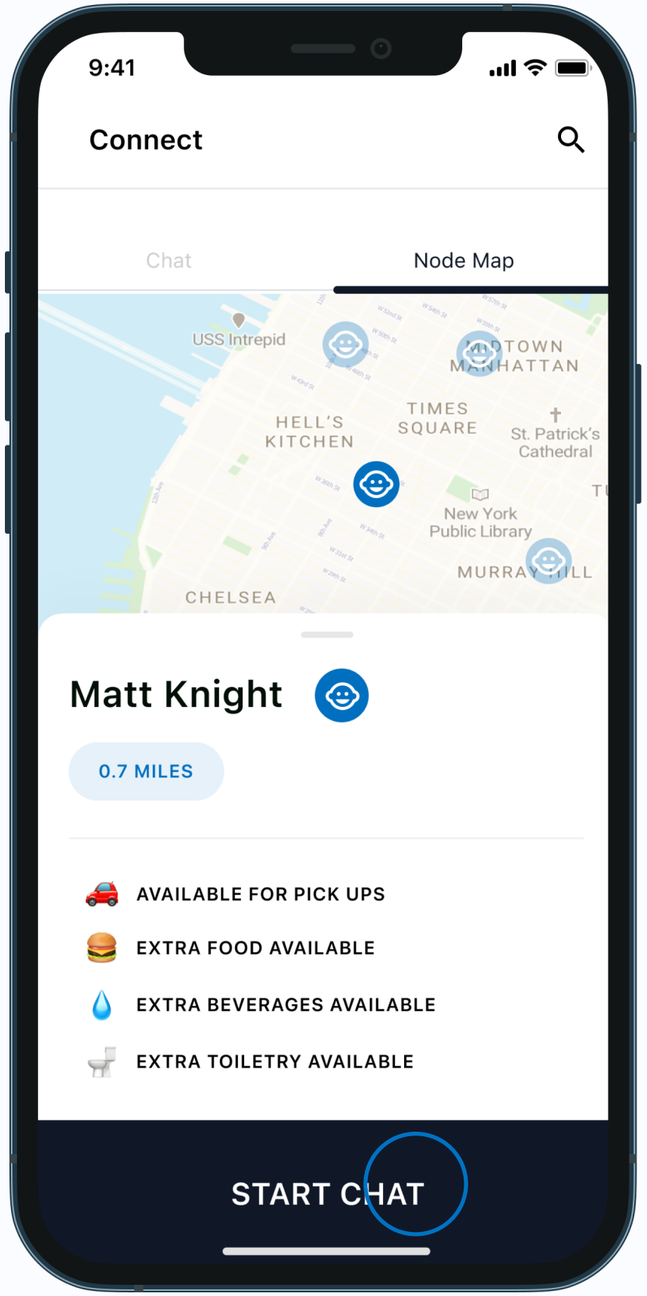
Chat User Testing

- No differentiation between users
- Improve UX writing



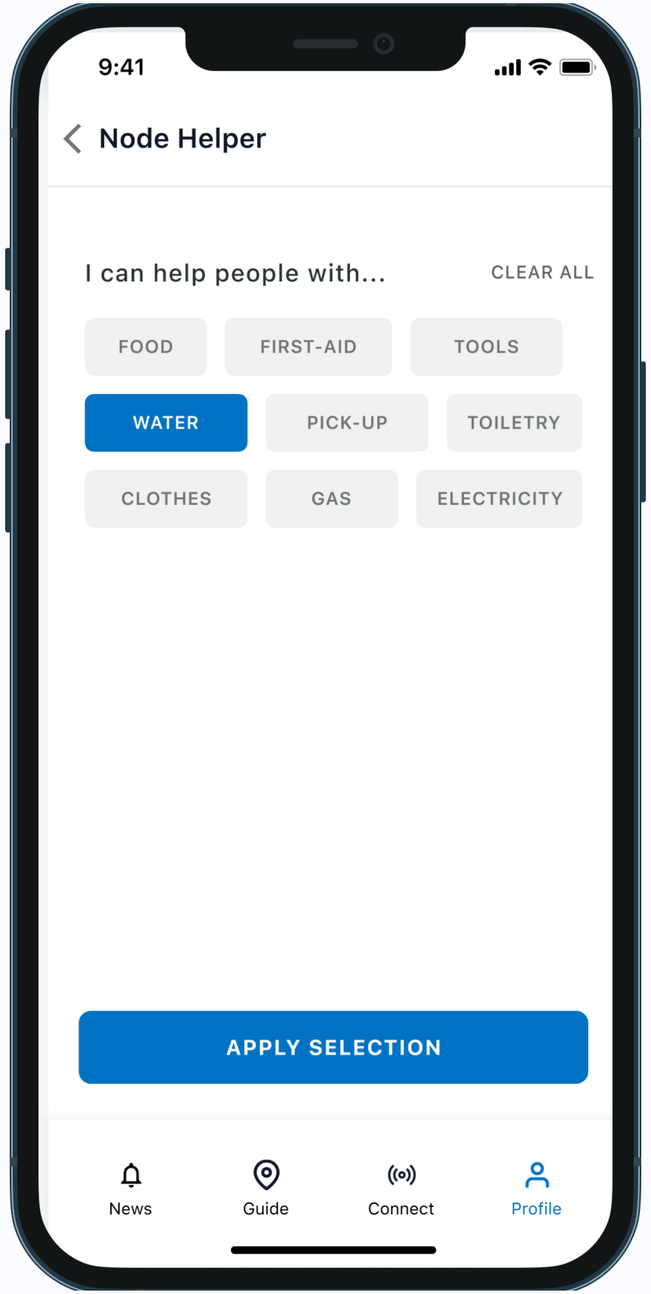
Connect


9:41
Connect
Chat
Node Map
Organizations
Node Helpers
Node
USS Intrepid
MIDTOWN MANHATTAN
HELL'S KITCHEN
TIMES SQUARE
St. Patrick's Cathedral
New York Public Library
MURRAY HILL
CHELSEA
MEATPACKING DISTRICT
ROSE HILL
KIPS BAY
WEST VILLAGE
New York
HUDSON SQUARE
ALPHABET CITY
SOHO
News
Guide
Connect
Profile

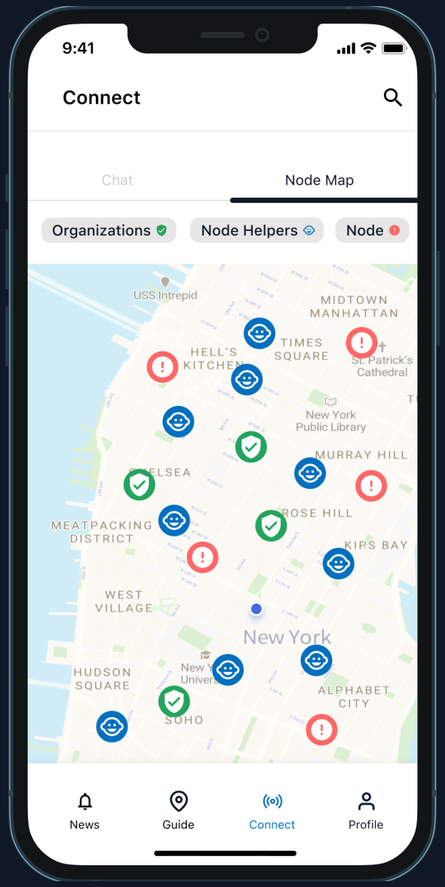

9:41
Connect
Chat
Node Map
USS Intrepid
MIDTOWN MANHATTAN
HELL'S KITCHEN
TIMES SQUARE
St. Patrick's Cathedral
New York Public Library
CHELSEA
Matt Knight
0.7 MILES
AVAILABLE FOR PICK UPS
EXTRA FOOD AVAILABLE
EXTRA BEVERAGES AVAILABLE
EXTRA TOILETRY AVAILABLE
START CHAT

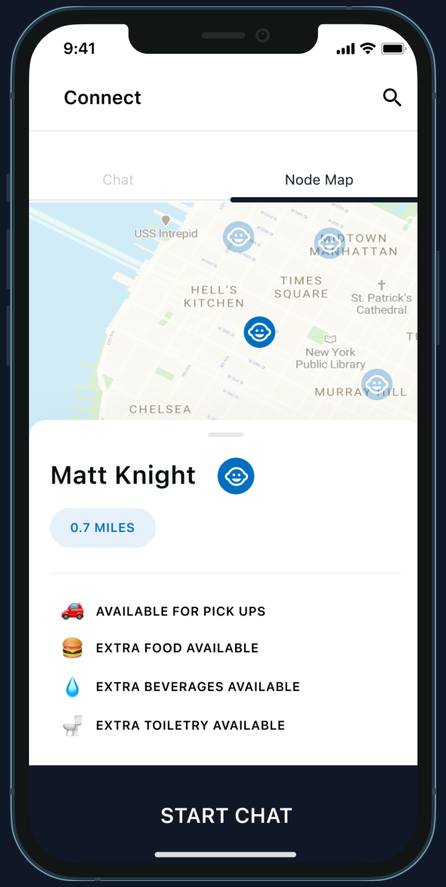
Connect

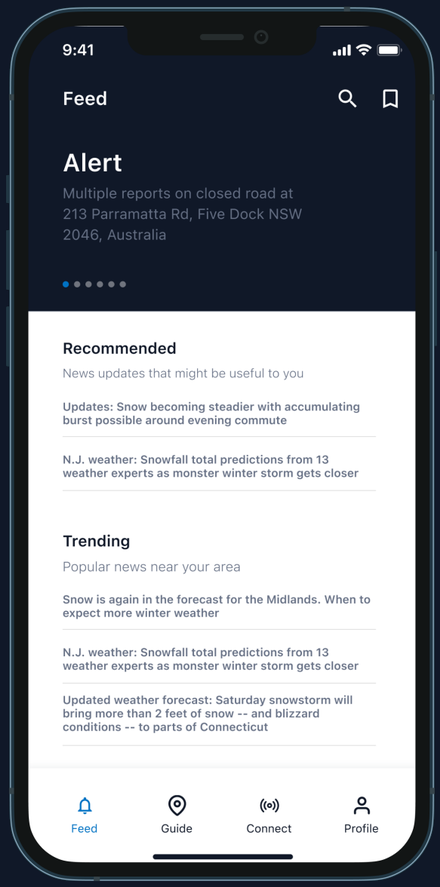
An easier way to help Node users

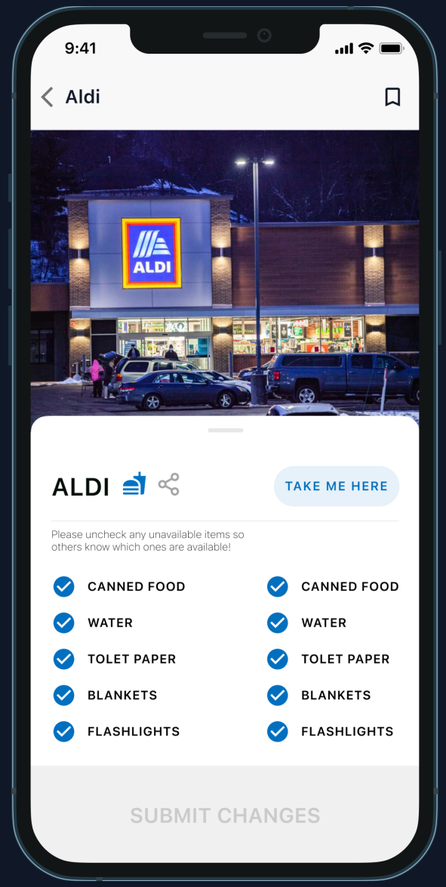


Hi-fi iteration 1





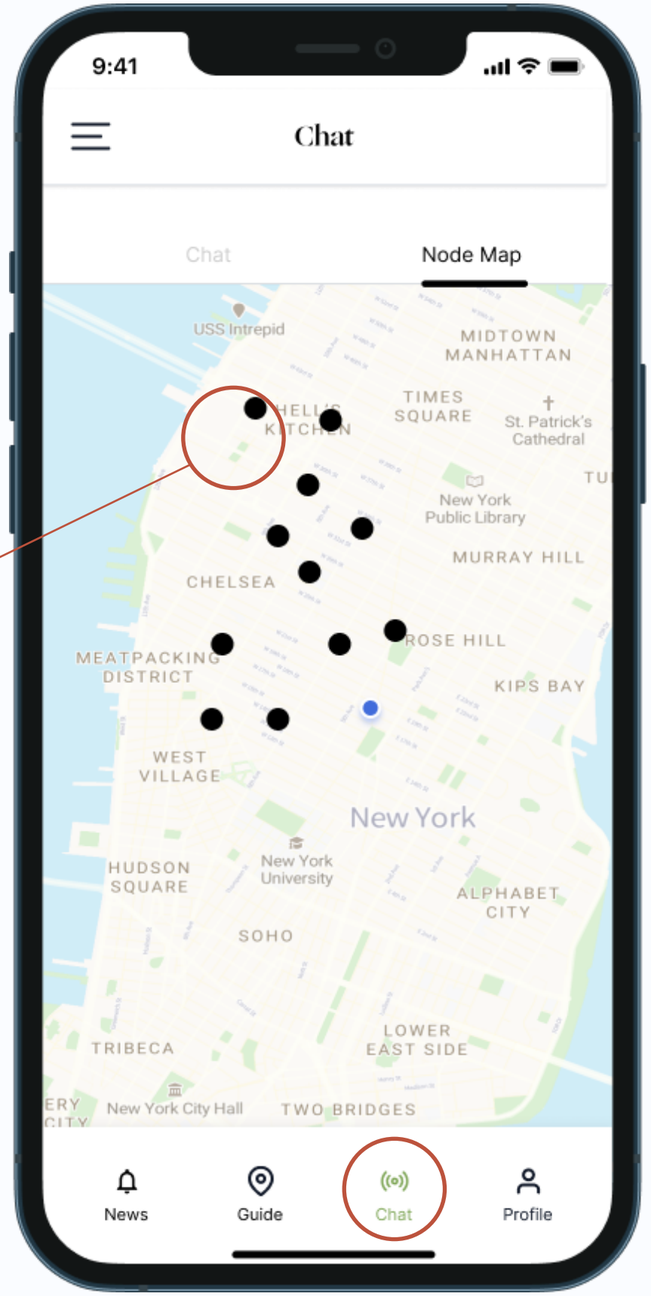




Node: App Hi-fi User Testing

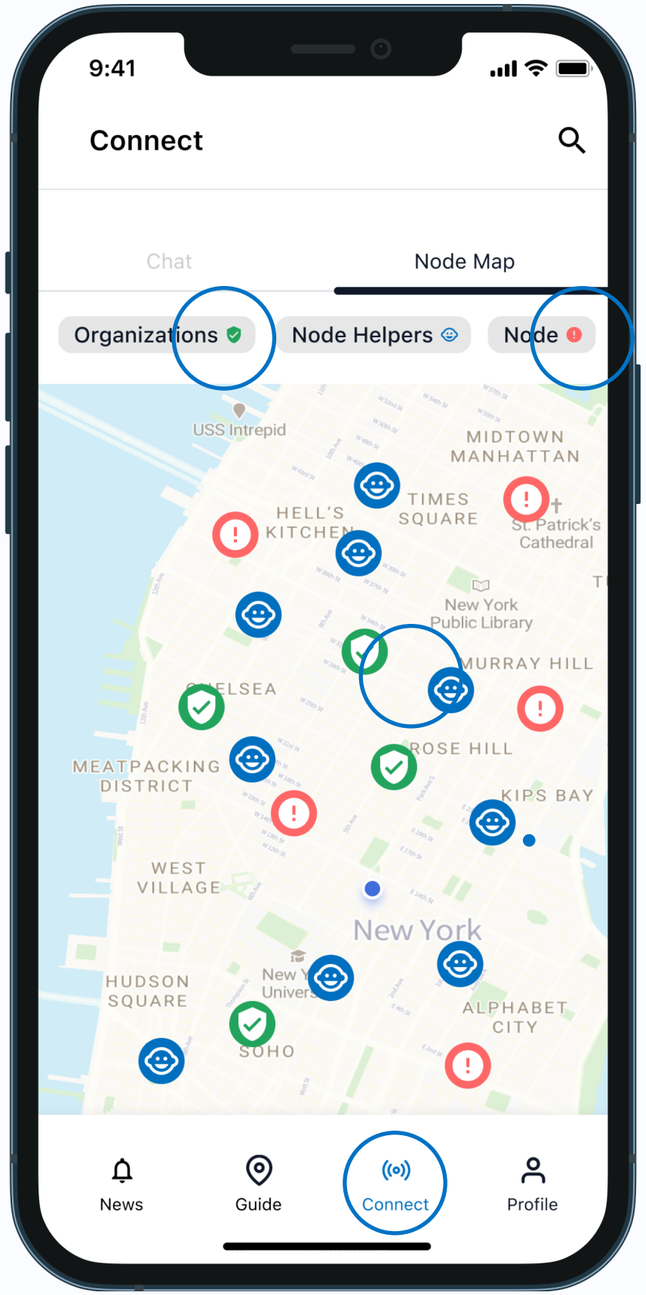
Chat User Testing

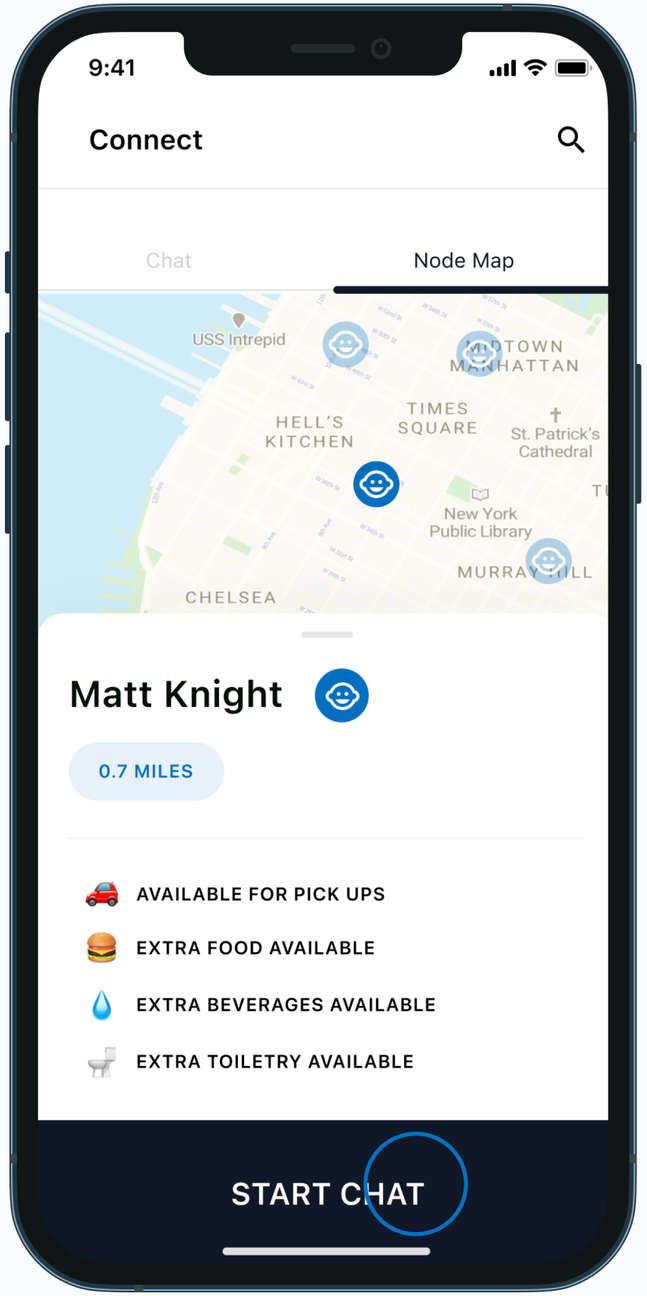
- Hard to understand icons
- No differentication between users
- Profile information of users



Connect

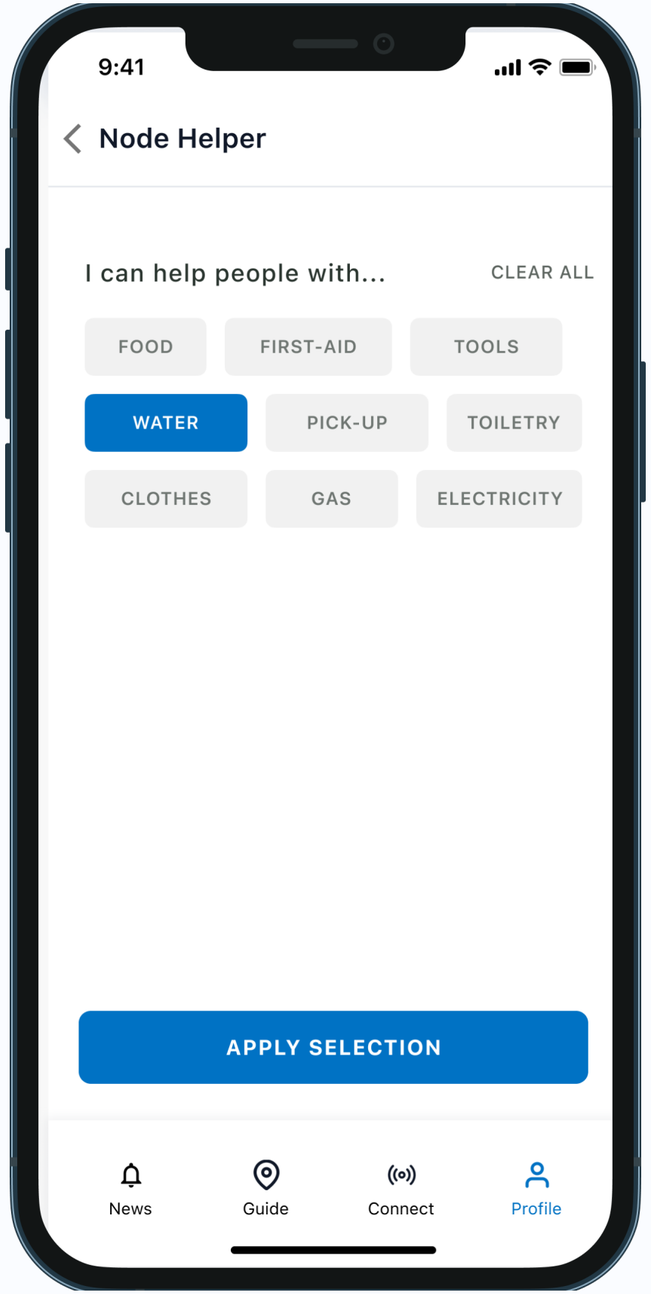
- New naming/icons
- Color coding





Connect

An easier way to help Node users

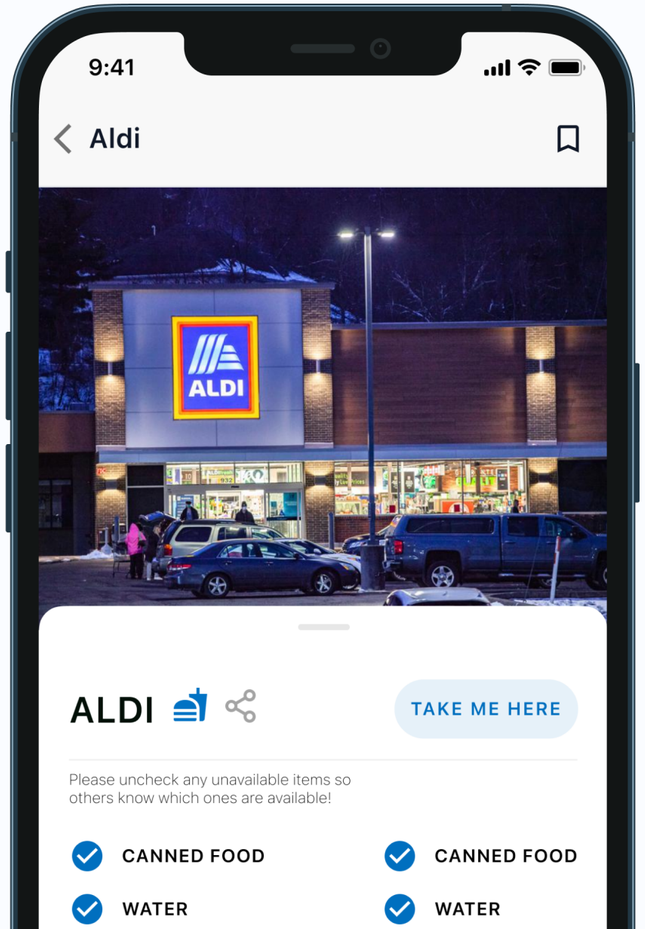


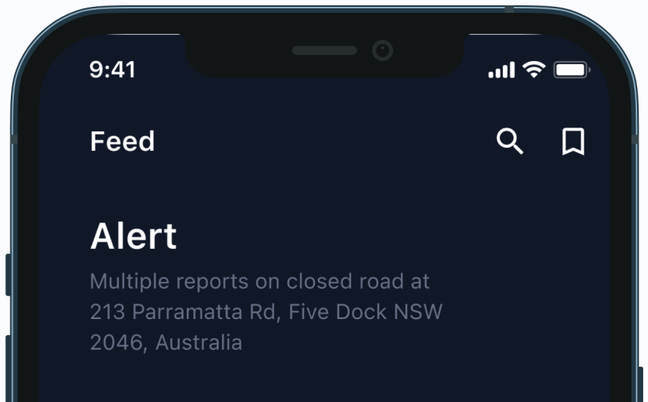
Connection to HMW's

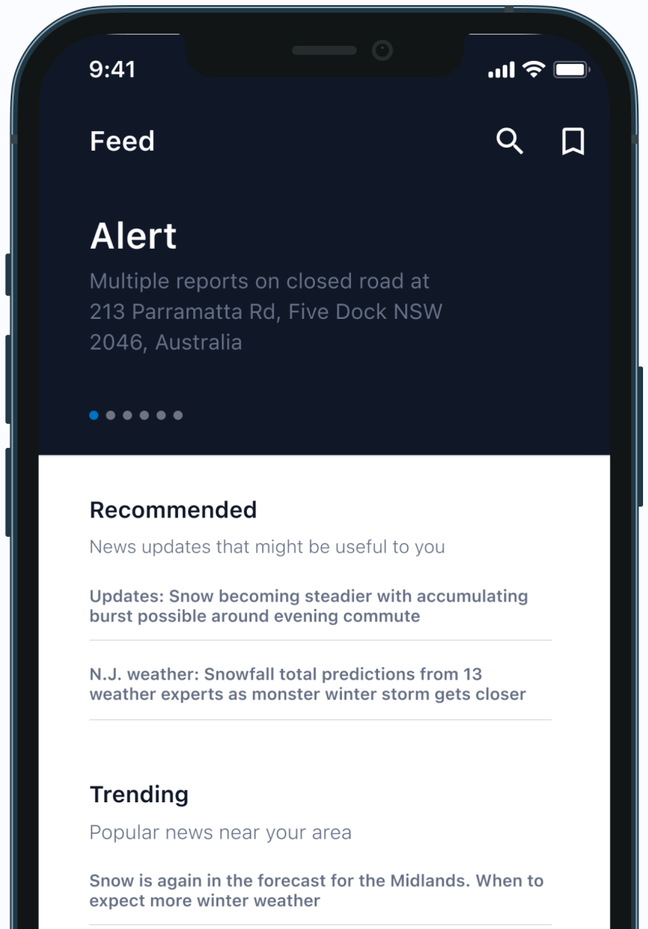
HMW provide centralized, trustworthy, concise information in real time?

HMW help people get the resources and information they need before and after a disaster?

HMW help people prepare and plan for natural disasters effectively?

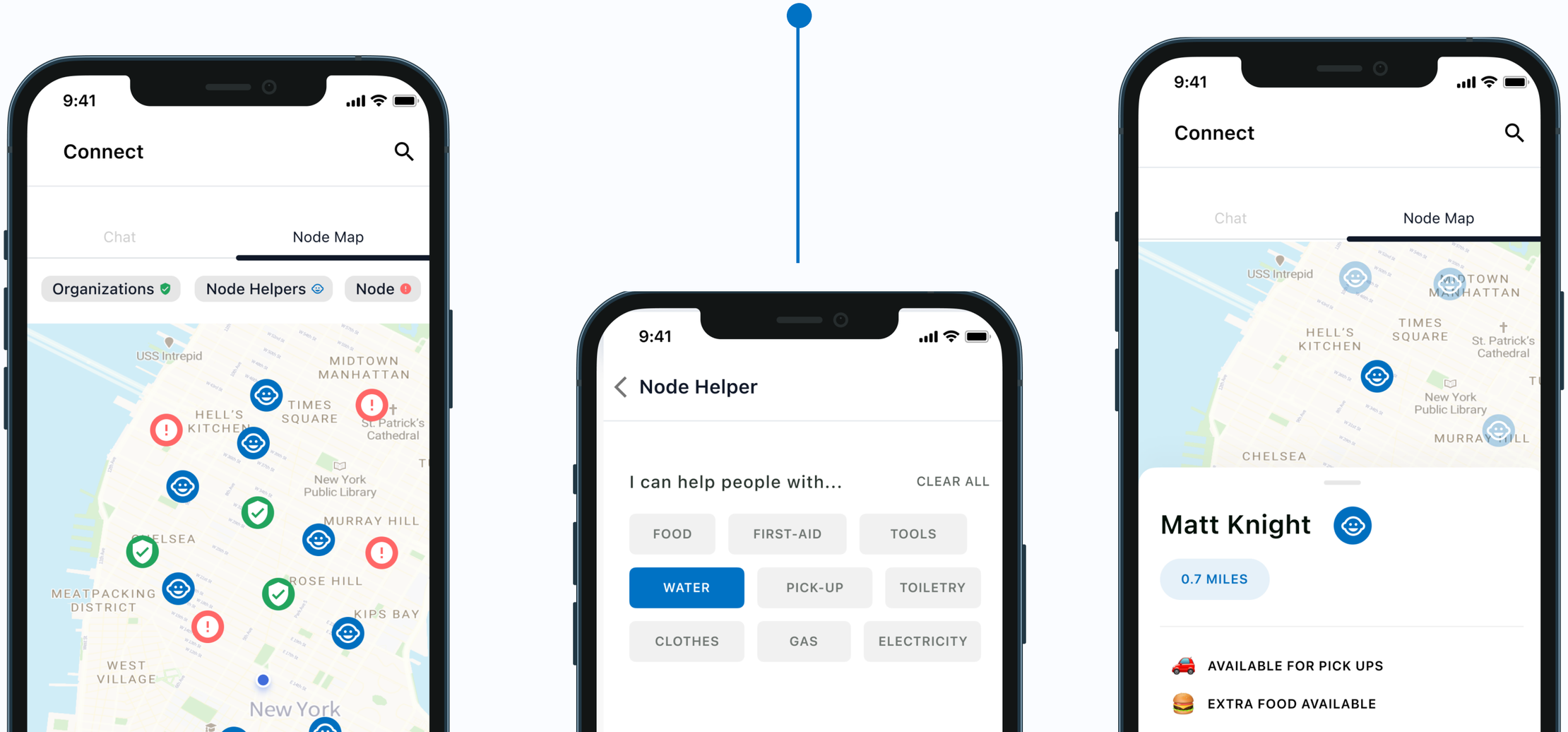






Connection to HMW's

HMW connect people with local volunteers and organizations for help and information?

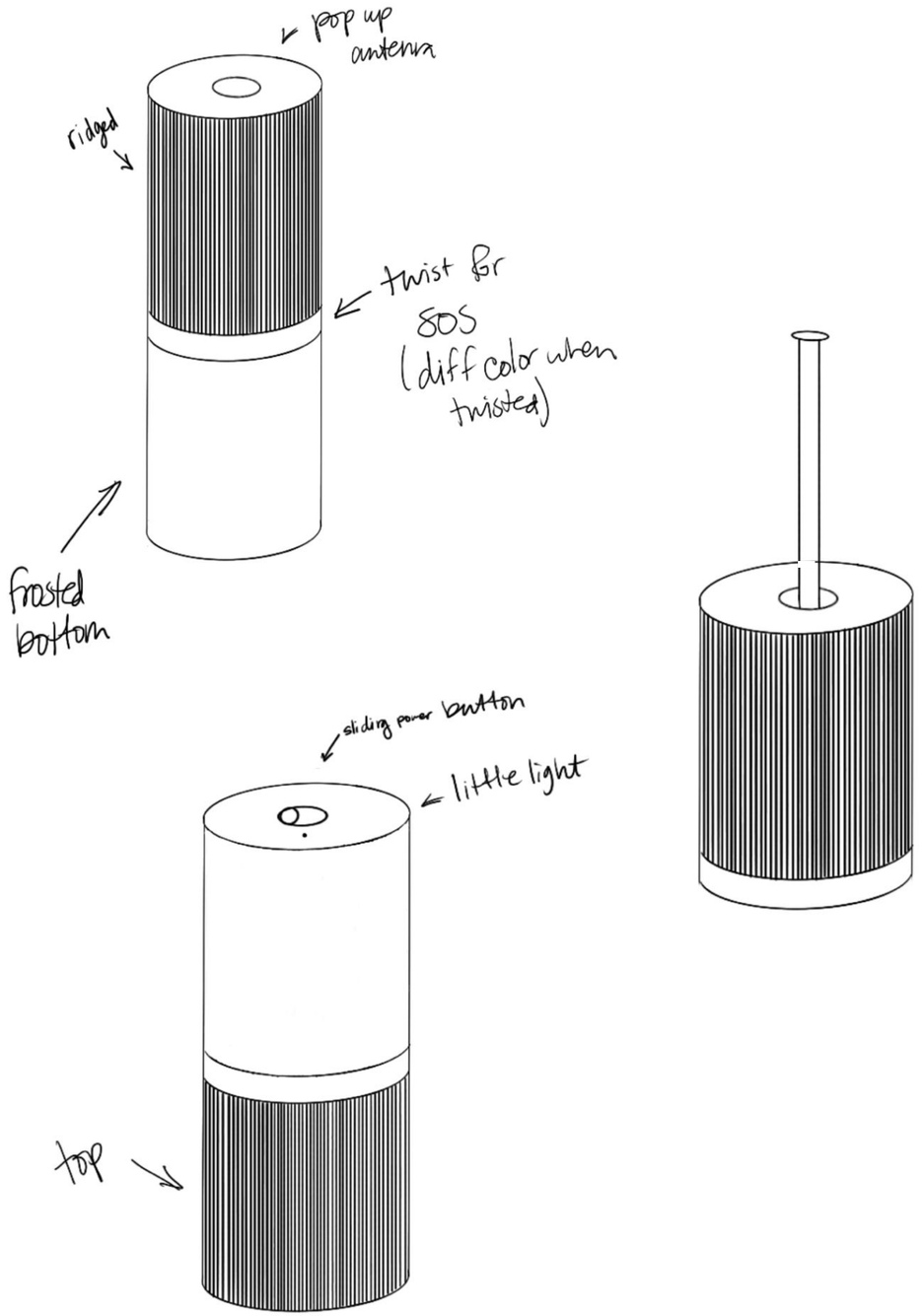


Node: Product Lo-fi & User Testing

Product Lo-fi

Features

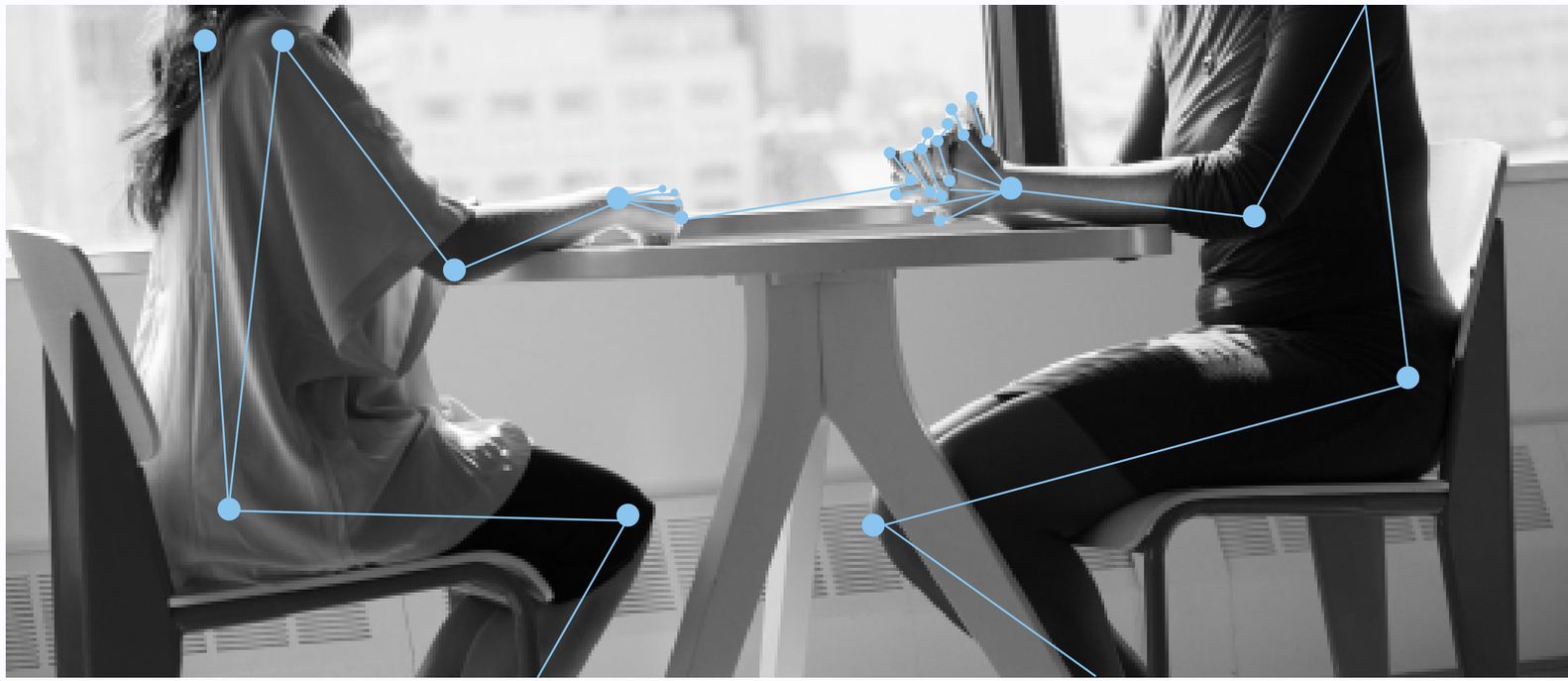
- Cylinder with ridges to prevent rolling
- Pop-up antenna
- Full twist to send SOS message
- Acts as a node for the mesh network



Product User Testing

9 Parcitipants

- Size
- Design
- Twist feature



Product User Testing

Positive

- Small enough to carry, but not too small
- Simple, clean design
- Twisting creates a fun, unique interaction

Negative

- Cylindrical shape can slip from hand
- Rectangular design is easier to put in your pocket and carry
- Skinny antenna in the middle looks weird

Node: Product Lo-fi & User Testing

Product Mid-fi

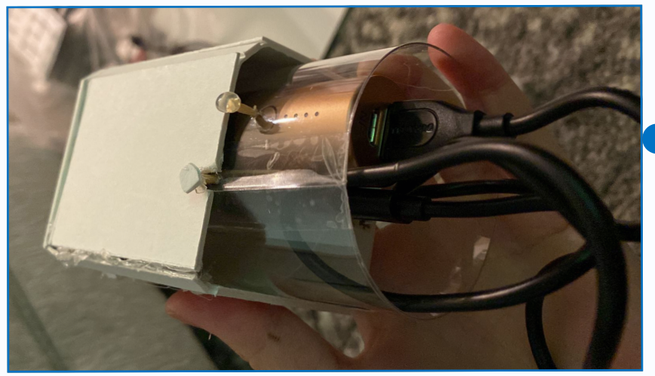
Changes

- Rounded-rectangle
- Thicker antenna
- Top and bottom ridged and frosted
- Power button on the side for ease of use

Product User Testing

Arduino Prototype

- Voice communication with two devices
- Chat communication platform on their devices



Product

esp provides all the files to the devices. it stores all the html, css and js files in the device itself.

The advantage of ESP (8266) is that it can act as station point, access point, and both station/ access point. The nodes are connected in a mesh network using a Painless Mesh library.

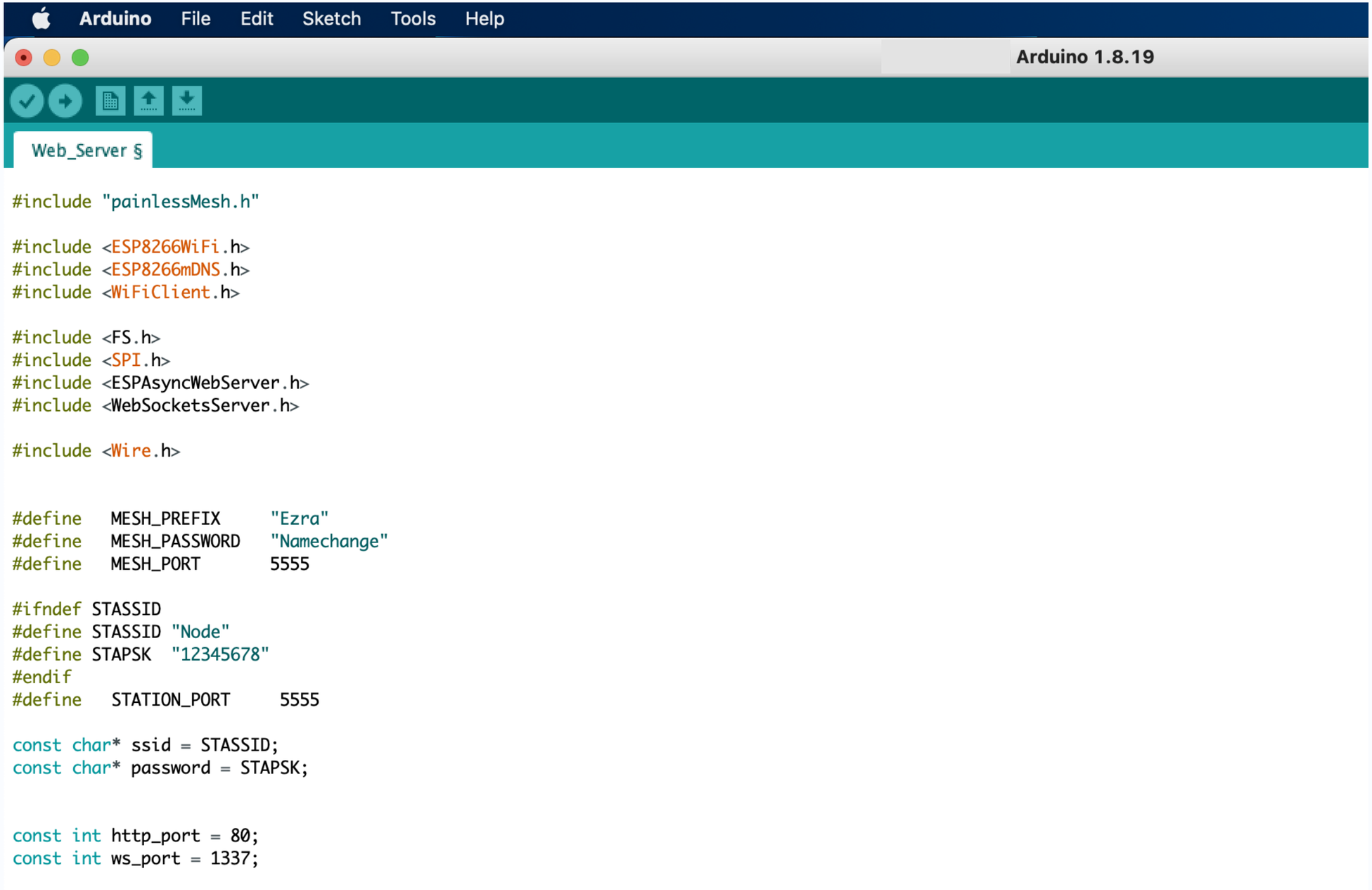
Browser or App

Database :- IndexedDB

ESP Webserver

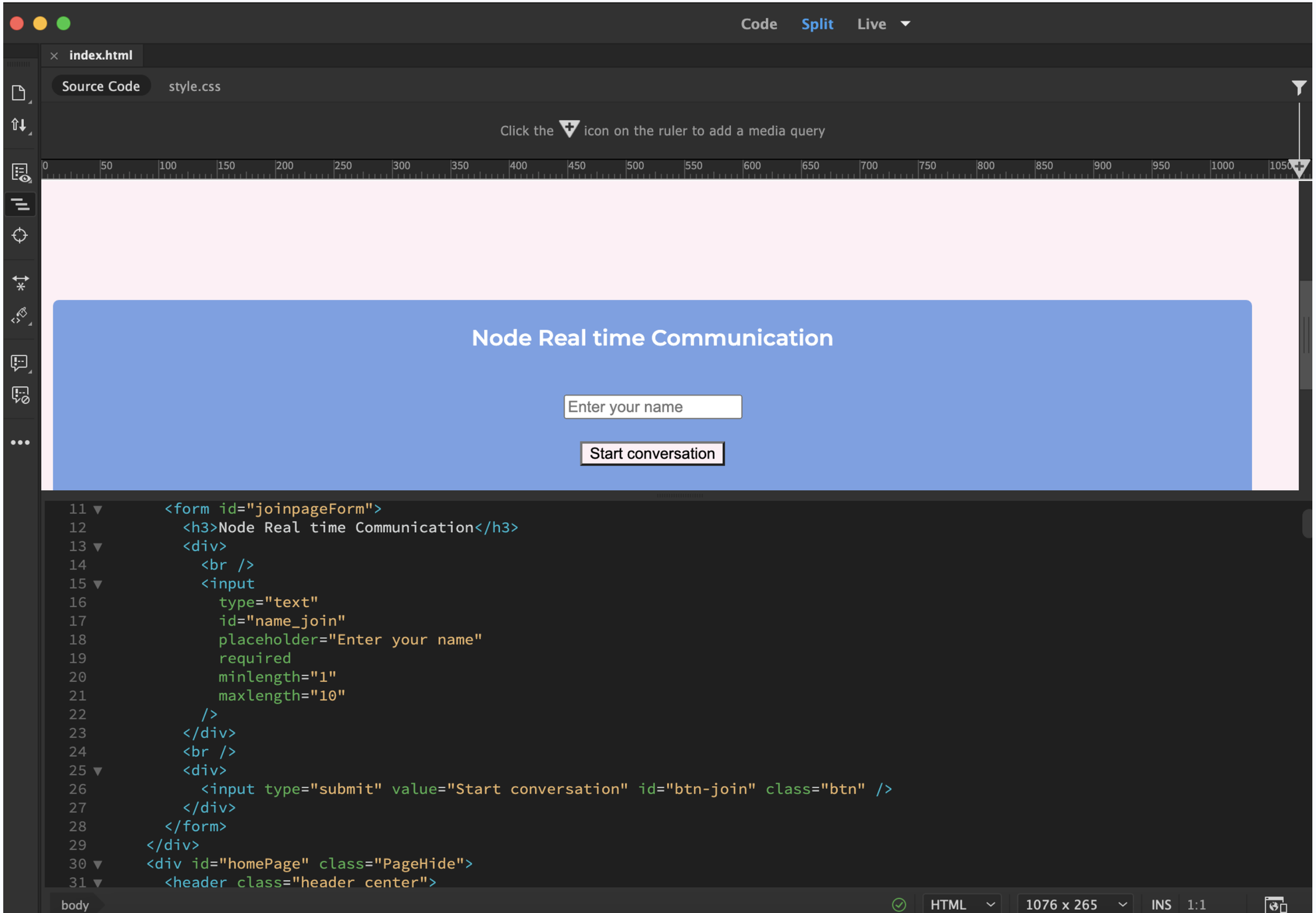
ESP Webserver

Product




```
#include "painlessMesh.h"

#include <ESP8266WiFi.h>
#include <ESP8266mDNS.h>
#include <WiFiClient.h>

#include <FS.h>
#include <SPI.h>
#include <ESPAsyncWebServer.h>
#include <WebSocketsServer.h>

#include <Wire.h>


#define   MESH_PREFIX     "Ezra"
#define   MESH_PASSWORD   "Namechange"
#define   MESH_PORT       5555

#ifndef STASSID
#define STASSID "Node"
#define STAPSK  "12345678"
#endif
#define   STATION_PORT     5555

const char* ssid = STASSID;
const char* password = STAPSK;


const int http_port = 80;
const int ws_port = 1337;
```

Product


Code
Split
Live
index.html
Source Code
style.css
Click the icon on the ruler to add a media query
Node Real time Communication
Enter your name
Start conversation
<form id="joinpageForm">
<h3>Node Real time Communication</h3>

<input
type="text"
id="name_join"
placeholder="Enter your name"
required
minlength="1"
maxlength="10"
/>

<input type="submit" value="Start conversation" id="btn-join" class="btn" />

</form>

<header class="header center">
body
HTML
1076 x 265
INS
1:1

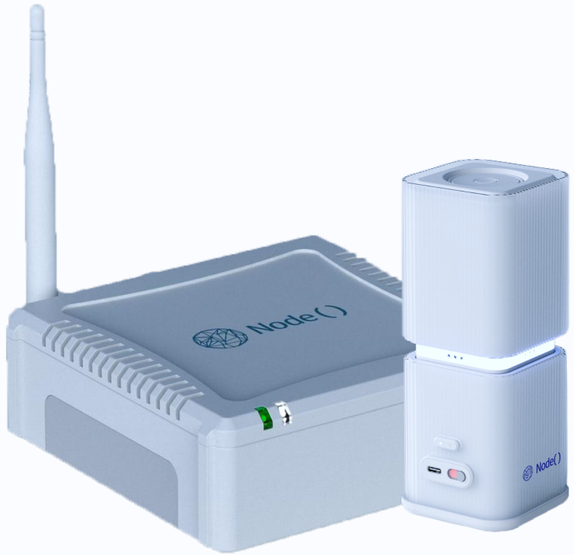
4.

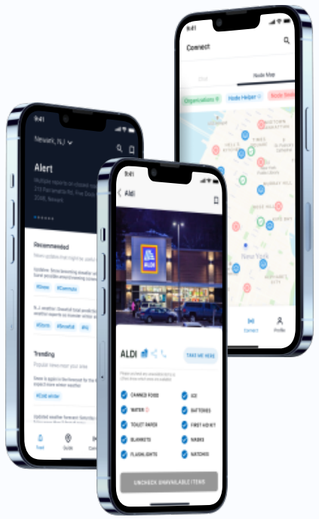
Deploy

Final Concept

What is Node?

Node( )

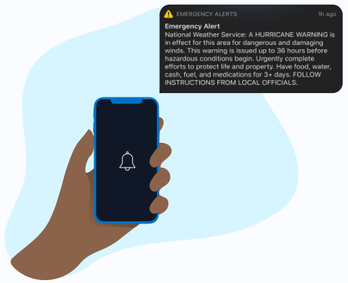




- **Devices**
  - Create a decentralized, self-sufficient wireless network
  - Secondary form of emergency communication

- **Application**
  - Emergency messages
  - Up-to-date news and alerts
  - Important resource mapping and navigation
  - Connection to volunteers and community

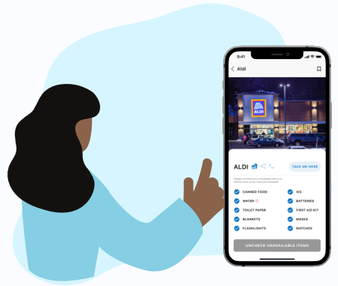
Monica’s Journey with Node



Monica receives an alert about an incoming hurricane

She goes onto the Node app and finds all of the information she needs about the storm.

She also finds where to get gas and other resources she needs with the best routes to get there.



Monica went to the grocery store Node suggested and was able to find everything she needed. She upvotes it to notify other users that it is a good place to go.

When Monica gets back home, she feels much more prepared and waits for the storm to hit.

After a while, the power goes out and she has no service, but Monica isnt worried because Node keeps her up-to-date on the latest news and alerts. She’s also able to still get emergency help using the Node network.

When her window breaks, and she realizes her phone is dead, she twists her device to contact emergency help. A local disaster organization talks to her with the walkie-talkie and tells her what to do

Eventually, she needs more resources and Node let’s her know where to find them and the safest routes avoiding any road closures and debris.

Product

Node( ) Devices

Our product

0.3 - 0.6 miles

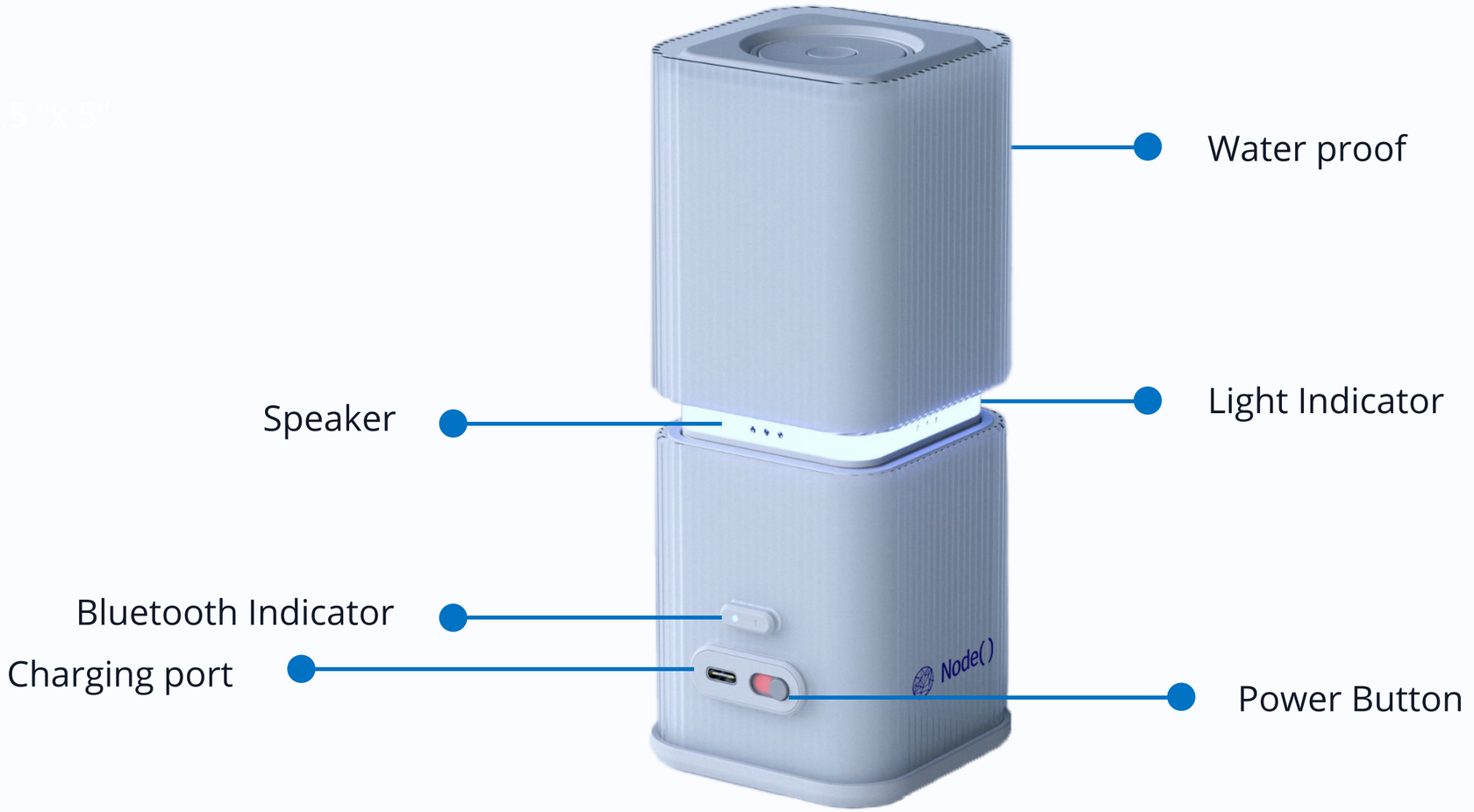
Always stays connected to other nodes and beacons

Can work as a stand-alone voice communciation device

SOS Twist to contact emergency help

How does it work

Product Size: 2.5 "x 2.5 "x 5"



Node Radius

Node Radius

1 - 2 miles

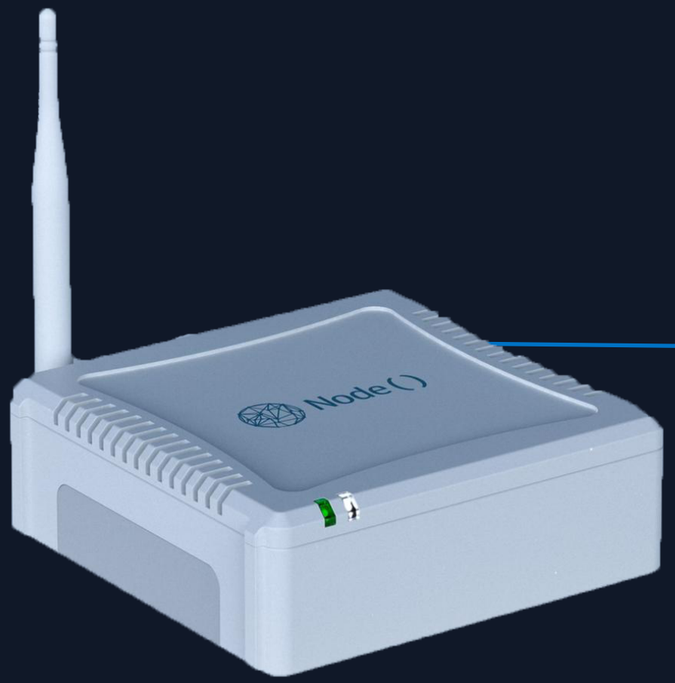
0.3 - 0.6 miles

0.3 - 0.6 miles

Node (Beacon)

- Organizations set up beacons around the area
- Set up in public spaces

Node (Beacon)

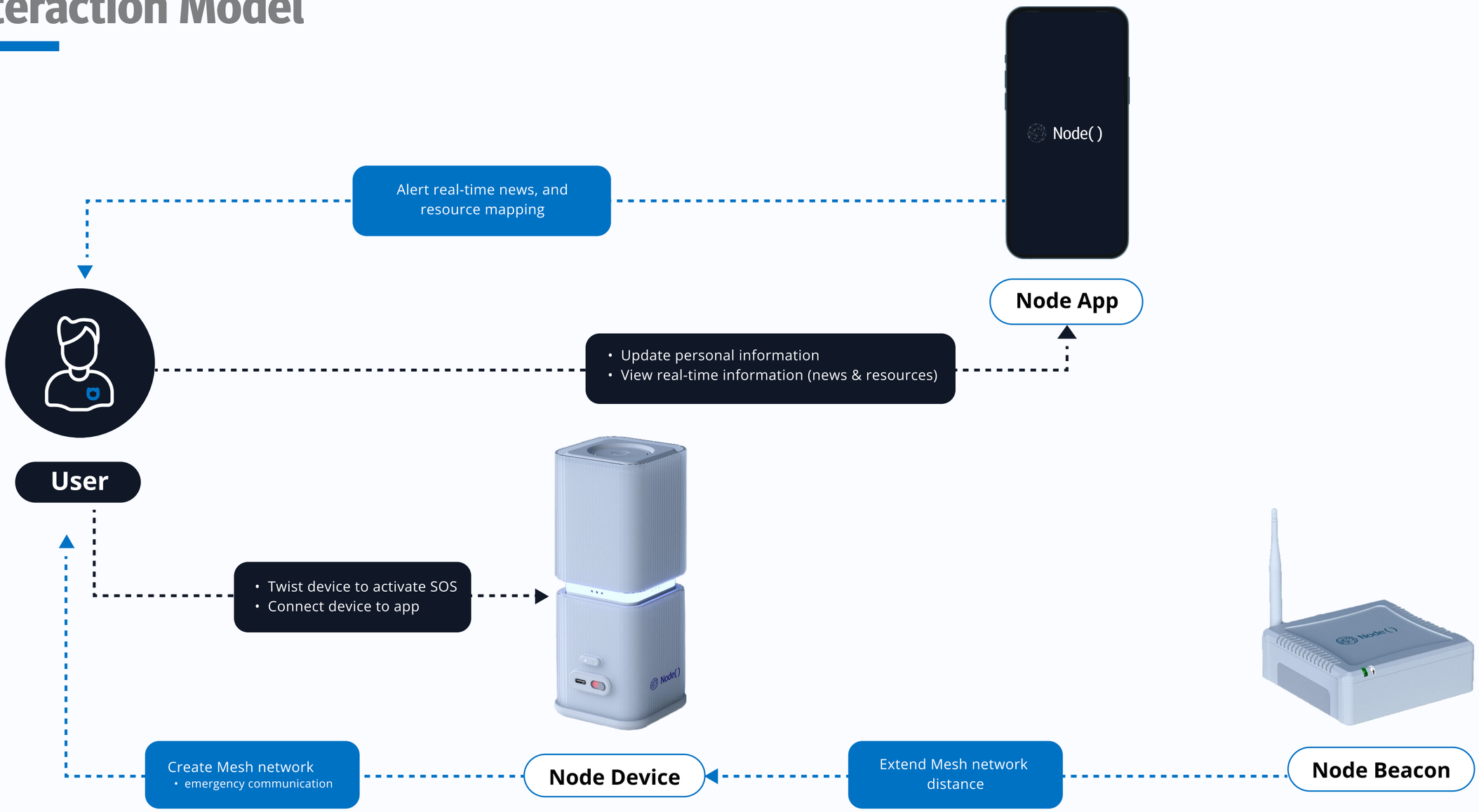


- 1 - 2 miles
- Always connected to nearby Nodes
- Battery Powered
- Easy to install at any location

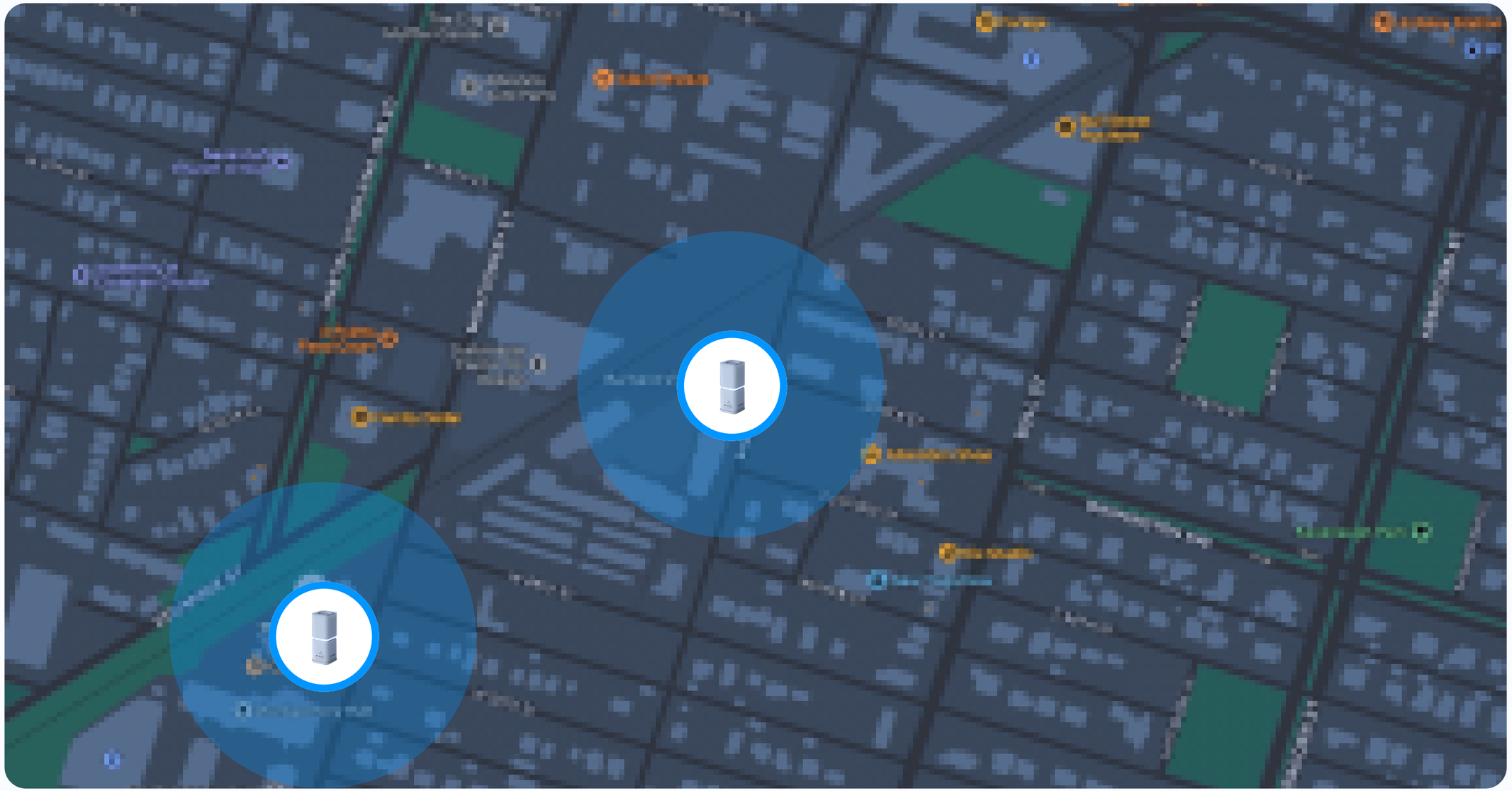
What is a mesh network?

A communications network in which there are at least two pathways to each node.
If one of the paths fails, the other is still available.

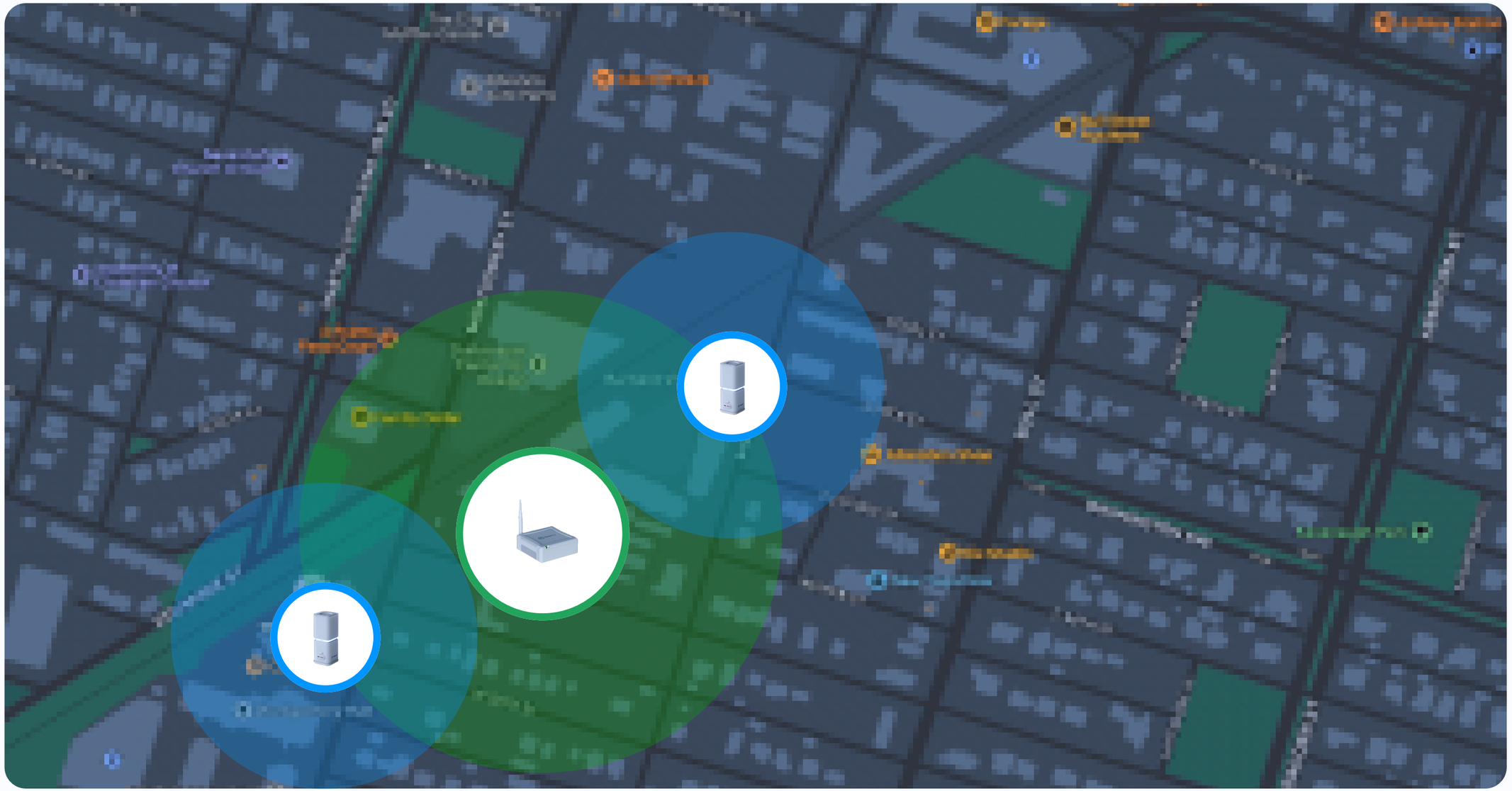
Interaction Model



How it works



How it works



How it works

Connection to HMW's

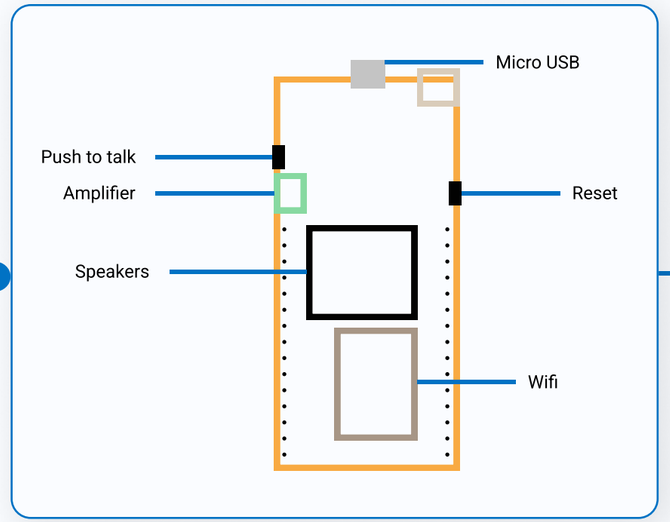
HMW provide a **reliable, accessible, alternative** form of **communication**?

Product Prototype

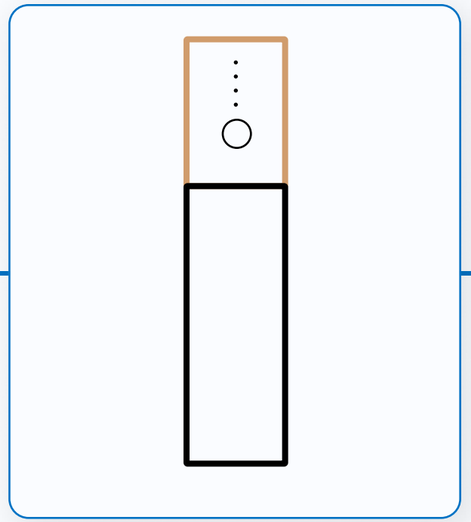
Node( ) Prototype

Product Demonstration

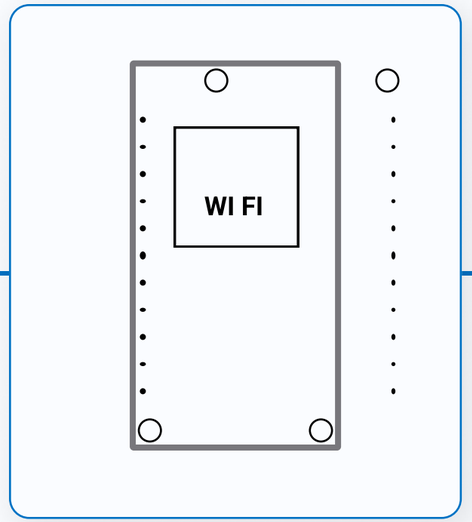
Components Used for the physical Prototype



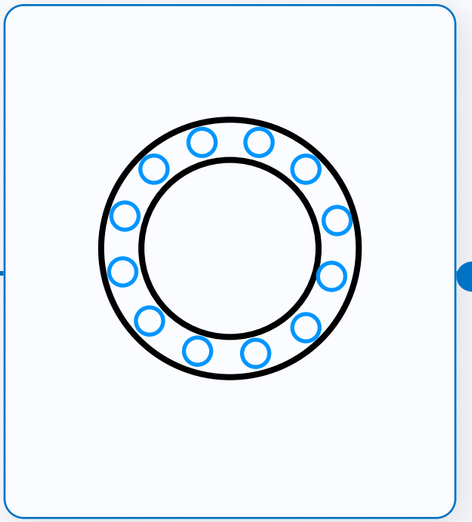
ESP 32 Module



Power supply - Mini Power Bank



ESP 8266 Module



Neo pixel

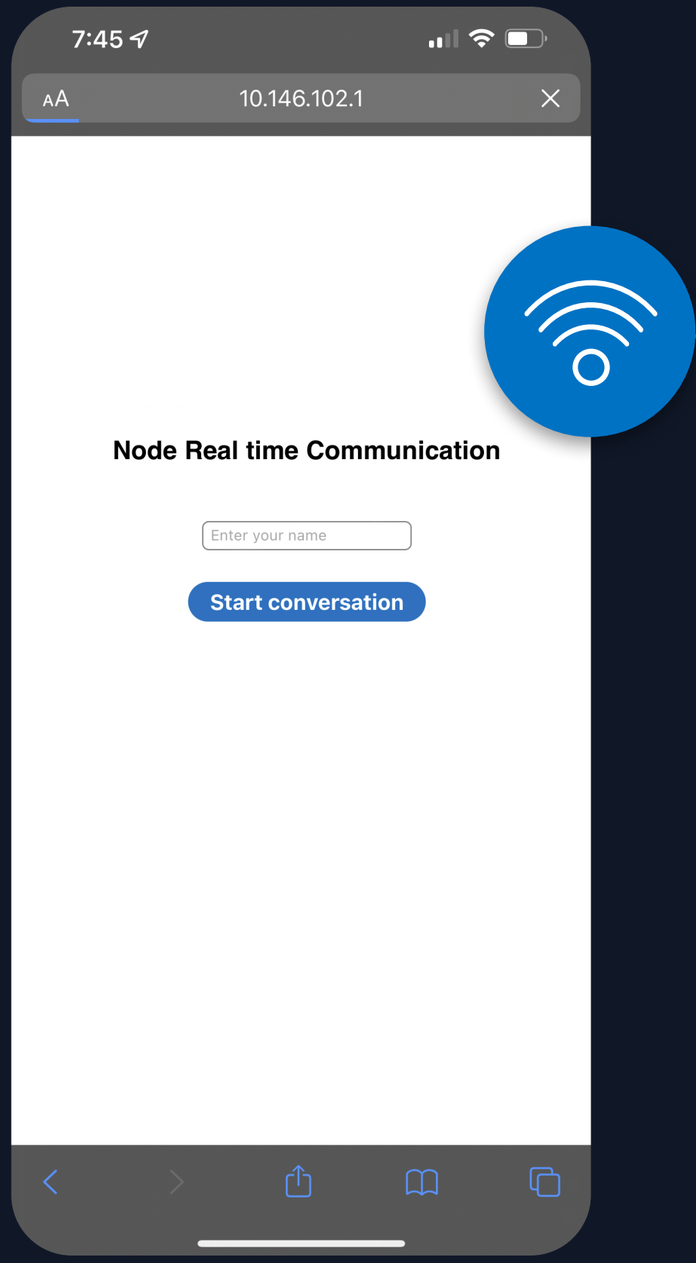
Product Demonstration

What can the prototype do?

- The modules are connected in a mesh network all the time
- It does not rely on any internet connection
- Can talk within a limited range by pushing the button on the side
- Using a browser on any device can connect to the device using WIFI

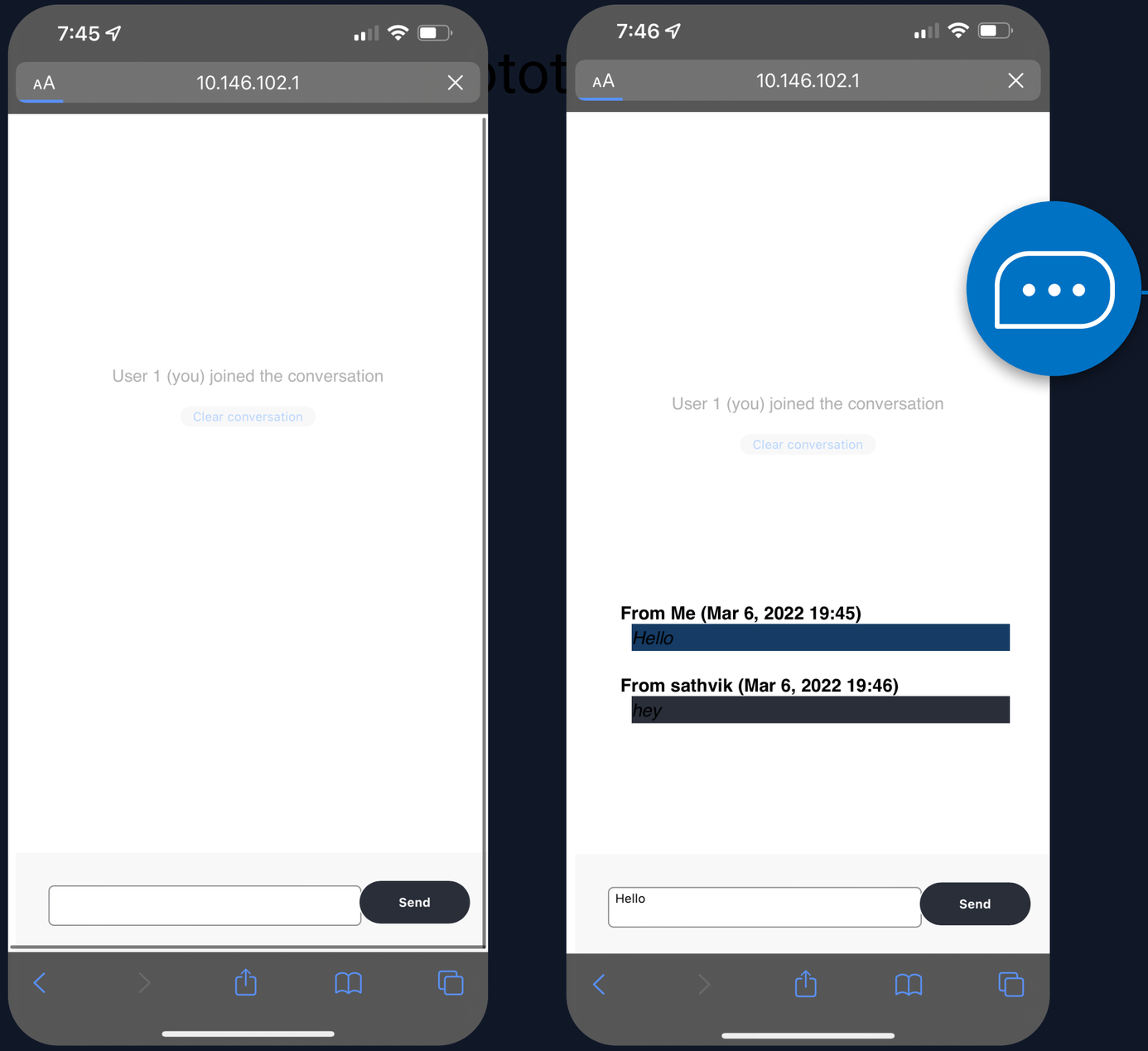
Product Demonstration

Using a browser on any device can connect to the module using WIFI



Product Demonstration

You can get into communication platform , send or receive texts from everyone on the server.



Product Demonstration

Coding Arduino

```
#include "painlessMesh.h"

#include <ESP8266WiFi.h>
#include <ESP8266mDNS.h>
#include <WiFiClient.h>

#include <FS.h>
#include <SPI.h>
#include <ESPAsyncWebServer.h>
#include <WebSocketsServer.h>

#include <Wire.h>


#define   MESH_PREFIX     "Ezra"
#define   MESH_PASSWORD   "Namechange"
#define   MESH_PORT       5555

#ifndef STASSID
#define STASSID "Node"
#define STAPSK  "12345678"
#endif
#define   STATION_PORT     5555
```

Product Demonstration

Coding WEbpage

style.css | index.html

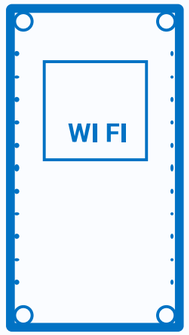
Users > sathvikreddy > Desktop > esp code > Web_Server > data > index.html > ...

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet" href="style.css" />
    <title>Node communication platform</title>
  </head>
  <body>
  <img src="https://drive.google.com/uc?export=view&id=11SInLPpk6Z8jdqMlYgspo5cCIBd1bbwM"class="center">
    <div id="loginPage" class="PageShow center">
      <form id="joinpageForm">
        <h3>Node Real time Communication</h3>
        <div>
          <br />
          <input
            type="text"
            id="name_join"
            placeholder="Enter your name"
            required
            minlength="1"
            maxlength="10"
          />
        </div>
        <br />
        <div>
          <input type="submit" value="Start conversation" id="btn-join" class="btn" />
        </div>
      </form>
    </div>
    <div id="homePage" class="PageHide">
      <header class="header center">
        <p id="title"><a id="name"></a> (you) joined the conversation</p>
        <!--<button id="btn-add">Add Chat</button>
        <button id="btn-load">Load History</button>-->

        <button id="btn-delete">Clear conversation</button>
      </header>
      <main class="main">
        <ul id="messagge-history"></ul>
      </main>

      <footer class="footer">
        <form id="form_location">
          <input
```

Users > sathvikreddy > Desktop > esp code > Web_Server > data > # style.css > ...

```css

  body {
    font-family: "Montserrat", sans-serif;
    min-height: 100%;
    display: grid;
    grid-template-rows: 1fr 1fr 1fr ;
    background-color: #ffffff;
  }

  #loginPage {
    overflow: hidden;
    background-color: #ffffff;
    position: fixed;
    top: 200px;
    width: 95%;
    height: 500px;
    color: rgb(0, 0, 0);
    align-items: center;
    /*grid-row-start: 1;
      grid-row-end: 1;*/
    z-index: 1;
    padding: 2px 2px 2px 2px;
    border-radius: 5px;
    margin: 0px 30px auto;
  }

.btn{
  background-color: #0072C4; /* Blue */
  border: none;
  color: white;
  padding: 10px 20px;
  text-align: center;
  text-decoration: none;
  display: inline-block;
  font-size: 16px;
  border-radius: 5px;
}

.btn:hover{
  background-color: #003D69;
}

.PageHide{
  display: none;
```

Moving Forward what changes need to be made to the product.



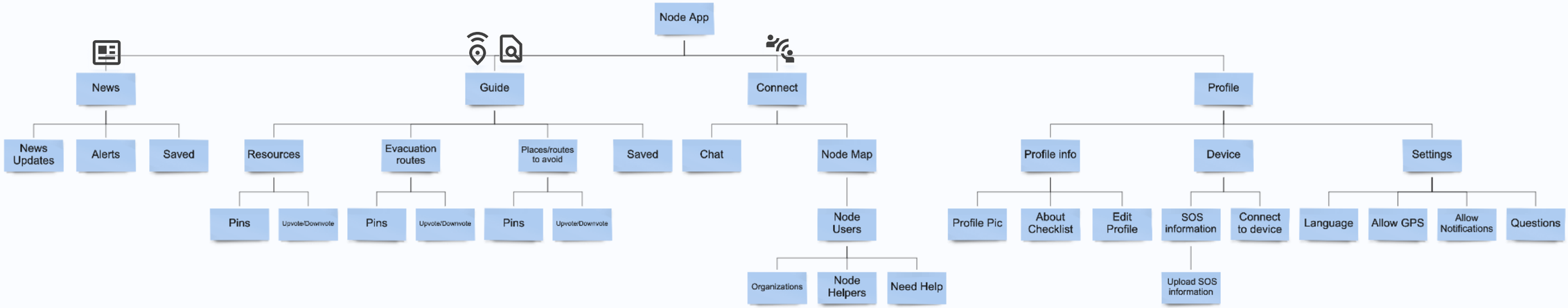
current model

- ESP WIFI module
- Transmit at 2400 MHz

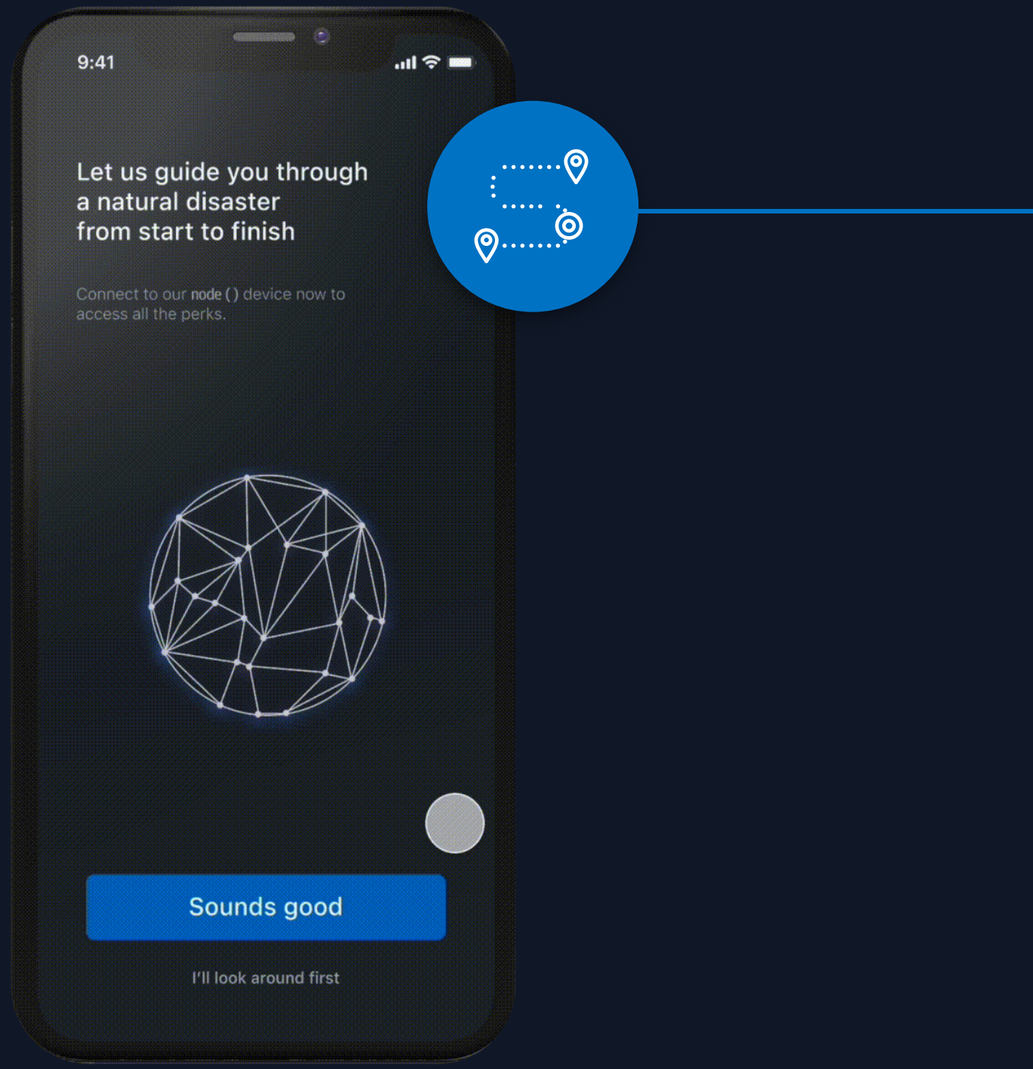
Since we do not share any large media files
and range is the priority
make the device to work between 5-30MHz

App

App Sitemap


Node App
News
Guide
Connect
Profile
News Updates
Alerts
Saved
Resources
Evacuation routes
Places/routes to avoid
Saved
Chat
Node Map
Profile info
Device
Settings
Pins
Upvote/Downvote
Pins
Upvote/Downvote
Pins
Upvote/Downvote
Node Users
Profile Pic
About Checklist
Edit Profile
SOS information
Connect to device
Language
Allow GPS
Allow Notifications
Questions
Organizations
Node Helpers
Need Help
Upload SOS information

Node (Onboarding)



Node(Feed)

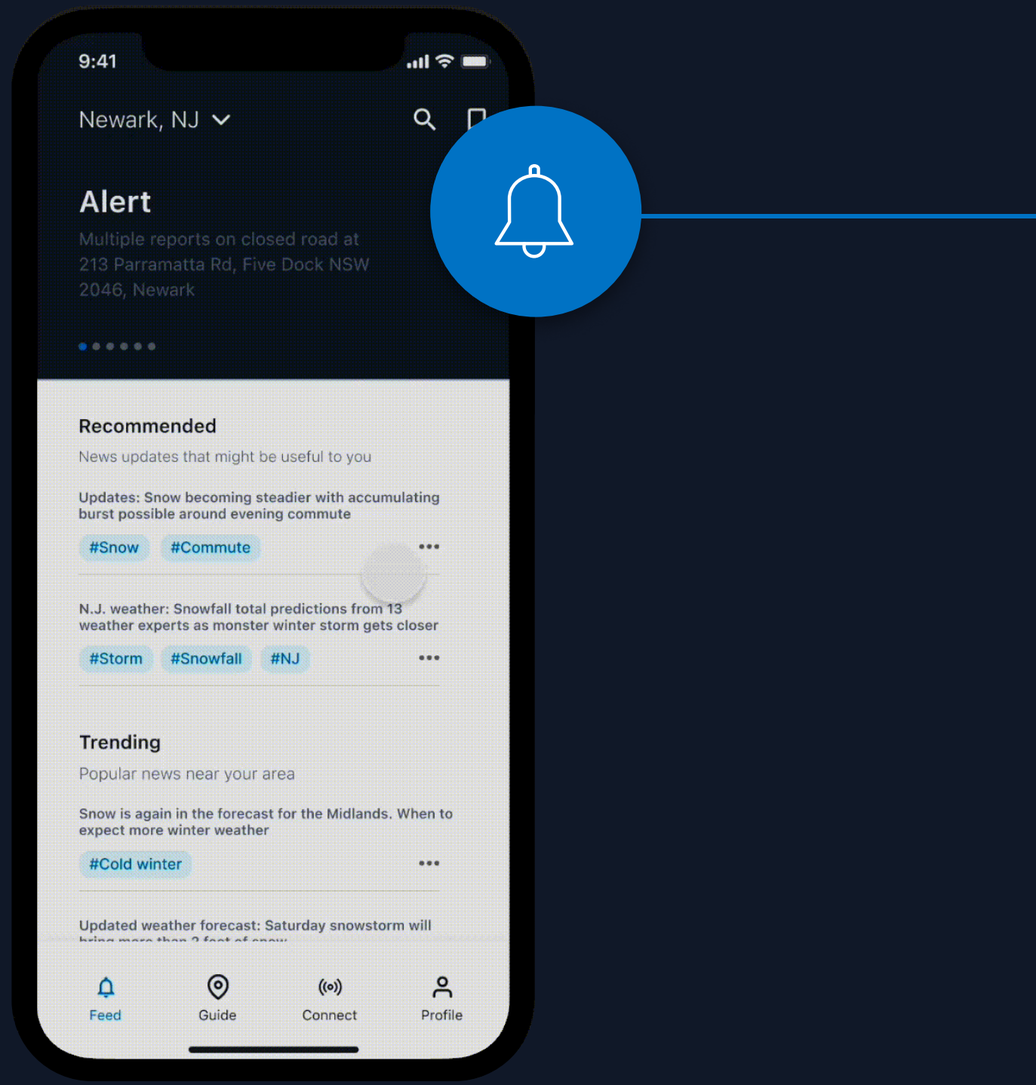
News Update

Users recieve credible, up-to-date news alerts

Node now

Safety alerts near your area.

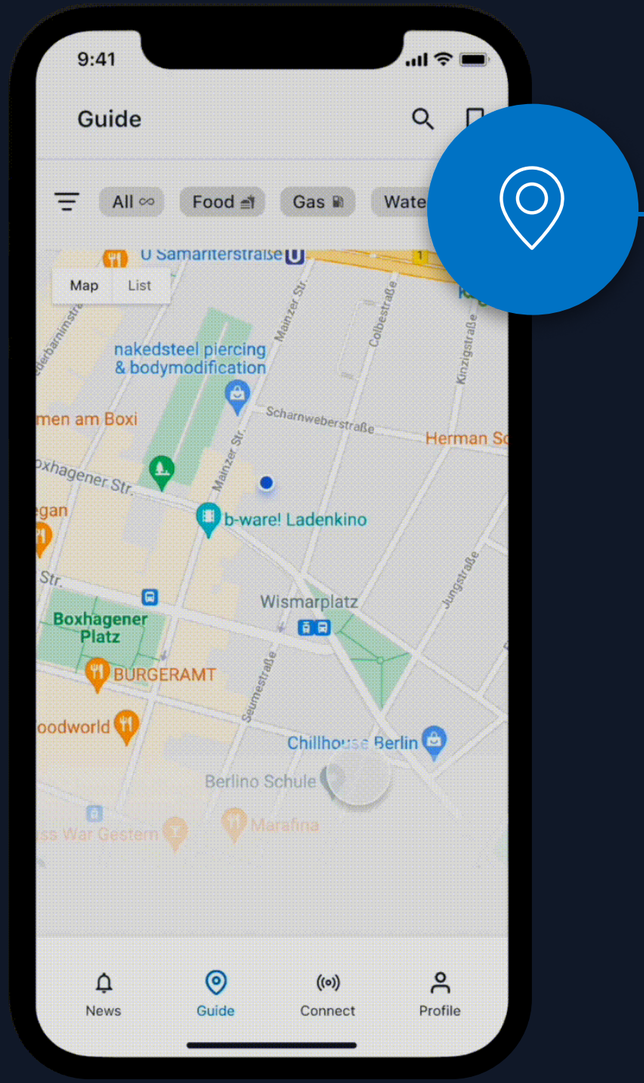
Multiple reports on closed road at 213 Parramatta Rd, Five Dock NSW 2046, Australia



Node(Guide)

Guide

Provides users with a way to find necessary resources in their area vetted by members of the community



Node(Connect)

Connect

The Node device uses mesh network technology to keep users connected and able to get help

Branding

Branding

Logo:

Node( )

Colors:

#101828 #080660 #0072C4 #97ABC4 #FFFFFF

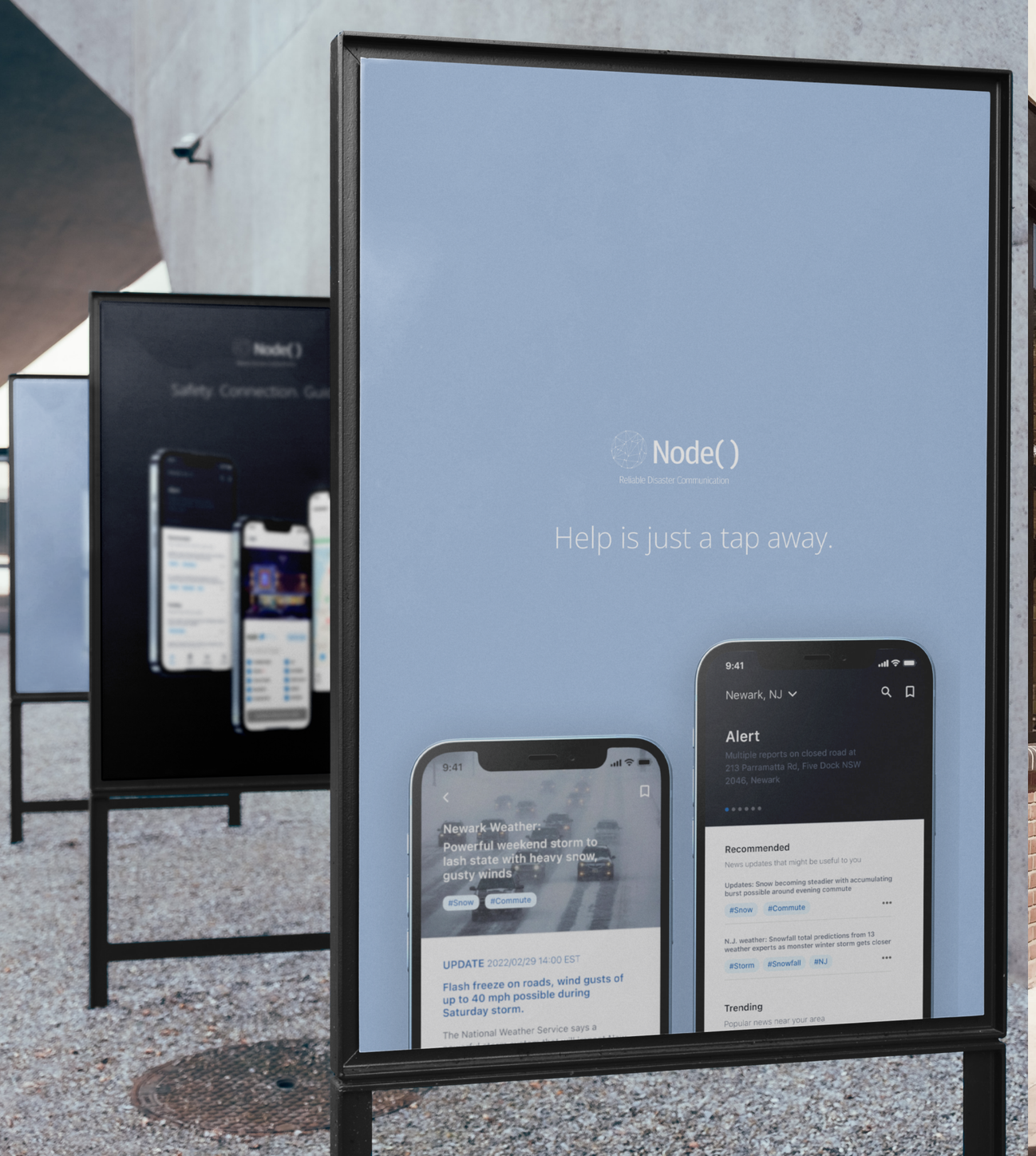
Typography:

Meta Headline Pro

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 ! @ # $ % ^ & * ( ) _ + { } [ ] : ” | ; ’ \ ‹ › , . ? /

SF Pro text

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
1 2 3 4 5 6 7 8 9 0 ! @ # $ % ^ & * ( ) _ + { } [ ] : ” | ; ’ \ < > , . ? /


Node( )
Reliable Disaster Communication
Help is just a tap away.
9:41
Newark, NJ
Alert
Multiple reports on closed road at 213 Parramatta Rd, Five Dock NSW 2046, Newark
Recommended
News updates that might be useful to you
Updates: Snow becoming steadier with accumulating burst possible around evening commute
#Snow
#Commute
N.J. weather: Snowfall total predictions from 13 weather experts as monster winter storm gets closer
#Storm
#Snowfall
#NJ
Trending
Popular news near your area
9:41
Newark Weather:
Powerful weekend storm to lash state with heavy snow, gusty winds
#Snow
#Commute
UPDATE 2022/02/29 14:00 EST
Flash freeze on roads, wind gusts of up to 40 mph possible during Saturday storm.
The National Weather Service says a

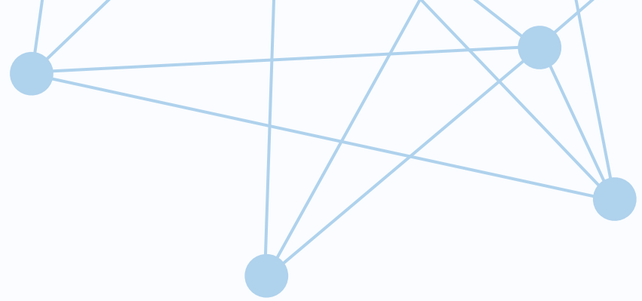
STREE
Node( )
Reliable Disaster Communication
Safety with a twist.

Package Design

Package Design

Business

Pricing Model



Business to Consumer

Individual Plan

- Individuals can purchase a Node for their personal use

Family plan

- Families can buy Nodes for up to four family members and save more

Business to Business

- City government and organizations can contact us for a quote
- Scalable pricing
- Product sold at cost

Individual Pricing

Sell directly to consumer

Individual Plan

- Buy Node **$70** (12 month 0%APR, **$6** per **month**)
- $2 per Mb

Individual Pricing

Sell directly to consumer

Family Plan

- Buy **2** Node for **$135**
- $2 per Mb

Save $5

Individual Pricing

Sell directly to consumer

Family Plan

- Buy 3 Node for **$195**
- $2 per Mb

Save $15

Individual Pricing

Sell directly to consumer

Family Plan

- Buy 4 Node for **$250**
- $2 per Mb

Save $30

Organization Pricing

Wholesale to Organization (B2B)

Buy in bulk (Offering Quotes)

Rents out to people

- Rent out **monthly** (**$5**) per node + pay usage **$2** per **MB** to us)
- All rentals go through us with **equiptment fee** being sent to **government** or **organization**

Node

- If they buy **500 units** (**10%** cheaper)
- If they buy **1000 units** (**15%** cheaper)
- If they buy **2000+ units** (**20%** cheaper)

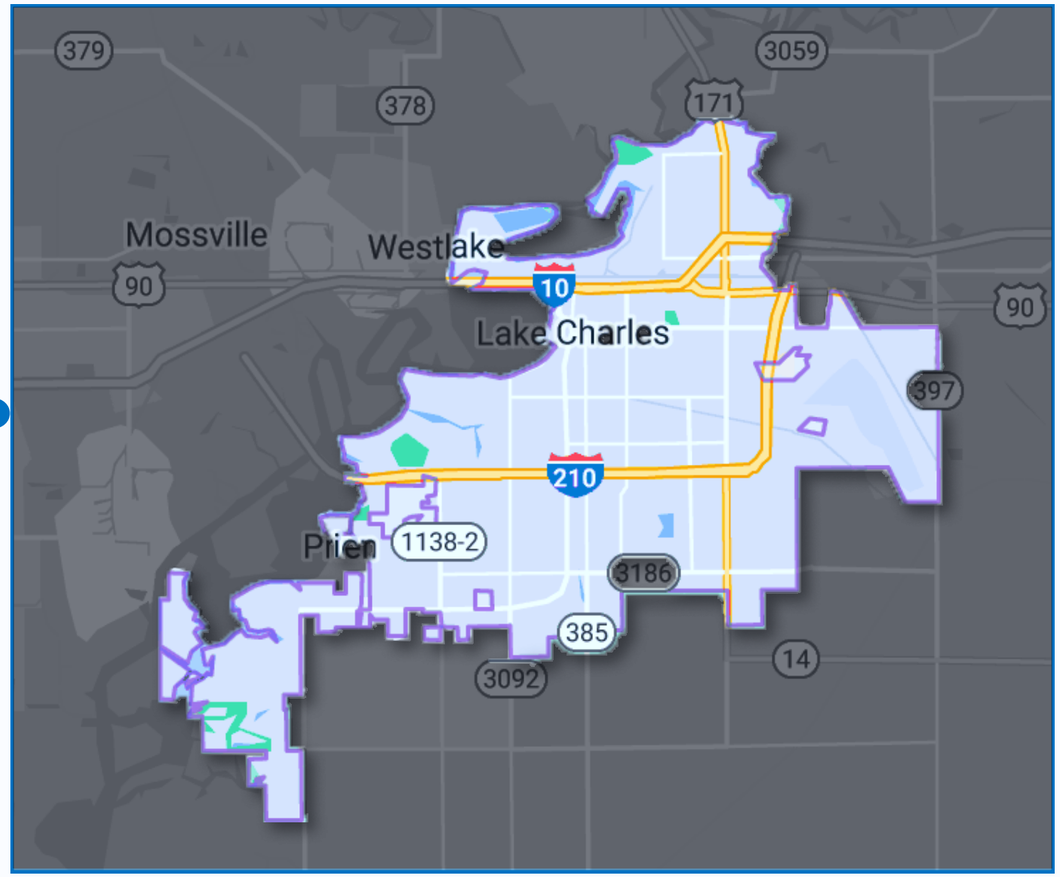
Buys Equiptment

- (**$74 base**) and node (**$50 base**) from us in bulk (have **set packages based on area**)

Beacon

- If they buy **50 units** (**10%** cheaper)
- If they buy **100 units** (**15%** cheaper)
- If they buy **200+ units** (**20%** cheaper)

Node for Monica's city



Lake Charles, LA

32k households

2.2 people per household

1 Node per housegold

22% below poverty level

(7,260 low income people)

47.7mi size

Recommend 1 beacon for every 2 miles

City government needs

100 beacons (approximately $6290)

3630 nodes (approximately $145,200)

Total: $151,480

Business Plan

Key partners

- Natural Disaster hotlines
- 911
- Government Agencies
- Local organizations & volunteers
- Local disaster services
- Communities

Motivations for Partnerships

- Optimization in spreading news and alerts
- Reduction of traffic
- Focus on people who really need help
- Expedited relief and recovery

Value propositions

- Risk reduction during natural disasters
- Trustworthy and essential information only for users
- Reduced panic and worry by providing, up-to-date, reliable news based on location, as well as resource mapping
- Reliable form of communication utilizing radio and mesh network technology for users to get help and stay in the loop
- Increased customization and improved usability from current solutions

Key activities

- Platform to connect with necessary resources
- Services that help users get through natural disasters smoothly
- Streamlined information based on location and need

Key resources

- Physical product
- Intellectual resources, such as data collection and news filtering
- Human resources; reliable communication and local resources

Customer relationships

- **Co-Creation**:
  - Interactive map where users can create a better experience, for example voting on whether a store has important resources people are looking for
- **Community**:
  - Radio and app connect users to local community for help, updates, and safety

Customer Segments

- **Mass market**:
  - People who are not used to going through natural disasters, live far away from support network, want specific disaster guidance
  - Communities using Node for help and safety

Channels

- **Partner channels**:
  - Local disaster services, natural disaster hotlines, resource distribution locations
- Website
- Social media
  - Instagram and Twitter

Cost structure

- **Fixed pricing**:
  - Asset sale/List price: $70 Node product, $74 Beacon
  - User pay $2/Mb they use
- Production Cost
- Employee Cost
- Marketing Cost

Revenue streams

- **Advertising (digital - social media, news, magazines)**:
  - Return of Investment (ROI) is estimated at 20% if sales grew by $200 and spent $1000 on marketing

Product Costs

Components	Price
WIFI	$1.789
Radio	$5
Antenna	$3
Battery	$10
Amplifier	$0.75
Speakers	$5
Microphone	$1
Wiring,..MISC	$5
Assembling, testing	$5
Manufacturing	$5
Packing, Logistics	$5
	≈ $47

Components	Price
WIFI	$3
Radio	$10
Antenna	$5
Battery	$30
Amplifier	$0.75
Speakers	$5
Wiring,..MISC	$5
Assembling, testing	$5
Manufacturing	$5
Packing, Logistics	$5
	≈ $74

Implementation Roadmap

Node ( )

Pre-pilot

Q1-2022

Activity

Pitch the project to **potential partner** organizations and government facilities

Discuss with **manufacturer**

Q2-2022

Project oversight
Project adjustments

Reach out to **local stakeholders**
Recruit **essential employees**
Reach out to potential partners

Implementation Roadmap

Pilot

Q3-2022

Activity

Launch and monitor with partenered organizations

Market validation (Go/No go)

Q4-2023

Roll out Node( )
with wide implementation with partnered organizations

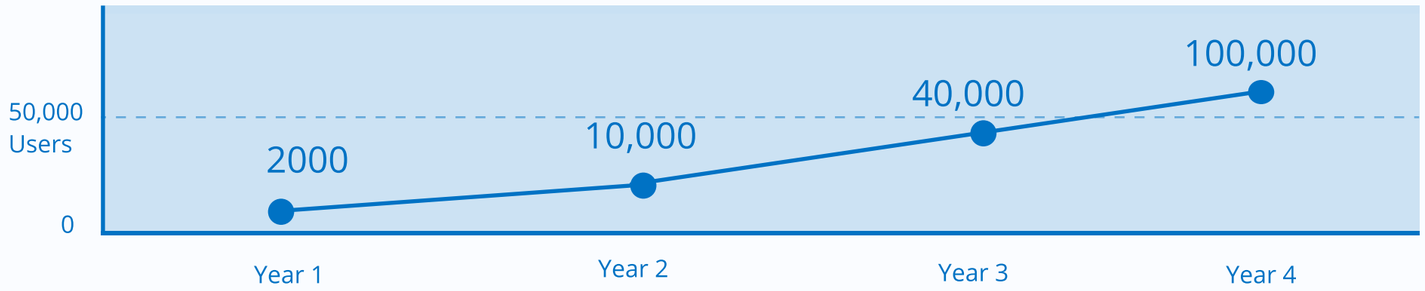
Impact

Market Size

Global Telecom Services Market

- USD **1,657.7** billion (2020)
- expected **growth rate** to **increase** by **5.4%** from 2021 to 2028

POPULATION PROTECTED



Final Deliverables

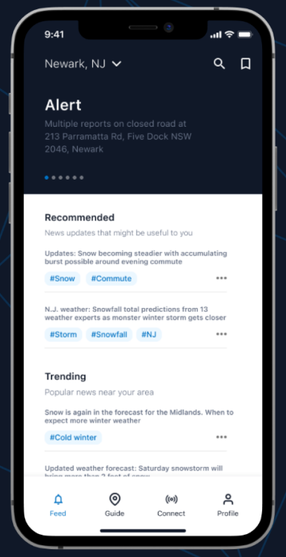
Vision Video

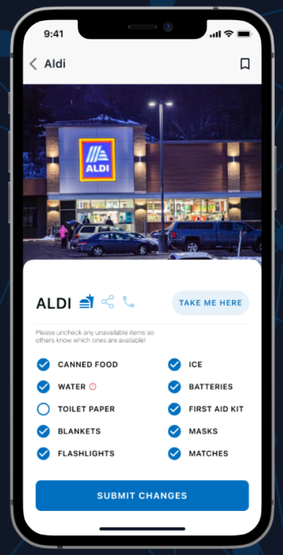
https://www.youtube.com/watch?v=JakiCRpt1ss

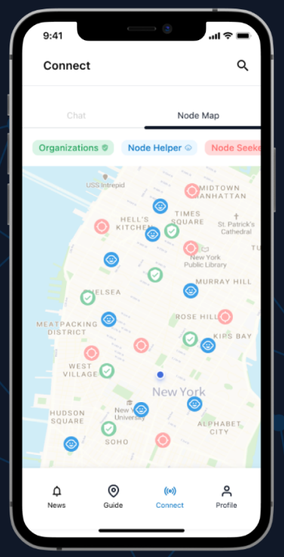
Lookbook, Poster, Selected Images

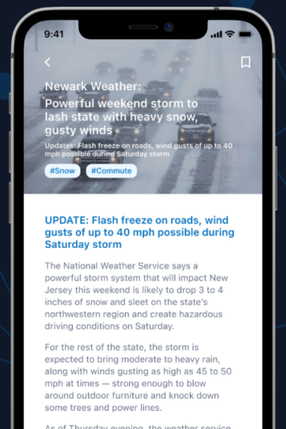
Node( )

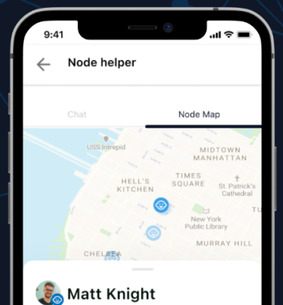
Reliable Disaster Communication

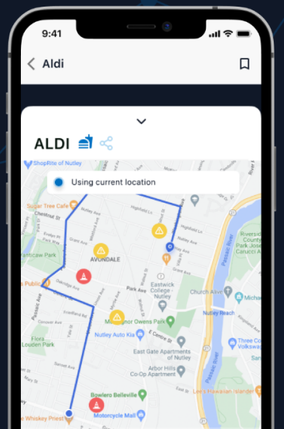












Node( )

Reliable Disaster Communication

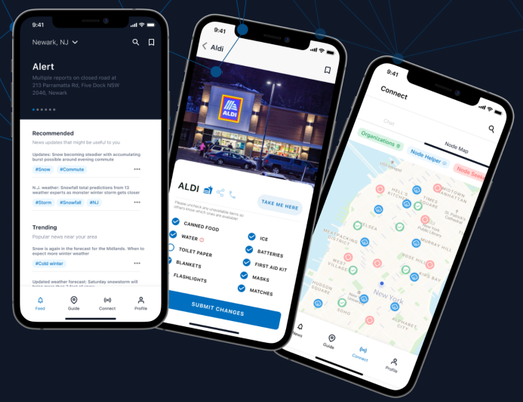
Problem

Natural disasters are very unpredictable and the ways information is spread and communication is handled only make a bad situation worse. On top of that, when the power goes out and cell service is down people are left without the use of the technology they depend on so much.

Solution

Node uses mesh network technology to form a self-sufficient wireless network that users can access even when normal systems fail. Using our network, users can send emergency messages, see up-to-date news and alerts, find important resources, and find the safest routes all on one, reliable platform.

Connect to emergency contacts



News Update

Users recieve credible, up-to-date news alerts

Guide

Provides users with a way to find necessary resources in their area vetted by members of the community

Connect

Using our network, users can message with others users, volunteers, and organizations for help and guidance

SCAD Isabella Rivera Mikayla Kim Sathvik Kotha Jiyoung Lee Tang Tantivirun

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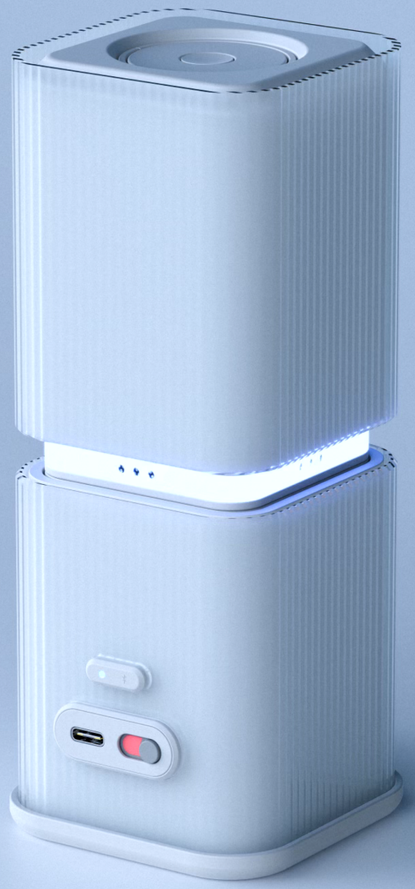
Reliable Disaster Communication

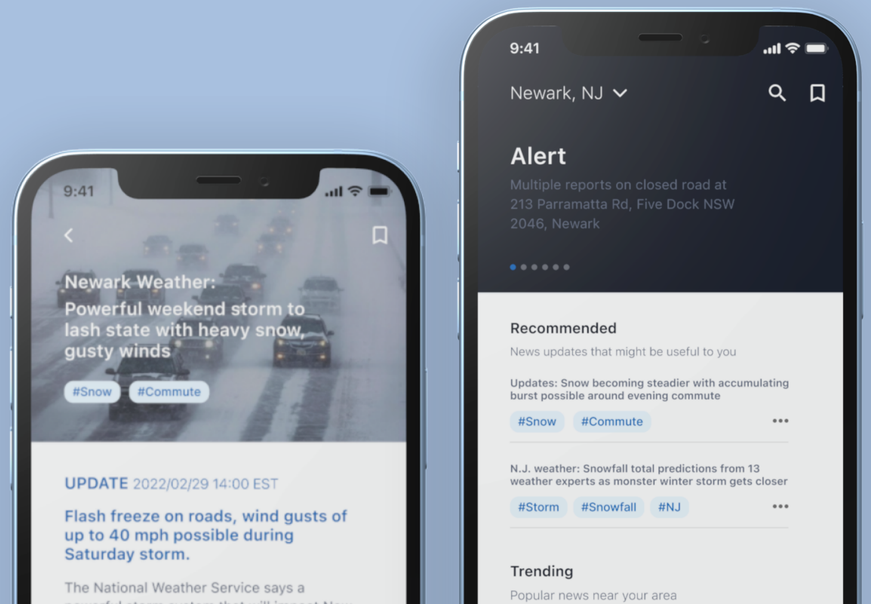
Safety with a twist.



Node( )

Reliable Disaster Communication

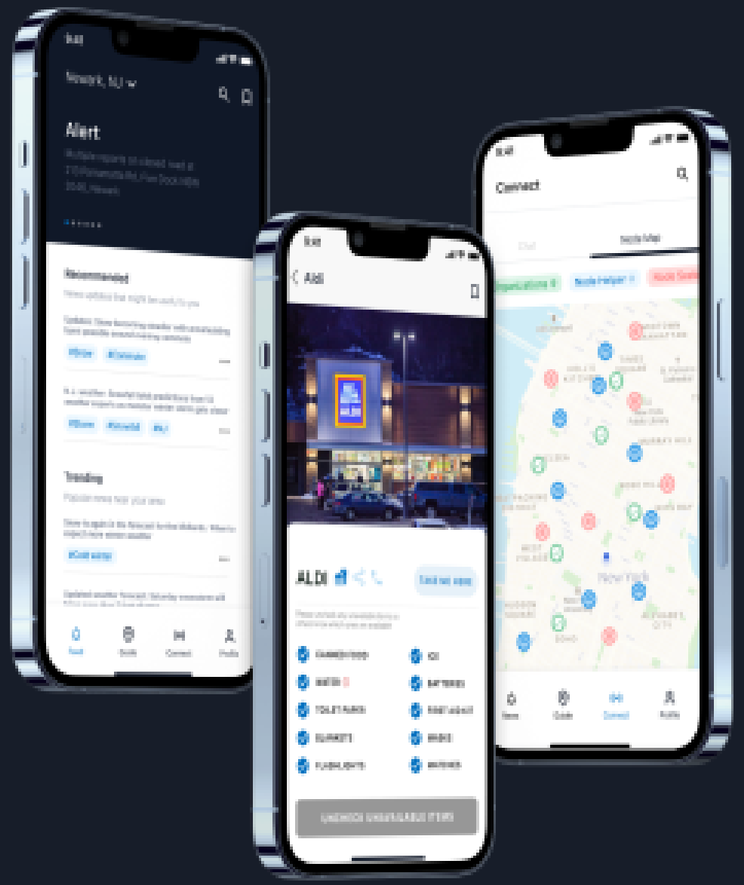
Help is just a tap away.



Node( )

Reliable Disaster Communication

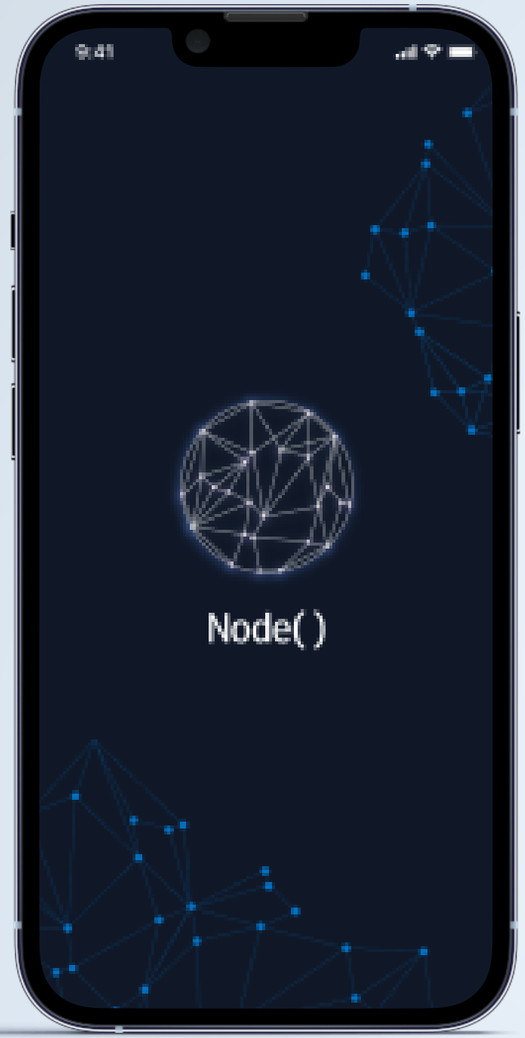
Safety. Connection. Guidance.



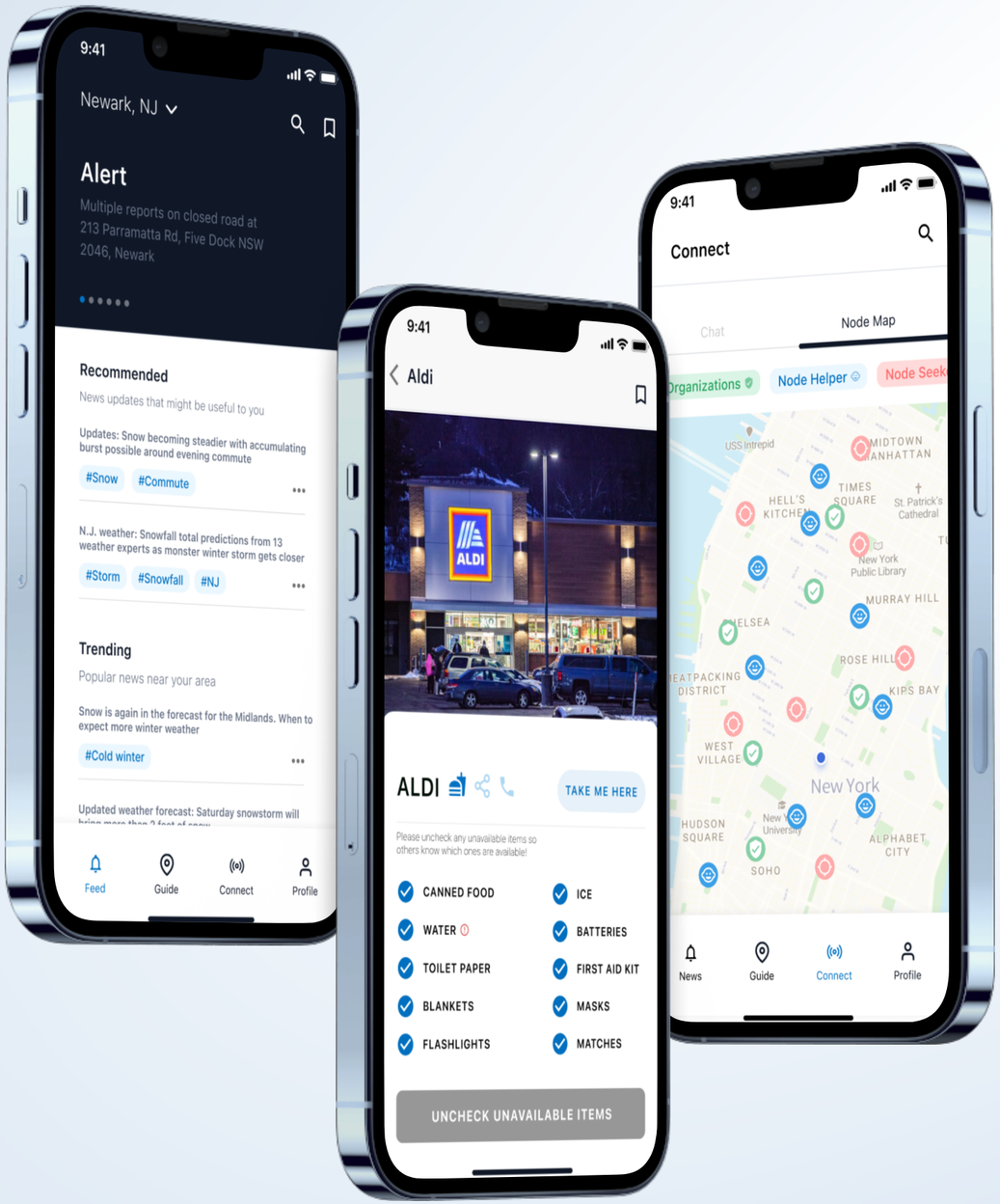
Node( )

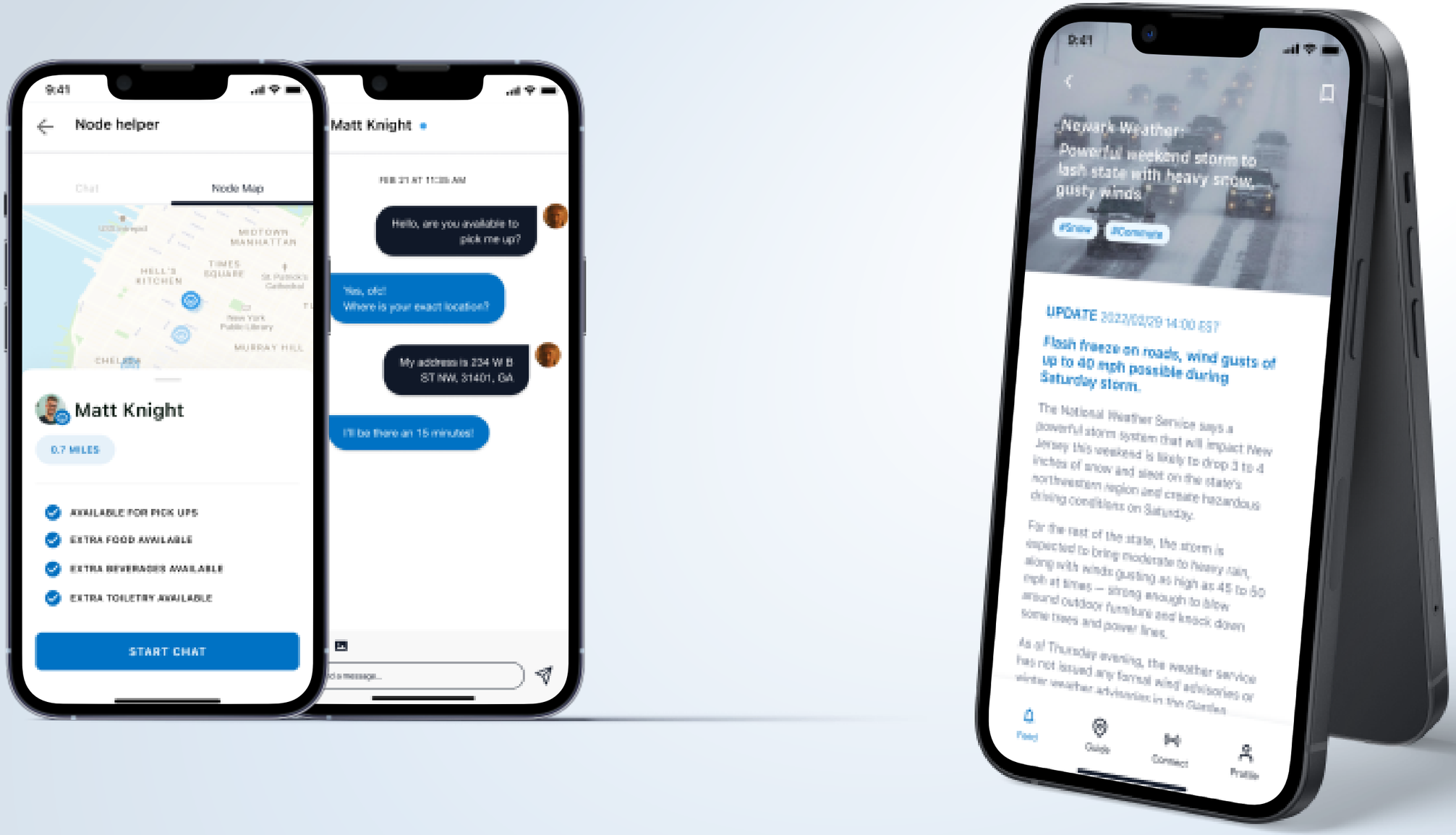
Reliable Disaster Communication

Help is just a tap away.


9:41
Node( )

ALDI
UNCHECK UNAVAILABLE ITEMS
ALDI
33 MINUTES


9:41
Newark, NJ
Alert
Multiple reports on closed road at 213 Parramatta Rd, Five Dock NSW 2046, Newark
Recommended
News updates that might be useful to you
Updates: Snow becoming steadier with accumulating burst possible around evening commute
#Snow
#Commute
N.J. weather: Snowfall total predictions from 13 weather experts as monster winter storm gets closer
#Storm
#Snowfall
#NJ
Trending
Popular news near your area
Snow is again in the forecast for the Midlands. When to expect more winter weather
#Cold winter
Updated weather forecast: Saturday snowstorm will
Feed
Guide
Connect
Profile
9:41
Aldi
ALDI
TAKE ME HERE
Please uncheck any unavailable items so others know which ones are available!
CANNED FOOD
WATER
TOILET PAPER
BLANKETS
FLASHLIGHTS
ICE
BATTERIES
FIRST AID KIT
MASKS
MATCHES
UNCHECK UNAVAILABLE ITEMS
9:41
Connect
Chat
Node Map
Organizations
Node Helper
Node Seek
USS Intrepid
MIDTOWN MANHATTAN
TIMES SQUARE
HELL'S KITCHEN
St. Patrick's Cathedral
New York Public Library
MURRAY HILL
CHELSEA
ROSE HILL
MEATPACKING DISTRICT
KIPS BAY
WEST VILLAGE
New York
HUDSON SQUARE
New York University
ALPHABET CITY
SOHO
News
Guide
Connect
Profile


9:41
Node helper
Chat
Node Map
Matt Knight
0.7 MILES
AVAILABLE FOR PICK UPS
EXTRA FOOD AVAILABLE
EXTRA BEVERAGES AVAILABLE
EXTRA TOILETRY AVAILABLE
START CHAT
Matt Knight
Hello, are you available to pick me up?
Yes, ofc! Where is your exact location?
My address is 234 W B ST NW, 31401, GA
I'll be there in 15 minutes!
9:41
Newark Weather
Powerful weekend storm to lash state with heavy snow, gusty winds
#Snow
#Commute
UPDATE 2022/02/20 14:00 EST
Flash freeze on roads, wind gusts of up to 40 mph possible during Saturday storm.
The National Weather Service says a powerful storm system that will impact New Jersey this weekend is likely to drop 3 to 4 inches of snow and sleet on the state's northwestern region and create hazardous driving conditions on Saturday.
For the rest of the state, the storm is expected to bring moderate to heavy rain, along with winds gusting as high as 45 to 50 mph at times — strong enough to blow around outdoor furniture and knock down some trees and power lines.
As of Thursday evening, the weather service has not issued any formal wind advisories or winter weather advisories in the Garden
Feed
Guide
Connect
Profile

Node()

9:41
Connect
Node Map
Chat
Node Seeker
Node Helper
Organizations
MIDTOWN MANHATTAN
TIMES SQUARE
HELL'S KITCHEN
MURRAY HILL
CHELSEA
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ICE
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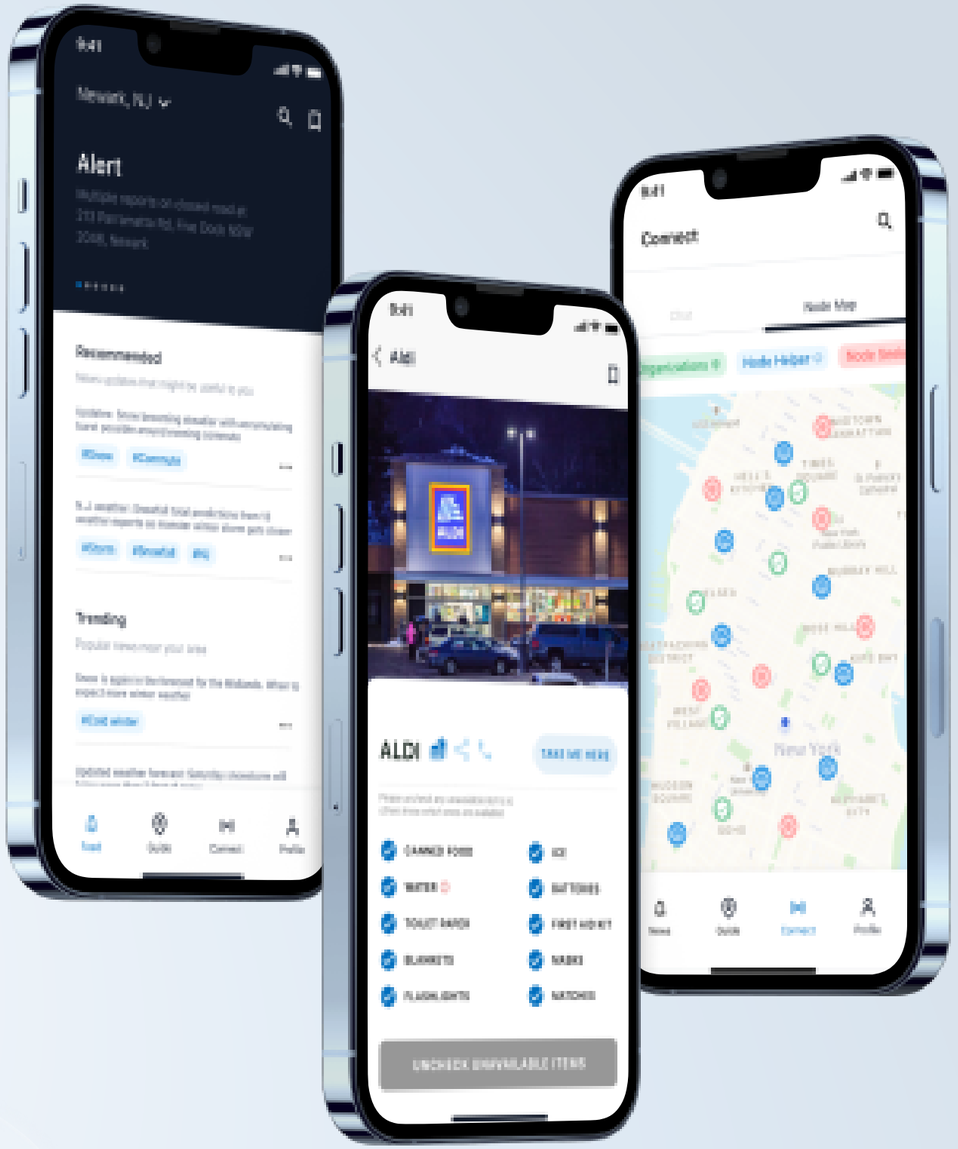
FIRST AID KIT
MASKS
MATCHES
SUBMIT CHANGES

Node()


Alert
Recommended
Trending
ALDI
UNCHECK UNAVAILABLE ITEMS

Node()

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Node()

Website & Social Media

Website

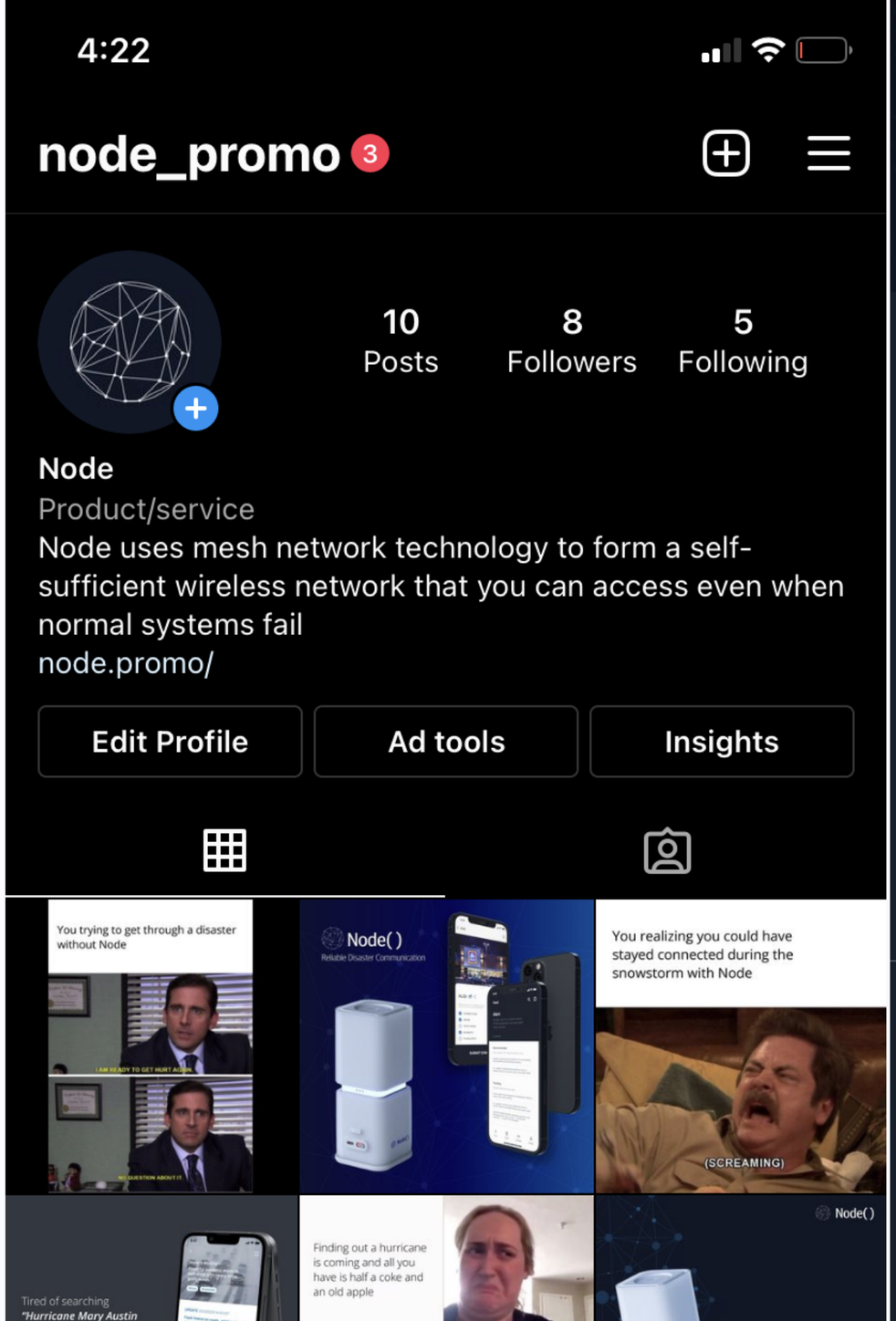
Node.promo

Instagram

node_promo

Twitter

Node_promo



Thank you!