



# Wisconsin State Parks **Research Report**



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## Executive Summary

A series of usability tests were completed over a period of 4 weeks to determine a user’s ability to find a state park using the state park finder within the Wisconsin State Park Website. The tests were conducted with 6 participants remotely using Zoom. The sessions were recorded and analysed to identify potential areas for improvement. The testing identified the potential for improved website information architecture. Within the state park finder, usability issues were exposed with filter interaction, map user interface and verbiage for call to action buttons. This research report includes the extensive research and design of the state parks website as well as the process and results of the usability tests.



# Introduction & Background

## Wisconsin State Parks Belong to the People

Wisconsin welcomes visitors to enjoy the diverse natural places and historic resources that provide recreational opportunities. At the heart of an excellent state park system is the experience of its visitors. Cultivating and maintaining an environment where visitors are welcomed and provided access to services and amenities will increase their enjoyment for state parks.

### Wisconsin State Park System Includes

- » 52 state parks
- » 8 southern forests
- » 8 recreation areas
- » 41 state trails extending for 1,980 miles and over 150,000 acres

### Economic Impact of State Parks

Camping, hiking, hunting, fishing, boating, cross country skiing and other outdoor activities common in our state parks contribute to our quality of life while making Wisconsin a major tourism destination. Wisconsin state parks hosted approximately 15.3 million visits in 2018.

The annual income from visitors is estimated to be over 1 billion dollars per year. Each visitor spends an average of 41-90 dollars per day. The state park system supports more than 8,220 private sector jobs, equating to \$350 million dollars of income for Wisconsin.

### The Project

Wisconsin State Parks website is currently buried within the Department of Natural Resources (DNR) website. A newly redesigned website is long overdue that provides visitors easy to access information and reflects the true beauty of our state.

### Design & Experience Requirements

- » Wisconsin State Parks has its own logo and branding standards
- » The online presence of Wisconsin State Parks is a well-designed website with easy to use navigation
- » All state parks are open, accessible and welcoming
- » High quality recreational opportunities are available throughout the state park system
- » All visitors have access to basic park information and materials to help them plan trips to state parks
- » Every visitor has access to equipment and/or programs to aid them in using and enjoying state parks

### Proposed State Park Features

- » Find a park with associated maps, events, and services each park offers (focus of usability test)
- » View accessibility services such as wheelchair friendly parking, trails, fishing piers and hunting blinds
- » View nearby attractions
- » View rules/regulations
- » Purchase vehicle admission stickers
- » Reserve a campsite
- » Event calendar with park events and volunteer opportunities

### Interested Stakeholders

Department of Natural Resources, an organized and appointed design/review committee and the office of Governor Evers.

## Vision Statement

The website redesign of Wisconsin State Parks will improve efficiency of land management and continued preservation of natural and recreational resources. Wisconsin State Parks will provide long term benefits for the enjoyment of hunters, anglers and visitors alike.



# Research Goals & Questions

## Research Goals

- Q: Can the user easily find a state park with public beaches using the state park finder?
- Q: Can the user easily find a state park and find park information such as hours of operation/address/phone numbers?
- Q: Can the user easily find a state park and view upcoming events that park offers?
- Q: Can the user find a state park that offers activities the user is interested in (biking, hiking, climbing, etc.)?
- Q: Can the user find a state park and view/print trail maps for that park?

## Research Questions

1. Can the user find the state park? (Yes/No)
2. Are the state park filters intuitive? (Yes/No)
3. Are there any state park filters that are missing? (Yes/No)
4. Can the user easily find park information such as hours, phone number and address? (Yes/No)
5. Can the user easily find park trails and maps? (Yes/No)
6. How long does it take the user to complete each task? (See Time on Task)
7. Would changes to the design increase/decrease time to complete a task? (Yes/No)

## Participants, Demographics and Recruitment Methods

A total of 6 total participants were recruited via social media or a verbal phone call request to participate in a 30 minute long testing session. It was important to recruit a wide variety of users with varying age, education and web expertise. It was important to have 2 user groups test the state park task flow – in state users and out of state users. Participants that live in Wisconsin are familiar with the geography of Wisconsin and location of state parks. They are also most likely to have previous experience purchasing an annual state park pass or visiting a state park. Out of state users are most likely buying daily passes, are unfamiliar with locations of state parks, cost of admission and will generally be doing more research and planning.

**Gender** - A person's gender can have a huge effect on their way of thinking, affecting the result of the test. Women tend to be more aware of their emotions versus men, while males tend to think from an objective, task-oriented point of view.

**Age** - older participants may be familiar with state parks throughout the states while younger participants may not have as much exposure. Older participants may take longer to complete tasks because of lack of technical knowledge.

**Education** - A lack of a high school degree may indicate basic reading and writing difficulties preventing them from completing a task. A college degree participant may have more free time, a 9-5 work day schedule and a consistent stream of income. Activities and interests may be different between levels of education.

**Location** - It's important to have a variety of in and out of state users for the pilot test. Out of state users will have a tourist perspective on the state park finder. They will most likely be using the website to plan a vacation. An in-state park visitor will be familiar with existing state parks, locations, and park passes.

**Web Expertise** - Expert, moderate, novice. Measured by frequency and ease of use navigating the web

**Types of Devices Owned** - The more devices and operating systems a user owns, the more tech savvy they may be. It may be difficult to find, but I would like a few users that are desktop computer only users or flip phone owners.

A series of usability tests were completed to determine the user's ability to find a state park using the state park finder. The tests were conducted with 6 participants using their own devices remotely using Zoom. The sessions were recorded and analyzed to identify potential areas for improvement.



# Participants

The 6 recruited participants had a variety of demographic characteristics.

- 01

Lives in Wisconsin

• High School Education

• Moderate Web Expertise

• Owns a laptop/smartphone

• Female

• Age 50
- 02

Lives in Wisconsin

• Bachelor's Degree

• Expert Web Expertise

• Owns a laptop/smartphone

• Male

• Age 30
- 03

Lives in Wisconsin

• Technical College

• Novice Web Expertise

• Owns a laptop/smartphone

• Male

• Age 54
- 04

Lives in Colorado

• Bachelor's Degree

• Expert Web Expertise

• Owns a laptop/smartphone

• Female

• Age 25
- 05

Lives in Minnesota

• Chiropractic Doctorate

• Novice Web Expertise

• Owns a smartphone/tablet

• Male

• Age 60
- 06

Lives in Illinois

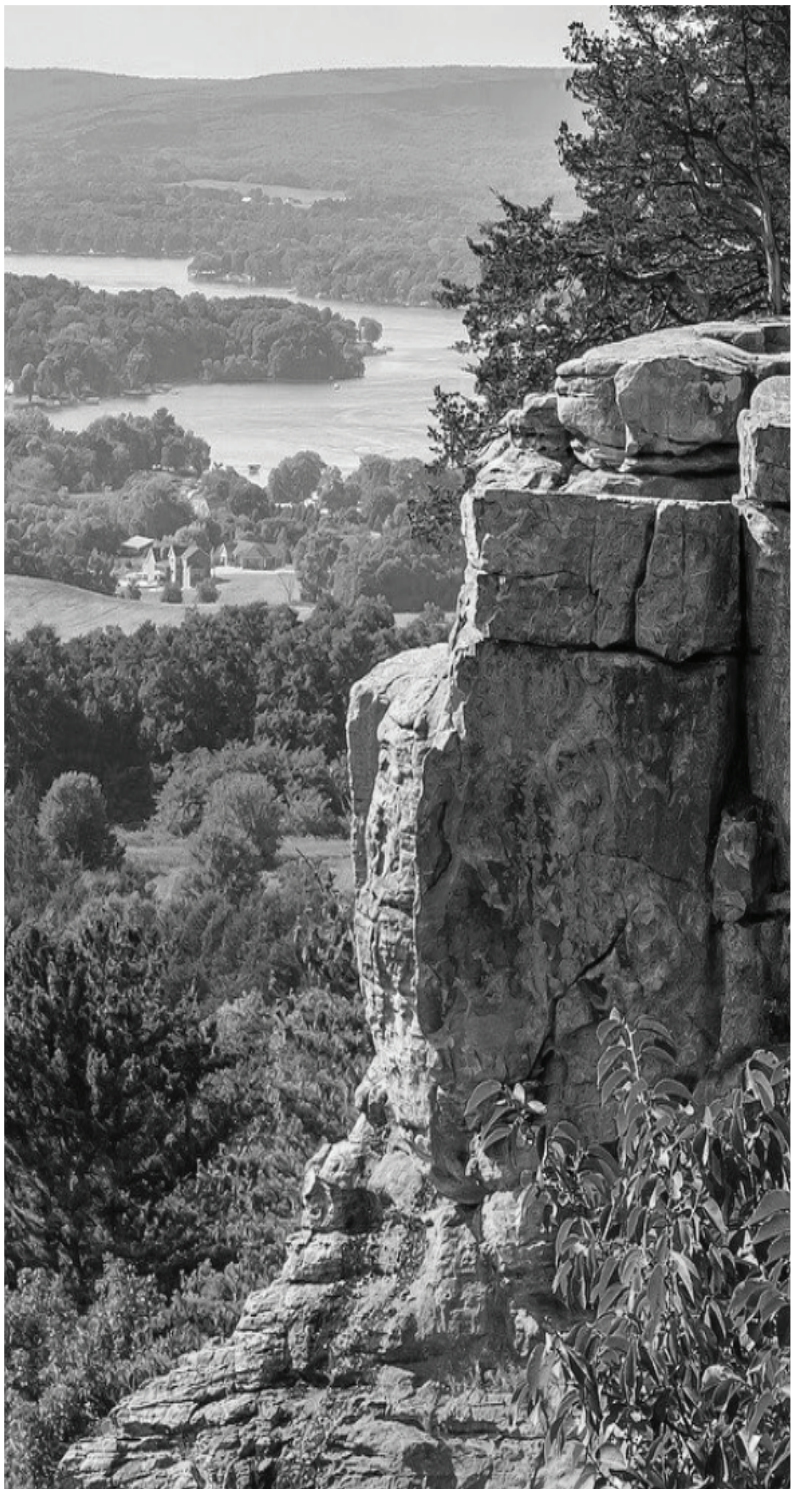
• Some College

• Expert Web Expertise

• Owns a smartphone

• Male

• Age 40



# Task Scenario

A visual representation of a specific route that a user might take through your site to achieve a goal. The state park finder tasks will be completed using an Adobe XD prototype on the user's own laptop or desktop device.

## 01 Navigation the Homepage

On the state park homepage, click on the item that will help you find a state park near you.  
**Justification** It's important that the state park finder is easily found on the homepage of the state park website. The design and hierarchy needs to be clear for the user to find what they are looking for.

## 02 Park Finder

Using the interactive map, find a few state parks that are nearest to the location you want to visit this weekend. Click on any parks that you find interesting to find out more information on that park.  
**Justification** There is a few reasons why we want to justify testing the filters for state parks. Can the user find the filters? Do the filter labels make sense? Is the design missing any filters?  
**Research Question** Can the user find a state park? (Yes/No)

## 03 Filter Park Results

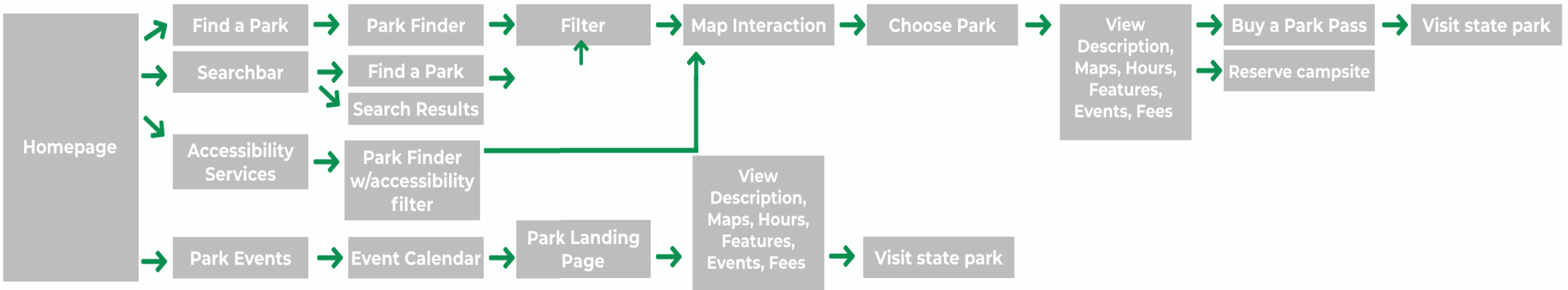
You want to find a state park near you that offers hiking trails. Narrow down your park results and click on a park that fits the criteria.  
**Justification** We need to find out if the filters are working the way the user intended. Do the hover/focus styling of the button communicate to the user that the button was clicked? Any animation or interaction with the map afterwards needs to be seamless and unsurprising.  
**Research Questions** Are the state park filters intuitive? (Yes/No). Are there any state park filters that are missing? (Yes/No)

## 04 Download a Map

Now that you've found a state park near you that offers hiking trails, download and print a map to take with you on your journey!  
**Justification** When a user finds a state park, are the state park trail links to the maps easy to find on the page?  
**Research Question** Can the user easily find park trails and maps? (Yes/No)

## 05 Plan a visit to a State Park

You'll be prepared for your visit ahead of time, having a trail map in hand that identifies difficulty of trails and trail types.  
**Justification** The map design needs to be clear and helpful to the user. Are areas on the map marked with appropriate icons? Can the user easily identify trail locations and difficulty?  
**Research Questions** How long does it take the user to complete each task? (See Task Time Results). Would changes to the design increase/decrease time to complete a task? (Yes/No)





# Testing Procedure & Data Collection

## Procedure

A **consent form** was sent to each user before they participated in the remote user test. Testing and research was completed remotely via Zoom between the research moderator (myself) and the participants. A total of 6 participants were recruited and each session lasted about 20 minutes in length.

Each participant was asked to complete the same task, “find a state park.” The participants were asked to think aloud while performing the task flow. The sessions were recorded, and extensive notes were taken by the moderator (myself).

## Scenario

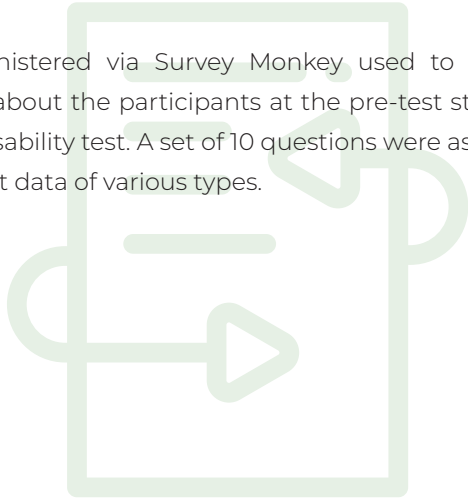
Using the interactive map, find a few state parks that are nearest to the location you want to visit. Click on any parks that you find interesting to find out more information on that park.

During remote testing the user interacted with the park finder map to display parks within the area selected. There are many components of the state park finder outside of the map interaction (filters, images, description and search results) that needed to be evaluated for ease of use.



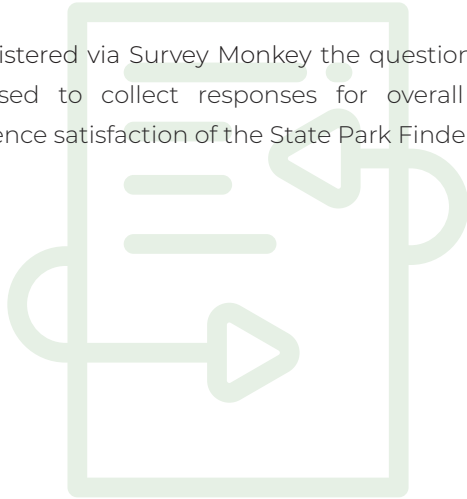
## Pretest Questionnaire

Administered via Survey Monkey used to collect data about the participants at the pre-test stage of the usability test. A set of 10 questions were asked to collect data of various types.



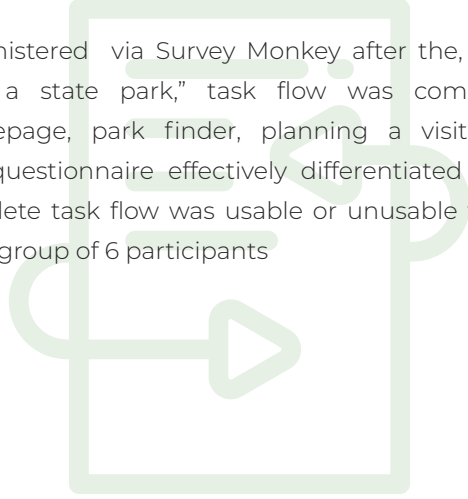
## After-Scenario Questionnaire (ASQ)

Administered via Survey Monkey the questionnaire was used to collect responses for overall user experience satisfaction of the State Park Finder.



## System Usability Scale Questionnaire (SUS)

Administered via Survey Monkey after the, entire “find a state park,” task flow was completed (homepage, park finder, planning a visit). The SUS questionnaire effectively differentiated if the complete task flow was usable or unusable with a small group of 6 participants



## Verbal Questions

With the addition of the post-task and post-test instrument questionnaires, these verbal post-task questions were asked.

1. How visually appealing is the state park finder? Feedback on design?
2. Do you have any feedback on how the state park finder can be improved?



# Metrics & Data Analysis

## Ease of use

- Can the user find the state park finder easily on the homepage design?
- Are the state park filters intuitive?
- Are the state park filters easy to understand?
- Are there any state park filters that are missing?
- Can the user easily find park information such as hours, phone number and address?
- Can the user easily find park trails and maps?

## Time of task

How long does it take the user to complete each task?

## Success rate percentage

Can the user find a state park?

Research Question	Metrics & Data	Data Analysis
Can the user find the state park finder easily on the homepage design?	M: First Click D: Number of times a different item was clicked on the homepage	Average number of page clicks (mean)
Can the user complete each task successfully in the find a state park task flow?	M: Perceived task difficulty D: Success completion rate by task	Average success percent (mean)
How efficient is the task flow of finding a state park using the state park finder?	M: Time spent on each task completion D: Time measured in seconds	Average Time (mean)
Question/Metrics/Data Grid		

User	SUS
1	80
2	62.5
3	77.5
4	95
5	83
6	78
Mean	79.3
Ease of Use (SUS score percentile, measure of perceived usability)	

User	Task 1	Task 2	Task 3	Task 4
1	:33	1:24	:25	:28
2	:20	1:33	:33	:20
3	:34	2:35	:45	:20
4	:15	1:45	:30	:18
5	:12	1:35	:32	:29
6	:15	1:45	:26	:25
Mean	:21	1:46	:32	:28
Time on Task MM:SS Groups for t-test, see Results page 14 Blue Group 1 (In state visitors) Green Group 2 (Out of state visitors)				

User	Task 1	Task 2	Task 3	Task 4
1	1	2	1	1
2	1	2	1	1
3	1	2	2	1
4	1	5	1	1
5	1	2	1	1
6	1	3	1	1
Median	1	2	1	1
Number of Page Clicks				

User	Task 1	Task 2	Task 3	Task 4
1	100%	0%	100%	100%
2	100%	100%	100%	100%
3	100%	100%	100%	100%
4	100%	0%	100%	100%
5	100%	100%	100%	100%
6	100%	100%	100%	100%
Success	100%	66%	100%	100%
Successful Completion Rate by Task				

“There are no secrets to success. It is the result of preparation, hard work, and learning from failure.”



# Results

The data from participants were also separated into 2 groups – in state park visitors and out of state park visitors. Participants 1, 2 and 3 have lived in Wisconsin for a large part of their lives, while participants 4, 5 and 6 live in Illinois, Colorado and Minnesota.

Table 1		
	In State	Out of State
	170	254
	166	168
	175	171
Mean	170.3	197.7
95% CI	5.1	55.2
T-Test		0.389
%		38.9

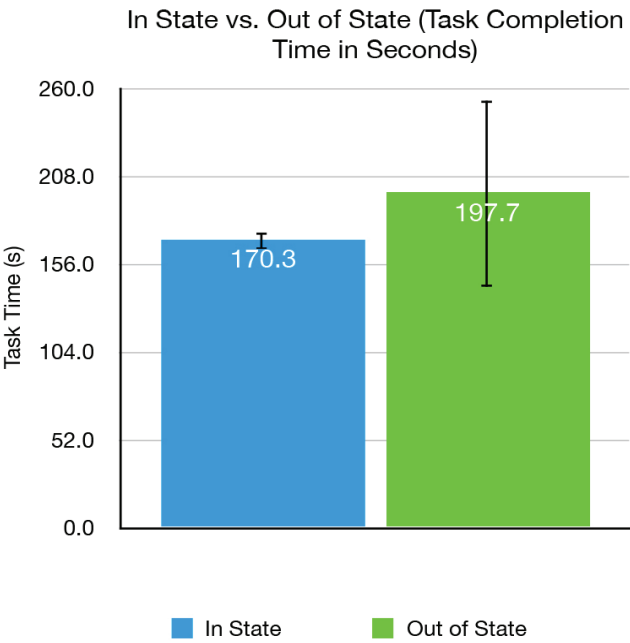
### Hypothesis

Out of state users will spend more time on tasks 1-4 while using the Wisconsin state park finder.

- Task 1: Navigate the homepage
- Task 2: Park finder (find a park)
- Task 3: Filter park results
- Task 4: Download a map

### Result

In terms of data; When comparing in state vs. out of state users for task completion times, the difference in task times is entirely due to chance because 38.9% percent for t-test is higher than the acceptable 5% alpha or error rate. Thus disproving the hypothesis that there will be a significant difference in comparing the two groups.



### Plan for Future Project

Ask an additional research question: Would changes to the design (park finder) increase/decrease time to complete a task? An alternate design could be created, and retest participants on design number two and assess time on tasks. With this new data set acquired, the two results could be compared with a paired T-Test to see if there is a significant difference in the two designs, and which is more efficient.

## Research Question Test Results

- 01 Can the user find the state park?  
**Yes**
- 02 Are the state park filters intuitive?  
**No**
- 03 Are the state park filters easy to understand?  
**Yes**
- 04 Are there any state park filters that are missing?  
**Yes**
- 05 Can the user easily find park information such as hours, phone number and address?  
**Yes**
- 06 Can the user easily find park trails and maps?  
**Yes**
- 07 How long does it take the user to complete each task?  
**See Time on Task table**
- 08 Would changes to the design increase/decrease time to complete a task?  
**Yes**



# Discussion & Reflection

## Likes, Dislikes & Participants Recommendations

Upon completion of the tasks, participants provided feedback for what they liked most and least about the website, and recommendations for improving the website.

### Liked Most

Nice pictures of parks, more pictures would be better. Design of homepage is organized and easy to use. All links on the homepage should be click-able but they understood that those links were not park of the tested task flow.

### Liked Least

Map interaction is not intuitive. Icons on the map could change to something more obvious. There are only 2 icons on the map that display state parks. More map icons would make sense. The map is too light in color, it looks like Google Map. Something with topography or colored lakes/rivers would be good. Filters for the map are too general.

### What went well

Participants did not spend much time on task 1 – navigate the homepage. The homepage “Find a State Park” button was obvious. After the user found a state park using the park finder, the park landing page was easy for the participants to navigate. There was not much feedback on the park landing pages other than adding more images.

### What did not go well

Prototype could be more refined to imitate a more realistic experience. Not all filters triggered state parks on the map or the search results. Map design and lack of icons caused confusion and increased task completion time.

## System Design Revision Plan

Additional design work needs to be done to the map to make it more realistic. With the next set of XD revisions, I'll be adding more parks, changing map icons and making sure the prototype reacts and displays search results.

### Research Revision

I was able to observe 2 users take the after scenario questionnaire (ASQ) and the system usability scale questionnaire (SUS). Both users wanted to rush through the survey and it seemed like the scale was reversed (strongly disagree on the left instead of right on the matrix scale). I'll be fine tuning and tweaking both surveys to make them easier to use to collect more accurate data.

### Moderator Notes

- More images of the state parks
- More map icons on the map
- Special features of that state park added on park detail page
- Map is pixelated and too light colored
- Instead of “Found here,” add something about wildlife.
- Add a button for “reserve a campsite.”
- Add a waterfall filter, they seem to be popular

Recommendations for filters: I assume that accessible means handicap accessible. Don't all parks have hiking trails? What does fishing mean? Does that mean that there is a boat launch and a lake? Fishing might be too general of a filter category – you might want to filter down further into what kind of fishing available at that park. Examples of new filters could be (fly fishing, boat fishing, paved trails, mountain biking, single track biking, family friendly, wilderness camping, walk in camping , RV camping).

# Recommendations

The recommendations section provides changes and justifications driven by the participant success rate, behaviors, and comments. Each recommendation includes a severity rating. The following recommendations will improve the overall ease of use and address the areas where participants experienced problems or found the interface/ information architecture unclear.

Change	Justification	Severity
Change map theme color, make sure map is high quality	Map blends in with white website background. The map is too light in color, it looks like Google Map. Something with topography or colored lakes/rivers would be good.	Medium
Add more park icons to map	Not having more park icons on the map confused the user as to why there were only 2 state parks in Wisconsin. The time spent on task 2 (find a park) was significantly longer than it needed to be for all users testing because of the lack of parks displayed.	High
Change map icon shape/ color so they stand out more	State park icons displayed on the map were small and green. For participant 1 there was not only confusion on lack of icons but the green color and shape blended in with the map. The participant needed assistance with the next step in the process to find a state park on the map.	High
Add more detailed park filters	One of the research questions is “are the state park filters intuitive.” All of the participants provided feedback on the filters and how they were too general and not useful.	Medium
Search Results need to dynamically change with each state park click on the map	The mockup needs to feel less like a prototype and function like a real website.	Low
Add more images of parks on the park detail page	Beautiful state park images are one of the reasons why participants would visit a state park, why not add more on the state park landing pages.	Low
Design Recommendations and Severity		





# Appendix

Remote Usability Test Consent Form	A20
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After Scenario Questionnaire (ASQ)	A23

**Author, Researcher & Designer**  
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NinebarkCreative.com



# Remote Usability Test Consent Form

Please read and sign this form.

During a usability test to be performed, you agree to participate in an online session using a personal laptop or desktop computer. During the session you will be interviewed about the Wisconsin state parks website. We will observe how you interact with it and will interview you briefly. The information from your interaction will be used to improve the website.

We will take handwritten notes and record the testing session. By signing this consent form, you are giving us consent to use your verbal statements and images, but not your name, for the purposes of demonstration and evaluation. Summary data may be used in publication for educational/research purposes.

I understand and consent to the use and release of the recording by the State of Wisconsin. I relinquish any rights to the recording and understand the recording may be copied and used by the State of Wisconsin without further permission. I understand that participation is voluntary, and I agree to immediately raise any concerns I might have.

If you have any questions after today, please contact Laurel Lawrence at 262-483-8889

Please sign below to indicate that you have read and understand the information on this form and that any questions you might have about the session have been answered.

Date:\_\_\_\_\_

Please print your name: \_\_\_\_\_

Please sign your name: \_\_\_\_\_

Thank you!

We appreciate your participation. Please return the signed document to laurelclawrence@gmail.com

# Pretest Questionnaire

The pretest questionnaire was used to collect data about the remote usability test participants at the pre-test stage of the usability test. A set of 10 questions will be asked to collect data of various types. Questions will multiple choice, nominal (yes/no), ordinal (ranking 1-5) and Likert scale (1- Strongly disagree, 2 - Disagree, 3 - Neither agree nor disagree, 4 - Agree, 5 - Strongly agree).

## State Park Pretest Questionnaire

1. What gender do you identify as?

2. What is your age?

- ☐ Under 18
- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65+

3. Do you live inside the State of Wisconsin?

- ☐ Yes
- ☐ No

4. How many are living in your household? Include yourself in this total.

5. Does anyone in your household require a use of a wheelchair?

6. Do you purchase an annual park pass?

7. How many times in a year do you anticipate visiting a state park?

8. How important are outdoor recreational opportunities to you when visiting a state park? Examples of outdoor recreational activities are hiking, biking, rock climbing, camping, fishing.

Strongly Agree

Neither Agree or Disagree

Strongly Disagree

9. What outdoor recreational activities do you expect to have available at state parks? (Multiple Choice)

- ☐ Hiking
- ☐ Fishing
- ☐ Biking
- ☐ Camping
- ☐ Swimming
- ☐ Boating
- ☐ None?
- ☐ Other (please specify)

10. How likely are you to follow the Wisconsin State Parks Instagram page?



# System Usability Scale Questionnaire (SUS)

A system usability scale questionnaire (SUS) online survey was given to the users after the, “Find the Park,” task flow completion. The SUS questionnaire effectively differentiated if the task flow was usable for the 6 participants. The questionnaire has been edited to apply to the state park finder instead of a generic system. For example, “system,” has been edited to say, “state park finder.” A free system usability scale questionnaire generator has been used to create this questionnaire. [www.usabillitest.com/sus-pdf-generator](http://www.usabillitest.com/sus-pdf-generator)

## State Park Finder System Usability Scale Questionnaire (SUS)

For each of the following statements, please make one selection that best describes your reaction to the state park finder.

1. I think that I would use the state park finder frequently

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

2. I found the the state park finder unnecessarily complex

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

3. I thought the state park finder was easy to use

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

4. I think that I would need the support of a technical person to be able to use the state park finder

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

5. I found the various functions in the state park finder were well integrated

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

6. I thought there was too much inconsistency in the state park finder

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

7. I would imagine that most people would learn to use the state park finder very quickly

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

8. I found the state park finder very cumbersome (awkward) to use

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

9. I felt very confident using the state park finder

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

10. I needed to learn a lot of things before I could get going with the state park finder.

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐

# After Scenario Questionnaire (ASQ)

An after-scenario questionnaire (ASQ) online survey was used to test, “Task 2 - Using the Park Finder.” The questionnaire has been edited to apply to the task finding a park instead of a generic task in a scenario. For example, “tasks in this scenario,” has been edited to say, “finding a park.”

## Task

Using the interactive map, find a few state parks that are nearest to the location you want to visit. Click on any parks that you find interesting to find out more information on that park.

## Justification

The primary reason for users to visit the state park website is to find a state park. During remote testing the user will be able to interact with the park finder map to display parks within the area selected. There are many components of the state park finder outside of the map interaction (filters, images, description and search results) that need to be evaluated for ease of use during this task.

Source (Lewis, J. R. (1995) IBM Computer Usability Satisfaction Questionnaires: Psychometric Evaluation and Instructions for Use. International Journal of Human-Computer Interaction, 7:1, 57-78.)

Please rate the usability of the state parks website park finder.

1. Overall, I am satisfied with the ease of finding a park

Strongly Agree Neither Agree or Disagree Strongly Disagree

☐ ☐ ☐

2. Overall, I am satisfied with the amount of time it took to find a park

Strongly Agree Neither Agree or Disagree Strongly Disagree

☐ ☐ ☐

3. Overall, I am satisfied with the support information (online-line help, messages, documentation) when finding a park

Strongly Agree Neither Agree or Disagree Strongly Disagree

☐ ☐ ☐