

# **CS5760 - Human Computer Interaction & Usability Testing**

**App : Urban Green Infrastructure and Flood Risk**

## **Usability Test Report Team 3**

### **UX Consultants :**

1. Aakash Gunda
2. Aditya Patil
3. Soufia bahmani

### **Developers:**

1. Kevin Bak
2. Patrick Janssen
3. Sean McFall
4. Andrew Koman
5. Leela Root
6. Matthew Cronin
7. Maxim Reuchlein

### **Scientist:**

1. Jessica Alger

Aakash Gunda  
Email : gunda@mtu.edu

**Date : April/22/2024**

## Test Schedule (As per current sign up):

Aakash Gunda	GSI	In Person(Librar	04/07/2024 11:00 AM			
Aakash Gunda	GSI	In Person(Librar	04/07/2024 12:00 AM	Michael Meyers	mijmeyer@mtu.€	CS2321
Aakash Gunda	GSI	In Person(Librar	04/07/2024 1:00 PM	Anna Tolles	aetolles@mtu.ec	CS2311
Aakash Gunda	GSI	In Person(Librar	04/10/2024 11:00 AM	Sawyer Dunbar	ssdunbar@mtu.€	CS2321
Aakash Gunda	GSI	In Person(Librar	04/11/2024 12:00 PM	Adam Jean	apjean@mtu.edu	CS2321
Aakash Gunda	GSI	In Person(Librar	04/11/2024 1:00 PM	Tony Maccagnar	camaccag@mtu	CS2321
Aakash Gunda	GSI	In Person(Librar	04/11/2024 2:00 PM	Logan Pickart	ljpickar@mtu.ed	CS2311
Aakash Gunda	GSI	In Person(Librar	04/11/2024 3:00 PM	Katie Torrey	kt@mtu.edu	CS 5831

**Total Tests Scheduled : 8 Sessions**

**Location : MTU Library**

**Requirements Needed before attending the Testing Room**

- 1.Smartphone
- 2.Access to Internet
- 3.Time period of atleast ranging from 40 to 45mins

## **App Description**

This application is designed to enhance natural greenspaces and mitigate flooding by allowing users to upload images that contribute to a scientific map. Its goal is to raise awareness among the general public about the role of greenspaces in absorbing stormwater and minimizing flood risks. The information gathered through this app will assist scientists and researchers in better understanding and enhancing these areas.

Additionally, the app features geo-location and time stamps for mapping flood zones, which aids in targeted improvements. The app includes a navigation bar with multiple pages: a Home page that offers an introduction and educational materials, and a Maps page that shows all the mapped greenspaces.

There is also an About Us page that details the project and introduces the team behind it. Overall, this app presents a novel way to improve natural greenspaces, reduce flooding risks, educate the public, and encourage community involvement in environmental enhancement.

**Pages of the Application:** The table has the page views based on the user logged in

<b>Public View</b>	<b>High School Student</b>	<b>High School Instructor</b>	<b>Scientist / Client</b>
Home	Home	Home	Home
Map	Map	Map	Map
View Posts	View Posts	View Posts	View Posts
Contact	Contact	Contact	Contact
About	About	About	About
Login	Login	Login	Login
--	Add GSI	Add GSI	Add GSI
--	View Members	View Members	View Members
—	—	Add Instructor	Admin Panel

## **Pre-Survey Questions(Before the test start)**

**1. How well are you comfortable using the mobile/Laptop ?**

- a. Strongly agree
- b. Agree
- c. Natural
- d. Disagree
- e. Strongly disagree.

**2. Do you have any prior knowledge about Green Spaces?**

- a. Strongly agree
- b. Agree
- c. Natural
- d. Disagree
- e. Strongly disagree.

**3.Do you have any prior experience in testing applications?**

- a. Yes
- b. No

**4.How comfortable are you in testing GSI application ?**

- a. Strongly agree
- b. Agree
- c. Natural
- d. Disagree
- e. Strongly disagree.

## **Test Scenario- 1(General Public View)**

**Scenario Goal :** User should be able to see the application without having User credentials.

**Description :** You are a general public user , who wants to learn about the GSI Spaces using the application.

### **Tasks:**

- Able to open the application without errors.
- Able to see the home page and access the content.
- Able to access the Home page , Map, Contact , About Page.
- Access to Look over the green spaces on the map page.
- Navigation between the pages.
- Contents on the pages should be efficient to read.

### **Qualitative measurement:**

- a. Convenience of using the features such as Menu Bar.
- b. Participants understanding of the information provided on the application.

### **Quantitative measurement:**

- a. Time spent on navigating between pages.
- b. Features of the page shouldn't be broken/unable to perform.

## **Post-Scenario Interview Questions:**

- a. Was navigating the website straightforward for you or its difficult?
- b. Do you have any recommendations for enhancing the website?

## **Potential observations of participants**

- a. Participant may not grasp the intended use of the app.
- b. Participants could face challenges in navigating through the website using the navigation bar.

## **Bug Report Form**

Bug Number:

Bug description:

Steps to reproduce:

## **Test Set-up Details:**

The test will be conducted in a silent room at MTU library with an active internet connection. Participants can use their own device to perform the test.

## **Test Scenario- 2 (High School Student View)**

**Goal :** To be able to use the features of the application.

**Description :** Here , You play the role of high school student who wants to access the application and use its features such as Home page, Map etc.,

### **Tasks:**

- Able to login with their user credentials
- Able to see the home page and access the content.
- Able to access the Home page , Map, Contact , About Page.
- Able to access the map features such as adding and deleting image.
- Able to see their previous posts and should be able edit.
- Access to Look over the green spaces on the map page.
- Navigation between the pages.
- Contents on the pages should be efficient to read.

### **Qualitative measurement:**

- a. Convenience of using the features such as Menu Bar.
- b. Participants understanding of the information provided on the application.
- c. Convenience of using the Map feature.

### **Quantitative measurement:**

- a. Time spent on navigating between pages.
- b. Features of the page shouldn't be broken/unable to perform.
- c. Time Spent adding or editing the post.



## **Post-Scenario Interview Questions:**

- a. Was navigating the website straightforward for you or its difficult?
- b. How well did you feel using the map feature?
- c. Do you have any recommendations for enhancing the website?

## **Potential observations of participants**

- a. Participant may not grasp the intended use of the app.
- b. Participants could face challenges in navigating through the website using the navigation bar.
- c. Participant could face problem in adding the GSI location.

## **Bug Report Form**

Bug Number:

Bug description:

Steps to reproduce:

## **Test Set-up Details:**

The test will be conducted in a silent room at MTU library with an active internet connection. Participants can use their own device to perform the test.

### **Test Scenario- 3 (High School Instructor View)**

**Goal :** To be able to use most of the features of the application.

**Description :** You play the role of an High school instructor who should be able to create and edit accesses along using the features of the application.

#### **Tasks:**

- Able to login with their user credentials
- Able to see the home page and access the content.
- Able to access the Home page , Map, Contact , About Page.
- Able to access the map features such as adding and deleting image.
- Able to see their previous posts and should be able edit.
- Able to add student or delete the student accesses to the site.
- Access to Look over the green spaces on the map page.
- Navigation between the pages.
- Contents on the pages should be efficient to read

#### **Qualitative measurement:**

- a. Convenience of using the features such as Menu Bar.
- b. Participants understanding of the information provided on the application.
- c. Convenience of using the Map feature.
- d. Participant convenience while adding/deleting the student access.

### **Quantitative measurement:**

- a. Time spent on navigating between pages.
- b. Features of the page shouldn't be broken/unable to perform.
- c. Time Spent adding or editing the post.
- d. Time spent on adding or deleting the user credentials.

### **Post-Scenario Interview Questions:**

- a. Was navigating the website straightforward for you or it's difficult?
- b. How well did you feel using the map feature?
- c. How comfortable were you while adding/deleting the accesses?
- d. Do you have any recommendations for enhancing the website?

### **Potential observations of participants**

- a. Participant may not grasp the intended use of the app.
- b. Participants could face challenges in navigating through the website.
- c. Participant could face problems in adding the GSI location.
- d. Participant could face challenges while assigning access to site?

## **Bug Report Form**

Bug Number:

Bug description:

Steps to reproduce:

### **Test Set-up Details:**

The test will be conducted in a silent room at MTU library with an active internet connection. Participants can use their own device to perform the test.

## **Test Scenario- 4(Client View)**

**Goal :** To be able to use all the features of the application.

**Description :** Here , you are the scientist of the application who wants to use all the features of the application.

### **Tasks:**

- Able to login with their user credentials
- Able to see the home page and access the content.
- Able to access the Home page , Map, Contact , About Page.
- Able to access the map features such as adding and deleting image.
- Able to see their previous posts and should be able edit.
- Able to add student or delete the student accesses to the site.
- Able to give approval for uploaded posts by High school students.
- Access to Look over the green spaces on the map page.
- Navigation between the pages.
- Contents on the pages should be efficient to read.

### **Qualitative measurement:**

- a. Convenience of using the features such as Menu Bar.
- b. Participants understanding of the information provided on the application.
- c. Convenience of using the Map feature.
- d. Participant convenience while adding/deleting the student access.
- e. Participant convenience while giving approval for the posts added.

### **Quantitative measurement:**

- a. Time spent on navigating between pages.
- b. Features of the page shouldn't be broken/unable to perform.
- c. Time Spent adding or editing the post.
- d. Time spent on adding or deleting the user credentials.
- e. Time spent to approve a post.

### **Post-Scenario Interview Questions:**

- a. Was navigating the website straightforward for you or it's difficult?
- b. How well did you feel using the map feature?
- c. How comfortable were you while adding/deleting the accesses?

### **Potential observations of participants**

- a. Participant may not grasp the intended use of the app.
- b. Participants could face challenges in navigating through the website.
- c. Participant could face problems in adding the GSI location.
- d. Participant could face challenges while assigning access to site?

## **Bug Report Form**

Bug Number:

Bug description:

Steps to reproduce:

### **Test Set-up Details:**

The test will be conducted in a silent room at MTU library with an active internet connection. Participants can use their own device to perform the test.

## Results

- First Scenario
  - Users found the application useful with the content provided.
  - Users found the map feature is working and view posts tab is appropriate.
- Second Scenario
  - Users are unable to use the Add GSI feature.
  - The Submit button in the Add GSI feature tab doesn't work.
  - Map feature is not fully Functional.
- Third Scenario
  - Users are able to add the new student accounts.
  - Users are not able to use the Add GSI feature.
  - Map feature is not fully functional.
- Fourth Scenario
  - Users are able to add the new instructors.
  - Need the buttons in admin panel instead of links
  - Unable to use Add GSI and view posts functionalities completely.



## **Suggestions from Users**

**Home** - On Home page , the last content box has been cutten off when phone is turned vertical.

**View** - View posts tab should be able to see completely in mobile view.

**Show** - Show the error response if the upload/submit doesn't work.

**Make** - Make buttons on the admin panel instead of links.

**Make** - Make the Map feature fully functional.

**Make** - Make the feature "Add new instructor" functional.

## **Improvements from UX Consultants**

1. Improve the Map functionality
2. Implement the feature and add new instructor.
3. Work on Ui on View posts tab.
4. Add buttons in admin panel tab.

## Appendix A -

### Participant Attendance

Name	Email	Test Location	Test Date	Course	Attendance
Baasandorj Batnairamdal	bbatnair@mtu.edu	Library	04/07/24	CS5831	Yes
Michael Meyers	mijmeyer@mtu.edu	Library	04/07/24	CS2321	Yes
Anna Tolles	aetolles@mtu.edu	Library	04/07/24	CS2321	Yes
Sawyer Dunbar	ssdunbar@mtu.edu	Library	04/10/24	CS2321	Yes
Adam Jean	apjean@mtu.edu	Library	04/11/24	CS2321	Yes
Tony Maccagnano	camaccag@mtu.edu	Library	04/11/24	CS2321	Yes
Logan Pickart	ljpickar@mtu.edu	Library	04/11/24	CS2311	Yes
Katie Torrey	kt@mtu.edu	Library	04/11/24	CS 5831	Yes

## Appendix B-

### - Bug Report

Number	Bug Location	Priority	Description
1	Home Page	Low	The last content box has been cutten off when phone is vertical.
2	Add GSI	High	Unable to add new posts.
3	View posts	High	No Feature Implemented for approval of posts.
4	Add GSI	High	No response for the error or success of the form when hit submit button.
5	Add Instructor	High	Unable to add new instructor.
6	Admin Panel	Low	Add buttons.
7	View Posts	Low	View Posts page is cutten off when phone is vertical.

**Appendix C-**

-No challenges occurred during the test time

<b>Challenge Number</b>	<b>Description</b>	<b>Comments</b>

## Consent Form for Interface Usability Study

You're invited to join a study evaluating computer interface usability, led by Dr. Robert Pastel of Michigan Technological University's Computer Science Department, with help from HCI course students. This study involves no known risks or costs to you.

### Study Purpose:

Your participation will help assess interface effectiveness and usability. Although there may be no direct benefit to you, the findings aim to provide broader insights into usability best practices.

### Duration and Confidentiality:

The study, including questionnaires and tasks, will take less than an hour. Your responses will remain anonymous, ensuring your participation is confidential. Only the course instructor will know of your involvement for credit purposes, and no personal data will be published.

### Participation:

Joining this study is entirely voluntary. You may choose not to answer any specific questions or decline any tasks without penalty.

### Technical Note:

The study may use video conferencing tools to record task execution. Webcam use is optional, and privacy precautions are advised (e.g., closing unnecessary apps, clearing desktop items).

### Contact:

For questions, contact **Dr. Robert Pastel**, Michigan Technological University, Houghton, MI 49931.

By proceeding with the tasks and questionnaires, you consent to participate in this study, acknowledging the terms outlined above.

Your participation implies agreement with these terms.