Each Team Member's Name and Role(s):

Team Members:

Leonardo De La Torre Cruz - Answers to Task Analysis Questions

Greg Hill - Design Research Goals, Stakeholders, and Participants
Written Scenarios

Henry Wang - Problem and Solution Overview
Appendix of Feedback Sessions and User Research

Josh Schaffer - Design Research Results and Themes
Proposed Design Sketches

Problem and Solution Overview:

We are tackling Edwardsville's public transit need for more bus riders, comfort improvement, better accessibility, and most importantly, safely getting the people from bars home. We proposed Bouncr which is a bus system that specifically aims to help bar goers and event goers safely go from place to place without worry in the world. This means we make the buses more convenient to utilize, enjoyable as well for more increased usage.

Design Research Goals, Stakeholders, and Participants:

Our goal is to improve the current state of public transportation, specifically buses. To elaborate, we want to simplify the use of bus transportation and make it more accessible to people who live outside of the city. We took a survey approach for our research method. The survey consisted of participant demographics as well as satisfaction on the current state of public transportation. This method was the most appealing to us, because it allowed us to get responses from as many people as possible. We used a Google survey which allows us to import all of the responses into a spreadsheet which shows all of the responses based on the participant. Many of our responses proved our initial hypothesis that those who live within a suburban area are less likely to take the bus. This is mainly due to the lack of bus stops near those areas, leading to most people using a car as their main source of transportation. Included below are a few examples of the responses we received from our survey.

Participant 1:

An anonymous female between the ages of 25 and 34 responded that she lives in a rural area more than 31 minutes from the nearest bus stop by walking and rarely uses public transportation. She is fairly dissatisfied with the current state of public transport and the technological features surrounding it. She was also concerned with the safety and cleanliness of buses, suggesting security guards and cameras to be present.

Participant 2:

An anonymous male between the ages of 19 and 24 responded that he also lives in a rural area more than 31 minutes from the nearest bus stop. His main issue with public transportation is that there are no routes near his area. One of his ideas for improvements were more buses and modern buses. He also expressed concerns with safety and suggested installment of cameras.

Participant 3:

An anonymous male between the ages of 19 and 24 responded that he lives in a suburban area less than 30 minutes from the nearest bus stop. His main concern with public transportation was the limited accessibility. His idea for an improvement is the inclusion of more bus stops to increase the accessibility to those who live in neighborhoods. He also suggested that we should expand MCT(Madison County Transit).

Design Research Results and Themes:

Theme 1: Safety

In our survey, one of the most common responses had something to do with security and safety, so it seems that our participants felt unsafe using the bus. This is further evident by how many respondents asked specifically for more security guards on buses. Some responses also

implied that they felt unsafe on our question, “What are the main issues or challenges you face when using public transportation?” with their responses: “crackheads,” “people that inflict bad vibes,” and “disruptive passengers.” So, one of our strongest themes with this survey was people’s desire for security and safety on buses. I think this could imply some different angles we could take, like a security service for bus services or looking into ways that make passengers feel more comfortable on the buses.

Follow up on safety:

When we got further into the design, we realized that safety was hard to guarantee on a bus that picks up drunk people. But nevertheless, we decided to go with the bar-stop bus design, and we will focus on solving the safety concerns going forward. These concerns were brought up during the question part of our presentation, and they were as follows:

1. Getting home safe from the bus stop
2. Avoiding being followed.
3. Safety with a lot of drunk people together on the bus.

Theme 2: Accessibility

The second most common sentiment was that of accessibility. Our participants wanted various things to do with accessibility; for instance, they wanted the buses to be on time and closer to more available bus routes. We had a question about accessibility, and here are some of their responses: “Safe unobstructed parking,” “More ramps for disabled,” “More bus stops and more buses in general,” and “Include sidewalks or bus benches to sit on.” All of these are good suggestions and should be integrated into bus networks. Our participants clearly wanted more buses, bus stops, and accessibility features; this gives us many vectors to tackle this problem. For example, we could consult with local bus networks to suggest cost-effective features that would make their bus stops more accessible.

Follow up on accessibility:

This theme became less relevant as we got further into the design since we will only be picking up people at the bars. But some aspects are still important to note, like how close the bus stops are to the user’s home and ramps for the disabled.

Theme 3: Comfort

In our survey, we found that a lot of people wanted some form of comfort with their public transportation experience. A good majority wanted a cleaner public transportation experience. Whether that be cleaner seats, surfaces, or stops, besides a cleaner transportation experience, they wanted improvements to overall bus comfort, like better seating and an A/C on buses.

Follow up on comfort:

Comfort hasn’t played a big part in any of our designs, but we want to have a comfortable user experience on our buses. This is probably more important now that we have locked down what we are going to do for our project being bar-stop buses. Because having a lot of drunk people

around would be inherently uncomfortable, we may need to think of ways to make our bus comfortable.

Answers to Task Analysis Questions:

1. Who is going to use the design?

a. The design will be utilized by individuals who have been drinking alcohol and need safe transportation home. Security personnel involved in managing and ensuring the safety of passengers during late-night transportation services.

2. What tasks do they now perform?

a. Currently, individuals who have been drinking alcohol may rely on personal vehicles, taxis, rideshare services, or public transportation to get home safely. Bouncr may manage public transportation schedules, while security personnel may be deployed in various buses to maintain order and safety.

3. What tasks are desired?

Majority of participants wanted the following:

a. They wanted security on the buses. More specifically security guards.
b. People wanted a more comfortable bus ride experience.
c. People wanted more accessible transportation.

4. How are the tasks learned?

a. Tasks are primarily learned through our survey and the participants' history of using public transportation. There was a pattern of people wanting the three things listed above. So our design will focus on these three things.

5. Where are the tasks performed?

a. The person interacts with the app to request a pickup. This data is processed by the app to generate route plans, schedule pickups, allocate resources, and ensure a smooth and secure transportation experience for passengers.

6. What is the relationship between the person and the data?

a. The person interacts with the app interface to input data such as pickup location, destination, and contact information. This data is processed by the app to generate route plans. As well we will take customers credit card information to process payment.

7. What other tools does the person have?

a. Users may have access to alternative transportation options such as personal vehicles, taxis, or rideshare services.

8. How do people communicate with each other?

a. People communicate with each other through various channels, including in-app messaging features, and interactions with fellow passengers. These communication channels facilitate coordination, assistance, and resolution of any issues during the journey.

9. How often are the tasks performed?

a. The frequency of tasks varies depending on the demand for late-night transportation services and the frequency of events or activities where alcohol consumption occurs. Tasks such as requesting pickups and boarding the bus may occur erratically throughout the night, depending on the user's needs and circumstances.

10. What are the time constraints on the tasks?

a. Time constraints on tasks include ensuring timely pickups and drop-offs, following predetermined schedules, and providing assistance to passengers within a reasonable timeframe. Additionally, users may need to consider the operating hours of the late-night bus service and plan their journeys accordingly to avoid missing the last bus.

11. What happens when things go wrong?

a. In the event of emergencies, conflicts, or disruptions to the late-night bus service, the app should provide users with immediate assistance options, including contacting emergency services, security personnel onboard the bus, or transportation authorities. Security personnel should be trained to handle various situations professionally and effectively, ensuring the safety and well-being of all passengers. Additionally, the app may offer feedback mechanisms for users to report issues and provide suggestions for improvement to enhance the overall service quality.

Proposed Design Sketches:

Task List:

1. Compare Prices for different transit services
2. bad bus scheduling route
3. No bus stop near bars
4. Wants to bar-hop with a group of friends.
5. Get a virtual bus stop in your neighborhood..
6. Wanting to get bus fares/deals

Design 1: Virtual Bus Stop

This design helps create a virtual bus stop anywhere you are, as long as you are near a bus route. The user can connect to the nearest moving bus without having to walk 15 minutes to a bus stop, helping the user save time. Many live far away from a bus stop to be able to go on a bus in the first place, so using this app can help call a nearby bus to pick the user up, taking him on the ride. This app can also call for the nearest bus that is going to your destination in the shortest amount of time possible.

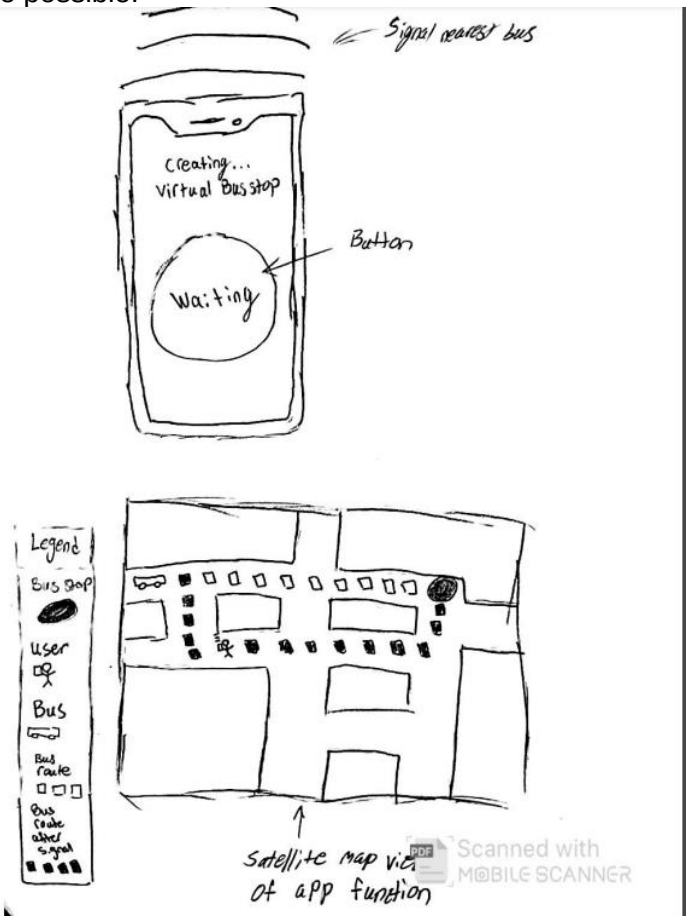

Figure 1: Virtual bus stop design

Design 2: App and app layout

This design helps illustrate how users will see the app and the different features it will offer. We want to keep it simple for the user by having a map with traffic monitoring on the front page. The circle button in the middle will be the place for users to buy, check recurring payments, and check active bus fares. They can slide through the different fares they have using the arrow keys. The app for buying will also let users know about offers and deals that a public transit system offers when they are in the buying window. They will also have quick information about what stops are available near them and can compare different transit options. MCT can also post different news changes on the app to inform passengers. The passengers can also inform MCT about their experience with transit. As well, any user can see other people's reviews.

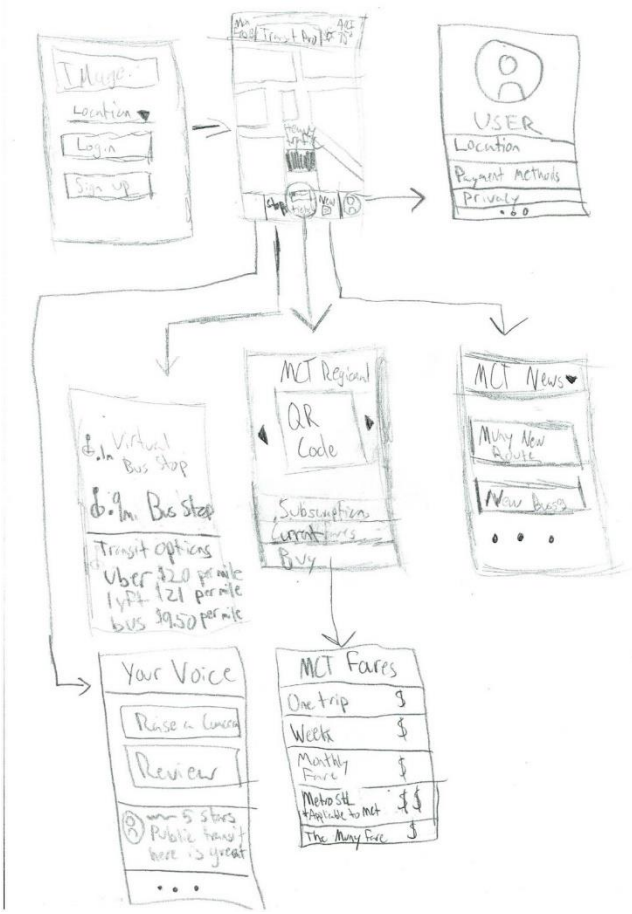

Figure 2: App layout design

Design 3: Bar pickup

This design illustrates the idea of a bus that picks up patrons from a bar. The idea is that buses will run on a certain schedule during weekends, mainly at night. They will then arrive at certain bus stops and drop people off so they can safely get home. This is a much cheaper alternative than Uber, Lyft, and taxis. Also included is a UI design from our app that allows users to see the bus schedule for the specific bar they are at. This way, users can be prepared for when to leave and plan accordingly.

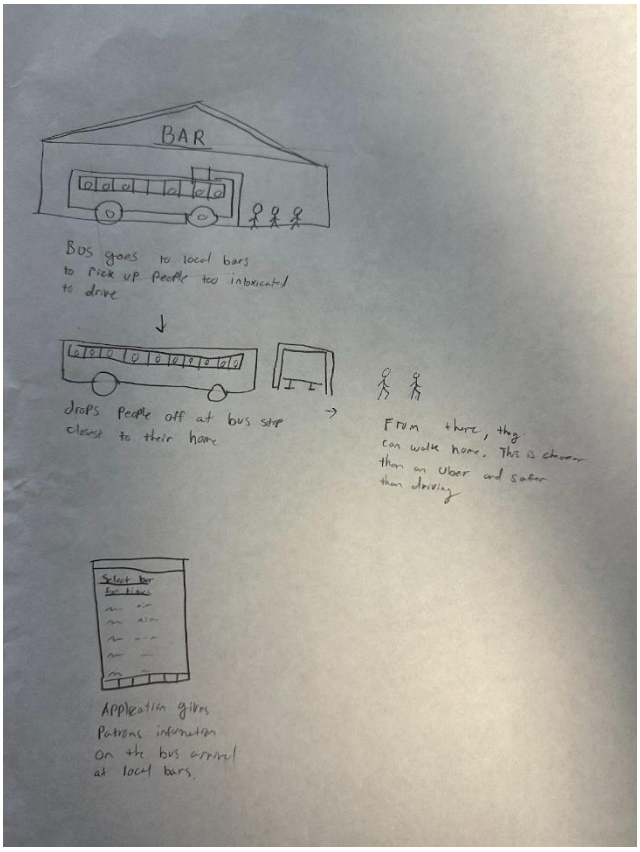

Figure 3: Bar bus design

Why we chose our design and tasks:

We decided to go with design 3: a bus to pick up drunk people at the bar and take them home. The tasks we chose were ensuring that there were no bus stops near bars and comparing prices between different transportation services. We chose these tasks because they give the user options to get home from the bar. The first option is our bus service, but if that is too expensive, they are given the option to compare the prices of different services such as Uber, Lyft, and MCT.

Written Scenarios:

Task 1: Compare Prices for different transit services

Tyler does not have a car and is short on cash. He is looking on his Uber and Lyft apps to find the best price. He believes that taking the bus will be much cheaper but he has nothing to compare the prices to easily. He would have to go on the MCT website and look for the bus fare. Lucky for him, an application has been developed (ours) which includes a price-comparing tool. He can see that his local bus stop will take him to his destination for a much smaller fee.

Task 3: No bus stop near bars

Joe is 22 years old and he is a late-night alcoholic. Joe bar-hops with his buddy Biden every night. Of course, his friend Biden likes to drink as well. One night Joe and Biden were drinking but when they were ready to go home Joe decided not to sober up and drove his Prius with his friend Biden home since no buses were running near the bar at this hour and Uber cost

a whole kidney. Joe later crashed his Prius that night and died while his friend Biden was severely injured, and the doctor said Biden would never be able to walk again. To prevent such tragedy from befalling anyone we would implement virtual bus stops near bars through our app design ensuring no such safety of drunk individuals having a safe ride home.

Storyboards of the Selected Design:

Task 1: Compare Prices for different transit services

Figure 4: Comparing prices storyboard

Task 3: No bus stop near bars

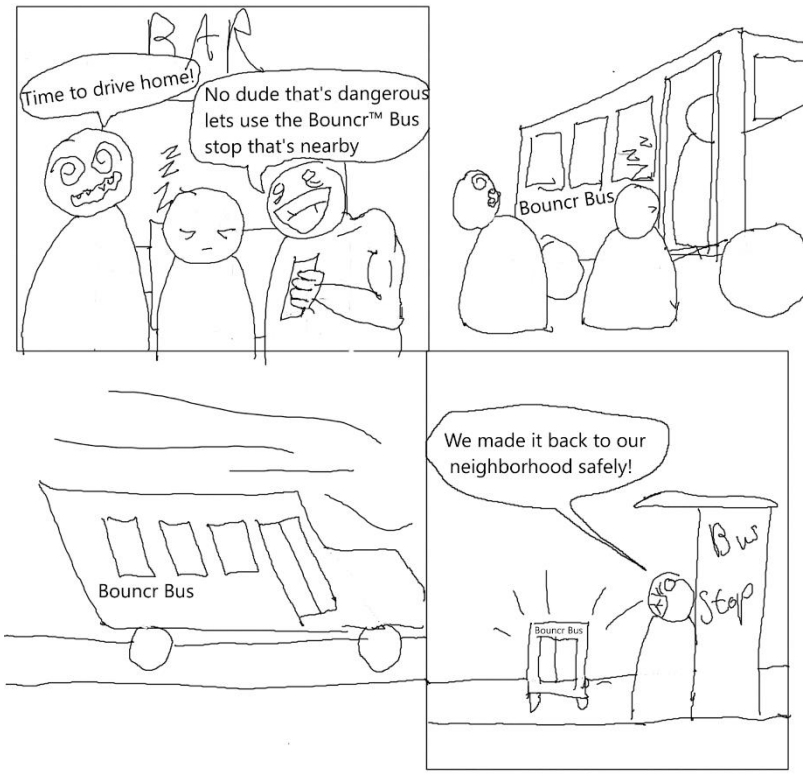

Figure 5: Using bus stop near bar storyboard

Appendix of Feedback Sessions and User Research:

2B Design Research Plan

Group 4 gave more concrete question for what our user should be and where we should get user feedback from:

- Feedback:
  - How to Verify participants?
  - More specific participants?
  - Interview at the bus stop?

Group 7 gave us suggested questions for what our survey should have questions for:

- Feedback:
- What questions will we ask?
  - Start with satisfaction ->What they want
  - What do you think of public transportation?
  - Is it an option?
  - Map who would want transportation Suburb/not

- Problems with using buses
  - Problem finding the bus routes
  - Apps don't work everywhere
  - Add more stops on busy routes
  - 13m drive -> 28m bus

30m drive -> 2hr bus
More frequent bus

Presentation Notes:

Safety walking home after being dropped off on a bus?
Safety with a lot of drunk people put together (Fights etc.)?
How much would it cost?
How will the bus stay on schedule if it deviates from the route?

Link to our google sheets with the survey data

https://docs.google.com/spreadsheets/d/1C9jy8I-m7BGGxnMfkMtyssvr4hswxQmcK1z--1wt2Kg/edit#gid=2048608928