HIKE IL

an app for mobile and smartwatch

Group 7

PORTFOLIO PIECE

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1.0. Project Brief

1.1. Overview

An interactive mobile and smartwatch app designed specifically for the Illinois State Park system. The app enhances visitors' experience by offering easy-to-use navigation tools, providing interpretative information about historical sites and other points of interest within each park, and offering real-time data about trail conditions. The app syncs seamlessly between mobile device and smartwatch, enabling users to easily plan their trip, explore the parks, and discover the natural beauty of the Prairie State.

1.2. Project goals

We defined the Hike IL application project goals as following.

- **Enhance Navigation:** Provide intuitive navigation for trails, landmarks, and facilities across mobile and smartwatch platforms.
- **Real-Time Updates:** Offer live updates on trial conditions, closures, and weather alerts.
- **Device Syncing:** Enable seamless syncing between mobile devices and smartwatches.
- **Trip Planning:** Include customizable itineraries, route planning, and location bookmarking.
- **Encourage Exploration:** Inspire more visitors to engage with and explore Illinois State Parks.

1.3. Design Goals

The team narrowed down the design goals of the Hike IL app as stated below.

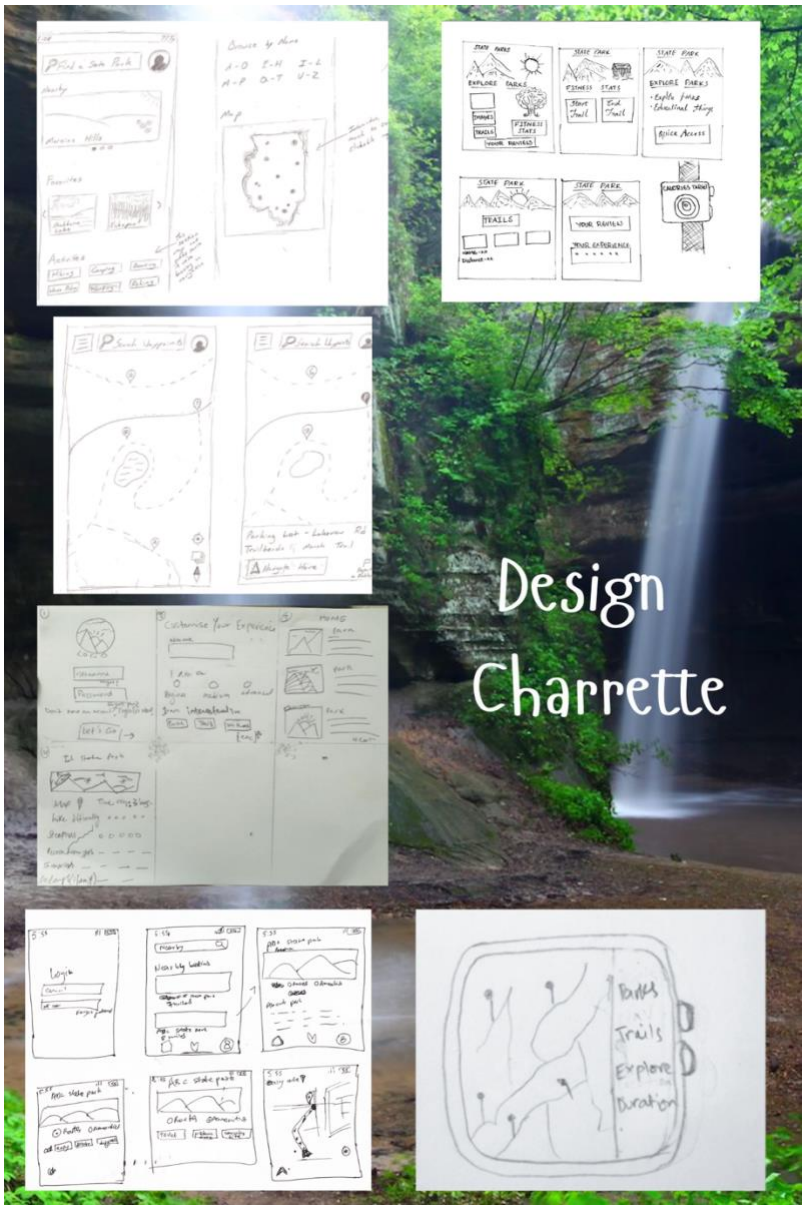
- Design the app for quick, easy navigation, allowing users to access essential information at a glance while hiking.
- Ensure offline map availability so users can navigate without cell service.
- Make the app intuitive for both beginners and experienced hikers to use.
- Use a minimalist design to reduce distractions and enhance the natural hiking experience.

2.0. Lo-fi Prototype

For this round of initial sketches, we opted to focus primarily on the mobile channel of the app. We expect the smartwatch channel to have a few key functions like

navigation, run tracking, and alerts, but the user will do most of their planning and configuration via the mobile app experience, so we felt these were the key screens to start with.

2.1. Design Charrette



2.2. Mood board

3.0. Personas and Design Scenarios

3.1. Persona 1

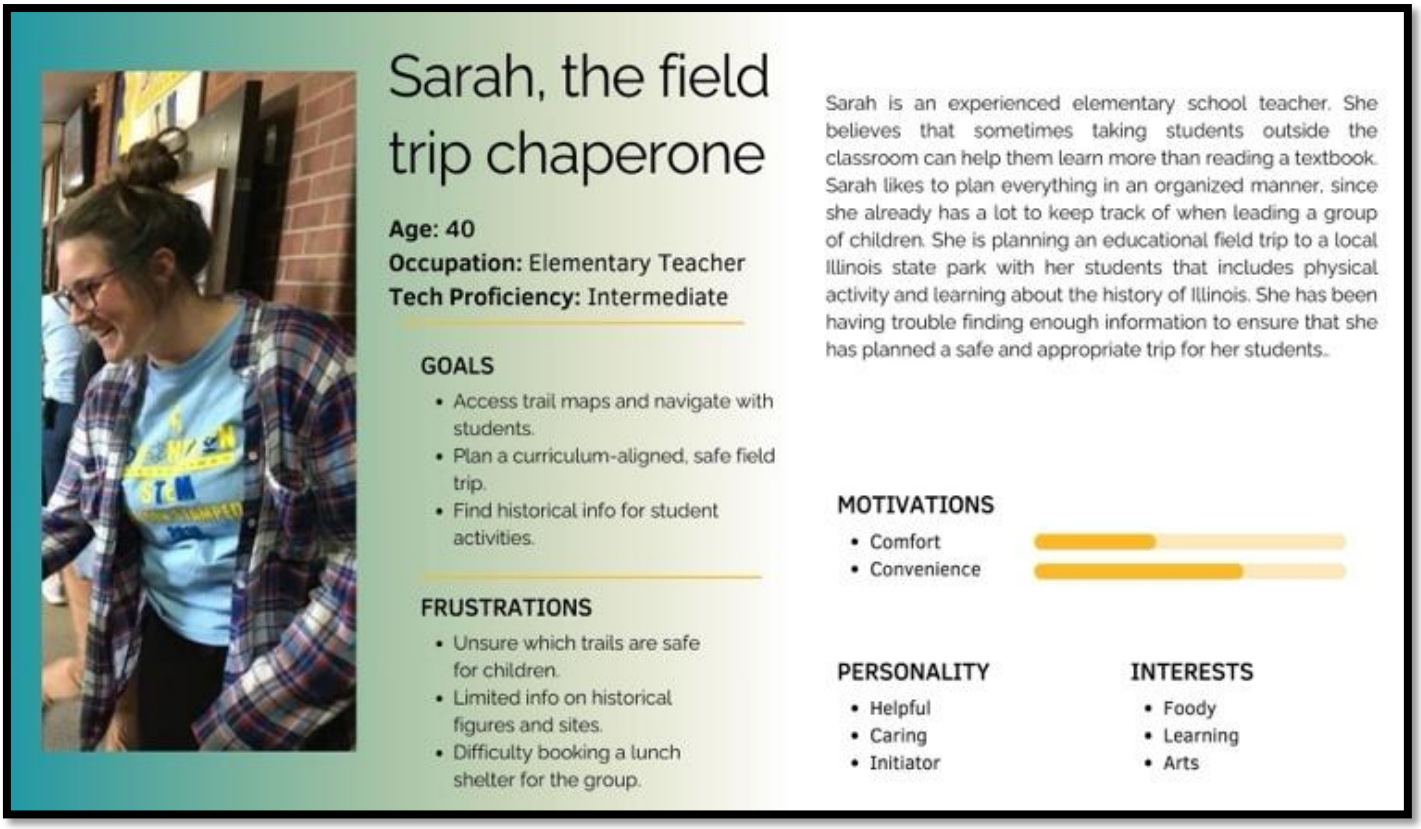
3.1.1. Scenario

Mark goes on a run

As Mark arrives at the park, he uses his smartwatch to access the trail map. The app syncs with his Fitbit, tracking his run, showing him real-time data on his pace, distance covered, and calories burned. Midway through the run, Mark receives a notification about an upcoming steep hill, helping him prepare mentally and physically for the challenge. Unfortunately, while navigating a difficult section of the trail, Mark loses cellular service and can no longer access the trail map on his phone. Fortunately, the offline mode on his smartwatch keeps him on track, offering simple, pre-downloaded map directions. Near the end of his run, Mark checks his distance and calories burned right on his watch. Feeling accomplished, he takes a quick photo

at a scenic spot, which he later shares on his social media, encouraging his followers to take on the same trail challenge.

3.2. Persona 2



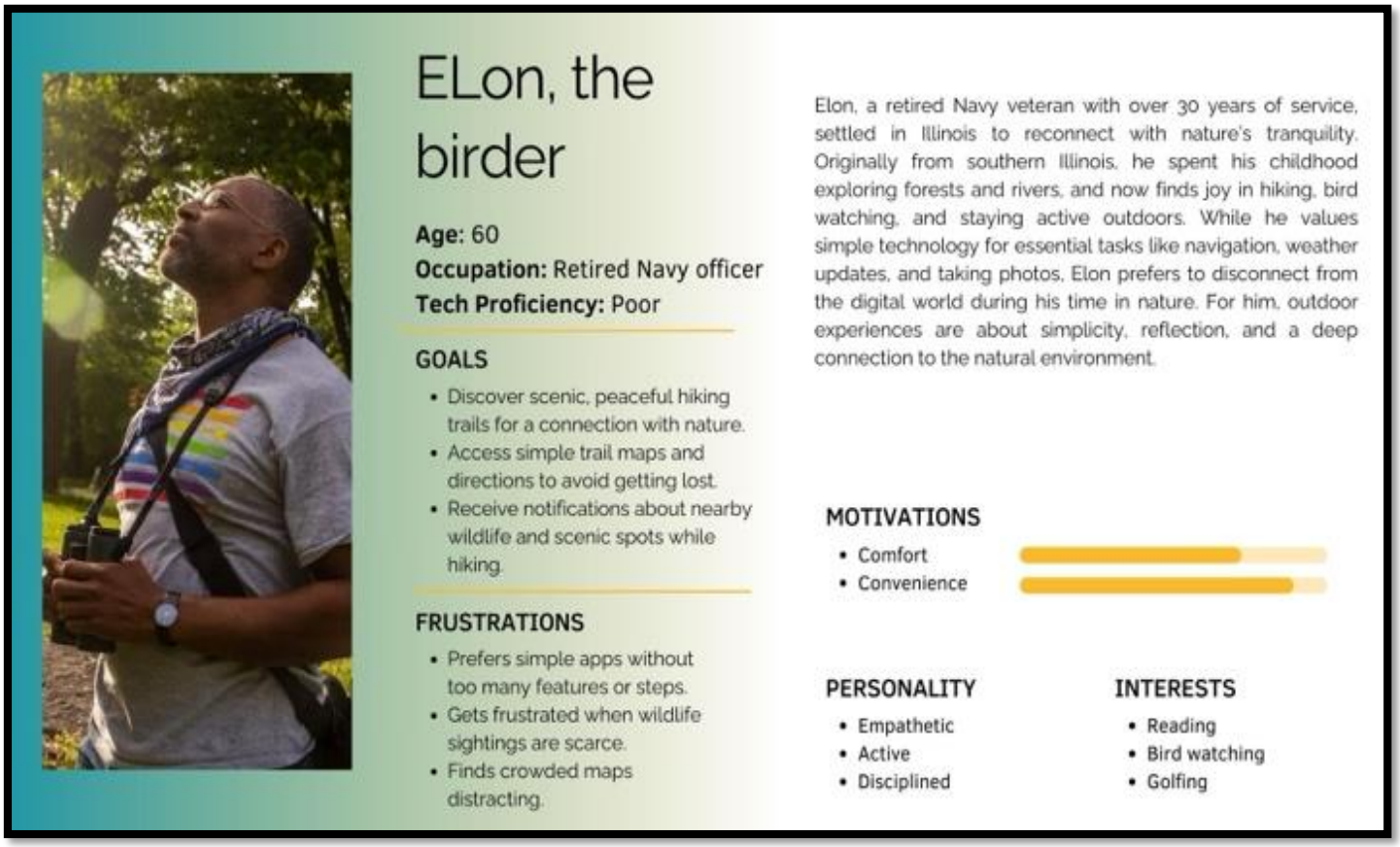
3.2.1. Scenario

Sarah goes on a field trip

Sarah is organizing a field trip to an Illinois state park for her class. The goal is to teach her students about Illinois history while incorporating some physical activity. Three months before the trip, Sarah opens the state park system's mobile app to plan the itinerary. She wants a safe, educational trail that is suitable for young students and includes interesting historical and ecological sites. Using the app's trail filtering options, she selects an easy, well-marked trail that has informative signs about local wildlife and history. She also reserves a ranger-led educational program through the app, ensuring the students will have an interactive learning experience. Sarah creates a list of key stops along the trail using the app's highlighted points of

interest, like the park's historical landmarks, so she can make the trip engaging and informative. On the day of the trip, Sarah uses her smartwatch to receive real-time safety alerts and reminders, keeping the students on track. When some students get tired, she quickly finds a shorter route using the app to ensure everyone stays safe and engaged. As they walk, her smartwatch notifies her of nearby historical landmarks.

3.3. Persona 3



3.3.1. Scenario

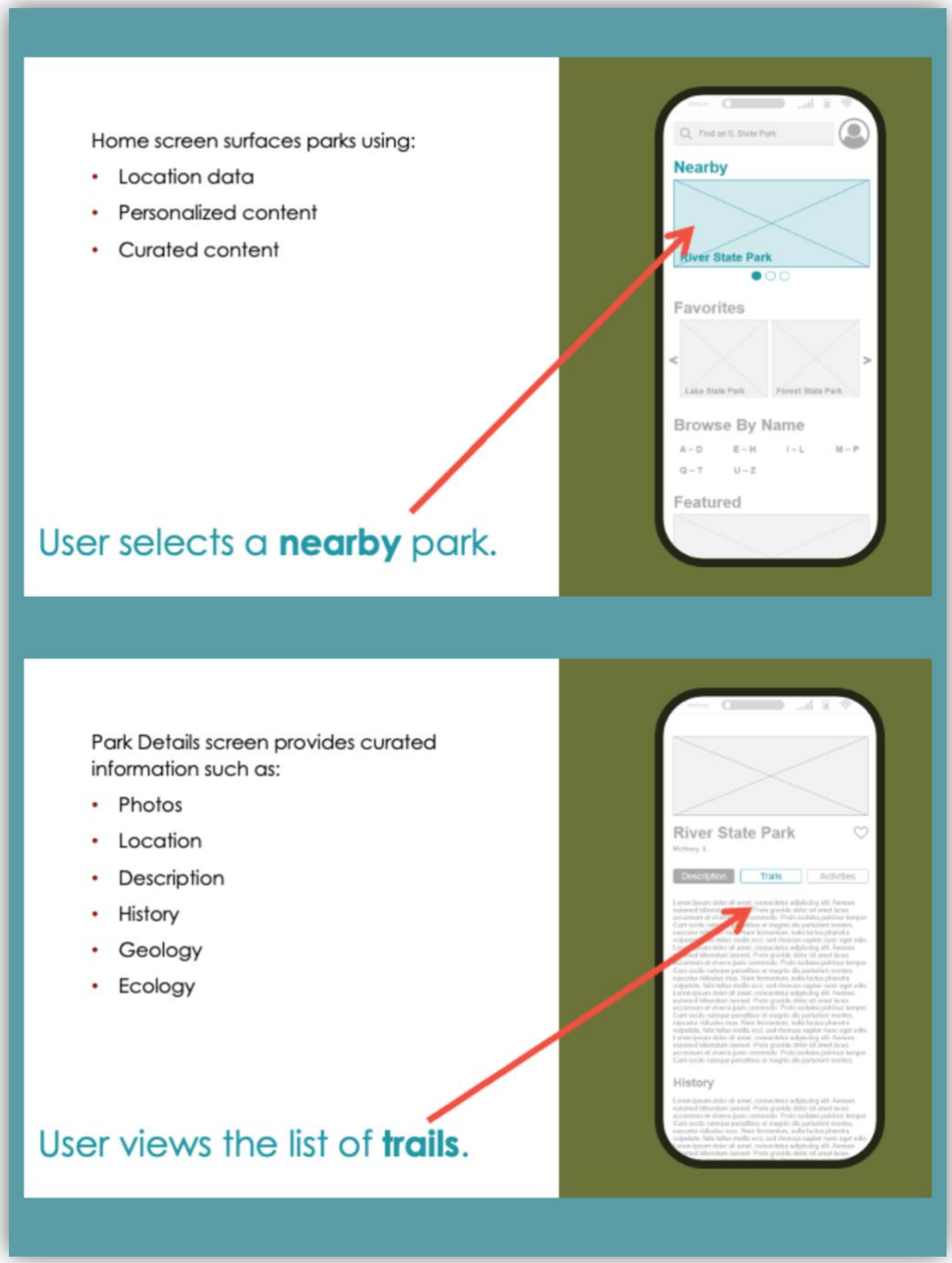
Elon goes on a quiet hike

Elon, a 60-year-old retired Navy officer, plans to visit an Illinois state park for a peaceful day of hiking and birdwatching. He opens the park system's mobile app to find a scenic, easy-to-navigate trail that aligns with his desire for a quiet, reflective experience. The app highlights a serene trail perfect for birdwatching, and Elon sets

off with his phone synced to provide simple navigation and notifications. The app offers Elon a basic trail map with clear directions, which he downloads to his phone for offline use since he prefers not to rely too much on cellular data during his hikes. He also sets up his mobile to send notifications for any nearby wildlife sightings or scenic spots, such as lookout points, without needing to check his phone.

While hiking, Elon appreciates the minimalist trail directions on his mobile, which allows him to stay focused on nature without constantly checking his phone. Midway through his walk, the phone alerts him to a nearby spot where a rare bird has been sighted recently, so he keeps his eyes peeled. As he continues, the watch also notifies him of scenic spots ahead, enhancing his experience without overwhelming him with information. At the end of the hike, Elon feels a sense of peace and accomplishment. He didn't have to struggle with complicated apps or worry about losing his way, and he was able to enjoy a tech-supported, low-stress hike. Back home, he logs into the app to leave a review for other retirees, sharing his peaceful experience and noting the helpfulness of the wildlife notifications and easy navigation.

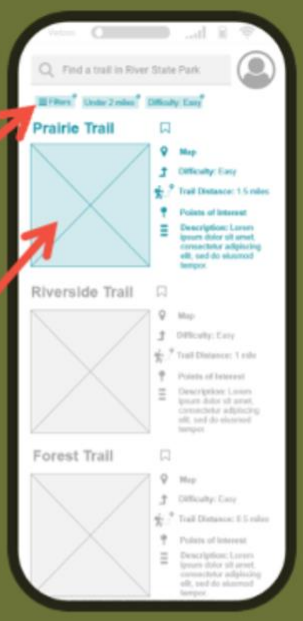
4.0. Mid - Fi Prototype (Mobile and Smart Watch happy path)



Trail List screen offers an overview of trails in the selected park, with at-a-glance information for each trail such as:

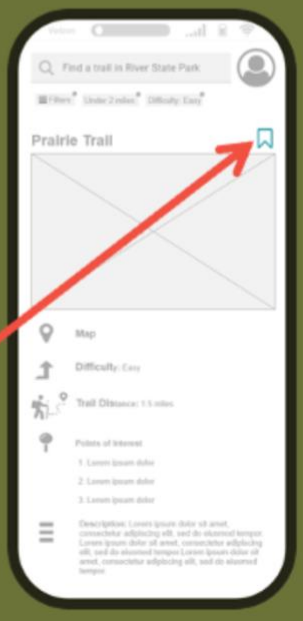
- Photos
- Difficulty
- Distance
- Points of interest
- Descriptive summary

User **filters** the list of trails and **selects** one that looks appropriate.



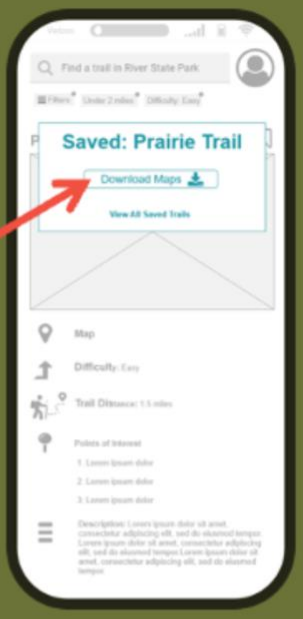
Trail Details screen gives users a more comprehensive look at the trail they've selected.

User **bookmarks** her selected trail.



Saved Trail Confirmation pop-up affirms that the user's trail has been saved and prompts them to download data for offline use.

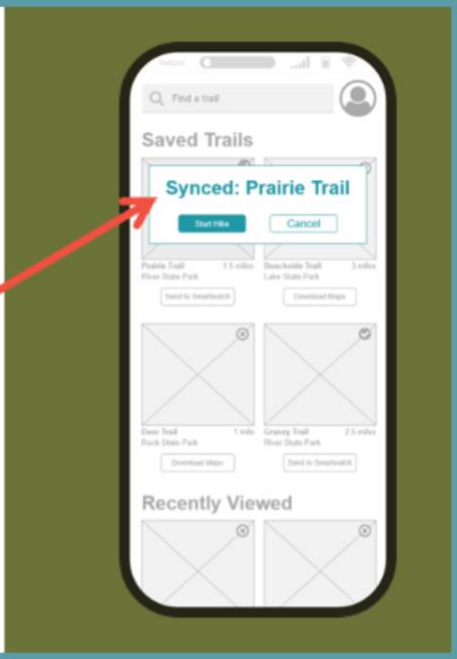
User **downloads** the trail map.



Saved Trails screen is accessible from the user's profile and shows a personalized list of saved content.

User **syncs** the trail data to her smartwatch.

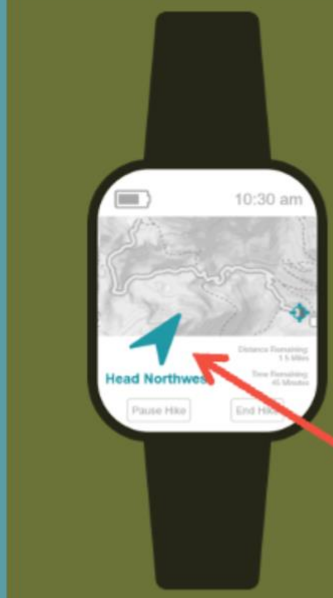
Sync Confirmation pop-up affirms that the selected trail is available on the user's smartwatch.



User **confirms** the sync has completed.

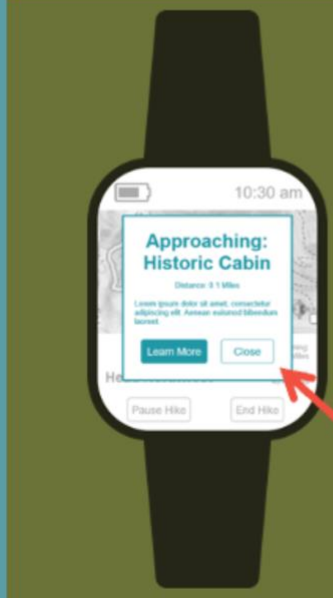
Once the trail is synced, user can access key controls from either phone or smartwatch.

User **begins** the hike.



Navigation view on watch provides a directional arrow and map overview.

User's watch helps her **navigate**.



Using GPS data, users receive alerts when they are approaching a point of interest, hazard, or other trail feature they should be aware of.

User receives an **alert** about an upcoming point of interest.

5.0. Usability Testing

Once we had our mid-fi prototypes, we recruited a set of test participants with varied levels of hiking experience and technology use. We asked them to complete 5 tasks, split across mobile device and smartwatch, which we felt were central to the user journey through Hike IL. Mobile app tasks were to select a trail, bookmark a trail, download a trail map for offline use; smartwatch app tasks were to access a downloaded map and begin navigation.

5.1. Ideal Participants for Useability Testing

To ensure the effectiveness of the usability testing, it was crucial for us to recruit participants who are either outdoor enthusiasts that own both a smartphone and a smartwatch and have experience hiking on various trails, or beginners who are considering starting to hike. Additionally, they should be tech-savvy individuals with a basic understanding of technology. We were of the view that a diverse pool of participants will help us identify potential usability issues that may affect specific user groups.

5.2. Participants

To gain a broad perspective, we recruited a diverse group of participants, representing different levels of hiking experience and comfort with technology.

Name	Age	Profession	Tech Proficiency	Hiking Experience
Aron	43	Software Engineer	High	Mid - Level
Usman	30	Medical Student	Good	Beginner
Rohan	23	Student	High	Beginner
Alex	45	Sales Accountant	Medium	Mid- Level

5.3. Tasks

1. Locate a park and filter trails by distance, difficulty, or other preferences.
2. Bookmark a chosen trail for easy access later.
3. Download a map for offline use to ensure accessibility without cellular service.
4. Access the downloaded map on a smartwatch to test hands-free navigation.
5. Start navigation on the smartwatch to test ease of use and interaction flow.

5.4. Discussion of Test Results

5.4.1. Homepage

- All users found the Nearby Parks feature useful.
- Users had difficulty finding a way back to the homepage after navigating to a park.
- The profile button functionality was confusing (hover-based on a mobile app).

5.4.2. Filters

- Filters were helpful and easy to understand.
- Users encountered issues with filters not updating after applying selections.
- Additional filter options, such as landmarks/points of interest and user reviews/ratings for trails, were suggested.

5.4.3. Bookmarking

- All users found the bookmarking process intuitive (clicking the star icon).
- Users were confident they could find their saved trails later.
- Improvements suggested included a dedicated section on the homepage or clearer labeling.

5.4.4. Downloading Maps Offline

- The process of downloading maps for offline use was clear to all users.
- All users agreed that offline maps would be highly useful for hiking.
- Users were unsure where the downloaded maps were stored on their device.

5.4.5. Smartwatch Functionality

- Difficulty locating saved trails on the smartwatch.
- Significant issues with the smartwatch interface, such as:

  ⇒ Difficulty finding the downloaded trail (only a list of saved trails appeared).
  ⇒ Incorrect display of downloaded trail distance (e.g., 10 miles vs. selected 1.5 miles).
  ⇒ Map displayed only an overview, lacking details like elevation and trail points.
  ⇒ Navigation pop-up (e.g., "approaching historic cabin") appeared instead of the map, causing confusion.

5.4.6. Positive Aspects

- The bookmarking process was easy to understand.
- Downloading maps offline was clear and considered a useful feature.

- The Nearby Parks feature on the homepage was well-received.

5.5. Recommendations

Following are the recommendations suggested by users.

5.5.1. Navigation

- Improve back button functionality.
- Make smartwatch navigation clearer.
- Zooming capabilities for the map.
- Changes in the profile options

5.5.2. Search & Filtering

- Search Bar to have more options.
- Addition of filter options (e.g., landmarks, elevation gain).

5.5.3. User Interface

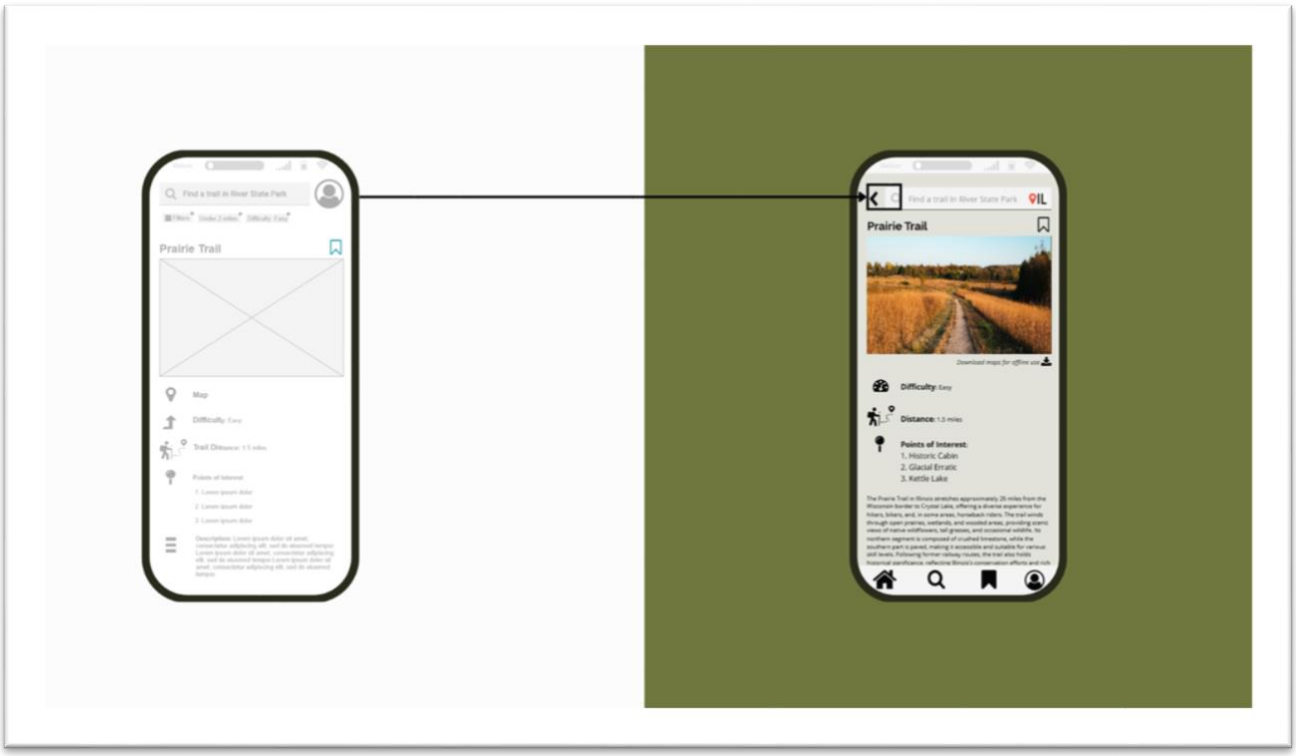
- Enhance the visibility and accessibility of the "saved trails" section.
- Design a more user-friendly smartwatch interface (e.g., address notch bar confusion, display downloaded trails correctly, prioritize detailed map information).
- Revise the app's color scheme to improve user experience.

5.5.4. Information Architecture

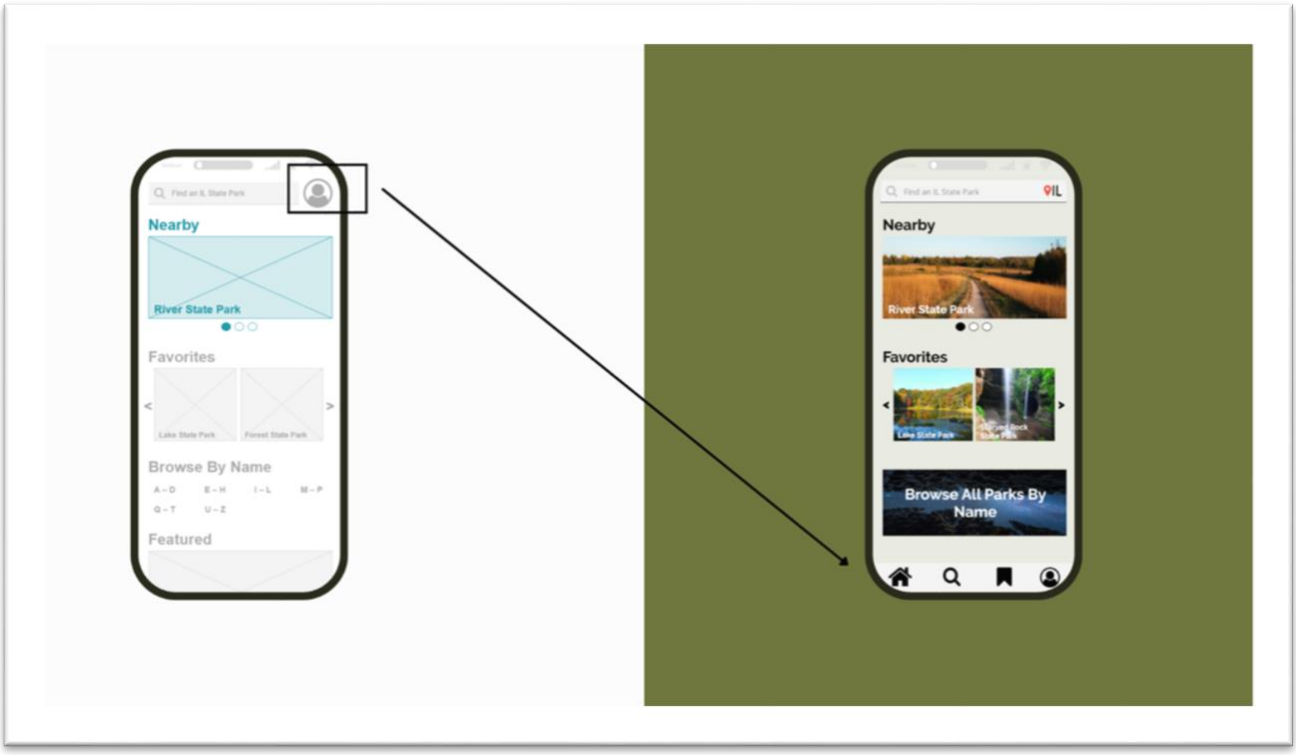
- Ensure users can easily return to the homepage from any point in the app.
- Improve labeling and the information hierarchy to enhance user understanding of features.

6.0. Design Iterations

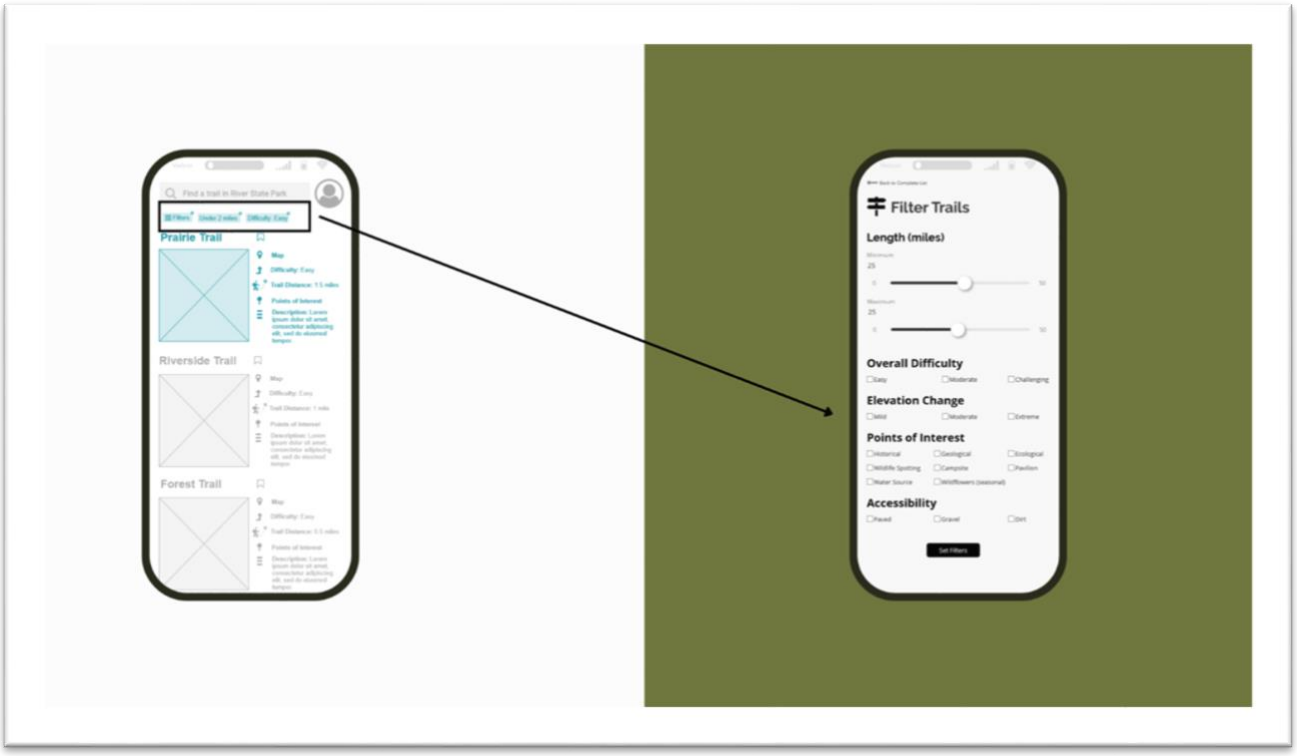
Problem: Include back button functionality.
Change: Created a back button on each screen for user ease and accessibility.



Problem: Confusion in the profile Icon drop down menu
Change: The Profile options are displayed at the bottom of the screen instead of a dropdown menu at the top to remove the confusion.



Problem: Addition of more filters
Change: We added additional options to this filter screen based on user feedback, including elevation change and more points of interest types.



Problem: Difficulty accessing locations saved trails on the smart watch.
Change: Simplified this view by putting that list front and center.

Problem: Not enough information on the smartwatch map view.
Change: we've utilized a better topographical map than we had previously to help ensure users have access to elevation information. We've also added map pins denoting points of interest on the trail, and a "remaining time and distance" feature at the bottom. Finally, we've moved the compass arrow to the top of the screen, making it more prominent

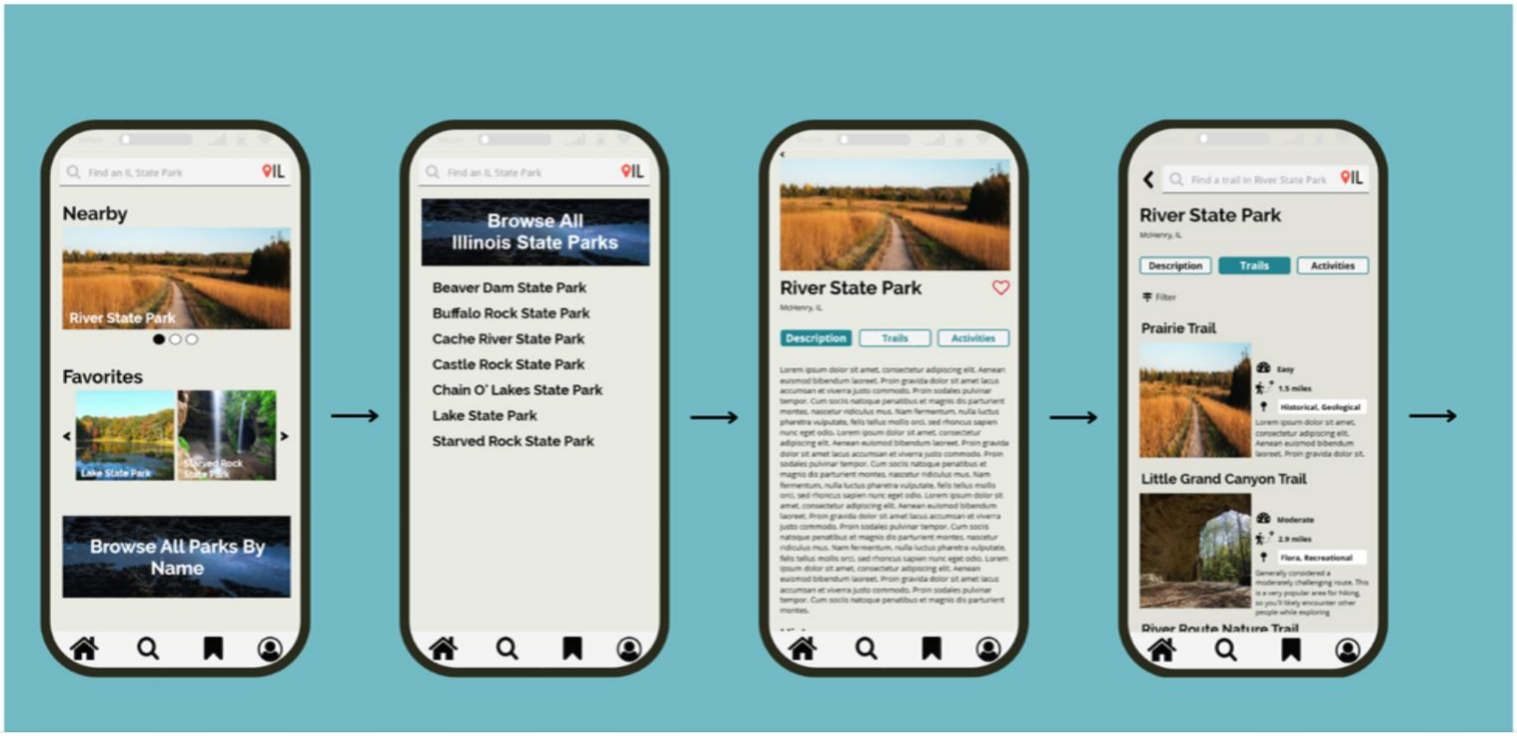
7.0. Hi-Fi Prototype

7.1. Link

https://443gvs.axshare.com

7.2. Hi-Fi Prototype (Mobile + Smart Watch - User Journey)

The hi-fi prototype consists of most of the edits that were pointed out by the user. We further smoothened out the functionality of the app for easier access.


Find an IL State Park
IL
Nearby
River State Park
Favorites
Lake State Park
Browse All Parks By Name
Browse All Illinois State Parks
Beaver Dam State Park
Buffalo Rock State Park
Cache River State Park
Castle Rock State Park
Chain O' Lakes State Park
Lake State Park
Starved Rock State Park
River State Park
McHenry, IL
Description
Trails
Activities
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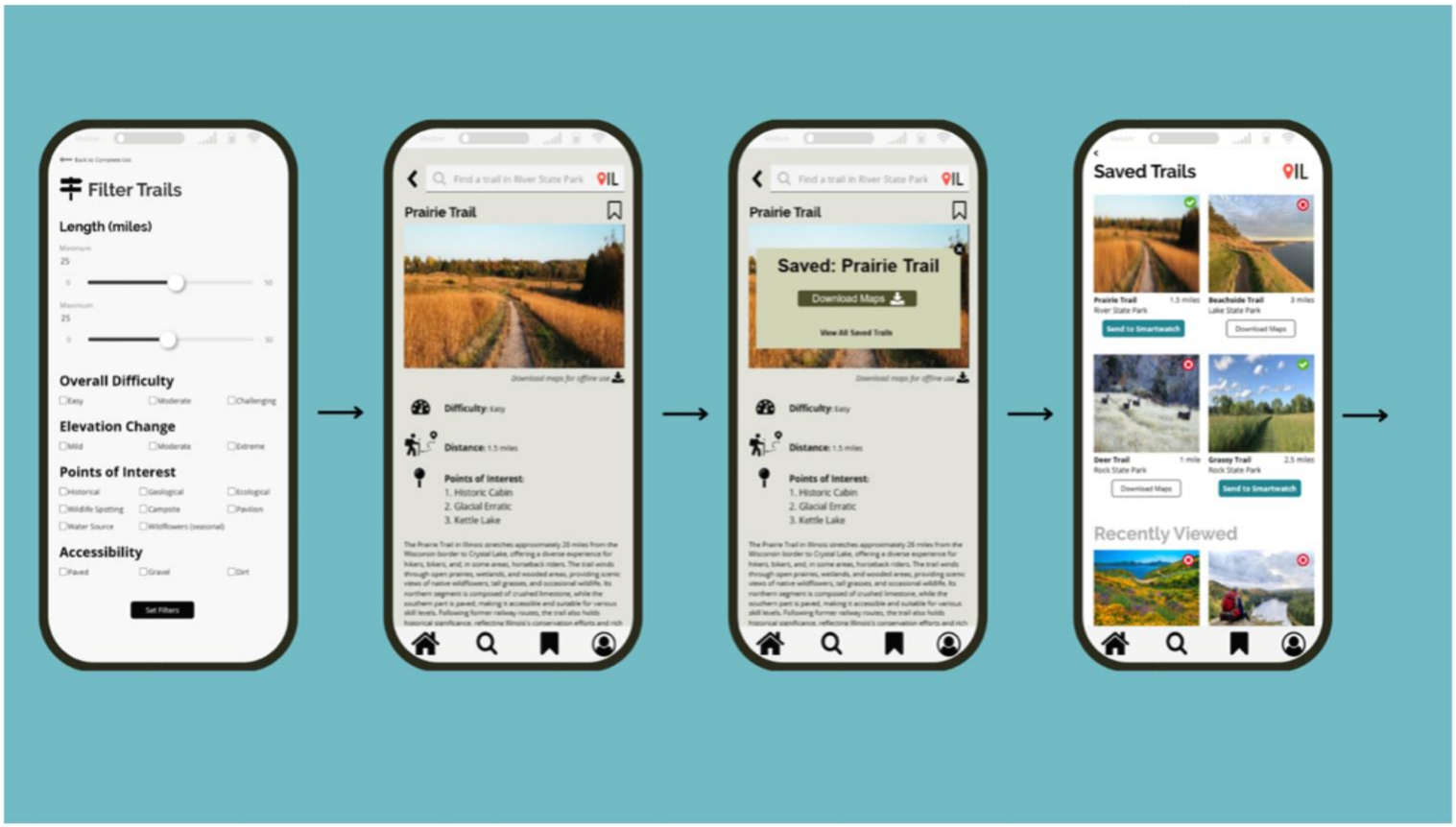
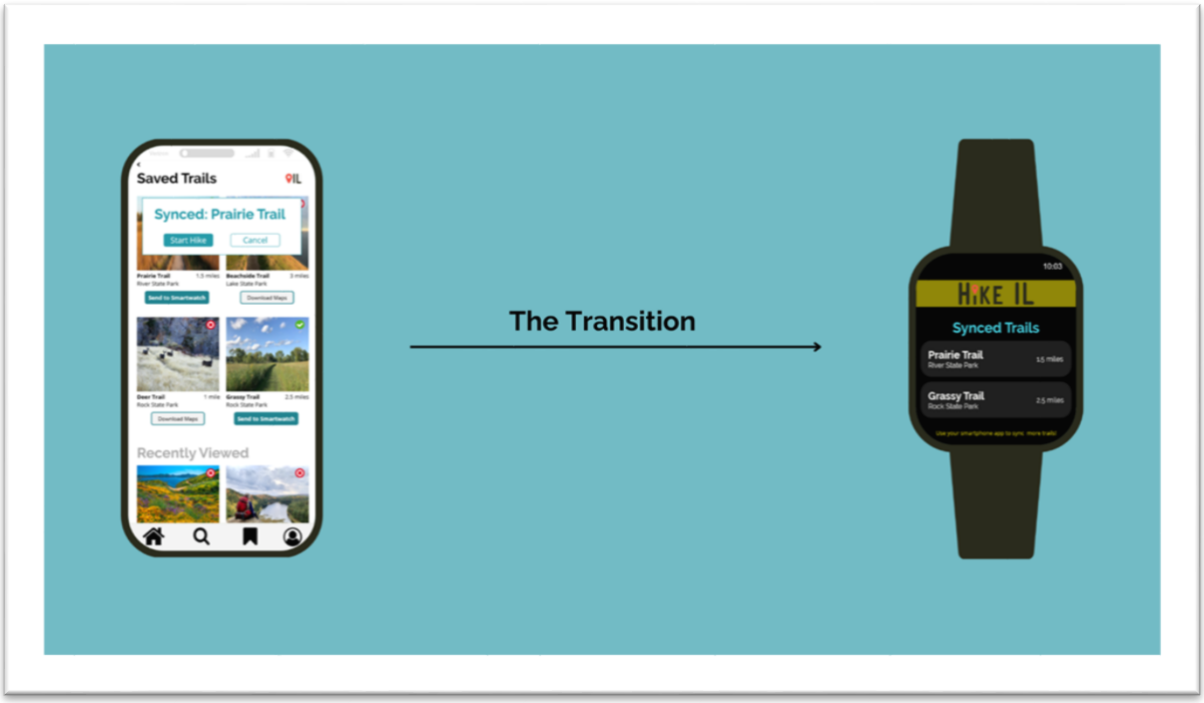
Find a trail in River State Park
River State Park
McHenry, IL
Description
Trails
Activities
Filter
Prairie Trail
Easy
1.5 miles
Historical, Geological
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aenean euismod bibendum laoreet. Proin gravida dolor sit.
Little Grand Canyon Trail
Moderate
2.9 miles
Flora, Recreational
Generally considered a moderately challenging route. This is a very popular area for hiking, so you'll likely encounter other people while exploring
River Route Nature Trail


Filter Trails
Length (miles)
Minimum
25
Maximum
25
Overall Difficulty
Easy
Moderate
Challenging
Elevation Change
Mild
Moderate
Extreme
Points of Interest
Historical
Geological
Ecological
Wildlife Spotting
Campsite
Pavilion
Water Source
Wildflowers (seasonal)
Accessibility
Paved
Gravel
Dirt
Set Filters
Find a trail in River State Park
Prairie Trail
Difficulty: Easy
Distance: 1.5 miles
Points of Interest:
1. Historic Cabin
2. Glacial Erratic
3. Kettle Lake
Saved: Prairie Trail
Download Maps
View All Saved Trails
Saved Trails
Prairie Trail
1.5 miles
River State Park
Send to Smartwatch
Beachside Trail
3 miles
Lake State Park
Download Maps
Deer Trail
1 mile
Rock State Park
Grassy Trail
2.5 miles
Recently Viewed


Saved Trails
Synced: Prairie Trail
Start Hike
Cancel
Recently Viewed
The Transition
HIKE IL
Synced Trails
Prairie Trail
River State Park
1.5 miles
Grassy Trail
Rock State Park
2.5 miles


Prairie Trail
River State Park
Start Hike
Difficulty: Easy
Length: 1.5 miles
Estimated Time: 30 minutes
Delete Trail
Heading NE
Approaching:
Historic Cabin
Learn More
Close

8.0. Marketing

8.1. Competitive /analyses

Our app stands out by offering a specialized, user-friendly experience tailored to Illinois State Parks, combining real-time trail information, wildlife alerts, and fitness tracking. Unlike **AllTrails** and **Google Maps**, which provide broad coverage but lack localized accuracy and simplicity, our app delivers up-to-date, easy-to-navigate trail information specific to the region. Compared to **Apple Health** and **Fitbit**, which focus solely on fitness tracking without trail or nature data, our app merges fitness goals with nature exploration. For users who want to connect with local parks, the app provides essential, real-time updates and a streamlined UI, catering to all experience levels. Additionally, unlike **Komoot** and **FarOut,** which target seasoned hikers with complex interfaces, our app is designed to be intuitive and informative for casual hikers, families, and educators, creating a well-rounded experience for outdoor enthusiasts in Illinois.

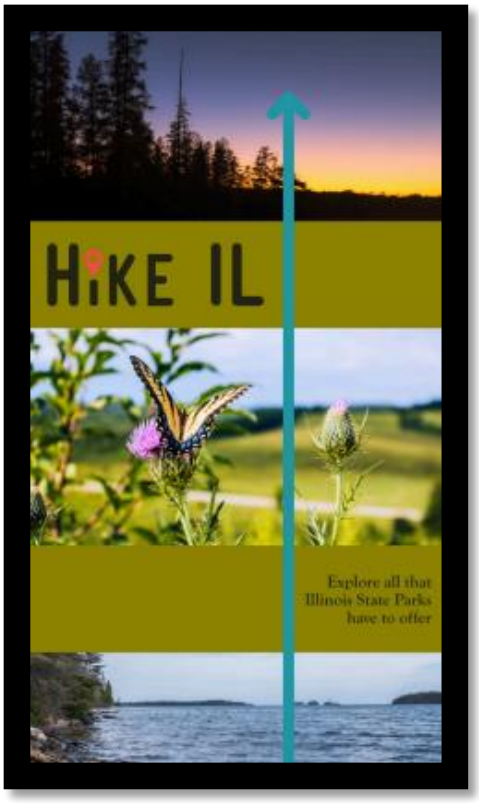
8.2. Key Selling Points

- **Real-time Park Data:** Stay updated with weather and trail conditions.
- **Smartwatch Integration:** Track fitness and navigation seamlessly.
- **Offline Mode:** No service? No problem. Download maps for offline use.
- **User Customization:** Features for all users, from tech-savvy athletes to casual nature lovers.
- **Educational Tools:** Wildlife, historical, and ecological insights. Perfect for teachers, parents, and scout leaders!

8.3. Promotional Ideas

- **Influencer Campaigns:** Collaborate with nature and fitness influencers.
- **App Store Ads:** Highlight fitness tracking, ease of use, and offline features.
- **Hashtag Challenge:** Encourage users to share photos and videos of their park

8.3.1. Instagram posts



Portrait (Story) 1080x1920

Square (Feed) 1080x108

9.0. Style Guide

Hike IL Style Guide: Link

10.0. Conclusion

Our team created a hiking app called "Hike IL" to make hiking easier and more accessible for everyone. The idea came from one of our team members, an avid hiker who has faced challenges with other apps and limited cell service on trails. We divided our work based on each teammate's strengths, bringing together a mix of perspectives to create a practical, adaptable, and nature-focused solution. This app

provides exactly what hikers need: simple and clear navigation that’s easy for users of any age, with offline map access for areas without cell service.

The design is minimalistic to prevent distractions and enhance the hiking experience. It's user-friendly, so even first-time users can navigate the app with ease. As part of the development process, we conducted user testing and received valuable feedback from hikers, allowing us to make improvements based on their suggestions. These enhancements have made the app even more intuitive and accessible.

11.0. Appendix

11.1. Usability Testing of Hike IL

Participants: 4 participants familiar with using smartphones and smartwatches
Interviews: 20-30 minutes
Introduction
Hi, I'm (name). I'm working on a group project called "Hike IL" for my HCI class. It's an app designed for hikers and outdoor enthusiasts to help them plan and navigate trails. The purpose of this test is to evaluate how user-friendly our app is, especially in terms of navigation. I'll give you five simple tasks to complete using the Hike IL prototype. As you work on these tasks, I encourage you to share your thoughts out loud. Let me know what you're thinking, any challenges you face, or anything that stands out to you. I'll be video recording our session so I can focus on our conversation and take notes. The video will only be used to clarify any points from my notes. Please remember that this test is about evaluating the app, not you. Don't worry about making mistakes. If you feel uncomfortable answering a question, we can skip it, and you may stop the interview at any time.
Do you have any questions or concerns before we begin?
Task Prompts
I'll give you a scenario and ask you to perform the task. There are five tasks in total. Please feel free to provide feedback, positive or negative, on anything. The test will now begin.
Task 1
Imagine you're planning a hiking trip for this weekend. Find a park that you like and filter the trails according to your needs (distance, features, difficulty level).
Post-task Questions:

- What factors do you consider when choosing a park from the homepage?
- Was the homepage intuitive? Did you have any questions?
- How difficult was this task?
- Were the filters helpful?
- Any confusion?

Task 2
If you've found a trail you like, please bookmark it as one of your favorites.
Post-task Questions:

- Was bookmarking the trail intuitive, or did you have to search for the feature?
- How confident are you that you'll be able to access your bookmarked trail later?
- If you could improve the bookmarking process, what would you change?

Task 3

Now, download the saved maps for offline use.

Post-task Questions:

- Did the app clearly explain how to download the map for offline use?
- How useful do you think having the map offline will be for your trip?
- Were you unsure at any point whether the download was successful or where the downloaded map was stored?

Task 4

Access the downloaded map on your smartwatch.

Post-task Questions:

- How easy was it to locate the downloaded map on your smartwatch?
- Did the map display correctly, and was it easy to use for navigation?
- Would you prefer any additional features or improvements when using the map on your smartwatch?

Task 5

Imagine you're ready to start your hike. Please start the navigation on your smartwatch to help guide you.

Post-task Questions:

- How difficult was this task?
- Was it confusing?
- Did you face any challenges?

Overall Post-test Questions

- How would you describe your overall experience using the app?
- Was there any task you found particularly easy or difficult?
- Which feature of the app did you find most useful?
- What suggestions do you have for improving the Hike IL app based on your experience today?

Closing

Thank you for participating in this test. Do you have any questions before we finish?