



Bears Ears NAV

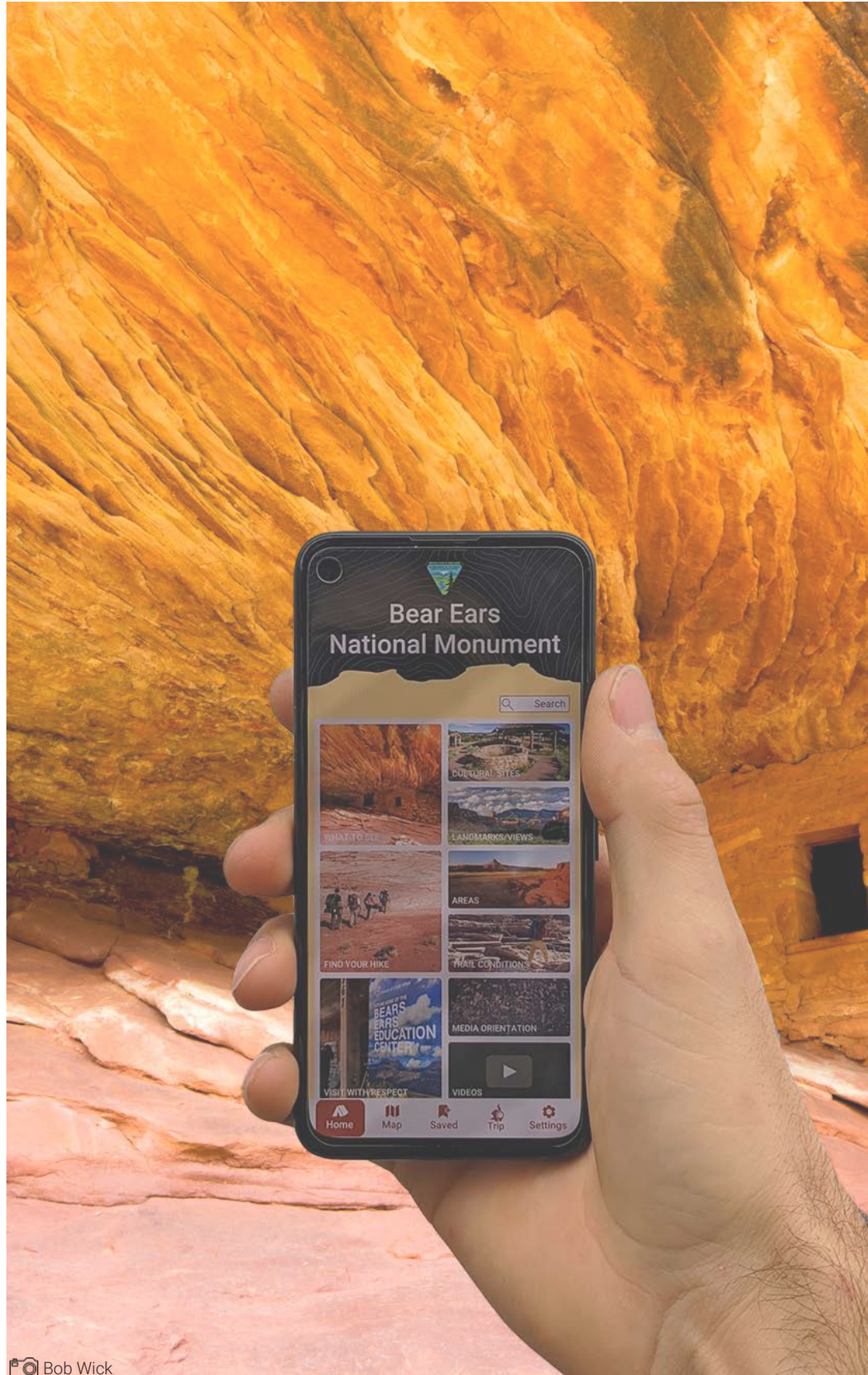
The Official Bears Ears National Monument App

Bears Ears NAV. An app designed to provide the best visitor information about the monument while allowing for proper management oversight of this information.

Bears Ears NAV

Dakota Janes

University of Utah
Multi-Disciplinary
Design



In Partnership with the Bureau of
Land Management and US Forest
Service

DES 3500-001 Design Product
Studio 2 Fall 2020

Elpitha Tsoutsounakis

© Bob Wick

Contents

4 Research

The Cultural Resource and Recreation Management Plan
Friends of Cedar Mesa - Visit With Respect
Hiking, Biking, Climbing, and Camping

8 Design Opportunity

Trail Proliferation
Navigation and Travel

11 Design Process

Precedence
Wayfinding
Purpose and Target Users

15 Product Outcomes

User Subconscious and Moments of Delight
Bears Ears NAV Interface

19 Impact

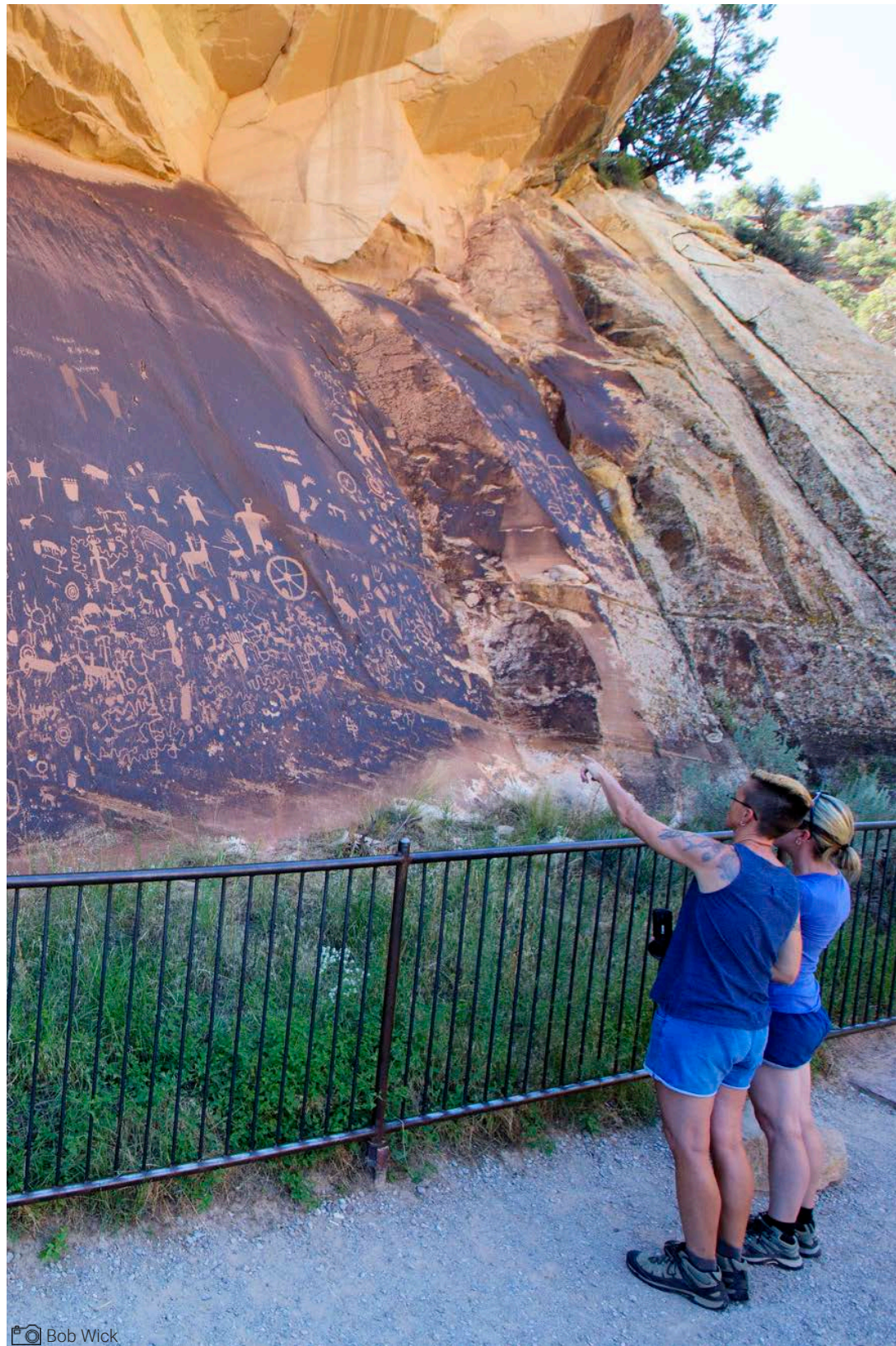
Application

Bibliography

Index

Research

- 5 The Cultural Resource and Recreation Management Plan
- 6 Friends of Cedar Mesa - Visit With Respect
- 7 Hiking, Biking, Climbing, and Camping



Bob Wick

Three Sites of Focus

Before meeting with the Bureau of Land Management, the studio was given a brief. The focus was on three major sites within Bears Ears National Monument.

- Lewis Lodge
- House on Fire
- Mule Canyon Complex



The CRRAMP

The Cultural Resource and Recreation Management Plan

The Bears Ears National Monument (BENM or Monument) was established by Presidential Proclamation 9558 on December 28, 2016. On December 4, 2017, Presidential Proclamation 9681 clarified and modified the designation of the BENM. The revised BENM boundary includes two separate units, known as the Shash Jáa and Indian Creek Units, that are reserved for the proper care and management of the objects of historic and scientific interest within their boundaries. These two units together are referred to as the planning Area in this document

The BLM has an implementation-level plan for merging recreational use and cultural resources, due in 4 years, will apply to both BLM and USFS sites. The CRRAMP will address site visitation, trails, trailheads, facilities, dispersed camping, interpretive strategy, and site monitoring. Currently the BLM is in the data collection and idea generating phase. They have identified areas for improvement; Damage to sites, human waste, trail proliferation, fee compliance, pet compliance, and accessibility. Of the identified areas for improvement, this project focuses on trail proliferation, damage to sites, and accessibility.



"The truth is many people don't know how simple it is to visit cultural and scientific sites respectfully." - Friends of Cedar Mesa



Friends of Cedar Mesa offers educational experiences about VWR. These consist of an orientation, group work, videos, guide training, and a 2-day ambassador training. For a basic understanding they also provide logos and icons on their website. This is the most condensed version and the easiest way for visitors to see the information. Visitors number one priority should be respectfully visiting the monument but getting this information to a visitor can be tough.

The Friends of Cedar Mesa also provide educational short videos with more in-depth explanations of their "Visit With Respect Tips". Along with short videos, Friends of Cedar Mesa offers an Ambassador Program. The Ambassador Program is designed to find motivated volunteers willing to help educate visitors how to responsibly visit sensitive cultural and archaeological sites.



Recreation in Bears Ears is encouraged, but can also lead to many problems. Some of the biggest are motorcycles on non-HOV trails, climbers parking in undesignated parking areas, and hikers, bikers, and campers traveling off path, creating their own trails and campsites. This causes many issues including deterioration of the cryptobiotic crust, trail proliferation, and destruction of artifacts.

Recreation

Recreation in the Bears Ears area consists of hiking, biking, off-roading (HOV), swimming, boating, climbing, and camping.

- There are well over 100+ hiking trails, 15 OHV trails, and numerous sites within Bears Ears.
- Indian Creek and Valley of The Gods both provide exceptional climbing areas, with some of the most popular climbing in Maple Canyon (Central Right Fork Overview) which has dozens of open face and crack climbing.
- Bike-packers have the luxury of over 700+ miles of single track riding in the northern end of the monument. Routes are provided by the grassroots company BikePacking Roots. If you're looking for a day trip, Lockhart Basin and Valley of The Gods also have single track mountain biking trails.
- There are two forms of camping in Bears Ears. The first is developed campgrounds such as Indian Creek Falls, Superbowl, and others. The second is primitive camping (dispersed camping) such as Valley of The Gods, Cedar Mesa, and Butler Wash Road.



© Bob Wick

Design Opportunities

- 9 Trail Proliferation
- 10 Navigation and Travel



Trail Proliferation

Trail proliferation is the deterioration of trails, plants, and cryptobiotic crust caused by humans traveling off trail either knowingly or unknowingly. Trail proliferation is a big issue in Bears Ears. Not only does trail proliferation cause damage to the land and soil, but it can also lead to destruction of archaeological sites and artifacts. This product will help inform visitors of the proper paths to follow, areas for camping, and designated parking for trails, sites, and more.

Causes of Trail Proliferation.

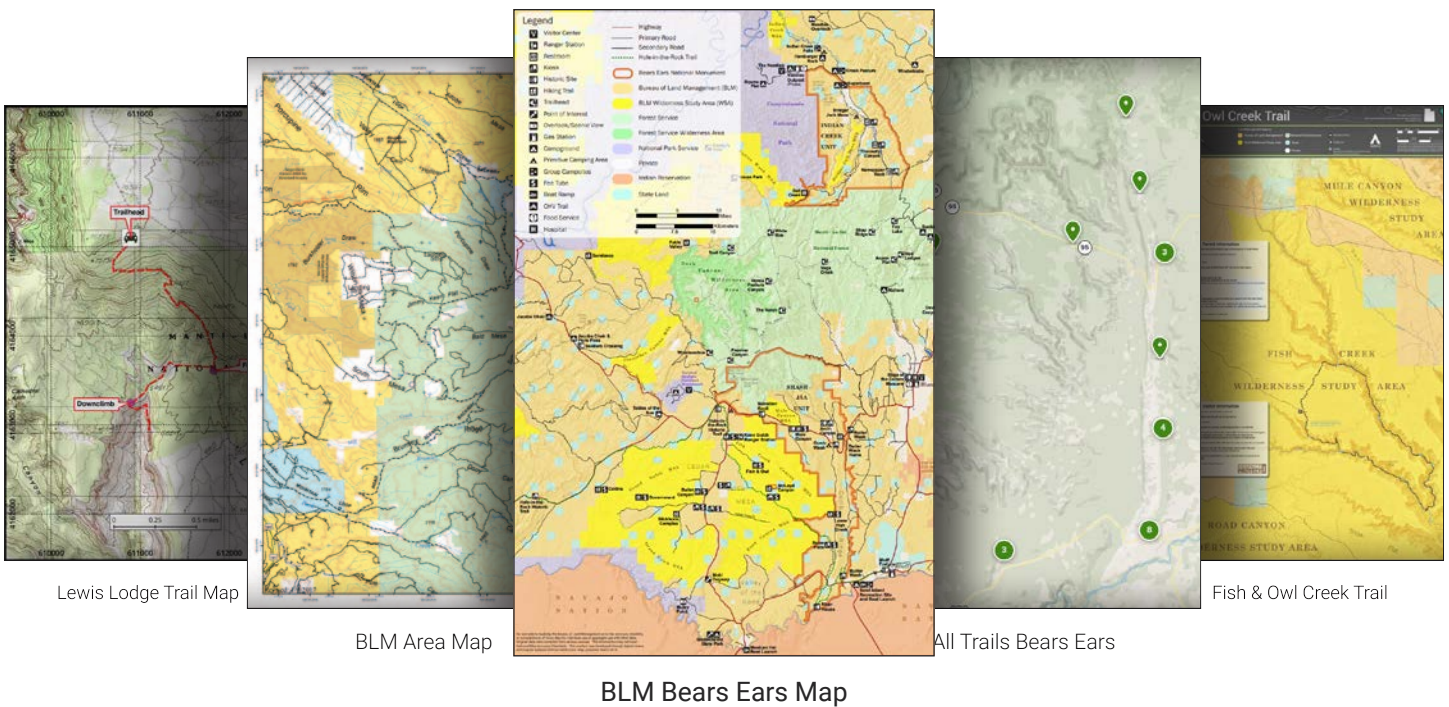
- Insufficient signage
- Visitors ignoring signage
- Visitor previously created trails, parking, and camping.
- Weather
- Awareness

This led to the idea of a navigation app for a cellular device. With a navigation app run by the BLM, they could show only proper trails, hide sensitive sites, create designated camping zones, parking areas, and inform visitors about how to be responsible. Having all of this information in one app would allow for better control of the information by the app manager and easier understanding of the land for visitors.



Navigation and Travel

To find a specific trail or site within Bears Ears requires visiting multiple websites for information. Public forms, blogs, and websites can lead to finding trails for sensitive sites not meant for public access or creating new routes that damage the land. The maps that are currently available on most sites show the boundaries of Bears Ears with general locations for all sites, hikes, viewpoints, etc. To find a more detailed map of exact trails requires either lots of research or the ability to read a topographic map and some time. This deters most visitors from doing the proper research to find the correct way to visit a site or follow a certain trail.



The monument largely has little to no cell service. Having paper maps can also be a hassle, take up space, and can be hard to read. If a visitor had an interactive map that helped lead them to the correct site, keep them on the correct trails, and only provide sites that are safe for visitation, management and preservation of sensitive cultural and archaeological sites would become much easier. This could also reduce trail proliferation, unintended expansion of parking areas, and less destruction of the very sensitive Crypto-crust found in the area.

Design Process

12 Precedence

13 Wayfinding

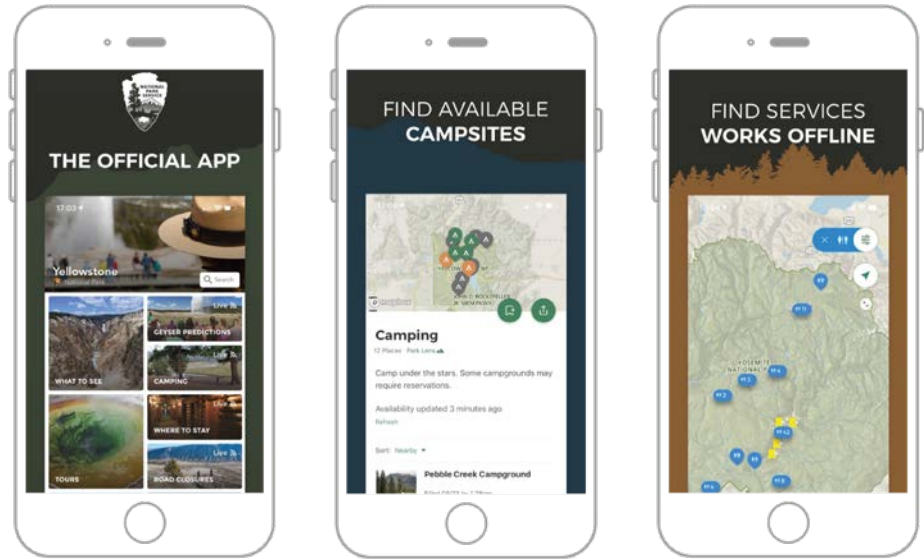
14 Purpose and Target Users



The National Park System has developed apps for your cellular device for the majority of their parks. Below is some of the content that is provided by the Yellowstone NPS app. This app has everything from download-able maps and information to find where to camp, stay, and how to get around the park along with live road updates and things to do. Similar to Bears Ears, having download-able content would allow for visitors to navigate without needing internet.

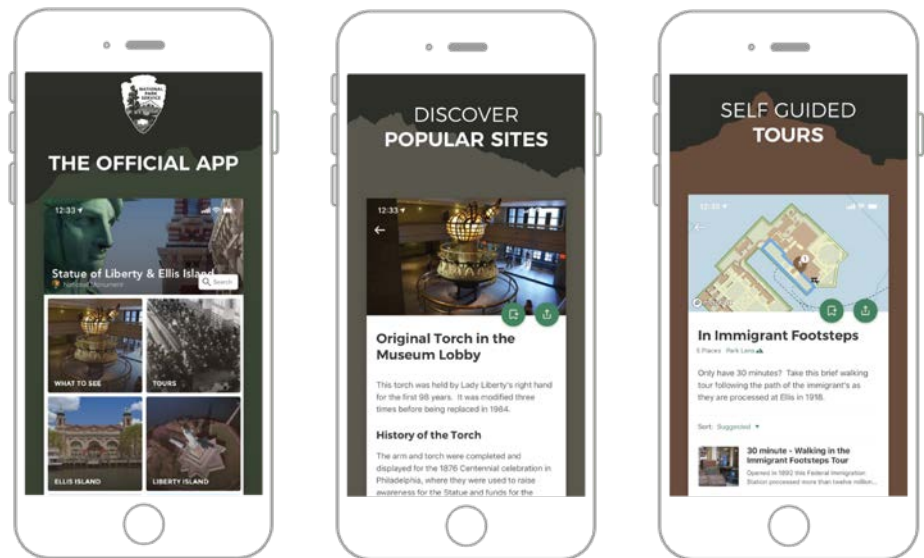
Yellowstone National Park App

The Yellowstone NPS app has downloadable content for access when you're in the park since there is very little cell service.



Statue of Liberty & Ellis Island National Park App

The Statue of Liberty & Ellis Island NPS app has audio and self guided tours for visitors. With as busy as the monument gets, having self guided tours enables every visitor to learn the history.



Above is an example of an app made for a National Monument. The NPS created an app to help visitors navigate the Statue of Liberty and Ellis Island. Content includes discovering tours, what to see, and history of the sites. The app also provides self guided tours with a pre-programmed map and audio information if preferred. This could be implemented into a Bears Ears navigation app to allow for the information at the visitor center to be accessed while out exploring.

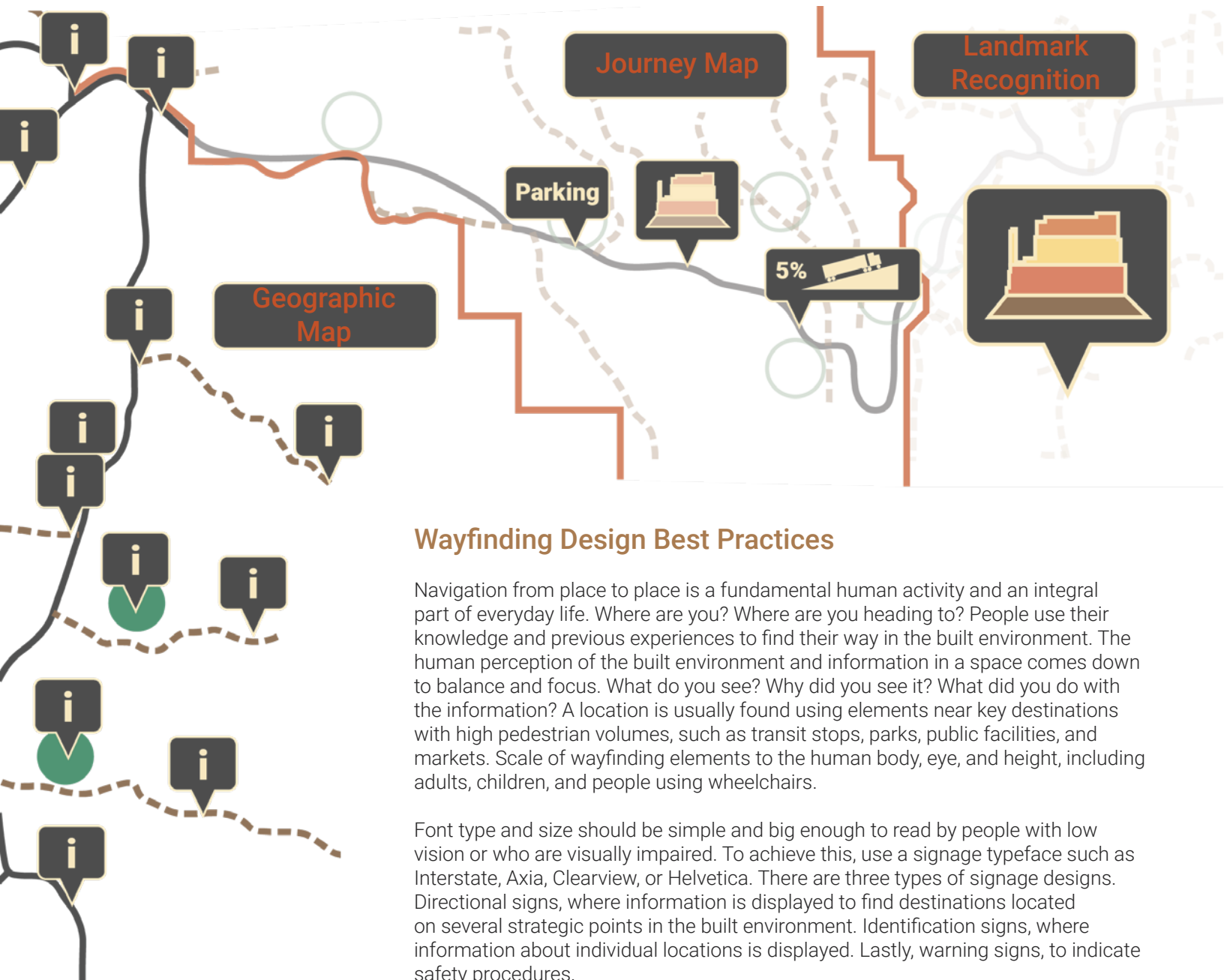
Wayfinding Design

The process or activity of ascertaining one's position and planning and following a route. Wayfinding design combines signage and map design, symbols, color, and typography to effectively navigate people through a space.

Wayfinding can be broken down into five design principles:

- Create an identity at each location, different from all others.
- Use landmarks to provide orientation cues and memorable locations.
- Create well structured paths.
- Create regions of differing visual character.
- Don't give the user too many choices in navigation.

People don't memorize every detail of a map, they remember key objects. It's important to provide enough information for understanding, but not overwhelming.



Wayfinding Design Best Practices

Navigation from place to place is a fundamental human activity and an integral part of everyday life. Where are you? Where are you heading to? People use their knowledge and previous experiences to find their way in the built environment. The human perception of the built environment and information in a space comes down to balance and focus. What do you see? Why did you see it? What did you do with the information? A location is usually found using elements near key destinations with high pedestrian volumes, such as transit stops, parks, public facilities, and markets. Scale of wayfinding elements to the human body, eye, and height, including adults, children, and people using wheelchairs.

Font type and size should be simple and big enough to read by people with low vision or who are visually impaired. To achieve this, use a signage typeface such as Interstate, Axia, Clearview, or Helvetica. There are three types of signage designs. Directional signs, where information is displayed to find destinations located on several strategic points in the built environment. Identification signs, where information about individual locations is displayed. Lastly, warning signs, to indicate safety procedures.

Purpose

What Bears Ears NAV will do for the visitor

The app user will be able to find any information they want for Bears Ears National Monument all in one, simple app. Specifically, the first phase of this app focuses on access to sites and recreation aspects while providing plenty of expansion opportunities post project.

What Bears Ears NAV aim to communicate

This app will communicate the importance of the land, the sensitivity of the sites, and the importance of visiting with respect. This information is helpful, but each visitor also needs to do their part.

What Bears Ears NAV does for the BLM & USFS

The Bears Ears NAV app will be able to control the narrative and the way people experience the monument. The app allows for full oversight of what the public can access.

Target Audience

The Planner

Someone who methodically researches their trip, knows exactly what they're going to do, what day it'll be done on, and how long the plan will take.

- Needs to keep track of activities
- Road, trail, & weather updates
- Precise what, where, & when info.
- Access to all content anywhere.

The Explorer

This visitor is the, "Figure it out when we get there" type. They've done a little digging to find areas of interest, but don't have a plan and will make it up as they go.

- Up to date monument map
- Recommendations
- Driving, hiking, visiting directions
- Educational material
- Camping and lodging availability
- Memories

The Repeat Visitor

The repeat visitor has been to the monument multiple times. They enjoy learning new things about the monument, exploring new areas, and visiting their favorites.

- Education material
- To do list + what next
- Favorites list
- Road, trail, and weather updates
- Camping and lodging availability
- Memories

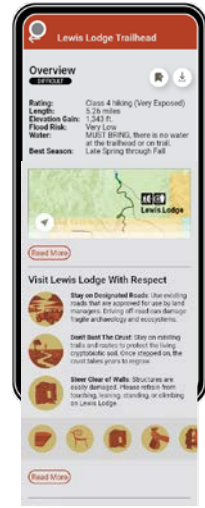
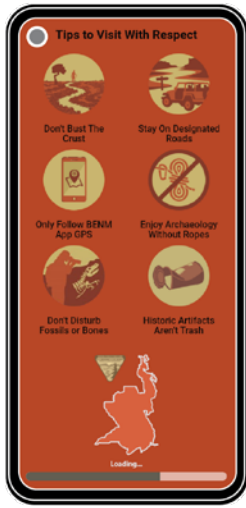
Product Outcomes

- 16 User Subconscious and Moments of Delight
- 17 Bears Ears NAV Interface
- 18 Behind The App



Scan for video walk-through





"The truth is many people don't know how simple it is to visit cultural and scientific sites respectfully." - Friends of Cedar Mesa

Subconscious

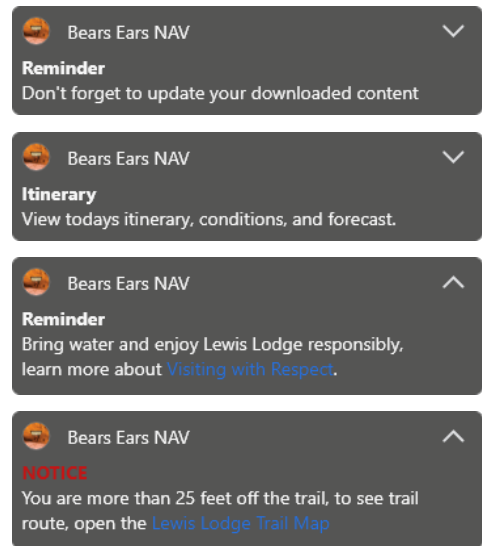
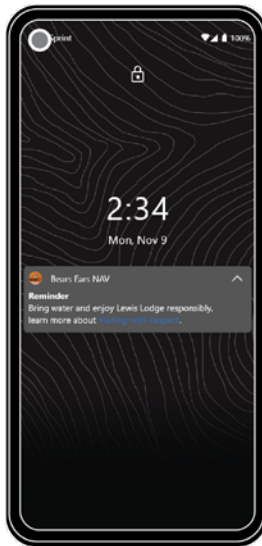
The part of the mind one is not fully aware of, but influences one's actions and decisions. Ways to responsibly visit are spread throughout the app.

Friends of Cedar Mesa offers educational experiences about VWR. These consist of an orientation, group work, videos, guide training, and a 2-day ambassador training. For a basic understanding they also provide logos and icons on their website. This is the most condensed version and the easiest way for visitors to see the information.

Moments of Delight

Moments of Delight are simple. They are designed around information the user doesn't even know they want to know.

Some examples of small notifications to assist a visitor. With many sensitive sites and soil in the monument, it is important for visitors to be responsible and respectful. The notifications will help visitors stay on the correct trails, make sure their app is up to date and the proper content is downloaded before they enter, and can help them enjoy the monument even after they have left.



The Interface

Navigation through the app is similar to current NPS apps. However, the app has highly specific trail maps, monument notifications and reminders.

While this project was focused on the navigation, accessibility, and reduction of trail proliferation within Bears Ears, the home screen shows expansion possibilities. The home screen provides visitors with information from the visitor center.

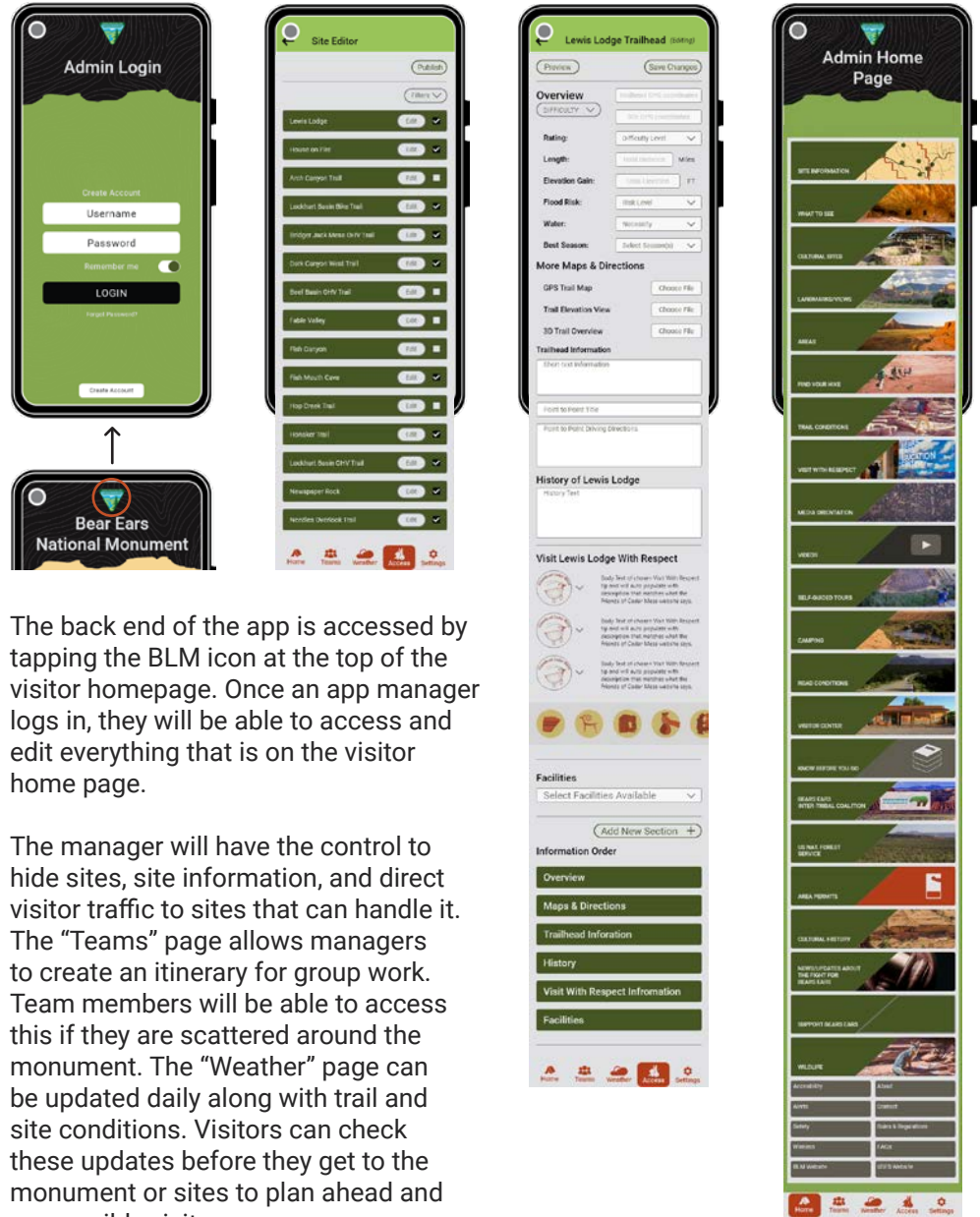


The map is a rendering of the current BLM map of Bears Ears. With a simplified interface users can filter their options, navigate around the monument, and get driving directions to trailheads, sites, camping, and more.

The site information page provides everything to visit the site such as an aerial view, history, facilities directions, and three tips for respectful visitation.

Behind The App

The back-end of the app is similar to the visitor view. Here, an admin will be able to directly control what the public can and can't see.



The back end of the app is accessed by tapping the BLM icon at the top of the visitor homepage. Once an app manager logs in, they will be able to access and edit everything that is on the visitor home page.

The manager will have the control to hide sites, site information, and direct visitor traffic to sites that can handle it. The "Teams" page allows managers to create an itinerary for group work. Team members will be able to access this if they are scattered around the monument. The "Weather" page can be updated daily along with trail and site conditions. Visitors can check these updates before they get to the monument or sites to plan ahead and responsibly visit.

The back end of the app controls the narrative and the way people visit the monument. The sensitive cultural and archaeological sites in the monument require more oversight. Having the ability to control what sites are being exposed to the general public can help reduce the amount of traffic to those sensitive areas.

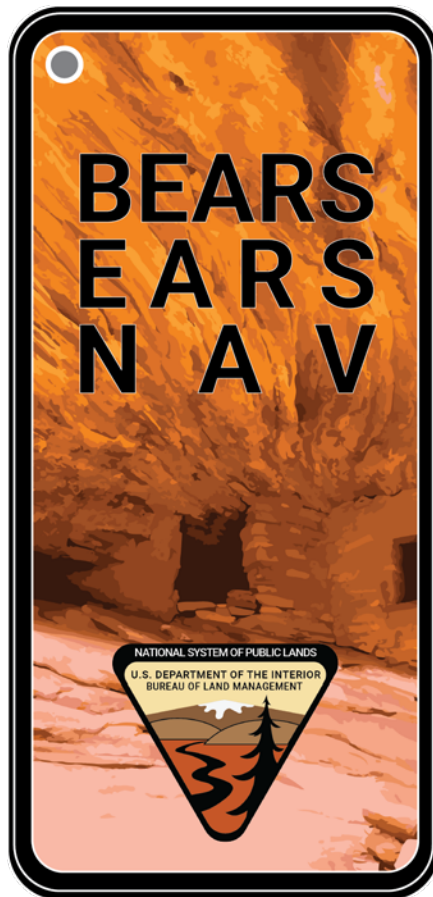
The site editor allows any app manager to edit site information to control each site's narrative. By giving the app manager this ability, visitors will only be able to see what is safe. The app is designed to limit the amount of visitation to sensitive sites. If visitors find the information on the app to be more useful than blog posts about other sites, they'll be more likely to avoid the sensitive areas of the monument.

Impact

20 Application



Bears Ears NAV provides visitors with access to information about the trails, sites, and history of Bears Ears along with information a visitor could find in the visitor center. The Bureau of Land Management and United States Forest Service will have full control of Bear Ears NAV and it's content. This allows them to control what is available to the public and helps protect the land and sensitive sites. The app will engage and educate visitors to help them understand and appreciate the land and what it has to offer.



Bears Ears NAV

The most responsible way to visit Bears Ears National Monument.

For visitors, this app will allow them to access all of its content off-line. Users can download the app contents, or individual parts they'd like to access if they don't have cell service. Since most of Bears Ears has little to no service, this will enable visitors to travel through the monument easier and more responsibly. Bears Ears NAV will also update visitors on their daily itinerary, weather conditions, if they are on the wrong trail, and provide an option to notify friends and family where you are traveling that day if something goes wrong.

Bibliography

- B. (2020, February 20). Maps: Frequently-Requested: Utah: Travel and Transportation. Retrieved November 02, 2020, from <https://www.blm.gov/maps/frequently-requested/utah/travel-transportation>
- Bears Ears National Monument: (2020, June 03). Mule Canyon Kiva. Retrieved September 19, 2020, from <https://bearssearsmonument.org/mule-canyon-kiva/>
- BLM. Bears Ears Monument Map. 2020. Map. <https://www.blm.gov/sites/blm.gov/files/documents/files/BLMUTahBearsEarsNationalMonumentMap.pdf>
- Cornia, Ryan. Lewis Lodge Map. 2006. Photograph, map. <https://www.roadtripryan.com/go/resources/content/utah/cedar-mesa/lewislodge/user-submitted/map/ryancornia-1453409948626.jpg>
- Cornia, R. (n.d.). Photo I. Retrieved November 02, 2020, from <https://www.roadtripryan.com/go/tripimage/showphoto/26>
- DAA, (2013, Aug 05). Lewis Lodge. Retrieved September 19, 2020, from <https://backcountrypost.com/threads/Lewis-lodge.2351/>
- Earth, Google. Earth View. 2020. Photograph. <https://www.google.com/earth/>
- F. (2020, April 03). Visit with Respect Education Campaign. Retrieved November 02, 2020, from <https://www.friendsofcedarmesa.org/visit-with-respect/>
- F. (2020, June 01). Tips for Enjoying & Preserving Archaeological Sites. Retrieved November 02, 2020, from <https://www.friendsofcedarmesa.org/tips-for-visiting-with-respect/>
- F. (2020, June 01). Visit with Respect Video Series. Retrieved November 02, 2020, from <https://www.friendsofcedarmesa.org/visit-with-respect-video-series/>
- Land Management, B. (2020, June 08). Bears Ears National Monument. Retrieved September 23, 2020, from <https://www.blm.gov/programs/national-conservation-lands/utah/bears-ears-national-monument>
- Maps, Google. Directions. 2020. Photograph, map. <https://www.google.com/maps/dir/Butler+Wash+Ruins+Trailhead/37.626739,+109.742746/@37.6034636,-109.711786,12z/data=!3m1!4b1!4m1!1m5!1m1!1s0x-87377dc37fc27809:0xa1b40c42defcd62c:2m2!1d-109.6325194!2d37.5242229!1m3!2m2!1d-109.742746!2d37.626739>
- Mule Canyon Kiva. (2020, June 03). Retrieved November 02, 2020, from <https://bearssearsmonument.org/mule-canyon-kiva/>
- National Park Service. (2020). National Park Service Apps on the App Store. Retrieved September 23, 2020, from <https://apps.apple.com/us/developer/national-park-service/id447866742>
- Ryan, R. (2016). Lewis Lodge Indian Ruins I. Retrieved September 23, 2020, from <https://www.roadtripryan.com/go/t/utah/cedar-mesa/lewislodge>
- Trails, A. (2020). House on Fire Via Mule Canyon trail. Retrieved September 23, 2020, from <https://www.alltrails.com/explore/trail/us/utah/house-on-fire-via-mule-canyon-trail>
- Visit Utah: (2018, June 08). Exploring Mule Canyon: House on Fire and Cave Tower. Retrieved September 19, 2020, from <https://www.visitutah.com/articles/exploring-mule-canyon-house-on-fire-and-the-cave-tower-ruins/>
- Wick, Bob. House on Fire. 2016. Photograph. <https://www.flickr.com/photos/blmutah/34496485633/in/album-72157692104710820/>
- Wick, Bob. Indian Creek. 2016. Photograph. <https://www.flickr.com/photos/blmutah/28627713244/in/album-72157692104710820/>

Contact Information

Dakota Janes
dakota.janes28@gmail.com

Special Thanks To

Misti Haines, Shirley Cloud-Lane, Jake Palma, and Jared Lundall | Bureau of Land Management.