

## **Helping Hands Final Report**

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Shiv Ahluwalia: paper prototype, digital mockups

### **Problem and Solution Overview**

People who are newly homeless are vulnerable to a state of further decline if information is not readily accessible. With the helpful efforts of organizations and volunteers, there is typically information about food, shelter, and other resources online in urban cities such as Seattle. Being homeless is hard work, and planning to fulfill basic necessities each day is time-consuming and tedious. By ensuring that information is optimally designed between the homeless and those who can help them: volunteers, social workers, and the recently homeless, we can better monitor and provide for the needs of homeless, start new and inexperienced homeless off on the right foot, and contribute to reducing the rate of both chronic and temporary homelessness. We believe that our design, a public display with a phone to aid homeless people with the necessities of food and shelter, as well as issues such as job help, life advice, and staying safe best addresses the current problems that the homeless face. A key feature is the capability to connect with the outside world in order to get advice about getting out of homelessness. In addition, the ability to talk to someone who is willing to listen to their story helps reaffirm their humanity. The design's public nature also allows for more interactions between those who are homeless and those who aren't, and also raise public awareness. The design is a great way to help homeless people maintain both their physical and mental health and wellbeing.

### **Initial Paper Prototype**

We began with a straightforward app layout with four options to select: Food, Shelter, Info, or Talk. The top of the screen changes to an image of a person lying on a bed to denote shelter mode, which is activated when the user selects the Shelter option. Our two primary tasks were finding a place to sleep and to ask a formerly homeless person for job advice.

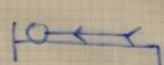
HelpingHands

12:51 PM




Food 409


Job Help

Shelter 

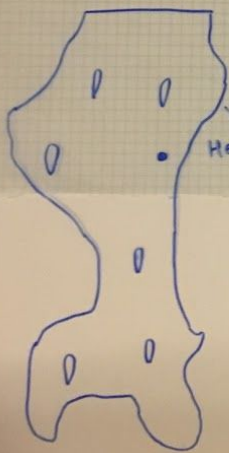
Life Advice

Info 

Other

Talk 

Call Here



West Side Shelter ←  
9AM-6PM

Directions

←(West) On 45th  
↓(South) On 15th

HelpingHands



12:51 PM

You are now calling  
HelpingHands for  
Job Help

End Call

## Testing Process

Our participants were found throughout the U-District and the tests were all conducted outdoors. We chose a diverse set of participants and outdoor settings because our system is meant to be used by people of all ages and genders in the outdoors. For each usability test, we laid the board on a surface approximately three feet off of the ground. We sat on both sides of the participants, and we each played all three roles of administrator, computer, and note taker with each test.

Our first participant was an intoxicated male student on Greek row. He is not homeless. We chose a student who is not homeless because our solution is meant to be used by those who are at risk of being homeless, so that they can become aware of resources that exist prior to actually being homeless. Awet was the computer and note taker, while Shiv was the administrator and note taker as well.

We asked the participant to:

- Find shelter
- Find food
- Talk to a volunteer

After our first test, we noticed that our participant didn't really struggle so we decided to make our prompts vaguer and decided on the following prompts:

- Find a place to sleep
- Find somewhere to get a hot meal
- Call a volunteer for help

Our second participant was a sober homeless man by Cafe Allegro. We chose him so that we could get a better idea of how someone who is homeless would interact with our system. He owned a cell phone with service, but it wasn't a smartphone. He took more time than our first participant and expressed initial unease about using it. We suspect that these reactions were because he wasn't used to the smartphone design conventions. We were both the administrators, note taker, and the computer.

Our third participant was a female homeless person by Cafe Allegro. She had a smartphone so she was familiar with our interface. We chose her because we wanted to see what effect owning a smartphone had on our design's usability. Our third participant fared much better than the second one and felt comfortable with the design. She was quickly able to go through the tasks.

## Testing Results

The heuristic evaluation revealed several areas needing improvement. The participants liked the simplicity and straightforward nature of our prototype, but we encountered feedback through their interactions with the display that we otherwise would not have realized. The suboptions for talking to someone made sense to us from a designer's perspective, but were not as descriptive and purpose-driven as they could be to make it more friendly for the user. Another issue that was raised was to add the date to the top right of the screen in conjunction with the time of day.

In the first usability test, the participant loved the icons on the home display and the simplicity of the design. He also enjoyed the locations in the map of Seattle being color-coded. However, his lack of sobriety might have played a role in his dearth of critique so we considered other participants who were not under the influence of drugs or alcohol.

In the second usability test, we made a substantial change to an aspect of our design. The participant noted that our map of Seattle was too messy, due to a lot of information and colors muddling up the screen. This inspired us to create a map with all of the neighborhoods of Seattle to be labeled *within* the map, rather than in a column on the left-hand side. We fixed this by creating a new map, one that was an actual map of Seattle with the neighborhoods denoted within the map, rather than our previously hand-drawn version. Also, we included a route to the desired location once the user selects the destination. Another issue was that the map does not indicate your current location (“You are here”). We fixed this by including a “You are here” sign in the map to explicitly show the user’s current location.

In the third usability test, we made a fundamental change to the entire design. The participant noted that the text in our prototype was too small to easily digest. Simply put, it was not clear and easy to read. The transparent paper that we used contributed to the lack of ease with which the user could read the information presented. We addressed this issue by creating an entirely new prototype with sheet paper instead of transparent paper, and we used black marker to create good contrast. We found this to be a vital change because we want homeless persons to quickly and effortlessly discover where and how to find a place to sleep, with all the necessary information included to make it easily digestible.


The in-class critiques of our paper prototypes really enhanced our design. One issue of user control was not being able to hang up during a call. We fixed this by presenting an “End call” button. A second issue was the user not having some sort of way to indicate that he/she is currently in a call. We fixed this by adding a message that says “You are now calling for \_\_\_\_\_” (the blank filled in with the nature of the call as selected by the user).

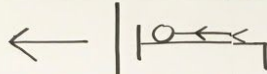
The critique of our digital mockup resulted in a lot of useful changes relating to readability and aesthetics. The role of primary colors was discussed and we were provided feedback. We found that we needed to alter the color of the text from black to white, and to change the red “End call” button to blue to account for individuals who may be colorblind. We also made certain parts more descriptive and user-friendly by changing the suboptions for “Talk” to more purpose-driven phrases such as “Advice from Formerly Homeless” and “How to Stay Safe”.

## **Final Paper Prototype**

Our final paper prototype was a completely new and revamped version of the initial paper prototype. We used sheet paper instead of transparent paper, and provided good contrast by using a black marker for the text. We included an actual map of Seattle that was much easier to read and digest than the hand-drawn version. Also, we added a descriptive message to indicate that the user is currently in a call and what the call is for. Further, we added the option to end the call with an “End call” button. Our two primary tasks were finding a place to sleep and to talk with a formerly homeless person for job advice.



Helping Hands 



Food 409

Shelter ~~1000~~

Info 

Talk 

Job Help

Life Advice

Staying Safe

Other

Call Here



You are now calling for Job Help

End Call



West Side Shelter

Open: 5pm - 7am

Capacity: 100

Serves: Young Adults (18-26)

Directions:  
West on 45<sup>th</sup> St  
North on 15<sup>th</sup> Ave  
West on Market

Digital Mockup

Task 1: Find a Place to Sleep



This is the homepage for our design and the user will click on Shelter.



5/26

1:00



After clicking on the shelter icon, a map appears with all possible shelters in the city. The user then clicks on a specific dot to find out more information.





5/26

1:00



## West Side Shelter

Open: 5PM – 7AM

Capacity: 100

Ages: 18-26

Gender: M/F

## Directions

West on 45<sup>th</sup> St NW

North on 15<sup>th</sup> Ave NW

West on Market St

The map minimizes and shelter information as well as directions appear on the screen.

Task 2: Ask a Formerly Homeless Person for Job Advice



From the home screen, the user selects Talk.

HelpingHands



5/26

1:00

Find a Job

Advice from  
Formerly  
Homeless

How to Stay Safe

Other

The user then selects the topic which he/she wishes to speak about. In our case, we will select Find a Job.

HelpingHands



5/26

1:00

# Pick up Receiver



Please use the phone on the left hand side  
to call a volunteer

Once the user has selected an option, they are prompted to call the helpline using a phone on the left of the display.

HelpingHands



5/26

1:00

You are now calling  
for Job Help

End Call

While they are in their call, the user knows what they are talking about and has the option to end the call.



By switching to digital tools instead of paper, we changed our background to the primary color of green. Based off critique, we changed the text to white to more easily read information, and made the “End call: button blue instead of red to account for those who are colorblind. We altered “Call here” to “Pick up receiver” to make it more descriptive for the user. Furthermore, we included the date in conjunction with the time of day in the top right part of the screen.

## Discussion

We found the prototyping and testing process to be extremely helpful. A major key that we discovered throughout the testing process was how vital it is to get feedback from persons who did not design the app.

For example, we believed that our color-coded map was fine. However, when our first participant went through the task of finding a place to sleep he found the map to be messy and clogged with information and colors. This led to replacing it with an actual map of Seattle that was clearer and friendlier.

In hindsight, we realized that our tests would have been more impactful if we made changes to the prototype in response to feedback before performing more tests. This would have allowed us to immediately notice if the alterations made the prototype simpler/clearer and whether it helped the user have a better experience in performing the tasks. After our second and third usability tests, we gained critical feedback that fundamentally changed the outlook of our design. The in-class critique shed light on small but important issues, such as including a date along with the time of day in the top right part of the screen. The digital mockup critique brought about great changes to the readability and aesthetics of the design, as well as making phrases more descriptive and easier to utilize.

## Appendix

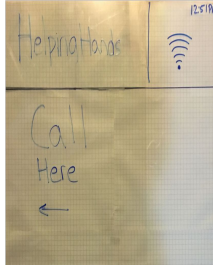
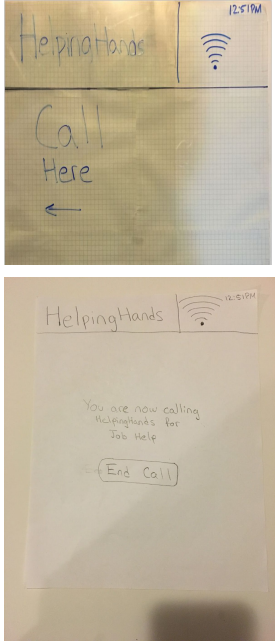
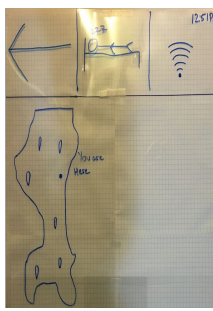
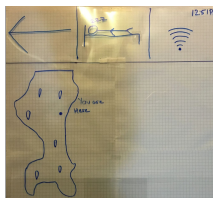

We have an app that is designed to help recently homeless individuals in Seattle deal with the realities and complexities of being homeless. This is our display and we would like you to perform the following two tasks:

- Find a place to sleep
- Ask a formerly homeless person for job advice

## Experiment Data

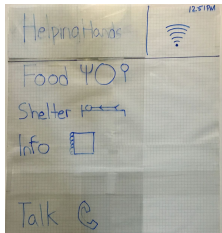

### Heuristic Review 1

Image	Issue	Severity	Change	Fixed Image
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	<p>(Joint issues)</p> <p>How to tell that I'm in a call.</p> <p>2</p> <p>3</p> <p>Wanted to be able to cancel call/hang up</p> <p>Heuristic violated: User control and freedom, Visibility of system status</p>		<p>We added another screen that tells the user that he/she is in a call and has the option to cancel during the call.</p>	
	<p>Is sleeping man symbol irrelevant?</p> <p>1</p> <p>Heuristic violated: Aesthetic and minimalist design</p>		<p>No change; rather than using words we used pictograms so that people who do not have a good grasp of English can understand the message conveyed by the display.</p>	<p>N/A</p>
	<p>User has to memorize map to find shelter.</p> <p>2</p> <p>Heuristic violated: Recognition rather than recall</p>		<p>Use an actual map of Seattle with color-coded symbols clearly denoting shelter locations.</p>	

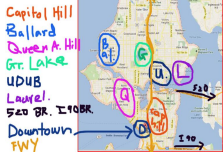
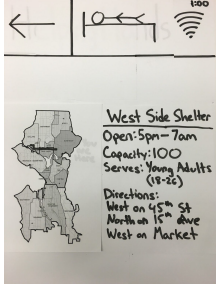
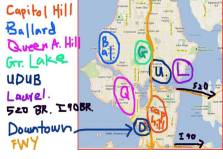
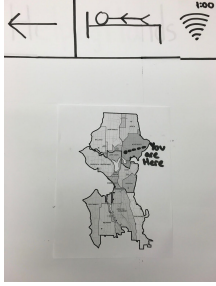
N/A	How to get back to home page.  Heuristic violated: User control and freedom	3	No change; everything can be accessed within two taps of our home screen. Adding a Home button would increase the number of actions needed to correct a mis-selection.	N/A
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### Usability Test 1

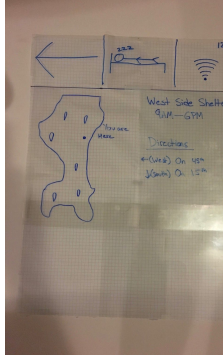
Image	Incident	Severity	Fix	Fixed Image
	He loved the icons on the home display and the simplicity of the design!	N/A	N/A	N/A
	Really liked that the locations in the map of Seattle are color-coded!	N/A	N/A	N/A

### Usability Test 2

Image	Incident	Severity	Fix	Fixed Image
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	<p>The map is messy, with too much information and colors.</p>	<p>2</p>	<p>We created a new map. It is clearer and denotes each neighborhood within the map. Also, it includes a route to the desired location.</p>	
	<p>The map does not indicate your current location ("You are here").</p>	<p>1</p>	<p>We included a "You are here" sign in the map.</p>	

### Usability Test 3

Image	Incident	Severity	Fix	Fixed Image
	<p>The text in our prototype is too small. It is not clear and easy to read.</p>	<p>2</p>	<p>We created an entirely new prototype with sheet paper instead of transparent paper, and we used black marker to create good contrast.</p>	