



**switchback**

# Hiking Mobile App

MUXD 5203 / Design Lab: The Industry Challenge

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Mira Etingof, and Brittany Davis



## OVERVIEW

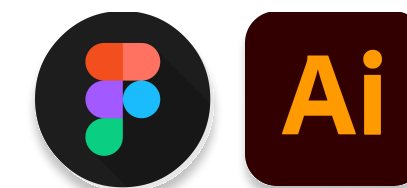
**Switchback** is your go-to guide for finding incredible hiking trails tailored to your preferences. Connect with a vibrant community of fellow outdoor enthusiasts, share your favorite trails, and plan epic adventures together.

With real-time navigation, event planning features, and a passion for exploration, **Switchback** is your gateway to a world where every step leads to new connections and unforgettable memories. Embrace the journey, connect with like-minded hikers, and let **Switchback** be your companion in the great outdoors!

### TEAM

Ayana Jones  
Brittany Davis  
Mira Etingof  
Brittany Saul

### TOOLS



qualtrics<sup>XM</sup>

### TIMELINE

8 weeks

[Detailed Timeline](#)

[Overview](#)



## Research Methodology

To start we interviewed 5 individuals from our networks who enjoy hiking and getting outdoors. This process included a screener questionnaire as well as a preliminary interview so we could better inform our ideation. Our objective was to learn about the habits and wants of hikers of all skill levels, focusing on planning hikes, choosing trails, on- and off-trail challenges, and the hiker's use of technology throughout the experience.

Interviews were conducted both over video conference as well as in person.



for more details,  
please visit our  
[Interview Guide!](#)

## User Types

### CASUAL

The Casual User is someone who enjoys getting out in nature but prefers to take it nice and easy, doesn't want to break a sweat, and would gravitate more to paved paths or flatter trails. Users of this type are concerned with hike difficulty, and don't want to accidentally end up on a trail with difficult terrain.

### RUGGED

The Rugged User is someone who hikes with some regularity, and enjoys a good challenge, but perhaps does not want to take the risks associated with really complex or dangerous terrain. They may track their miles covered, or elevation gained throughout the hike and are more interested in groups and organizations.

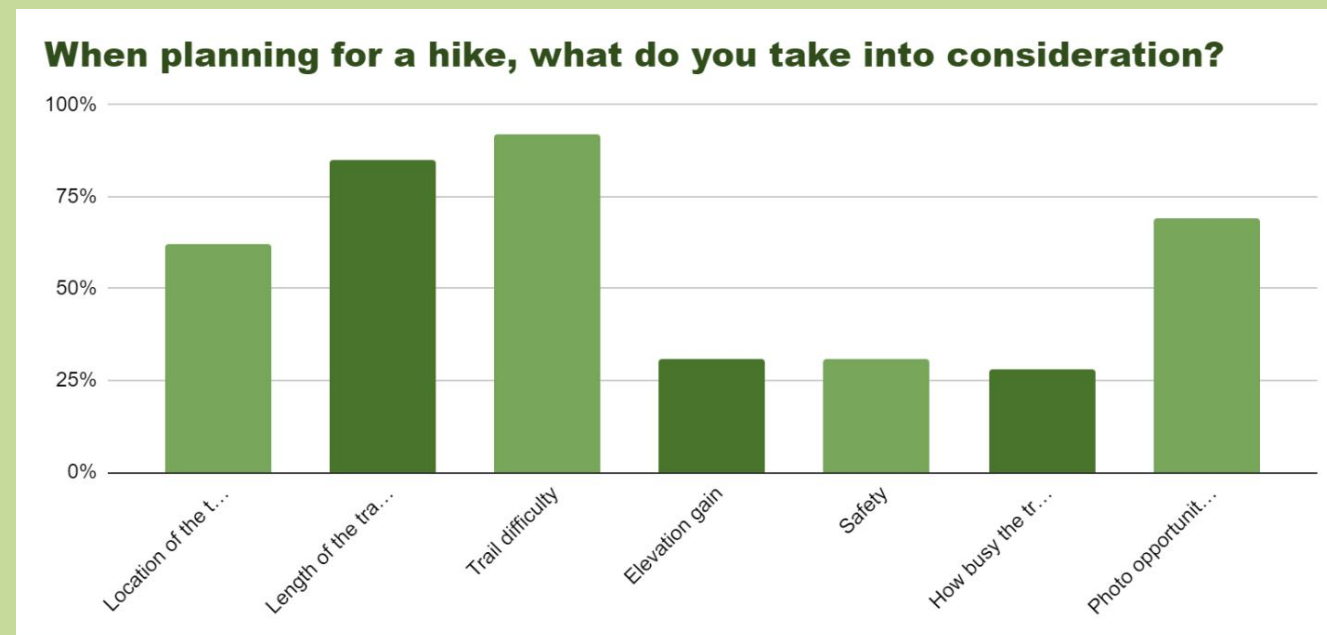
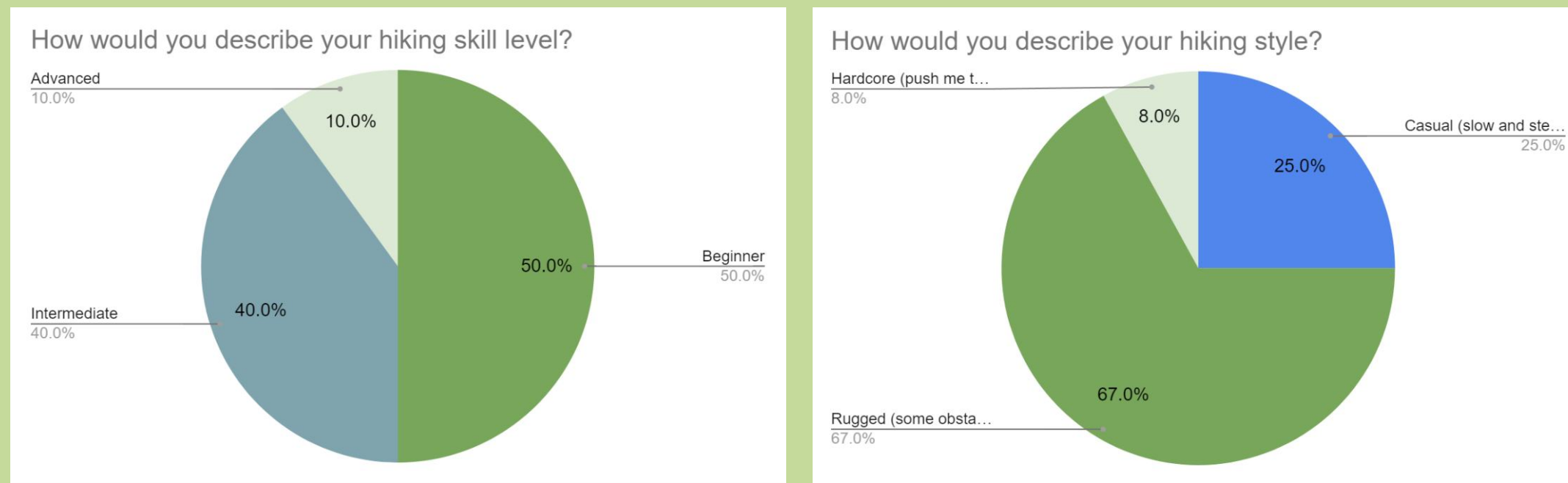
### HARDCORE

The Hardcore User is someone who is extremely dedicated to hiking and wilderness safety, and hikes regularly. Users of this type like to be prepared and know exactly what to expect on the trail. Users of this type want to challenge themselves to the max and read reviews, download maps, and look at markers before every hike.



# Data and Insights

## Screener Data



## Interview Data

**4/5** Participants prefer to hike with other people but most noted that they find it difficult to plan hikes due to varying schedules

**3/5** Participants felt that trails are not often as they are described in competitor websites/mobile apps which impacts the safety of hikers looking for a trail experience that aligns with their skill level

**4/5** Participants felt they would benefit from being able to gain insights into a hiking trail (reviews, images, real-time updates) from other trail-goers to help guide their decision making

**ALL** Participants agreed that personal comfort is a priority and hope to have access to facilities such as restrooms/portable restrooms though they do not always expect to find them at all sites

## What Users Need

### TRANSPARENCY

Is the number one priority of most users - they want to have as much information about a trail as possible prior to their arrival and be able to customize their hiking experience based on their unique needs (including skill level, travel distance, photo ops, and more)

### PERSONALIZATION

Smartwatch interfacing is important to most users that are interested in tracking their hiking metrics. Generally, users felt that receiving notifications and reminders about upcoming group hikes or about their own fitness goals would help them maintain consistency with their hiking habits

### ACCURACY

Is also a priority - users have been let down by competitors due to misinformation or inaccurate representations of trails by other users. Having clear expectations of regulations, obstacles, and other key features at a trail is important to users looking for a smooth experience (I.e. knowing about parking fees/park fees ahead of time)

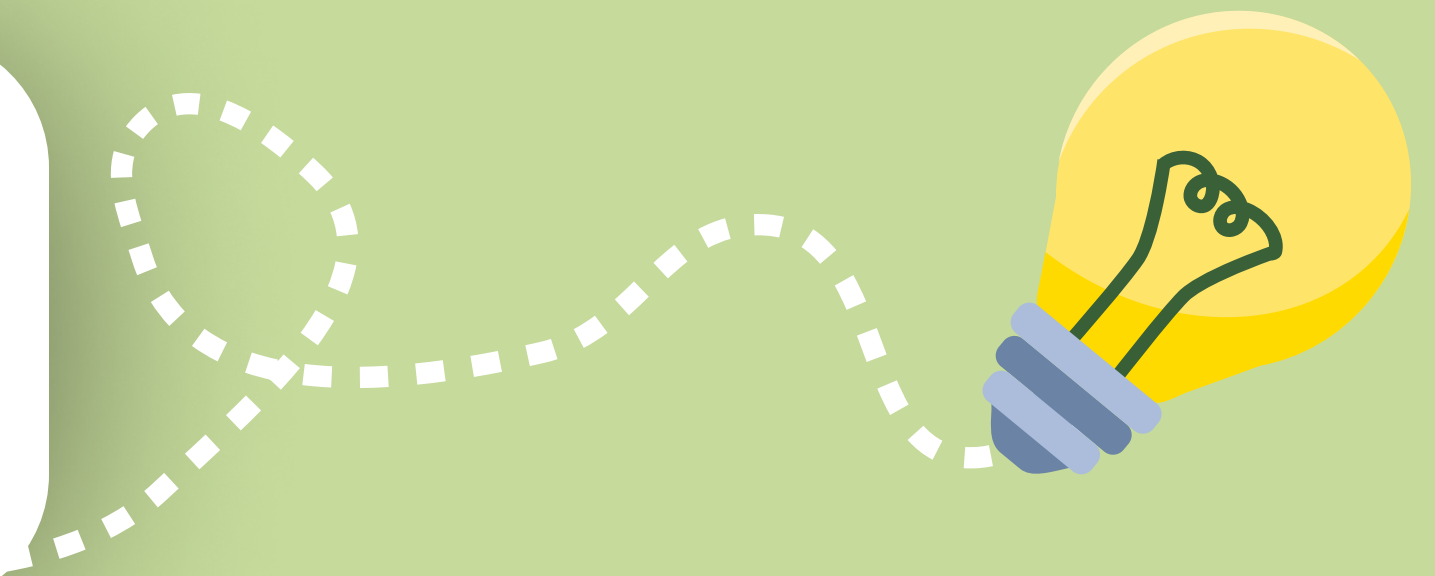
### SAFETY

GPS integration and real-time location tracking is valuable for users of all skill levels and increase their comfort level on hikes



# USER PERSONAS

To better inform the design process, we started by creating two user personas to serve as a representation of real-life users and their needs based on our findings from the user research we conducted. Taking these users' needs into consideration allowed us to identify problems to solve and further develop possible solutions that address each persona's unique user story.



## DEBORAH

**Age** 23  
**Location** Buffalo, NY  
**Occupation** Influencer  
**Skill Level** Beginner

### About

Deborah is a college student that is new to the Buffalo area. She is looking to site see and explore her local trails. She is interested in hiking for relaxation rather than exercise.

"As a social media influencer, I don't want to do any intense hikes, but I do want to get the best photos for my next post."

### Motivations

- Would like a review of the trails by previous hikers
- Wants to have a safe hike
- Wants to get instagram-worthy photos

### Goals

- Hiking experience aligns with her skill level
- Be able to navigate back to the trailhead
- Find unique locations that will impress her followers

### Pain Points

- Not knowing what to expect from a trail
- Description of the trail not matching with the hike
- Worried about getting lost



## GREG

**Age** 30  
**Location** Charleston, WV  
**Occupation** History Teacher  
**Skill Level** Intermediate

### About

Greg grew up in the Appalachian Mountains and hikes regularly with friends and family. He's looking to challenge himself. He's interested in historical sites and trail history.

"I love hiking with friends but it can be tough to coordinate schedules to make it happen. Our plans rarely leave the group chat."

### Motivations

- Learning more about the history of the trails
- Reconnect with friends or make new ones
- Pushing his limitation

### Goals

- To meet new hikers
- Elevate his hiking skill to take on more challenging trails
- Plan group trips with ease

### Pain Points

- Has a hard time planning hikes with others
- Knowing where park facilities are
- Not being able to navigate when signal is lost








# PROBLEM STATEMENT

Outdoor enthusiasts need a streamlined way to connect with their community and discover trails suitable for their skill levels and preferences to ensure an enjoyable and safe outdoor experience



# USER JOURNEY MAP

	I'd like to hike	Planning	Transport	On Hike	Finish
Actions	<ul style="list-style-type: none"> <li>• Google local hikes.</li> <li>• Connect with friends.</li> <li>• Compare reviews of different hikers.</li> </ul>	<ul style="list-style-type: none"> <li>• Finding a Trail</li> <li>• Pack Comfortable Footwear</li> <li>• Bring Essentials</li> </ul>	<ul style="list-style-type: none"> <li>• Navigating to the Trailhead</li> </ul>	<ul style="list-style-type: none"> <li>• Staying hydrated</li> <li>• Applying sunscreen</li> <li>• Meeting other hikers</li> </ul>	<ul style="list-style-type: none"> <li>• Completing the Hike</li> </ul>
Questions	<p>What's the difficulty?            What should I bring?            What's the weather?            Are there facilities?</p>	<p>How many folks are coming?            How far away is the trail?            How can I get there?            How long is the hike?</p>	<p>Where do I park?            Do I have to pay for a permit?            What does the trail head look like?</p>	<p>Is there a place to rest?            Where is the best spot to take a picture?            Staying in contact with group?</p>	<p>Are there any hotels in the area?            Is there a campground close by.</p>
Feeling					
Opportunities	<p>Connect with hikers were they are</p>	<p>Reminders in App that perpetuate hiking safety standards.</p>	<p>Navigating to the trail</p>	<p>Trail Review            Showing progress on the hike.</p>	<p>Share Experience</p>



# COMPETITIVE ANALYSIS



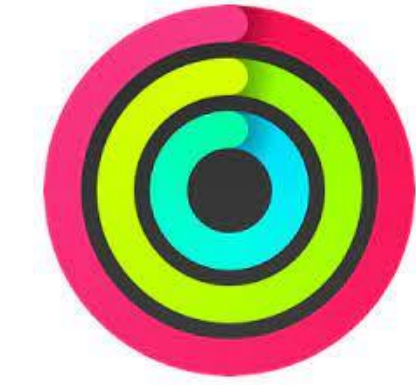
National Parks Trail Guide



Avenza Maps

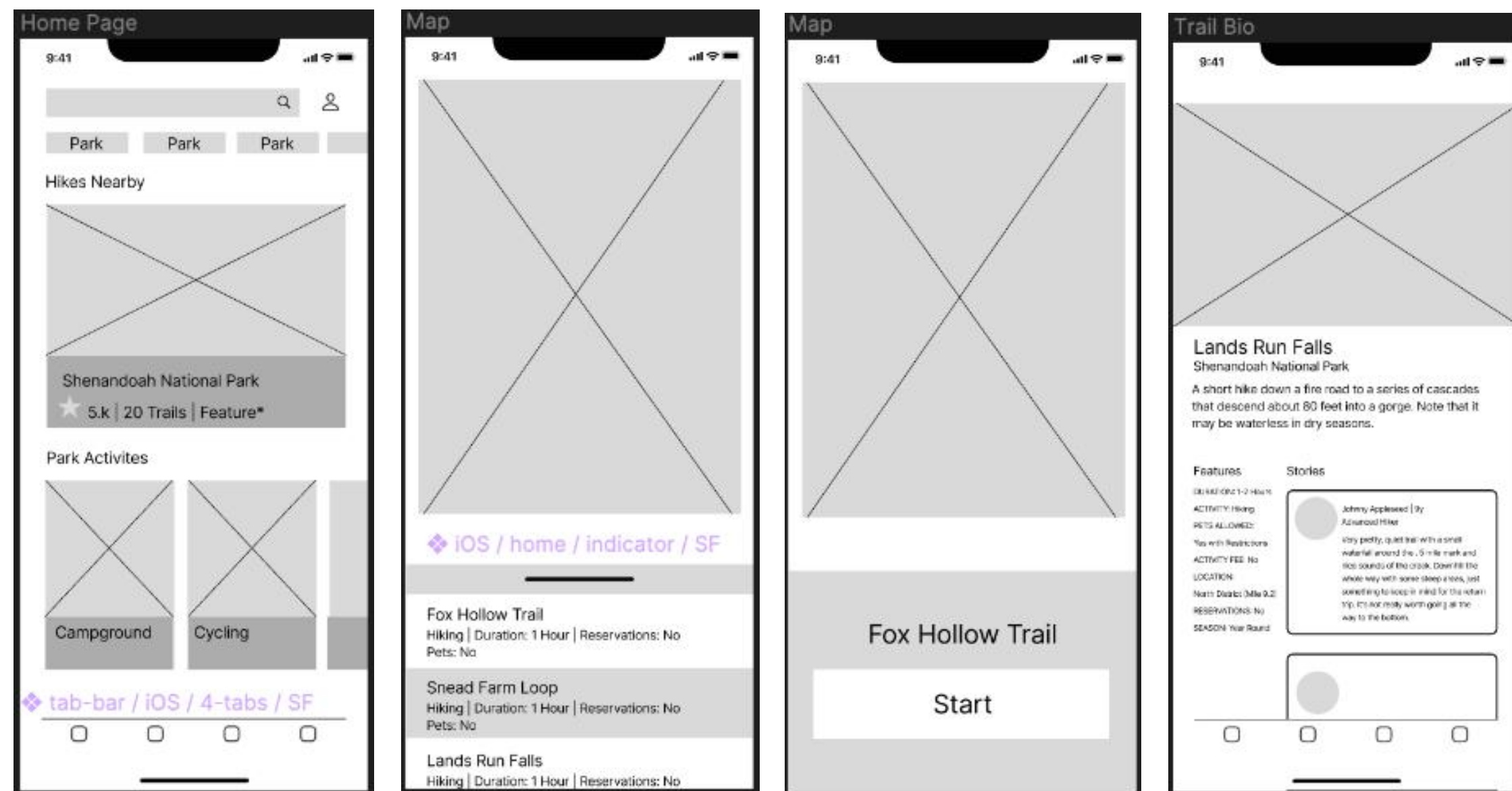


Strava

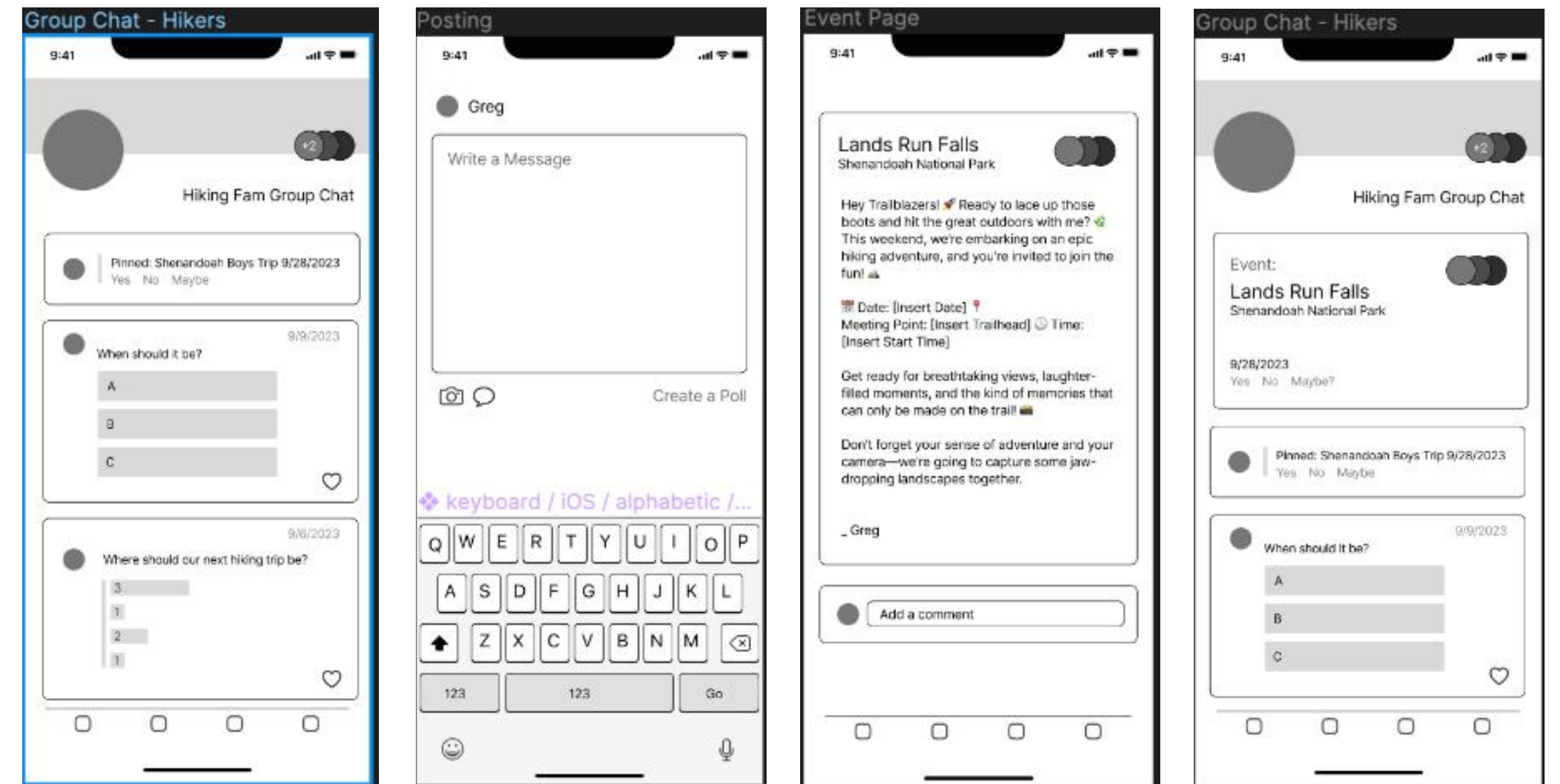


Fitness App (Apple)

# USER FLOW 1: LOCATING A TRAIL



# USER FLOW 2: CREATING A GROUP

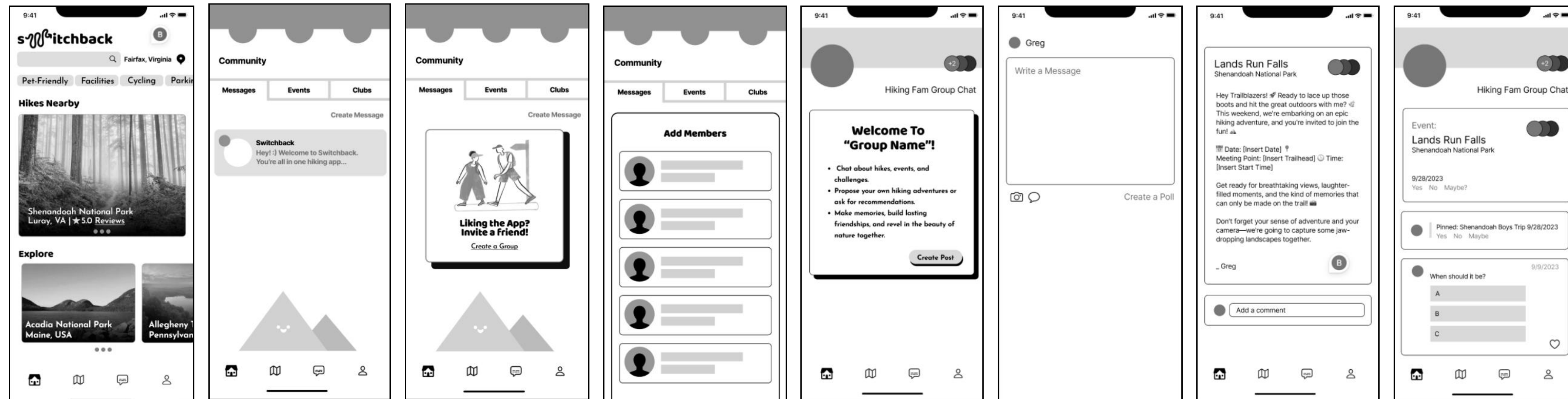




# USER FLOW 1: LOCATING A TRAIL



# USER FLOW 2: CREATING A GROUP





## Usability Testing Objective

The goal of each interview was to evaluate how users interact with the app and better understand their thoughts, feelings, and beliefs about app features and functionality. In understanding how users interact with the added features, one will be able to better determine efficacy of features within the app and make recommendations to improve user experience.

## Methodology

We interviewed 5 individuals from our personal circles (some were repeats from the initial round of testing) and gathered data from their answers to questions we had prepared. Some interviews were conducted over Zoom and some in person with audio and screen recording. Interviews were approximately 30-40 minutes, depending on how much the participant had to say. We made note of any confusion and synthesized a list of changes to make to the prototype to fit the critiques we received.

for more details,  
please visit our  
[\[Usability Testing Plan\]](#)



### Usability Testing Participant Overview

Name	About	Date
Linda	25, Engineering Doc Coordinator Boston, MA	11/30
David	29, Software Engineer Washington, DC	12/1
Kevin(phone)	45, IT Support New York, NY	12/2
Brendan(laptop)	50, IT Coram NY	12/1
Nathan	26, Physicist Cleveland, OH	12/2

### Scenario 1: Completing a hike

**Part 1:** Imagine you are new to hiking and want to find a hiking trail that's close to home. Knowing what to expect on your hike and being confident that you will not get lost are two of your main priorities. For this exercise, show us how you would use the Switchback app to find a local trail and navigate through your hike.

**Part 2:** At this point in the process, you are nearing the end of your hike. To symbolize this, please click on the highlighted purple icon you see on the screen. You really enjoyed your time on the trail and want to share your experience with others. What would you do next?

### Scenario 2: Creating a group

You are an experienced hiker who enjoys getting together with friends for group hikes but often finds it difficult to follow through on those plans. Using the Switchback app, you want to start a hiking group for you and your friends and begin to plan an upcoming event together.



# KEY FINDINGS OVERVIEW

for more details please visit our [\[Usability Testing Synthesis\]](#)



## GENERAL NAVIGATION

- Many screens did not provide users the ability to return to the previous screen or continue as expected
- Most users felt a lack of clarity or consistency with symbols used throughout the app which led to issues moving through each task
- Generally, users felt frustrated that pathing was unclear or not functional throughout each task



## LOCATING A TRAIL

- All users had difficulty selecting a trail and moving forward to get more information regarding a trail of interest
- All users were unclear about the wayfinding feature - did not know the icons on each screen had a purpose
- Most users expected to see more details regarding their hike metrics upon completion of a hike



## CREATING A GROUP

- Users generally found value in the Community aspect of the product and felt they would use this feature
  - Navigation throughout the Community feature was a challenge for most users and often users were confused about goal of each page
- Unclear verbiage & pathing caused a lot of confusion for users while trying to create a group



# RECOMMENDATIONS

for more details please visit our [\[Prototype\]](#)

Severity Rating:

0

1

2

3

4

3

A majority of participants had difficulty locating the Community feature within the app. Some mistook the Community icon for the location of in-app messages/notifications

Add a banner or other notification on the homepage indicating the incorporation of a Community feature to guide users to that section and provide more than one way to get to that screen.

3

Some participants felt confused about the view of the map when searching for a nearby trail. All struggled to access more specific trail details and start their hike. Buttons and their functions were unclear

Expand the user's view to reflect a larger area of map to reflect multiple trail locations vs one location. Give them multiple ways to see trail details (click on trail overview or click on waypoint on map)

4

Wayfinder caused a lot of confusion for users. All participants were unclear regarding the purpose of the icons listed on the screen and did not think they were clickable or functioning

Redesign icons to be more clear and reduce distractions for the user. Provide users with some in-app direction regarding how to use each feature (pop-ups/help messages). Give users the option to see when they are offline and have real-time updates for hike metrics.

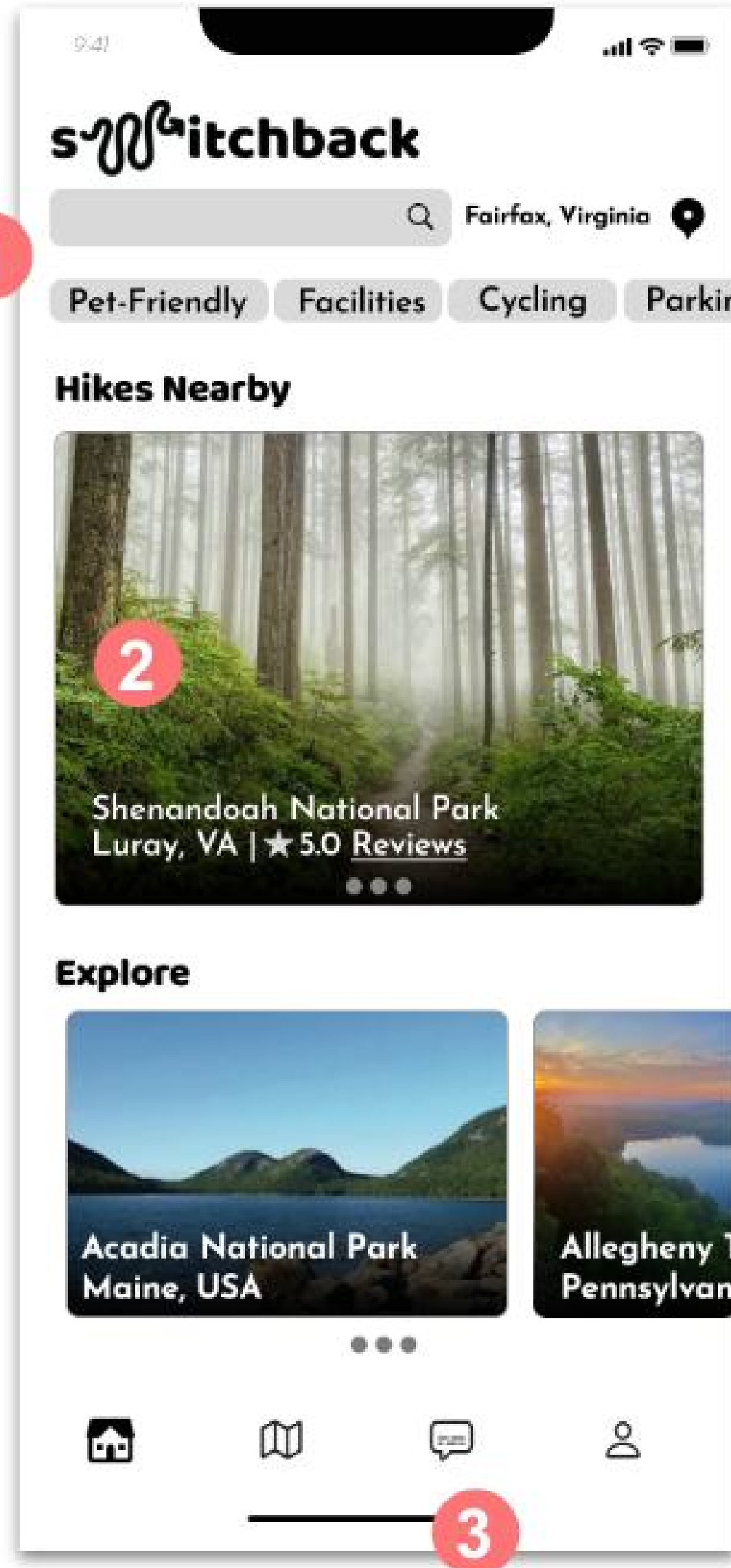
4

Most users were unable to complete the process of creating a group within the app without additional prompts from the moderator. Pathing, verbiage, and purpose each screen was unclear causing most users to not be able to complete the assigned task

Clarify verbiage and add "Clubs" tab to better guide the user. Include additional screens to help clarify steps in the flow (need to add "Create a Group" process screen)

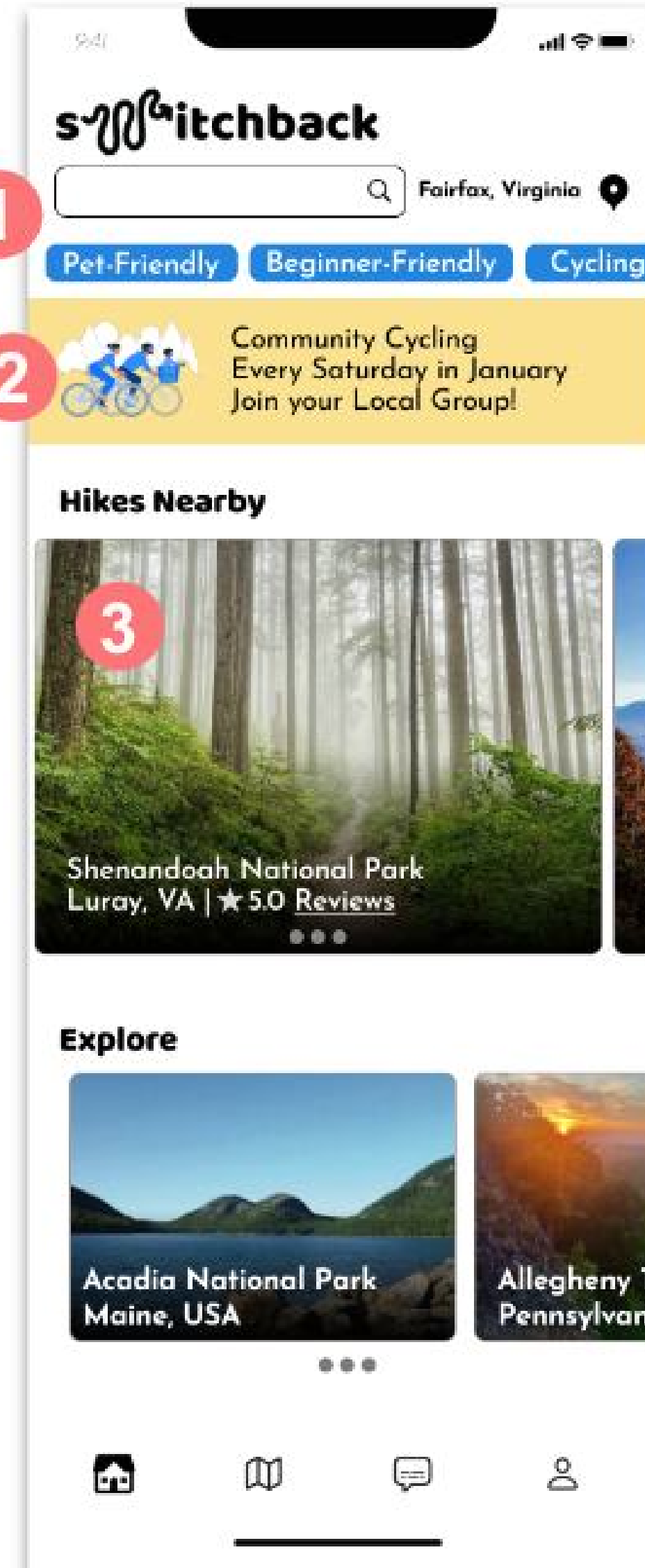


# HOME SCREEN



## Iteration 1

- 1 Users noted their instinct to use the search bar to locate nearby trails but this was not functional
- 2 Some users felt it was more intuitive to be able to see multiple nearby trails on the homepage and click for more info
- 3 Most users had difficulty locating the community features within the app or otherwise noted that they would not assume those options existed



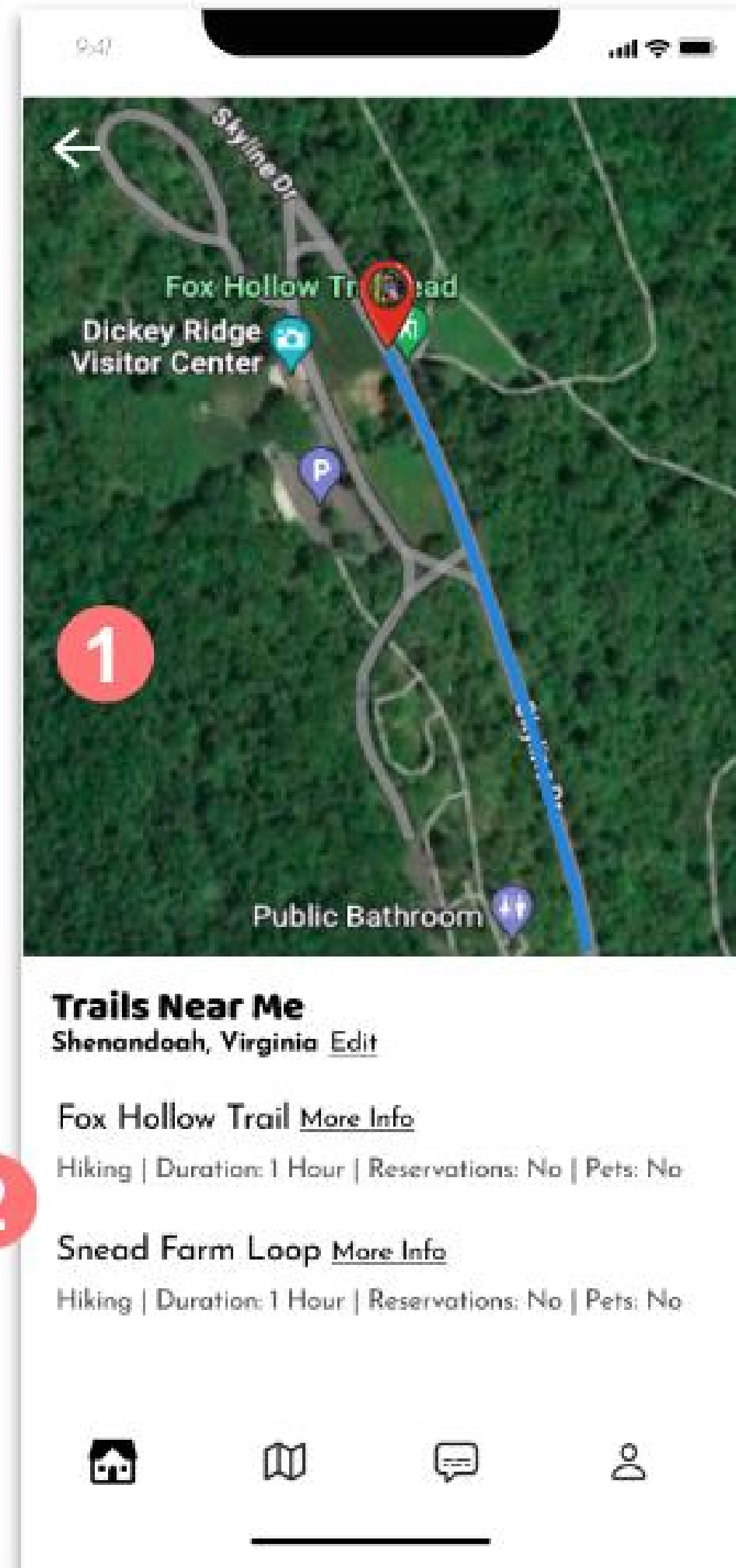
## Iteration 2

- 1 Updated search bar & notable trail qualifiers to improve users' search capabilities
- 2 Added a banner to highlight the community feature and encourage users to to navigate to the community flow
- 3 Created a carousel of nearby trails that will take users directly to more trail information upon click



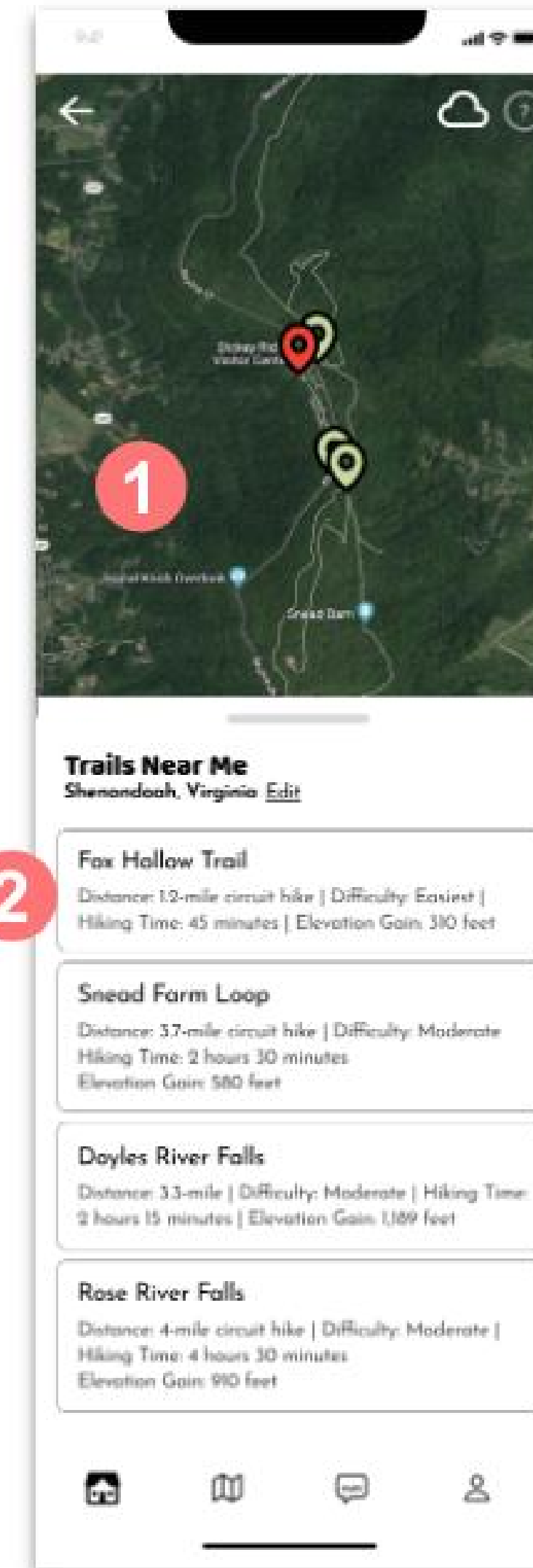
# LOCATING A TRAIL

## Iteration 1



- 1 Most users were confused at the map they were initially seeing & expected to be taken to a wider overview of nearby trails
- 2 Users had difficulty navigating beyond this screen due to uncertainty about what is clickable/what is a button
- 3 All users were unclear about the meaning of "Continue" and expected to see more trail information

## Iteration 2

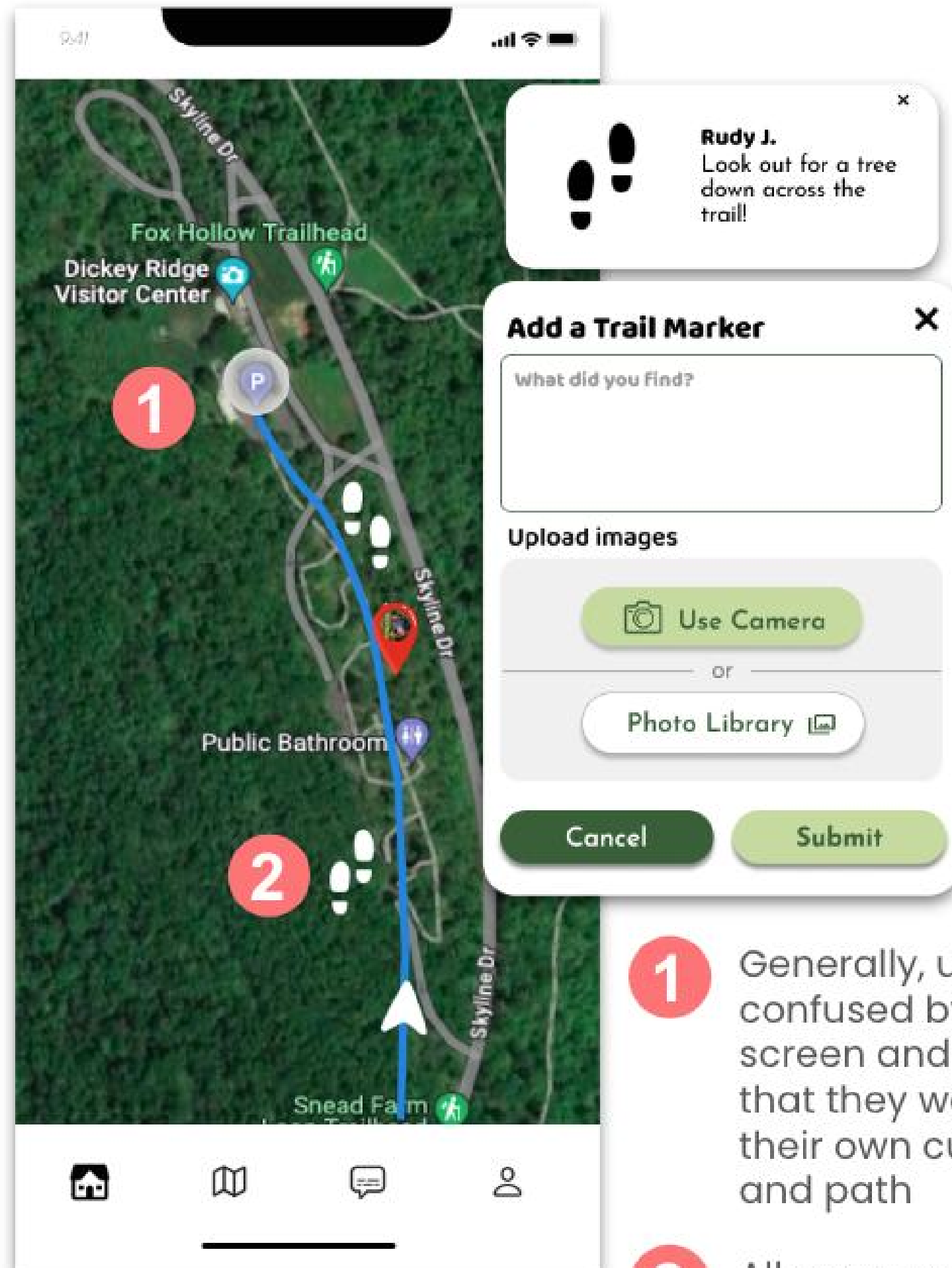


- 1 Incorporated an expanded view of the user's location with multiple nearby trails marked
- 2 Modified formatting of nearby trail listings to be more defined and clickable. Also provided users the ability to click waypoints on screen to be taken to more details about specific trails
- 3 Changed "Continue" button to "Start Hike" and eliminated an additional step for the user altogether



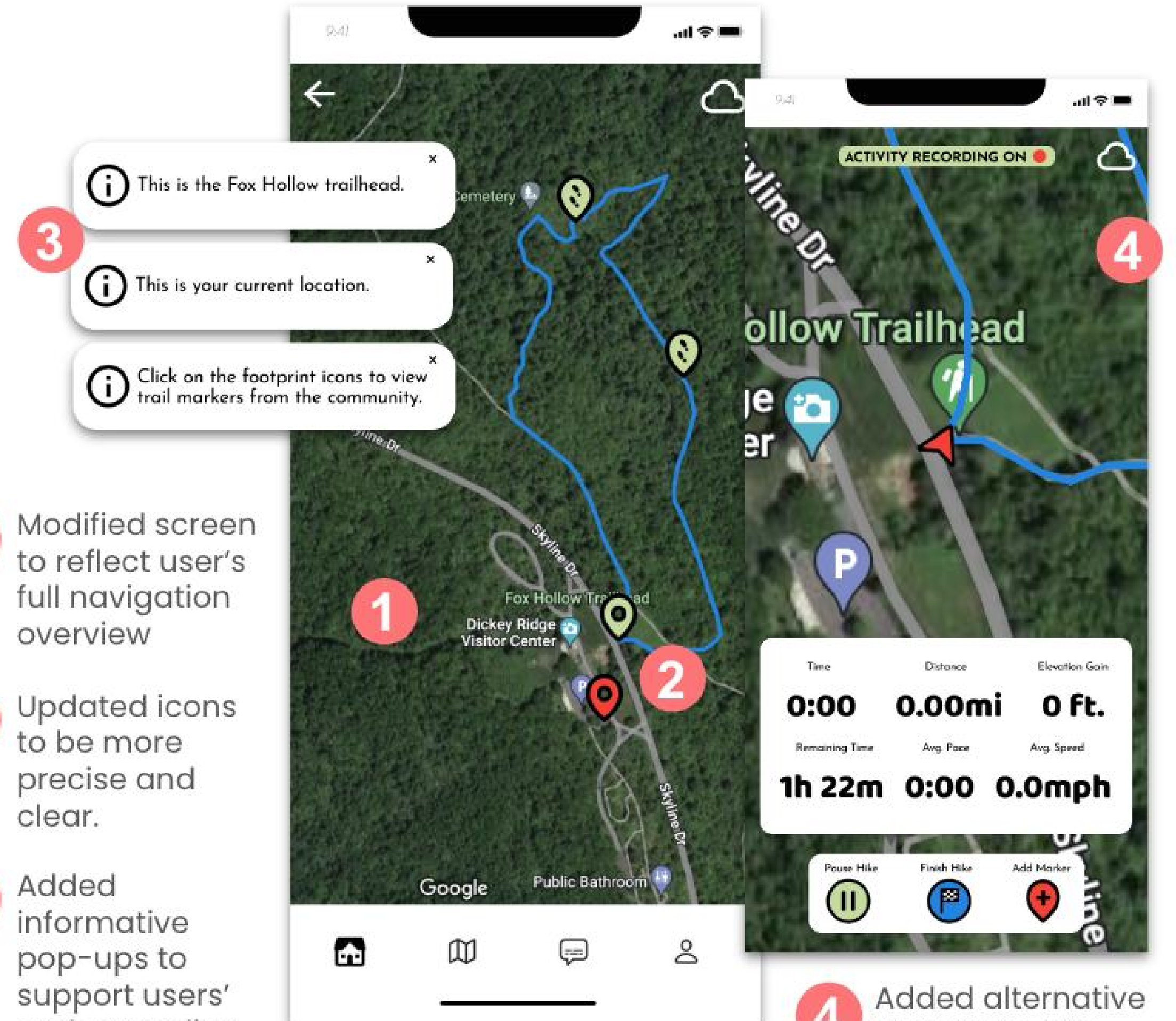
# WAYFINDER & MARKED LOCATIONS

## Iteration 1



- 1 Generally, users were confused by the view on this screen and were unclear that they were looking at their own current location and path
- 2 All users were uncertain about icons listed on screen and did not assume they served a purpose until prompted by moderator

## Iteration 2



- 1 Modified screen to reflect user's full navigation overview
- 2 Updated icons to be more precise and clear.
- 3 Added informative pop-ups to support users' understanding of each icon's purpose

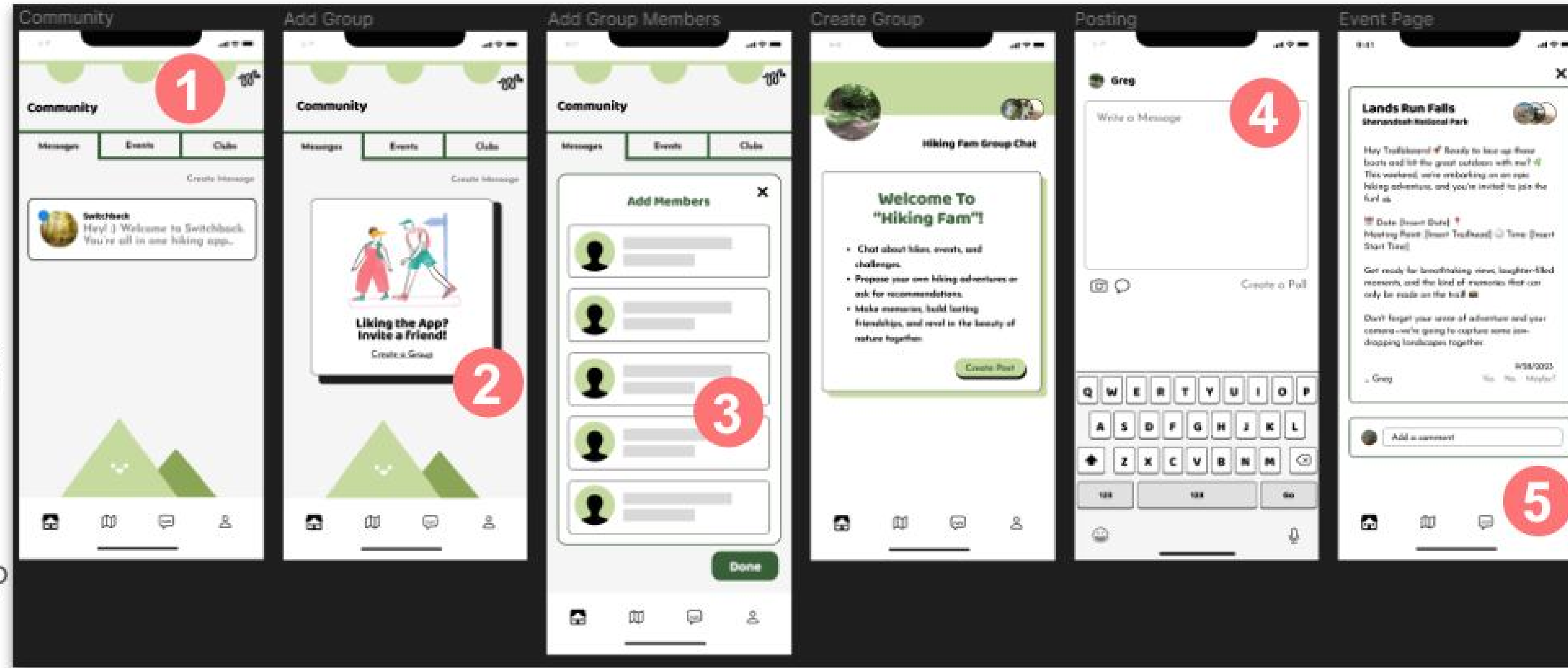
- 4 Added alternative view for in-hike metrics and activity recording



# COMMUNITY & CREATING A GROUP EVENT

## Iteration 1

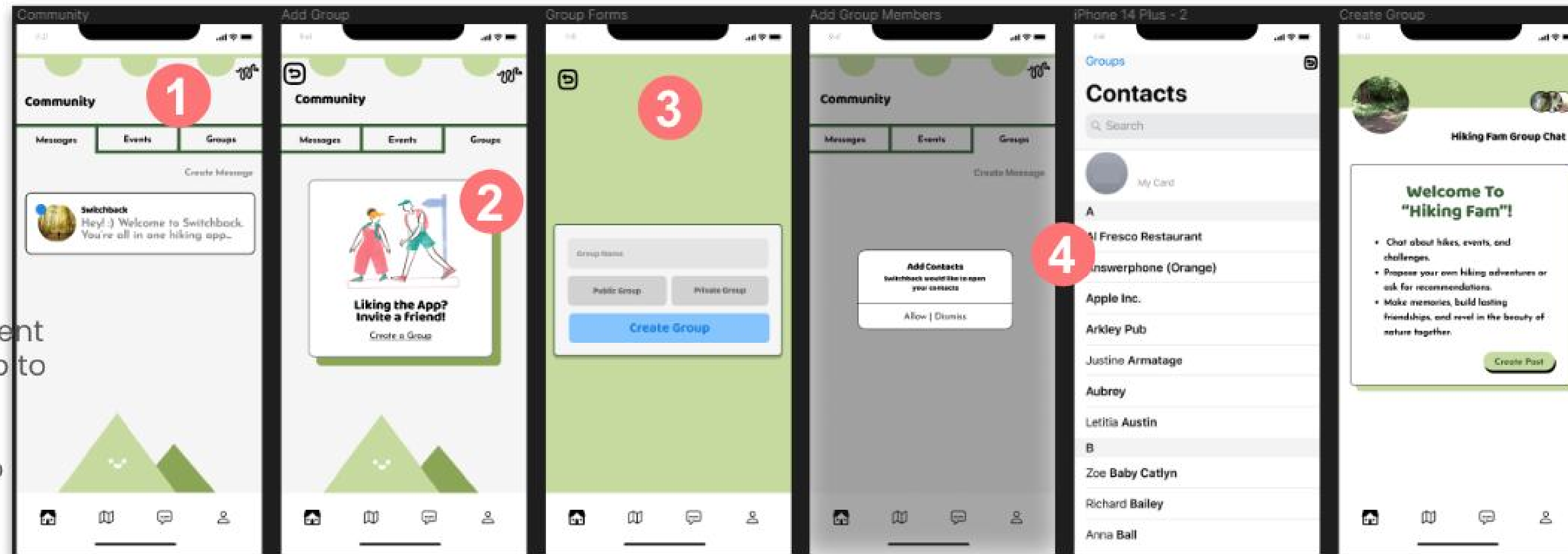
- 1 Most users were unclear how to move beyond this page to create a group
- 2 Users found pathing was confusing - did not know what this page meant
- 3 Process of adding members to a group was unclear



- 4 Users were unsure of how to post a comment. Create a poll button added to lack of clarity
- 5 Most users did not understand what this screen was showing or what they are required to do

## Iteration 2

- 1 Changed term "Clubs" to "Groups" to promote consistency throughout flow and provide clarity to users
- 2 Reflected movement from message tab to groups tab
- 3 Added a screen to depict process of creating a group



- 4 Added screens to depict process of adding members by allowing them to access phone contacts or manually input



**Before**



**After**





## RECOMMENDATIONS AND NEXT STEPS cont.

**Ranking Amongst Users:** A ranking system for hike difficulty and users experience was considered. The hikers should be able to see the difficulty level of a hike and the reasoning for each scale. Users should be ranked according to their skill level as well; to give some context for reviews and opinions.

**GPS Locator:** The ability to ping your in app friends to see their locations regardless of the trail they are hiking.





## RECOMMENDATIONS AND NEXT STEPS

**User Safety:** When creating events or clubs concerns for solo hikers were raised. Some suggestions were a group/event minimum or attaching a phone number to each user to keep users to one account.

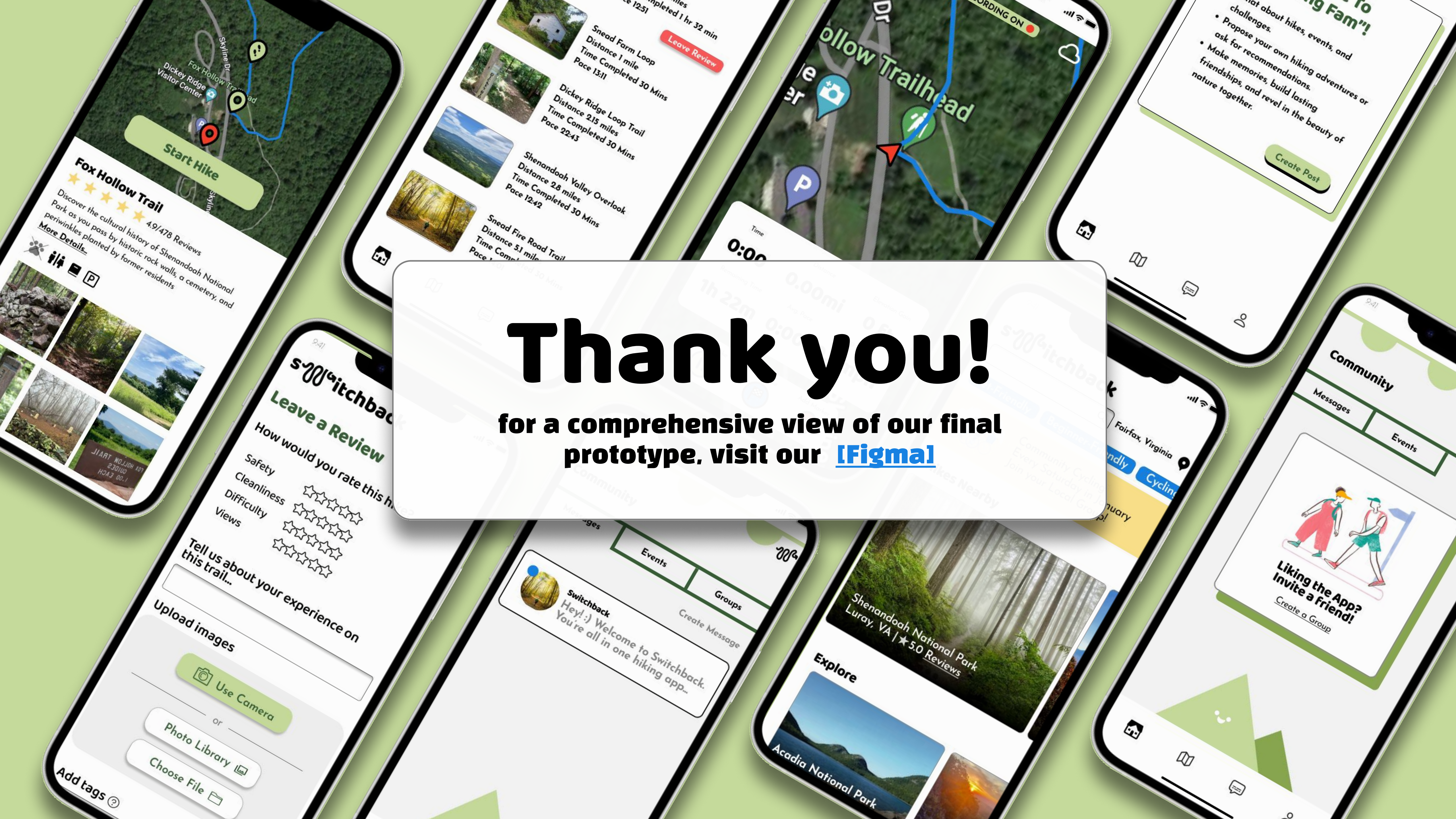
Another possibility was to only all “certified establishment” conduct group events to alleviate concerns of suspicious hiking groups.

**Offline Mode:** The ability to download maps for hiking without a signal. A solution to navigation without a signal.

**Gamification:** We recommend fleshing out the badge and reward system for user to keep them engaged and motivated.







**Thank you!**  
for a comprehensive view of our final  
prototype, visit our [\[Figma\]](#)