

SFMTA CIS Revamp

When is the bus coming, and how on earth do I buy a ticket?

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Research Overview

Scope, goals, and context

What's Going On?

- I worked with **Seamless Bay Area**, a nonprofit dedicated to the unification of transit systems around the SF Bay Area
- We were hired by the San Francisco Municipal Transportation Authority (**SFMTA**)
- To look for usability issues with their new Consumer Information System (**CIS**)



The Team

- Shreya Jaiswal,
UX Researcher @AnswerLab

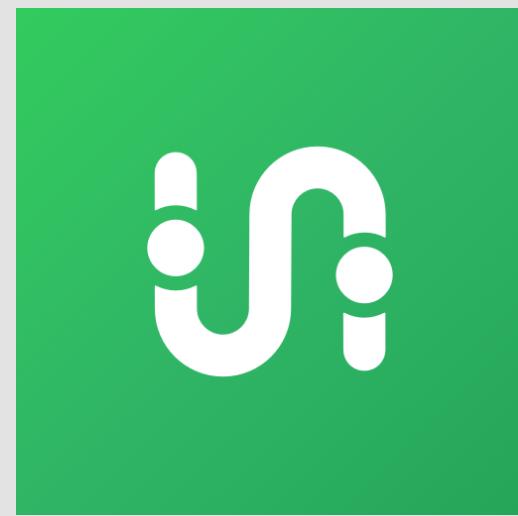


- Liz Broekhuysen,
Design Consultant @Thesaurus
Board Member @Seamless Bay Area

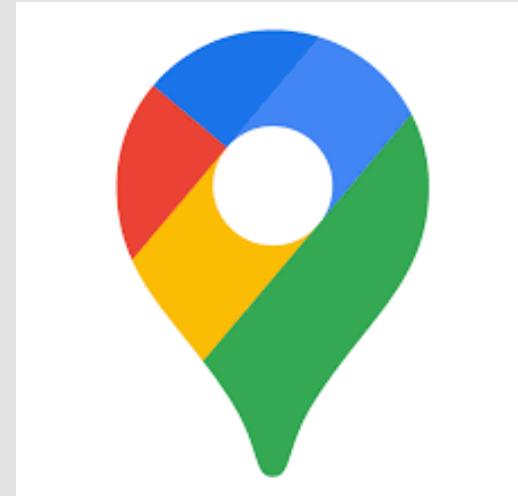


Goals

- Where does this app fit in the market given competing apps?*
- Discover if users **understand how to use the features of the app**
- **Are the new digital signs delivering useful information that the old analog signs didn't?**



Transit App



Google Maps



Apple Maps

*Transit App has 4.7/5 stars on the app store, 156k reviews

Scope & Limitations

- SFMTA wanted to move on to the next phase of the project in **10 days**
- There was no funding for more features before the release, only tweaking of existing ones
- Limited access to designers' wireframes

Participant Criteria

- Surveys instead of full usability tests
- We decided to recruit participants directly from a webinar delivered by the SFMTA on the new systems
- We felt we'd get the highest response rate from these individuals, and they might be more more motivated to submit responses in a timely fashion
- Managed to recruit $n = 22$ participants for a set of **two surveys**

Survey 1: Methodology

What we did

Survey 1: Discovering Our Users

- Who are our respondents?
- What are they interested in?
- The first survey was designed to understand existing painpoints and delights in public transit and related digital apps
- Then do usability study

Survey 1: Findings

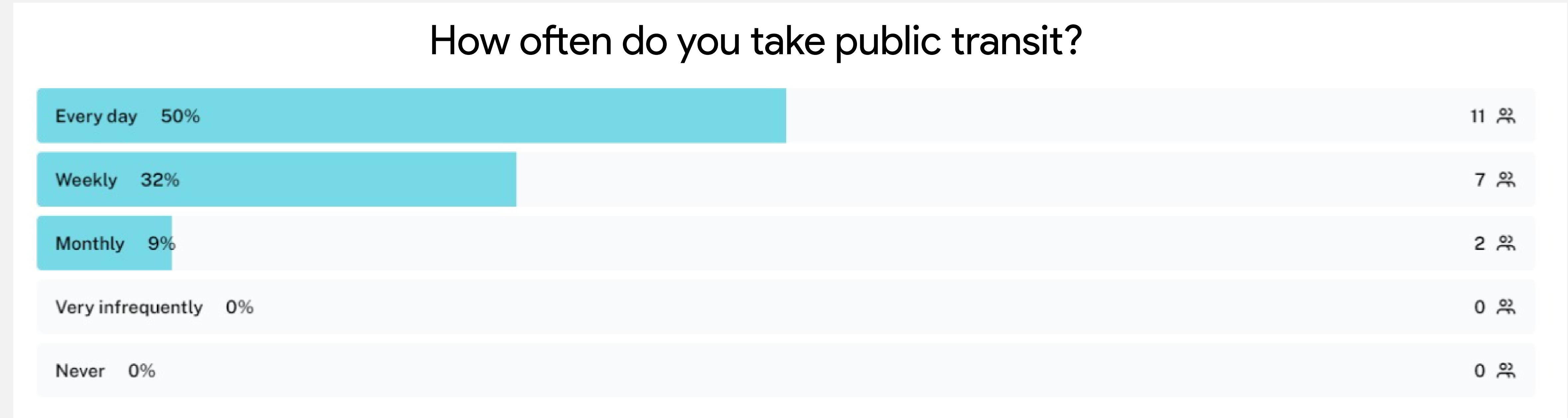
What we learned and what happened after

What We Missed

- May not be a lot of overlap between people interested in webinars on digital transit systems and those actually taking transit regularly.
- Potentially significant degree of coverage error – **our sample is likely not representative of the typical transit user.**
- The unit non-response *could* represent people most dependent on public transit; those with less education, who are lower on the socioeconomic spectrum, etc.

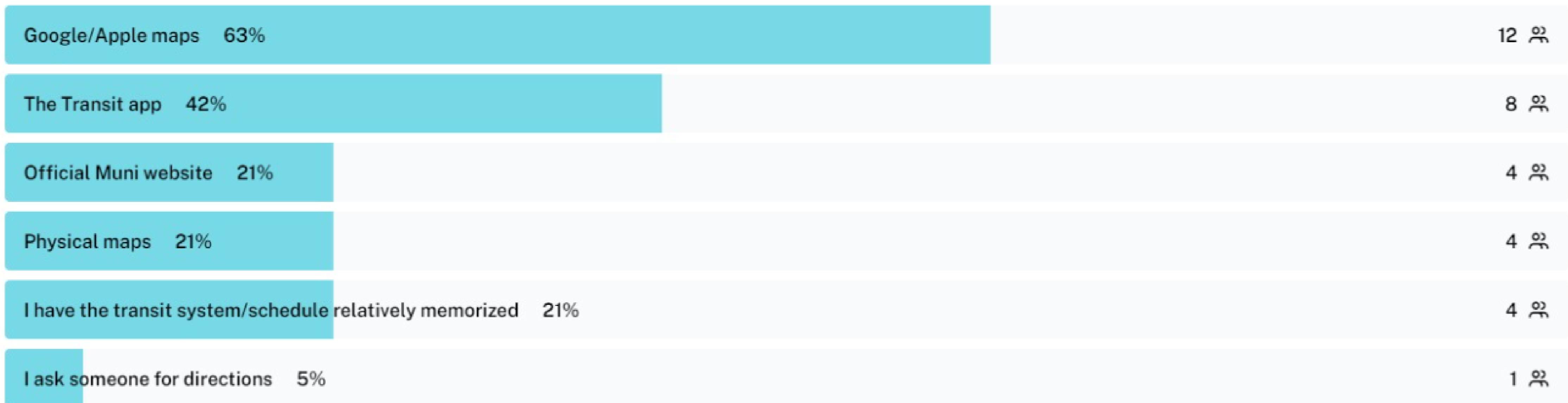
Who We Talked To

How often do you take public transit?



Who We Talked To

You are taking a trip somewhere you haven't been before.
What do you use to plan the trip?



What They Were Interested In

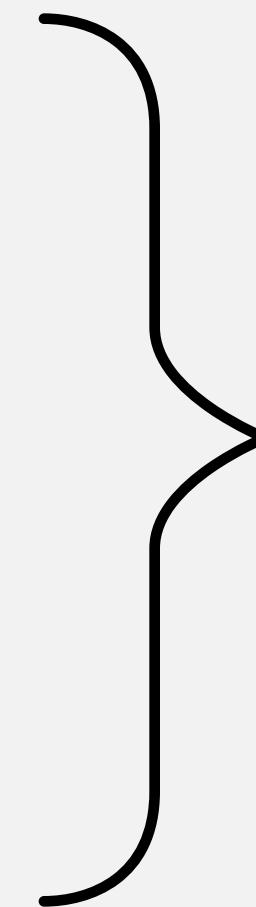


- yes, most feedback was negative or unrelated to the CIS, with two exceptions:
 - Digital ticket sales
 - Departure predictions

Affinity map of some sample feedback

Survey 1 Learnings

- 70% of respondents used a digital system for wayfinding.
- 90% of respondents used public transit at least one a week
- Implies the elements of the population we weren't able to reach would almost certainly struggle at least as much with usability.



High-transit-use and tech-dependent group

Survey 2: Methodology

What we were looking for

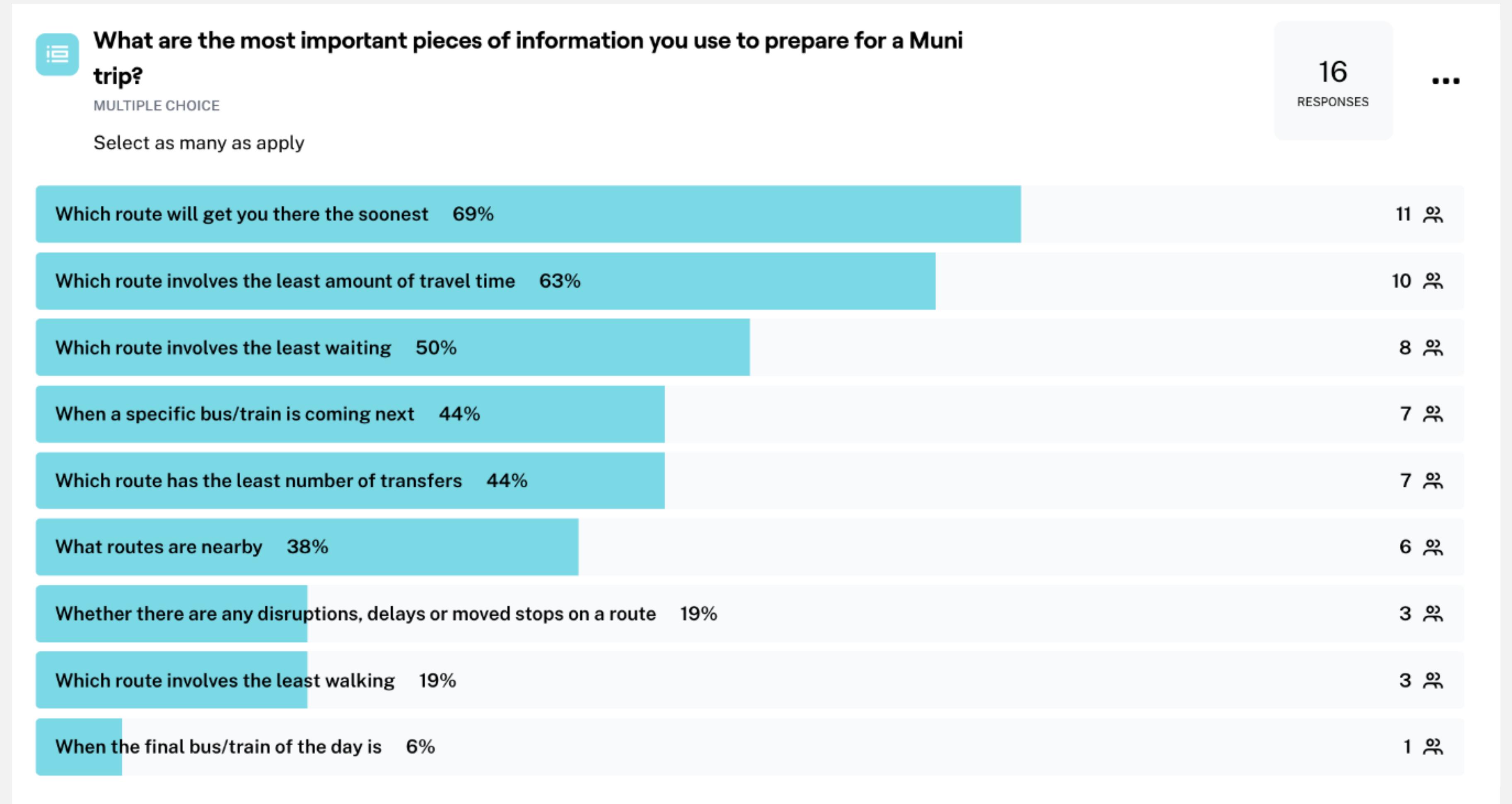
Survey 2 Methodology - CIS Usability

- Show prototypes of **current version of the CIS** that **covers features they are interested in**
- **Discover trends**, if any, in any potential usability problems
- Make sure the features which justify the CIS's existence are rock solid and solving legitimate problems

Findings

What were the results?

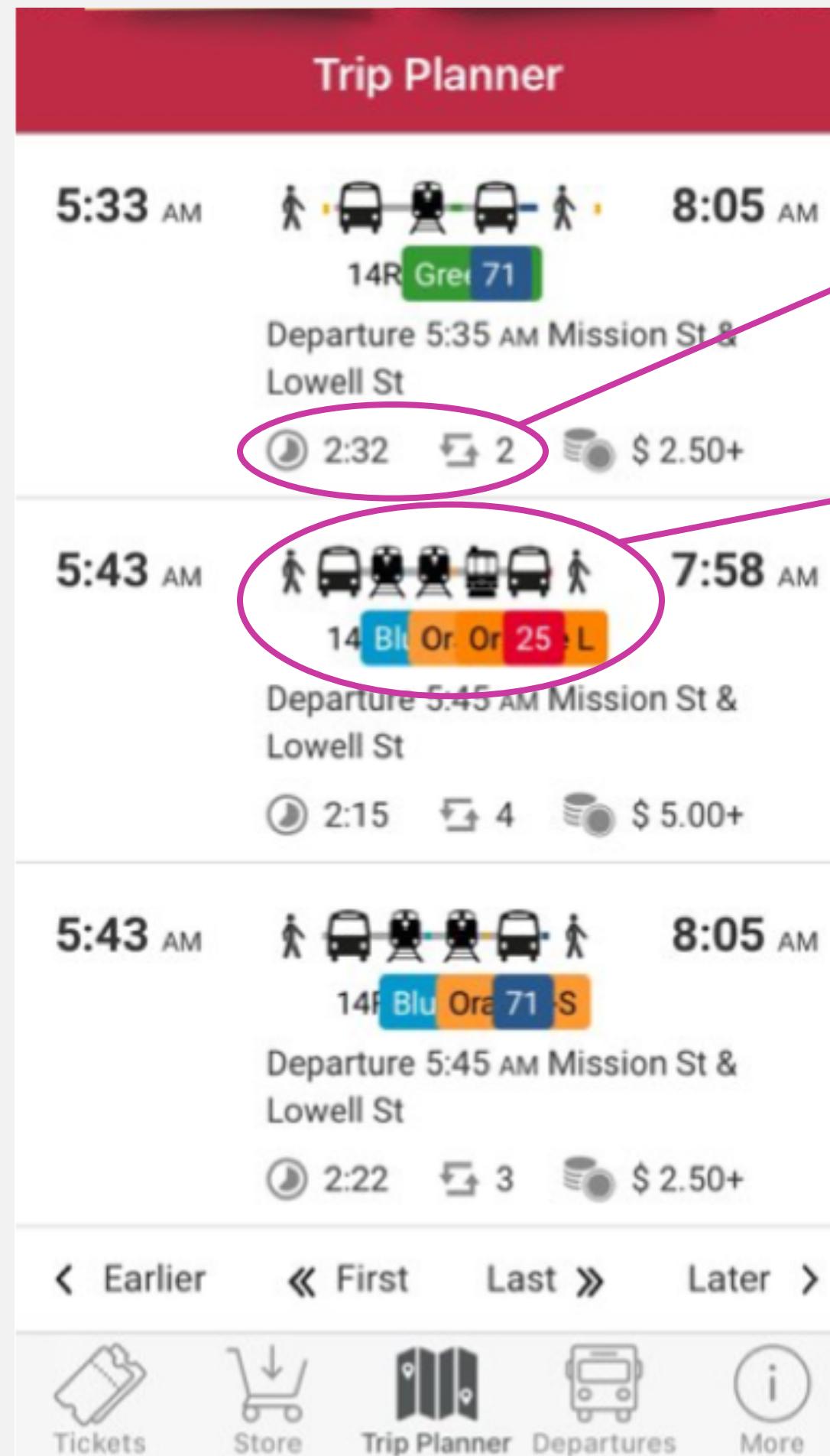
App - Trip Planner



CIS Usability Survey

1. App - Trip Planner
2. App - Ticket Purchasing
3. Digital Sign - Map View
4. Digital Sign - Alert View

App - Trip Planner



What do these mean? (39%)

What's happening here? (81%)

What is the destination? (24%)

What is the origin? (20%)

How long are transfers? (18%)

There was a fair amount of confusion about the **icons**, **transfer times**, and other **critical information**.

CIS Usability Survey

1. App - Trip Planner

2. App - Ticket Purchasing

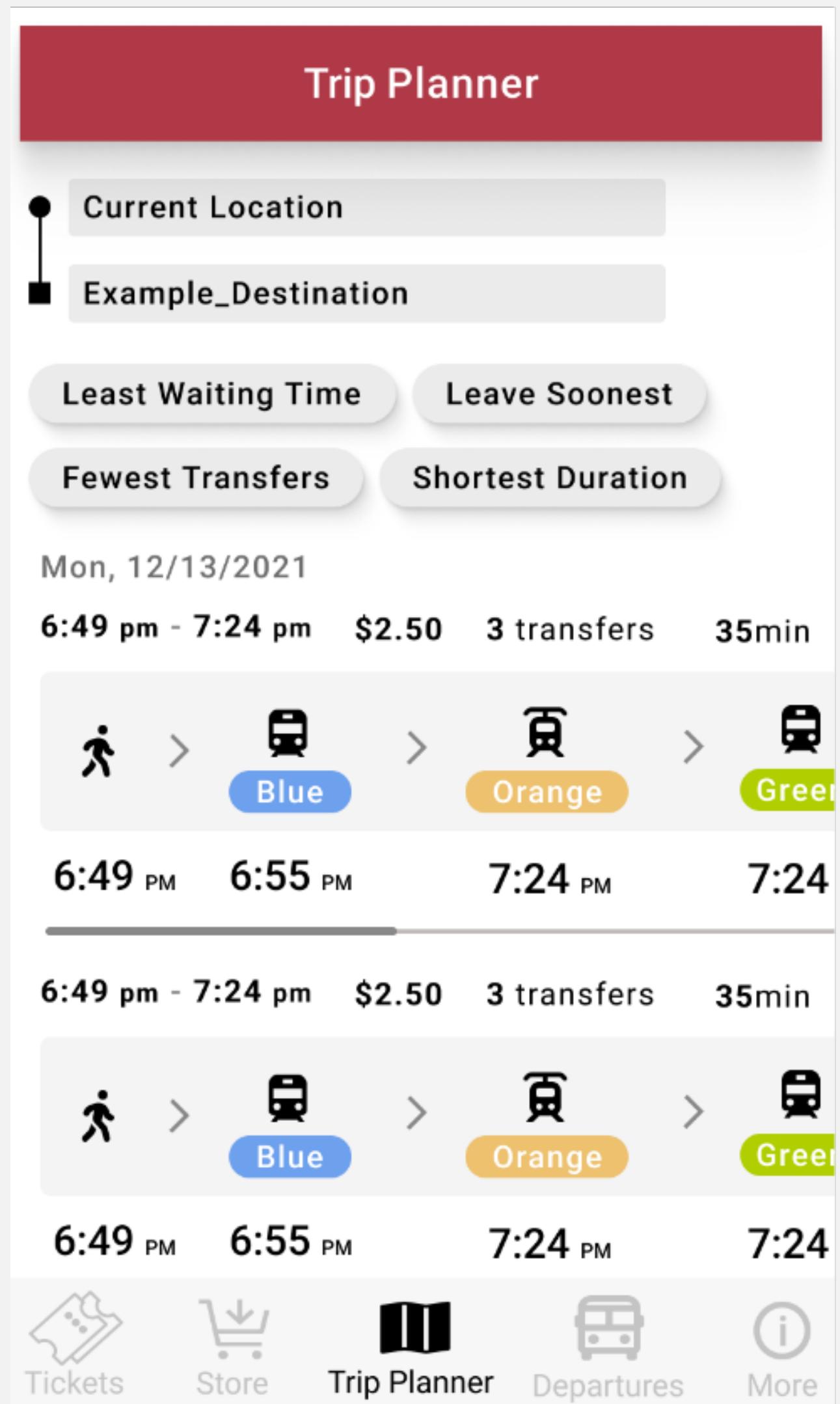
3. Digital Sign - Map View

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App - Trip Planner

Shows location + Destination

Icons replaced by text



Filters for individually optimized route options

More standard route overview

CIS Usability Survey

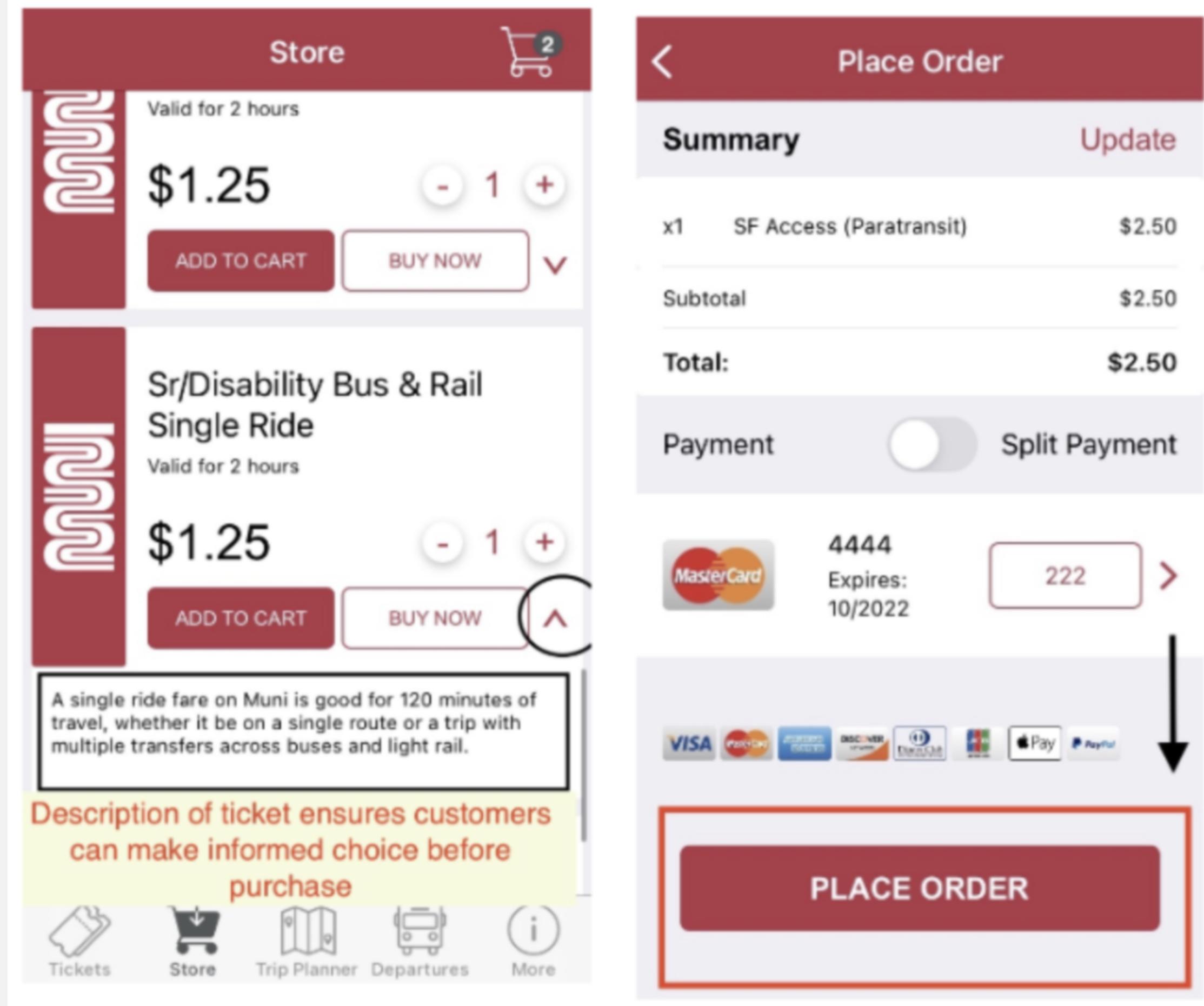
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App - Ticket Purchasing



- How confident would you feel purchasing a ticket? (3/5)
- Confused about fares (15%)
- Options were hard to distinguish/visuals too cramped (32%)
- Confusing buttons, especially “split fares” and “update” (53%)

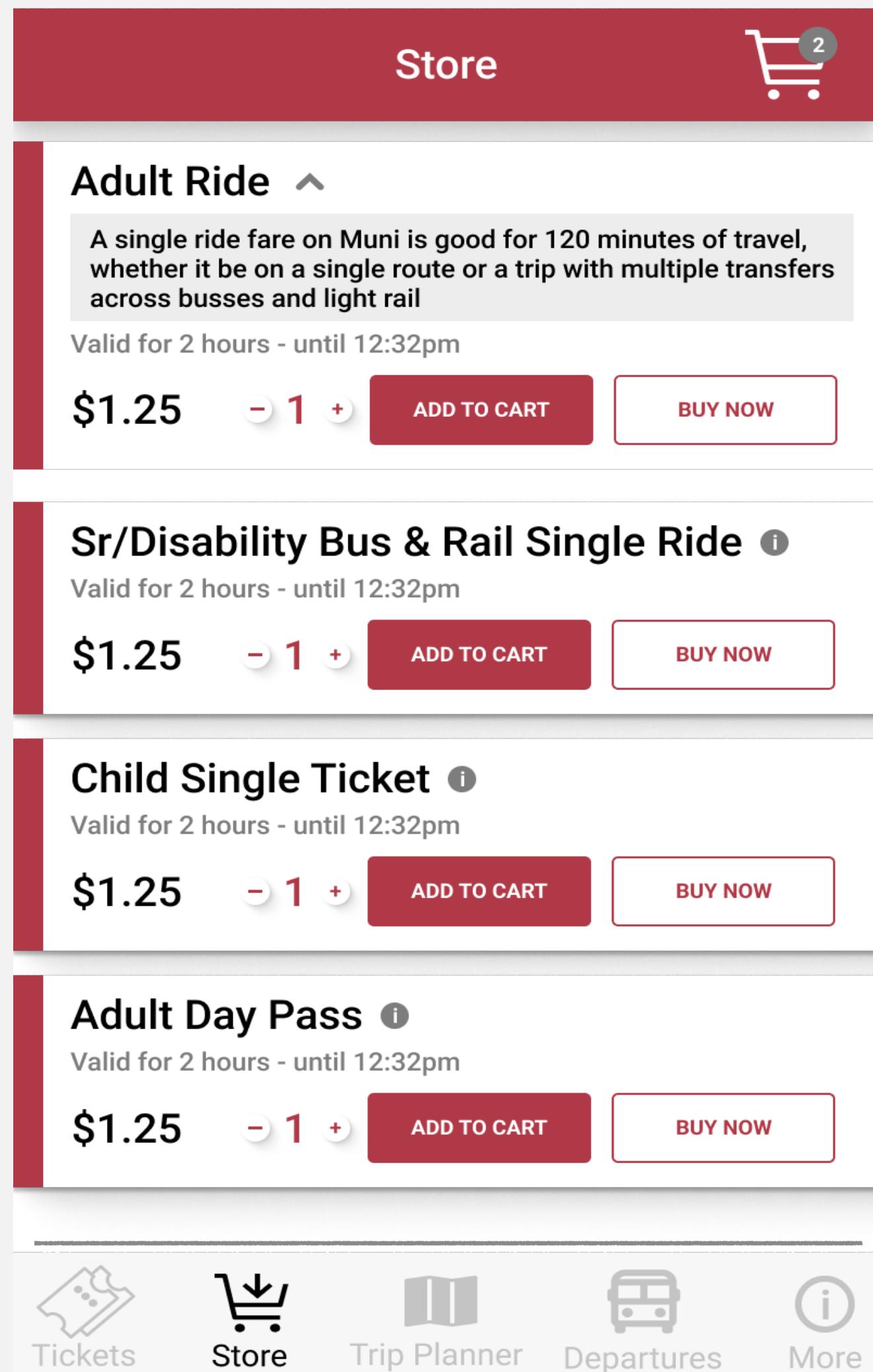
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App - Ticket Purchasing

Removing Muni icon gives more screen real estate

Tickets reorganized so that more can be displayed at once



More spacing between buttons

Info icon shows where to find more information

Ticket says what time it will expire

CIS Usability Survey

1. App - Trip Planner

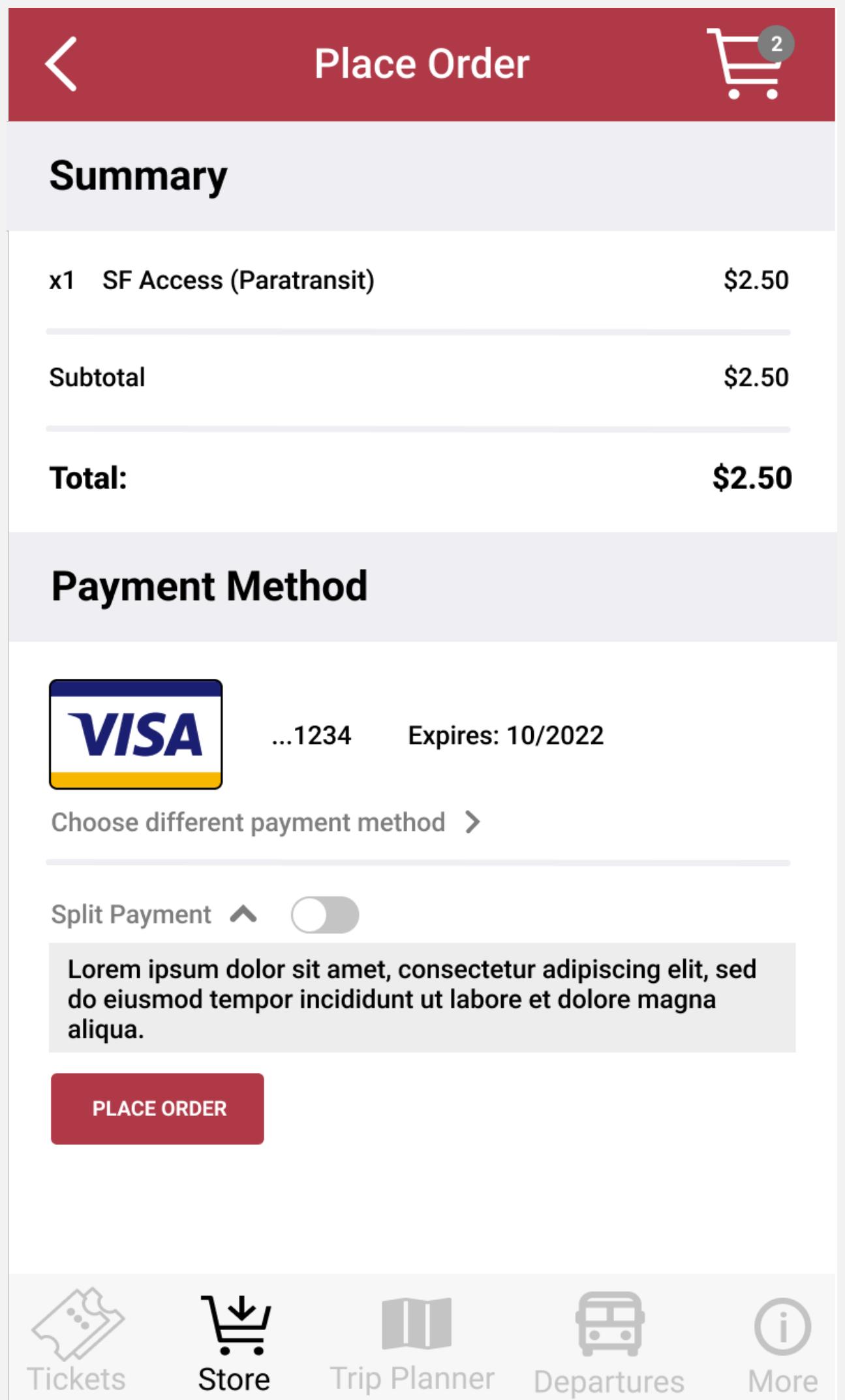
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App - Ticket Purchasing

Dont need to list accepted payment methods if one is already selected



Removed confusing buttons

Info to explain how split payment works

CIS Usability Survey

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Digital Sign - Map View

CIS Usability Survey

More detail desired (27%)



Framing of map strange (21%)

Likes that it shows
live data (31%)

Route lines unclear (21%)

1. App - Trip Planner

2. App - Ticket Purchasing

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4. Digital Sign - Alert View

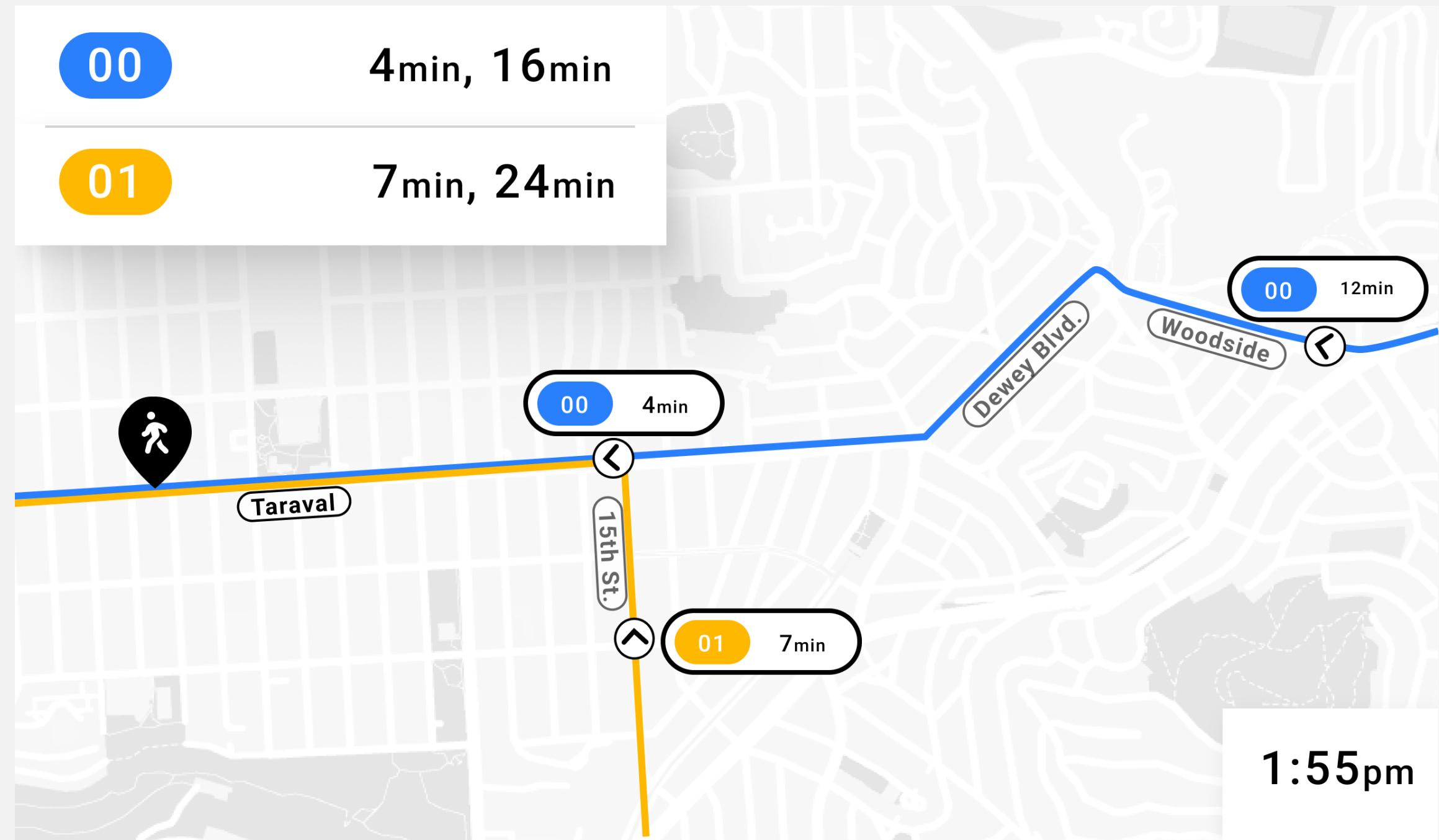
Digital Sign - Map View

CIS Usability Survey

Current location icon shows direction of travel

Numbers defined

Less background detail



Lines and icons bigger for readability

1. App - Trip Planner

2. App - Ticket Purchasing

3. Digital Sign - Map View

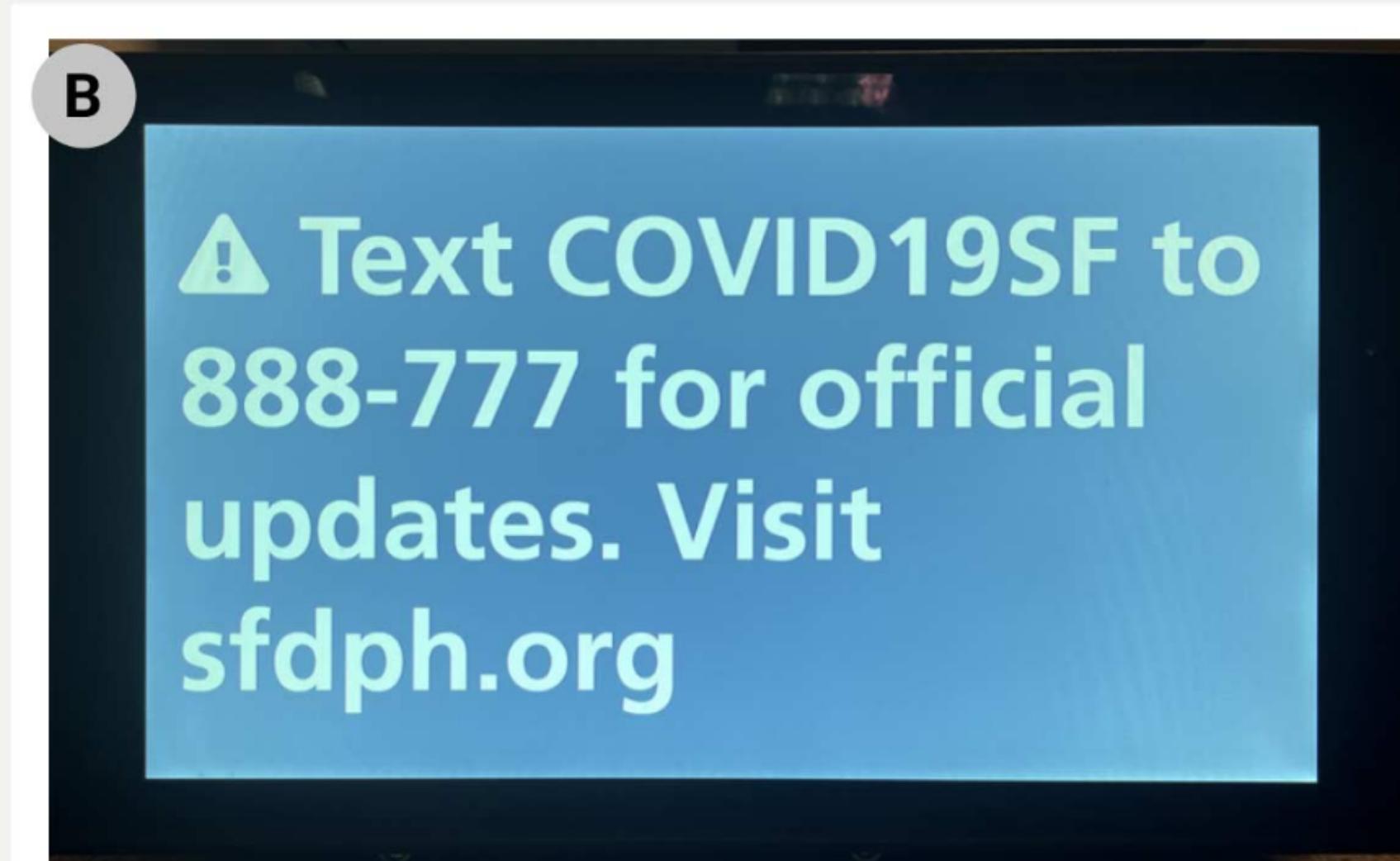
4. Digital Sign - Alert View

Digital Sign - Map View

CIS Usability Survey



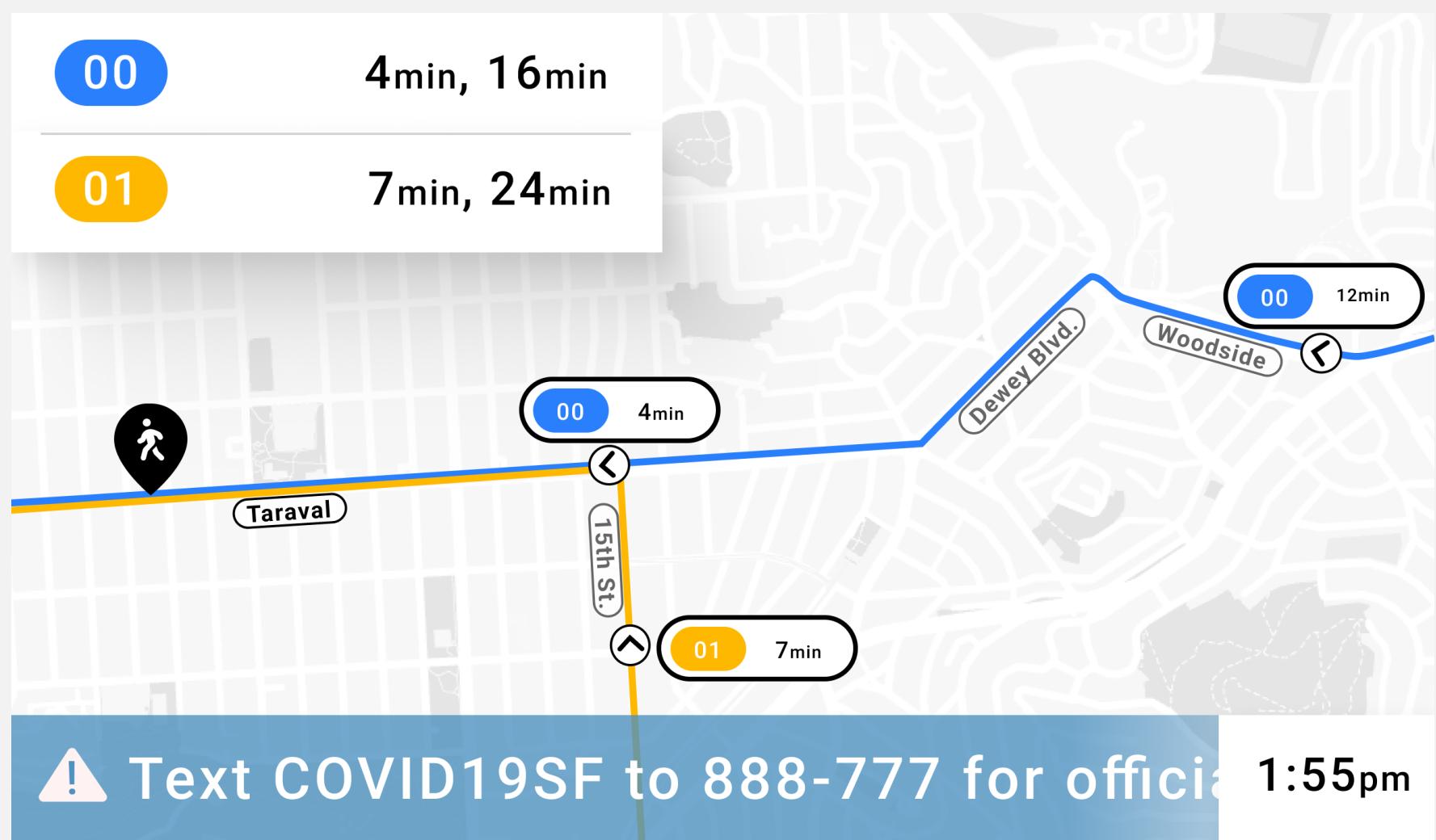
- We had an a priori belief that people cared about not having critical information removed
- We asked respondents to compare the prototype we were given (**option B**) with a version we created (**option A**)
- **92% of respondents preferred option A**



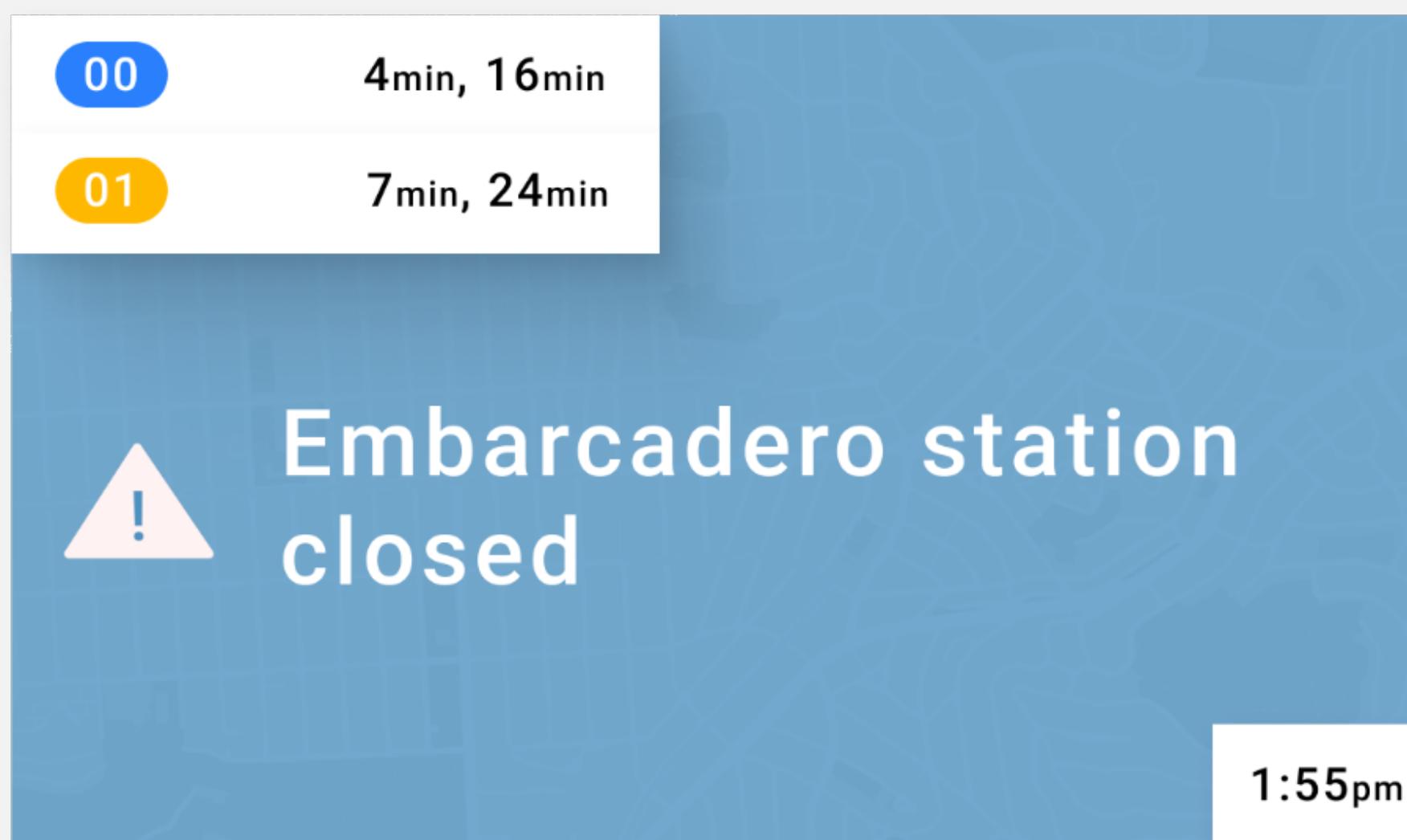
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Digital Sign - Map View

CIS Usability Survey



Scrolling alert



Full screen alert

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2. App - Ticket Purchasing

3. Digital Sign - Map View

4. Digital Sign - Alert View

Analysis + Results

How we interpreted the data and what happened after

What Did All These Problems Have In Common?

- **Poor information hierarchy**
 - “where is the destination again?”
 - “when is the next bus coming?”
- **Interfaces and terms people are familiar with being used in unfamiliar ways**
 - “why are the icons clustered together”
 - “why wouldn’t this page automatically update?”

Did Our Suggestions Work?

- None of the usability problems mentioned came up in further usability tests performed by the SFMTA
- They are considering a partnership with the Transit App creators to take over some of the features they were previously planning to incorporate into their app

Closing Thoughts

...and what comes next

What Would I Do Differently Next Time?

- Increase the sample size and include people who are more representative of regular transit riders.
- Nonprofit work is sometimes limited
- Collect more demographic data
- Perform actual usability tests instead of just a survey
- Include a card sort and determine information architecture issues

Thanks for coming

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