Node( )

Reliable Disaster Communication

Natural Disaster Communication

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.

Two Main Aspects

Finding necessary information

Staying Connected

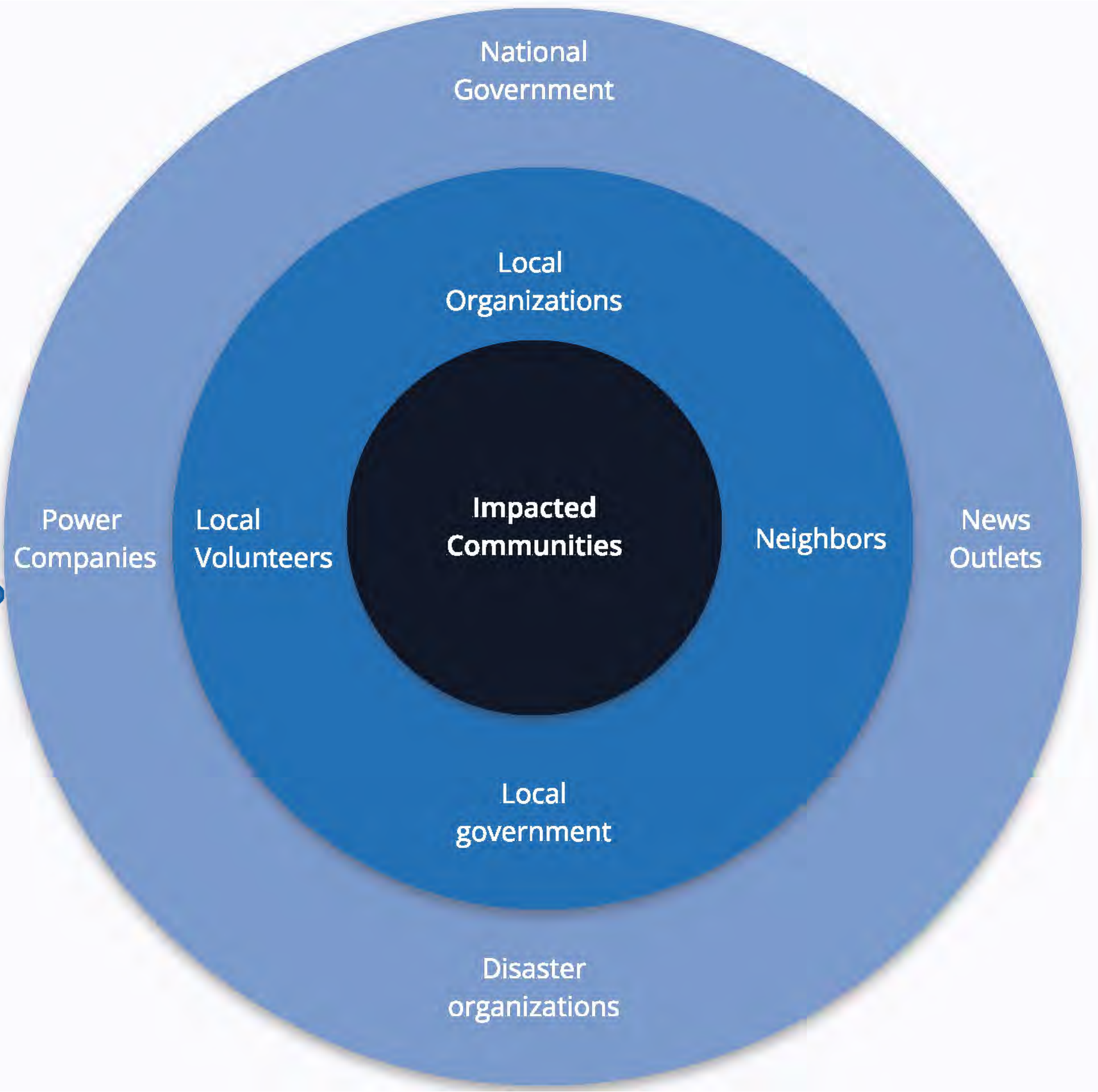# Target Audience

Communities

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

Main Research Areas

Determine how people plan for natural disasters

Find communication platforms people use during a natural disaster

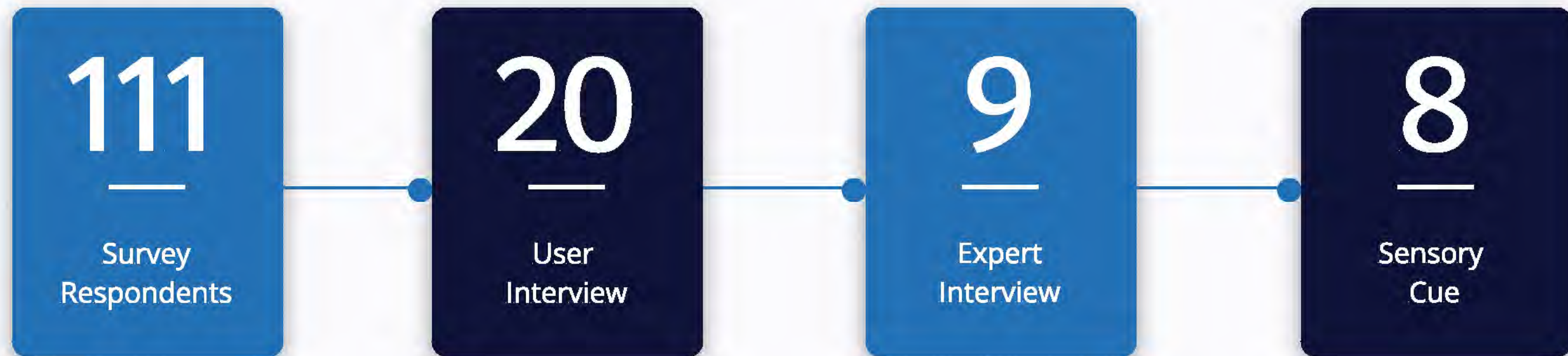Discover existing information channels

Identify relationship between intensity of situation and need for communication support

See ways to provide a safe enviornment for people in a disaster

Methods

111	20	9	8
Survey Respondents	User Interview	Expert Interview	Sensory Cue

Key Insights

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

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

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**

Information from the top is **ineffectively spread** to the public

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

Most people don't have a **secondary communication device**

Henry, A. (2018, February 15). How to prepare your community for a disaster. The New York Times. Retrieved from https://www.nytimes.com/2018/02/15/smarter-living/prepare-your-community-for-a-disaster.html

Persona

Monica Jones

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

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

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

User Journey Map

	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 Opportunity	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

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?

What is 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

Node

0.3 - 0.6 miles

Always stays connected to other nodes and beacons

Can work as a stand-alone voice communication device

SOS Twist to contact emergency help

How does it work

Water proof

Light Indicator

Speaker

Bluetooth Indicator

Charging port

Power Button

Node( )

Node (Beacon)

0.3 - 0.6 miles

0.3 - 0.6 miles

Node (Beacon)

1 - 2 miles

0.3 - 0.6 miles

0.3 - 0.6 miles
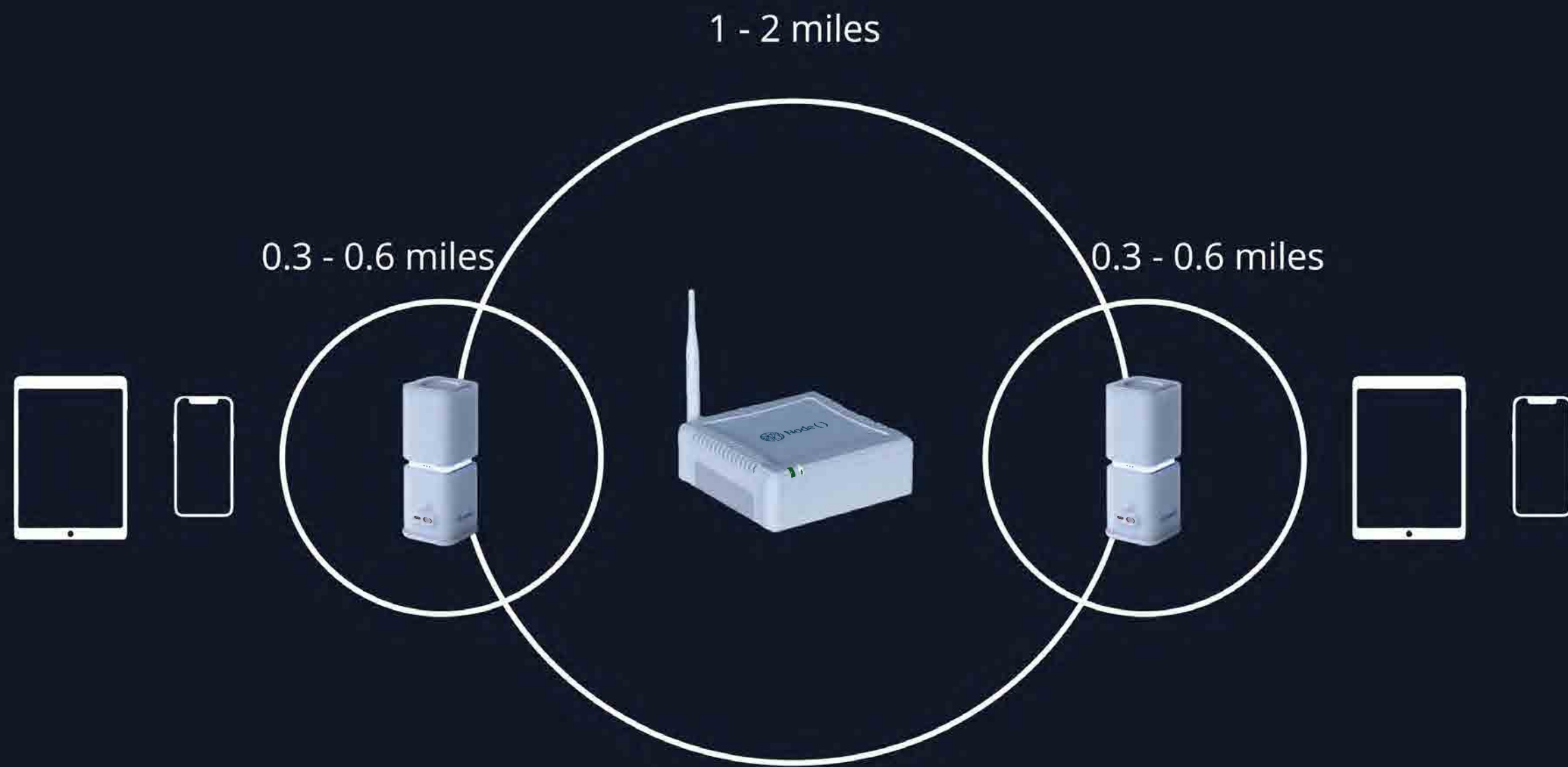
Node (Beacon)

- 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

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
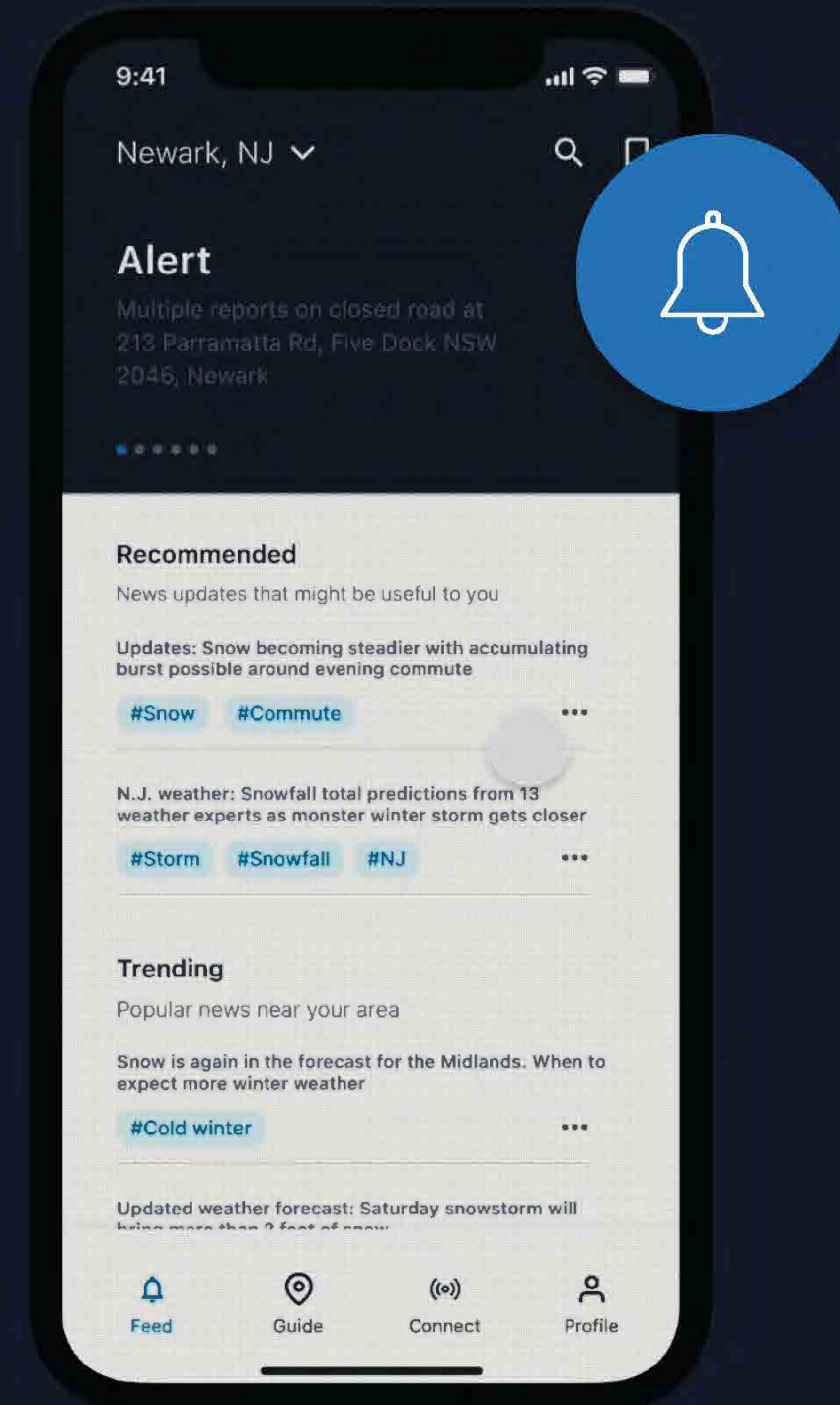
Node(Guide)

Guide
Provides users with a way to find necessary resources in their area vetted by members of the community
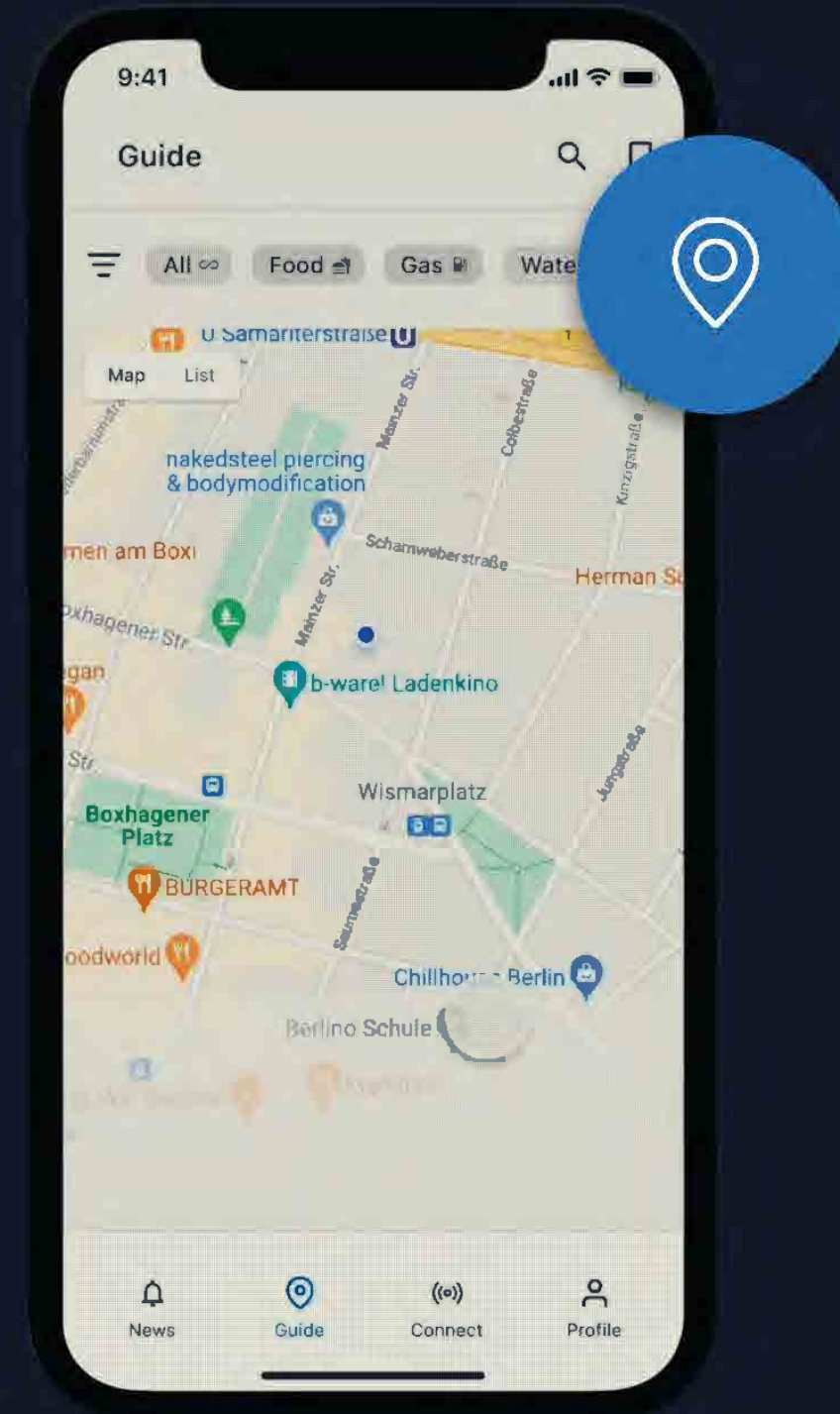
Node(Connect)

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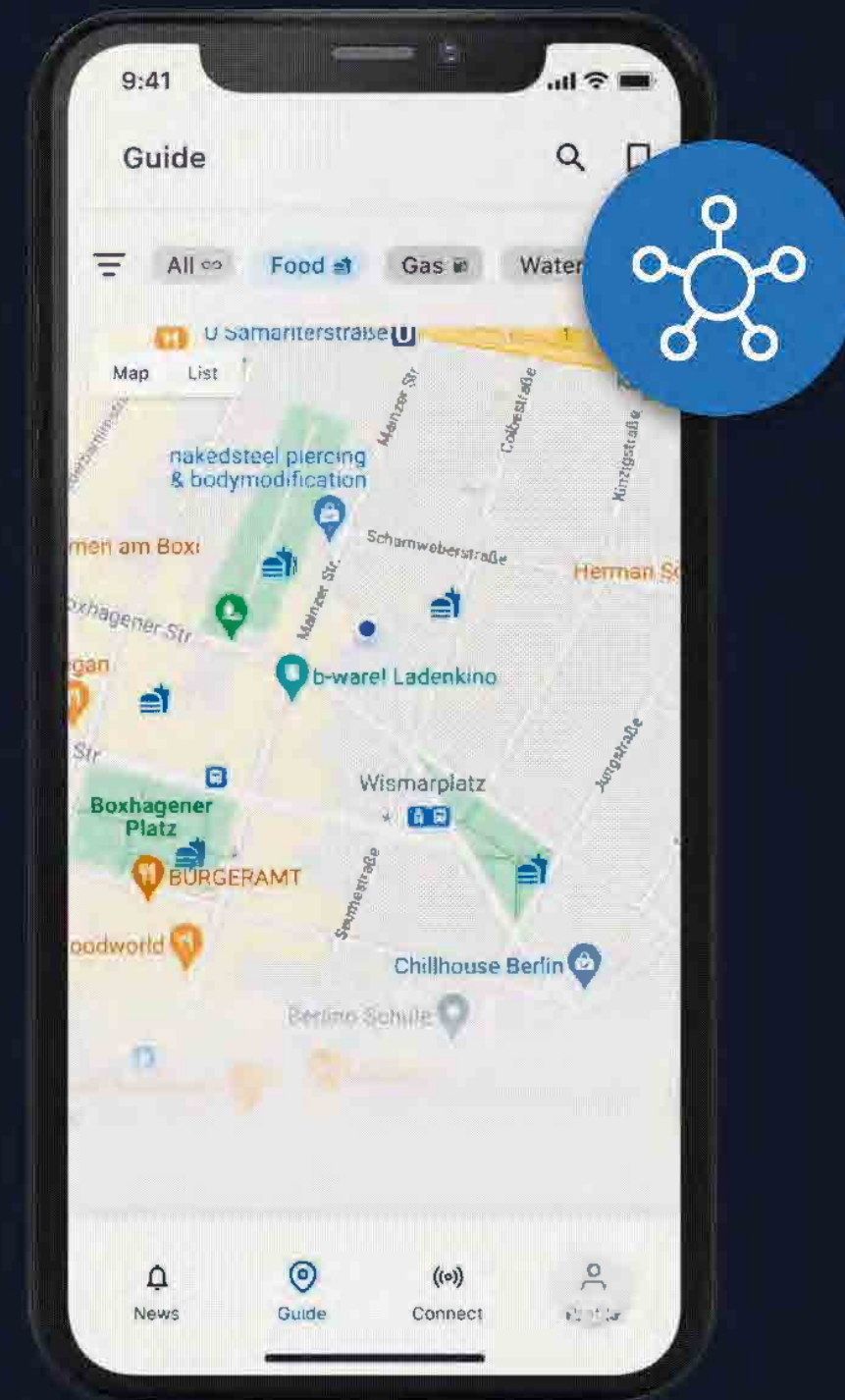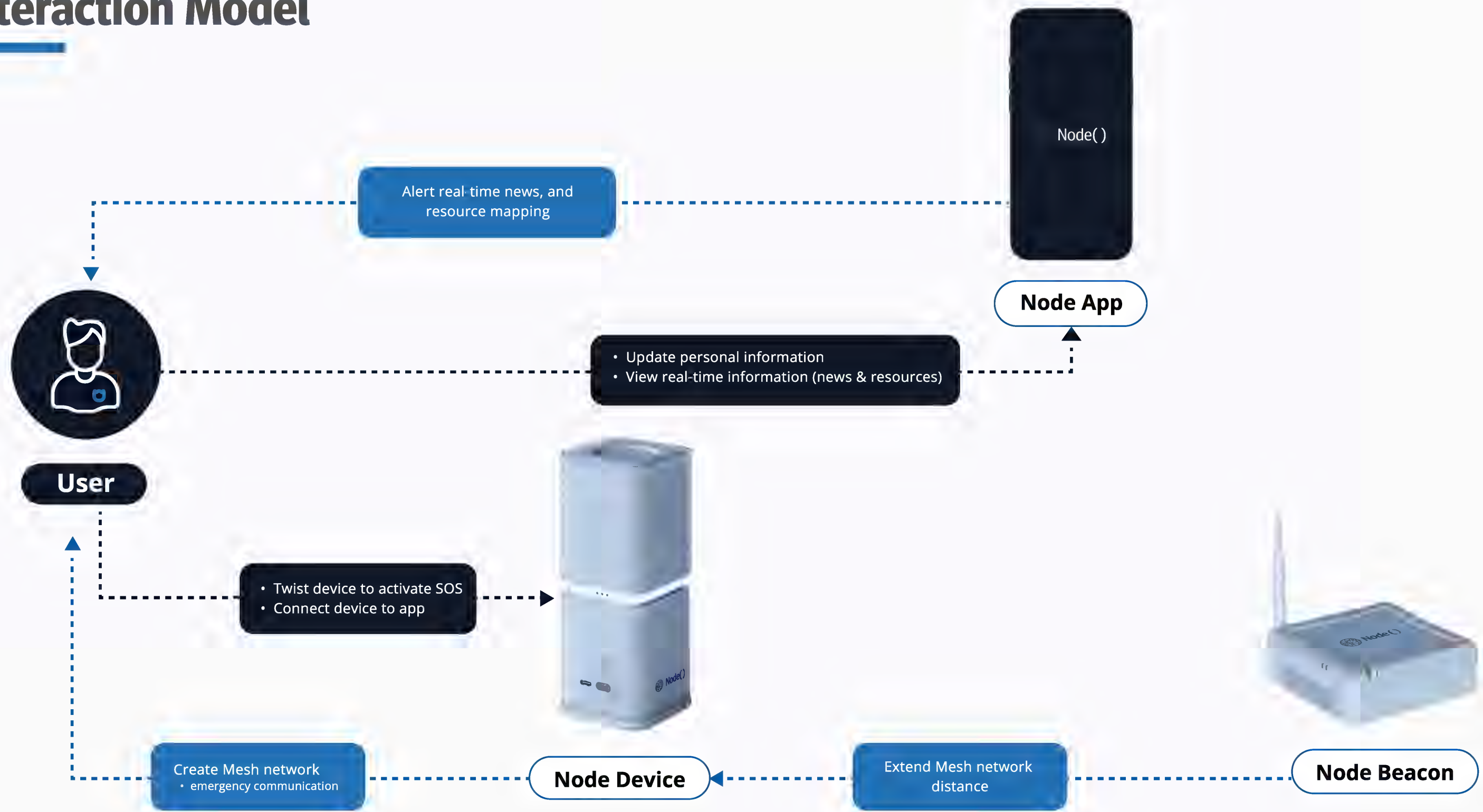The Node device uses mesh network technology to keep users connected and able to get help
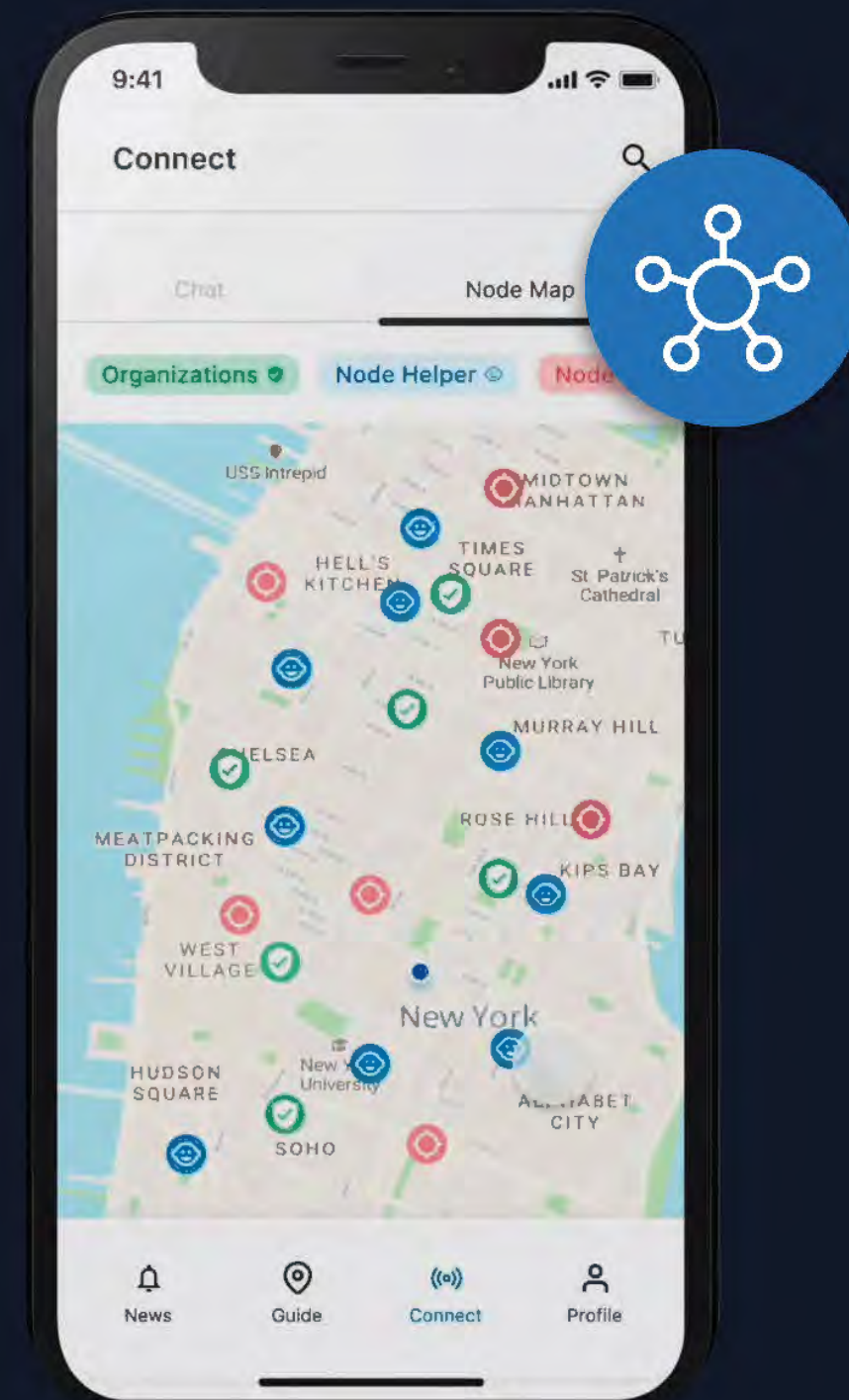
Node(Connect)

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

Interaction Model

Node( )

Node App

Alert real-time news, and resource mapping

- Update personal information
- View real-time information (news & resources)

User

- Twist device to activate SOS
- Connect device to app

Node Device

Create Mesh network
- emergency communication

Extend Mesh network distance

Node Beacon

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.
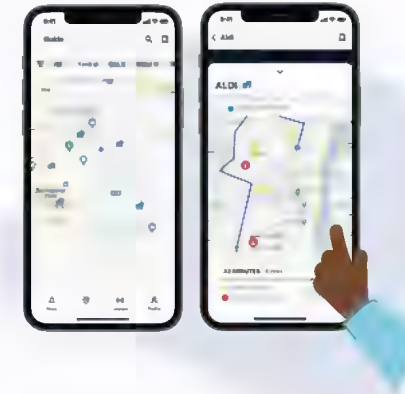
She also finds where to get gas and other resources she needs with the best routes to get there.
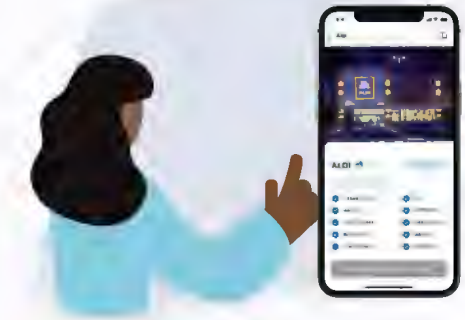
Monica went to the grocery store Node suggested and was able to find everything she needed. She upvotes it to notify other users that it is a good place to go.

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.
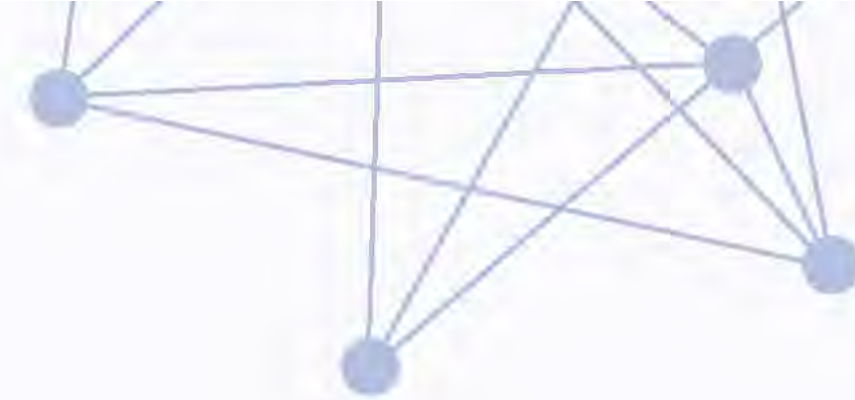

When her window breaks, and she realizes her phone is dead, she twists her device to contact emergency help. A local disaster organization talks to her with the walkie-talkie and tells her what to do

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.

Pricing Model

Business to Consumer

Individual Plan

- Individuals can purchase a Node for their personal use

Family plan

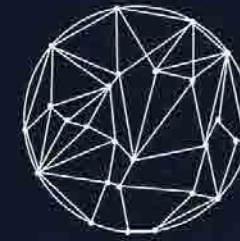- Families can buy Nodes for up to four family members and save more

Business to Business

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

Business Plan

Key partners	Value propositions	Key activities	Customer relationships	Customer Segments

• Natural Disaster hotlines
• 911
• Government Agencies
• Local organizations & volunteers
• Local disaster services
• Communities
	• 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
		• Platform to connect with necessary resources
		• Services that help users get through natural disasters smoothly
		• Streamlined information based on location and need
			• **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
				• **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

Motivations for Partnerships

		Key resources		Channels

• Optimization in spreading news and alerts
• Reduction of traffic
• Focus on people who really need help
• Expedited relief and recovery
		• Physical product
		• Intellectual resources, such as data collection and news filtering
		• Human resources; reliable communication and local resources
				• **Partner channels:**
				  • Local disaster services, natural disaster hotlines, resource distribution locations
				• Website
				• Social media
				  • Instagram and Twitter

Cost structure

Revenue streams

Cost structure	Revenue streams

• **Fixed pricing:**
  • Asset sale/List price: $70 Node product, $74 Beacon
  • User pay $2/Mb they use
• Production Cost
• Employee Cost
• Marketing Cost
	• **Advertising (digital - social media, news, magazines):**
	  • Return of Investment (ROI) is estimated at 20% if sales grew by $200 and spent $1000 on marketing

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