



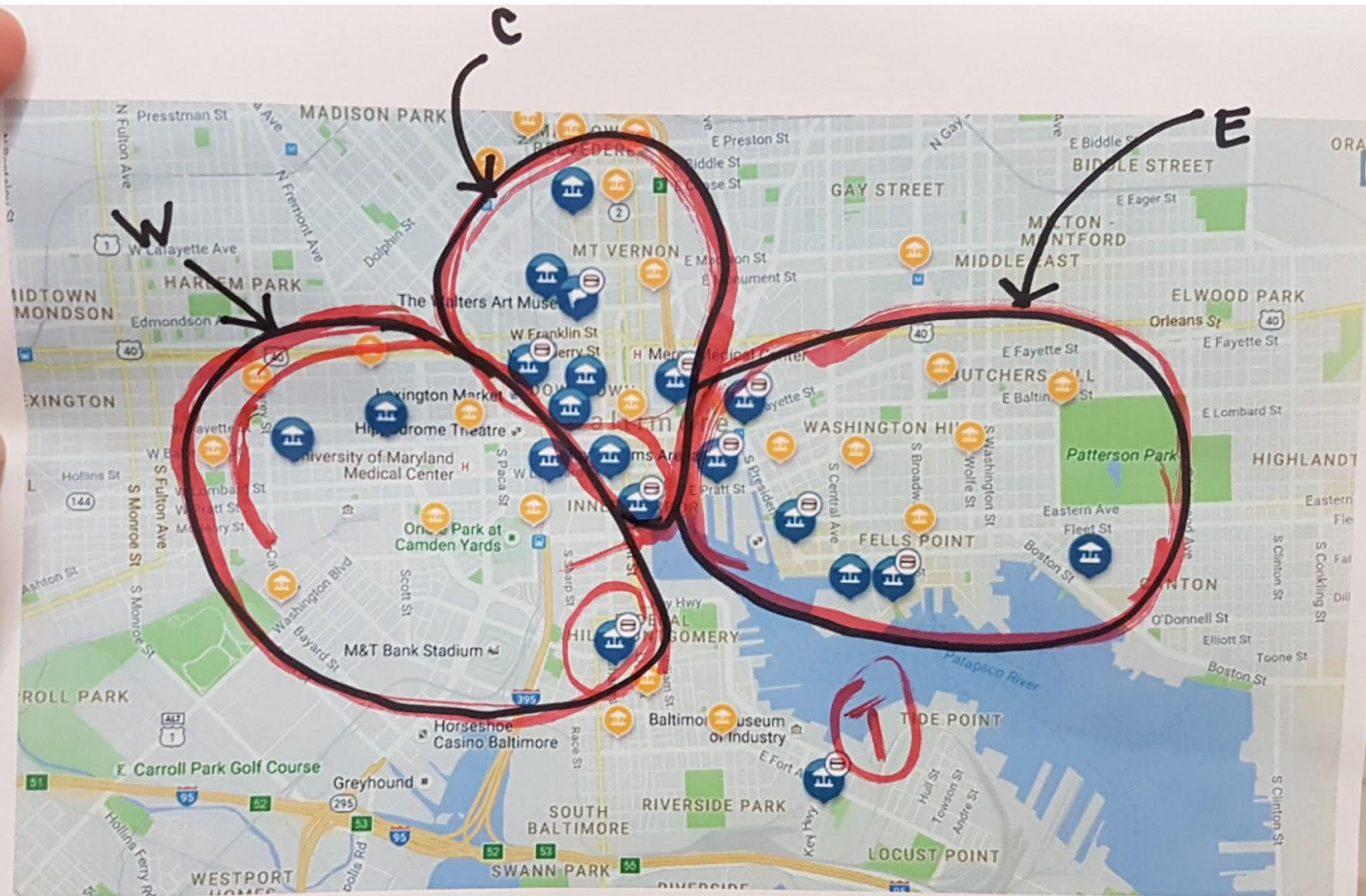
Baltimore Bike share

Design Research
11.10.2016

DESIGN RESEARCH PROCESS

Guiding Questions:

1. What's most successful about BBS?
1. What's deterring non-members from joining?
2. What frustrates members?
3. What is the experience of the BBS journey -- from discovery to sign-up to riding to exit?
4. How does the current BBS information design influence the journey?
5. How efficient and user-friendly are the bikes, the kiosk, and the app?
6. Is BBS equitable?

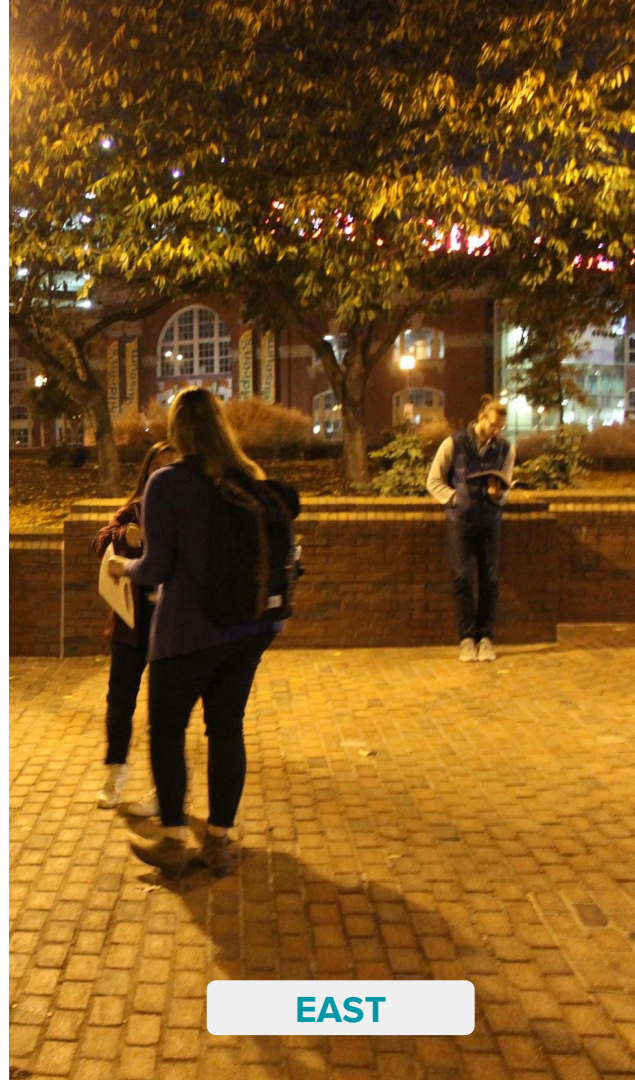




WEST



CENTRAL



EAST





WHO

Personas

HOW

User Journey

WHAT

Hardware/Software



White



KAWAII

LIFE

white (49)

black (13)

curious = ●

used = ●

pulled = ●

♂ 24

♀ 25

♂ 5

♀ 8

I¹

III³

- 10

II²

I¹

20

|||||¹⁴ |||||¹⁰

II²

III⁴

30

II²

||||⁴

III³

III³

40

III³ II²

|||||⁷

I¹

50+

35 were interested (W-24, 11)

20 people used BBS (14 of 20 → \$0.40) (W-20)

7 pulled (W-5, B-2)

♂ 29

♀ 33

only on canvas - HOW? Why share? - getting to the bottom, weight, changed.

CASH DO NOT ERAS

ADDRESS: identifying, identifying, contact, collection

ALLES: getting to the bottom, weight, changed

EXAMINE: EXAM, EXAM, EXAM

BLOCKS: make, make, make

CARD AT KIDSK

WEB/APP (long-term)




WAVIA
desi ka
mood
viva

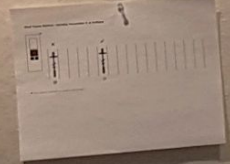
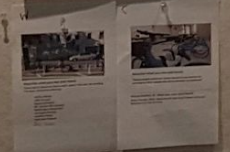
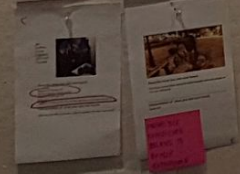
BIKE SCREEN

What are the features of the screen?
How is it used?
What are the benefits?

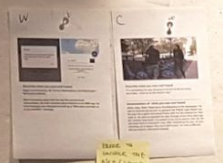
What are the features of the screen?
How is it used?
What are the benefits?



more 'glazy'
to get
light

W C



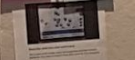
What are the features of the screen?
How is it used?
What are the benefits?

W



What are the features of the screen?
How is it used?
What are the benefits?

What are the features of the screen?
How is it used?
What are the benefits?



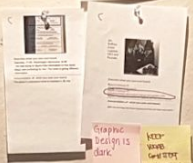
What are the features of the screen?
How is it used?
What are the benefits?

What are the features of the screen?
How is it used?
What are the benefits?

W C



C




Graphic design is dark
KEEP SCREENS
GETTING
TOO DARK
(AND AS A RESULT
BURN)



STATION LIGHT

What are the features of the screen?
How is it used?
What are the benefits?

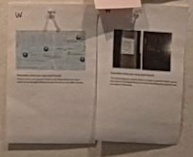
What are the features of the screen?
How is it used?
What are the benefits?



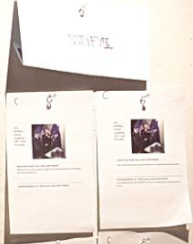
W



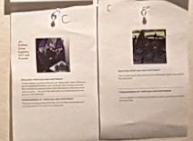
W



W C



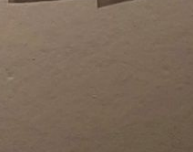
C



C



C





STATIN LICH

How do the...
 the...
 the...
 the...

James

"I want to know if I can
 wear a hoodie to go for the
 hike."

Cynthia

"I would like around these
 bike area if I didn't have
 my other plans."

Dorothy

"I've decided to take my
 friends around Redwood
 through the Redwoods."

A hand-drawn diagram consisting of a circle with an arrow pointing clockwise around its perimeter.

WINTER

WINTER

WINTER

WINTER

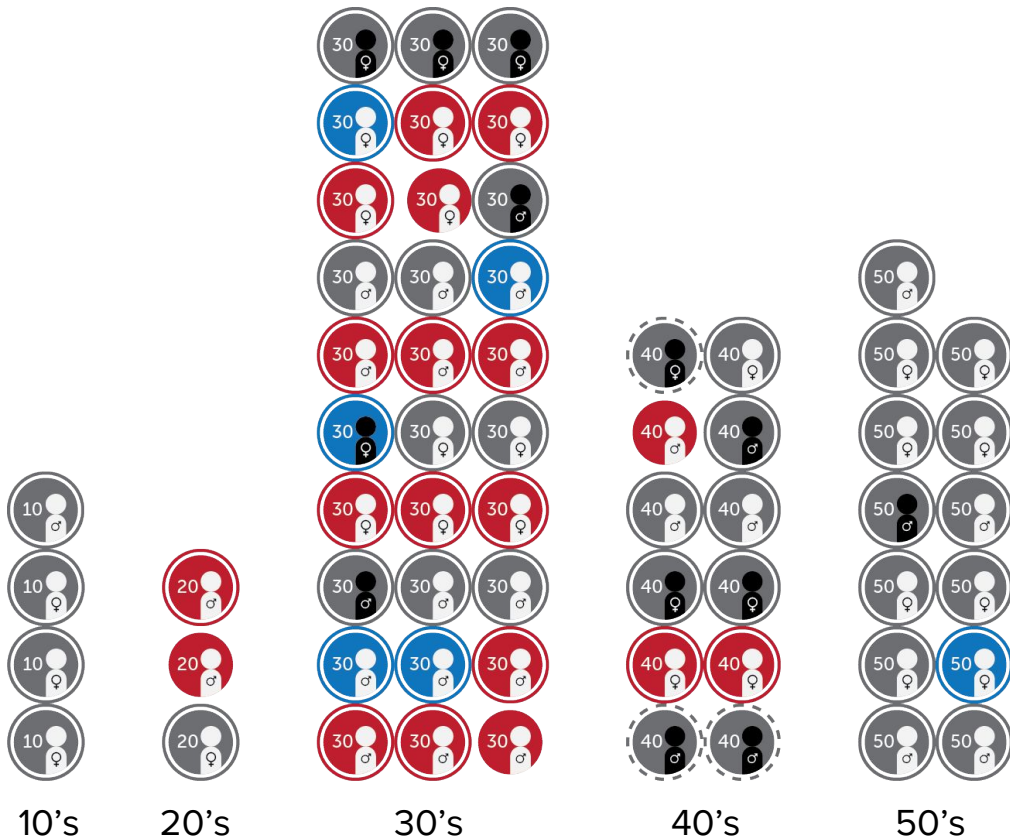
WINTER

EMERGENCY
 ACT
 QUICK RE...

1

USER DEMOGRAPHICS

USERS BY AGE



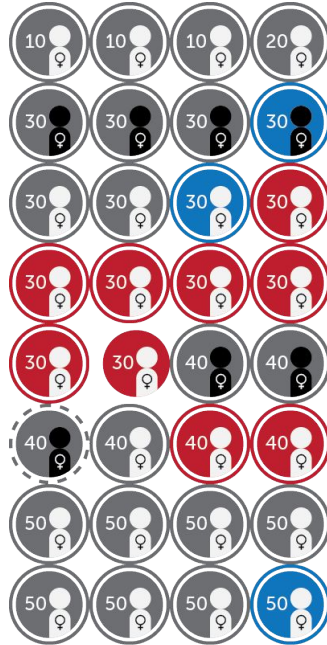
- = work, chores (replaces car)
- = play, exercise etc (for fun)
- = unspecified

- # = age ♂/♀ = gender
- = black □ = white

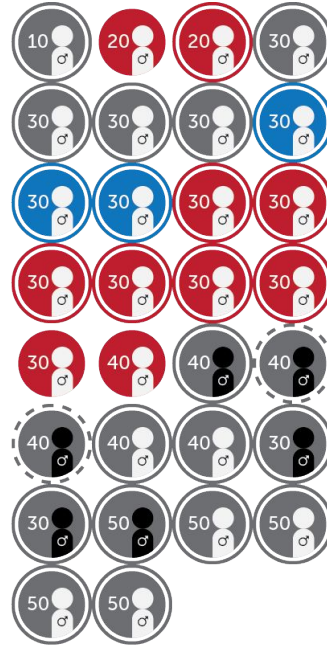
- = used bikeshare
- = approached, did not use
- = did not approach

USERS BY GENDER

Female



Male



- = work, chores (replaces car)
- = play, exercise etc (for fun)
- ⊙ = unspecified

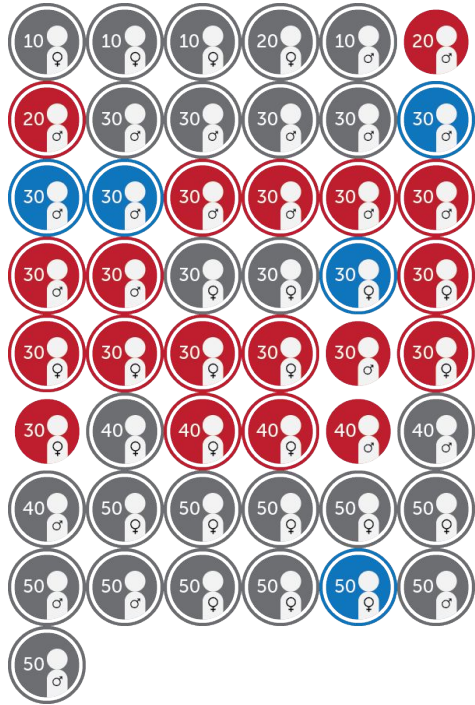
= age ♂/♀ = gender

■ = black □ = white

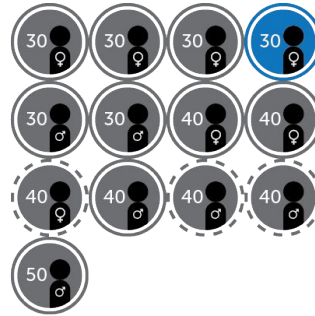
- = used bikeshare
- = approached, did not use
- = did not approach

USERS BY RACE

White



Black



- = work, chores (replaces car)
- = play, exercise etc (for fun)
- = unspecified

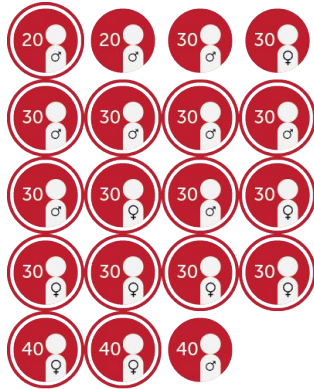
= age ♂/♀ = gender

♣ = black ♣ = white

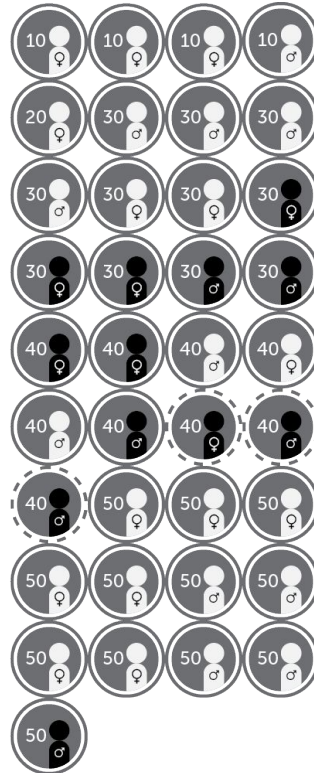
- = used bikeshare
- = approached, did not use
- = did not approach

INTERACTION WITH BIKESHARE

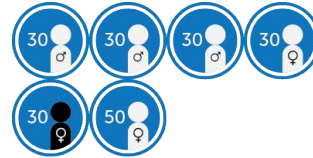
Used the Bikeshare



Curious About Bikeshare



Did Not Approach Bikeshare



- = work, chores (replaces car)
- = play, exercise etc (for fun)
- = unspecified

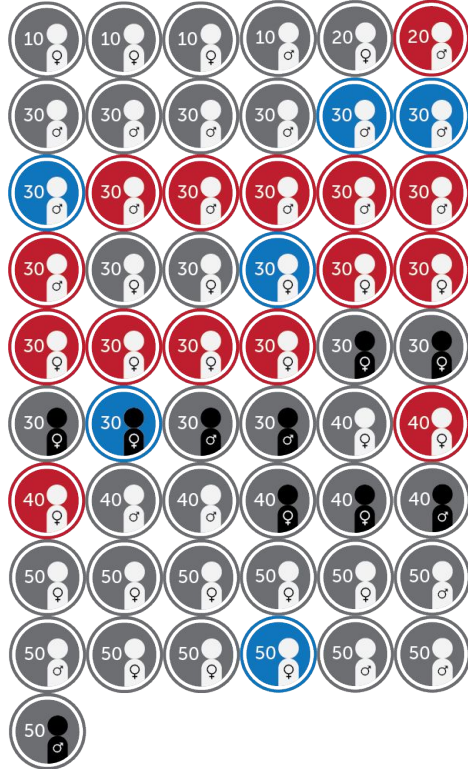
= age ♂/♀ = gender

● = black □ = white

- = used bikeshare
- = approached, did not use
- = did not approach

INTENDED USE OF BIKESHARE

Play, Exercise



Work, Chores



Unspecified



- = work, chores (replaces car)
- = play, exercise etc (for fun)
- = unspecified

= age ♂/♀ = gender

♣ = black □ = white

- = used bikeshare
- = approached, did not use
- = did not approach

PERSONAS



Patrick

Age: 32

Gender: Male

Race: White

Aspirations: Find alternative travel options to work

“It would be nice if I could use my Metro smart card to access both the train and bikes. The monthly pass is only \$15 and it works out to be cheaper than my metro pass!”

MOTIVATIONS FOR USING BIKE SHARE:

Patrick doesn't have a car and would ride his bike to work all the time. He decided to start using Bikeshare because he's had 2 of his bikes stolen. It takes him 10-15 minutes to get to the nearest Bikeshare station but he does not mind, he's still exploring new transportation methods to get to work. What he doesn't like, however, is that the app freezes sometimes and he has to reinstall it so he can check out a bike. One morning, he couldn't unlock any of the bikes in the station and it made him late for work. He's still considering the Bikeshare program because it is a cheaper option than taking the Metro.

BARRIERS

Cost Perception



Neighborhood Safety



Access to station



Access to Information



Ability to fulfill requirements



OPPORTUNITIES FOR BIKESHARE TO SUPPORT:

- Reduce technical glitches when checking out bikes
- Add more stations to residential areas



Mari

Age: 52

Gender: Female

Race: Black

Aspirations: Spending quality time with her family, watching her grandkids graduate from school.

“Do you need to have a credit card to use them? Where do you put the money in?”

MOTIVATIONS FOR USING BIKE SHARE:

Mari usually gets around the city on the bus. She wanted to try Bikeshare to see if she could ride it to the grocery store with her husband. She thinks it would be fun to take her 12 year old grandson around the city on the Bikeshare, too.

Mari tried to figure out how to use the bikes from the kiosk posters, but she couldn't figure out how to pay. Upon investigating the bikes further Mari also thinks the basket would be too small for her grocery trips. She also realized that the bikes are not made for kids. Mari plans to call the Bikeshare office tomorrow morning to get answers before paying to use bikeshare.

BARRIERS

Cost Perception



Neighborhood Safety



Access to station



Access to Information



Ability to fulfill requirements



OPPORTUNITIES FOR BIKESHARE TO SUPPORT:

Provide more information at the Kiosks



James

Age: 37

Gender: Male

Race: Black

Aspirations: Alternative transportation option other than bus and light rail.

“I want to know if I can use cash to pay for the bikes.”

MOTIVATIONS FOR USING BIKE SHARE:

James does not own a car so he mainly uses public transportation to go to and from work. It often takes a long time to commute because of the route and the multiple stops of the buses. He wondered if he could use cash to pay for the bikes so he made a phone call to the customer center of the Baltimore Bike Share. He was told that he needs to go to MTA authority to make the payment and the key fob will be sent in mail. After the email of payment confirmation is sent, the key fob will be activated.

BARRIERS

Cost Perception



Neighborhood Safety



Access to station



Access to Information



Ability to fulfill requirements



OPPORTUNITIES FOR BIKESHARE TO SUPPORT:

Consider creating less steps/requirements and easier access to pay for bike share using cash.



Lisa

Age: 35

Gender: Female

Race: White

Aspirations: Keep fit and stay active.

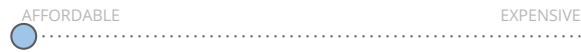
“I chose to ride manual bikes over electric ones because I want to be fit.”

MOTIVATIONS FOR USING BIKE SHARE:

Lisa’s job requires her to sit all day but she loves outdoor activities. She tried both the manual and electric bikes, and she thinks the manual ones are better for exercise. She is excited that this Bike Share program has launched because she has tried bike share in other cities such as DC and Philadelphia. She plans to get the monthly membership to take the bike to work every day to stay fit.

BARRIERS

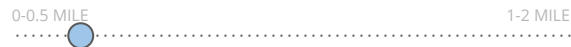
Cost Perception



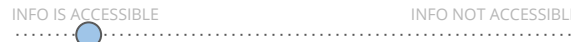
Neighborhood Safety



Access to station



Access to Information



Ability to fulfill requirements



OPPORTUNITIES FOR BIKESHARE TO SUPPORT:

Enhance infrastructure of the Baltimore Bike Share program such as bike trails and bike lanes.



Cynthia

Age: 55

Gender: Female

Race: White

Aspirations: Stay young and age happily

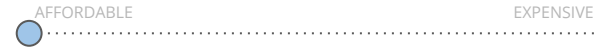
“I would ride around these bikes now if I didn’t have any other plans.”

MOTIVATIONS FOR USING BIKE SHARE:

Cynthia likes to use the bikes for leisure/fun. She usually bikes around the Inner Harbor with her husband Robert. She also likes to go out with her friends on weekends for fun and recreation and she’s thinking of using Bikeshare exactly for that. She just needs to figure out how to begin using the program and how to use the app.

BARRIERS

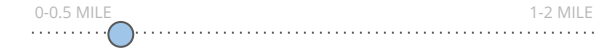
Cost Perception



Neighborhood Safety



Access to station



Access to Information



Ability to fulfill requirements



OPPORTUNITIES FOR BIKESHARE TO SUPPORT:

Provide support for people who are less tech savvy



Garon

Age: 28

Gender: Male

Race: Black

Aspirations: Have some fun outside of day to day routine.

“Pretty romantic, if you ask me.”

MOTIVATIONS FOR USING BIKE SHARE:

Garon is born and raised in Baltimore. Everyday he would toil through his job looking forward to the weekend when he can spend a nice day biking around the city with his girlfriend. He thinks the Bikeshare is affordable but the safety of biking around Baltimore is a concern. He still thinks biking with his girlfriend is romantic, but he'd prefer to do it around the Inner Harbor.

BARRIERS

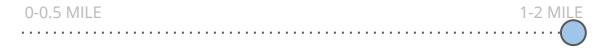
Cost Perception



Neighborhood Safety



Access to station



Access to Information



Ability to fulfill requirements



OPPORTUNITIES FOR BIKESHARE TO SUPPORT:

Demonstrate/showcase safety features of the bikes and provide more bike lanes along East Baltimore.



Agatha

Age: 42

Gender: Female

Race: White

Aspirations: Try out new things here in Baltimore.

“Aren’t those electric [bikes]?”

MOTIVATIONS FOR USING BIKE SHARE:

Agatha heard about Bikeshare in the news. She’s not yet sure what she’ll use it for but she would like to try and see if it’s convenient to use the bikes while running short errands around the city. She would like to use the electric ones in particular because she thinks biking on those are easy and require no work! She is unsure how to tell which ones are electric and which ones aren’t. She’s also unsure about navigation, but she plans to try the bikes once and see how it goes from there.

BARRIERS

Cost Perception



Neighborhood Safety



Access to station



Access to Information



Ability to fulfill requirements

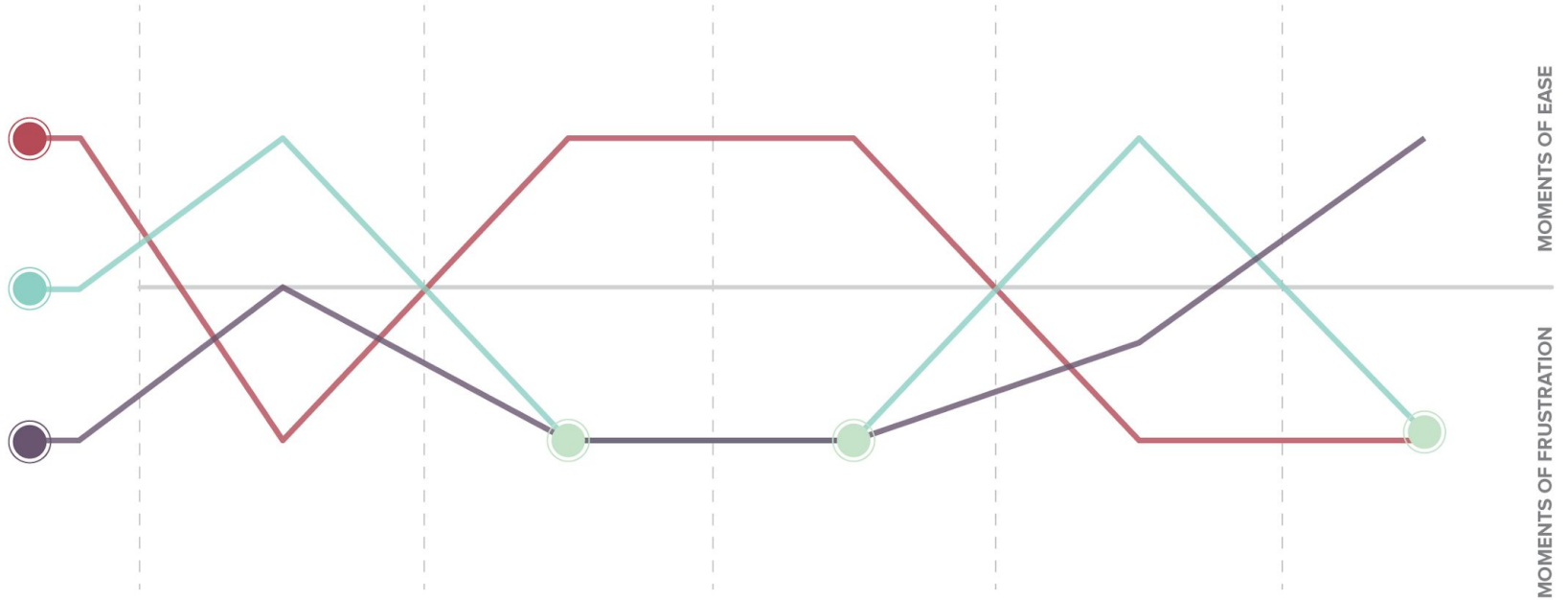


OPPORTUNITIES FOR BIKESHARE TO SUPPORT:

- Easier Identification of electric bikes
- Assist in wayfinding through the city.

JOURNEY (HOW)

BALTIMORE BIKE SHARE JOURNEYS



DISCOVERING

How they heard about Baltimore Bike Share (BBS)

ACCESSING

How they got to one of the BBS stations

PAYING

How they paid for their biking experience

BIKING

How they got from point A to point B

RETURNING

How they made their way back to a station



Garon // 28 // M // Black



Agatha // 42 // F // White



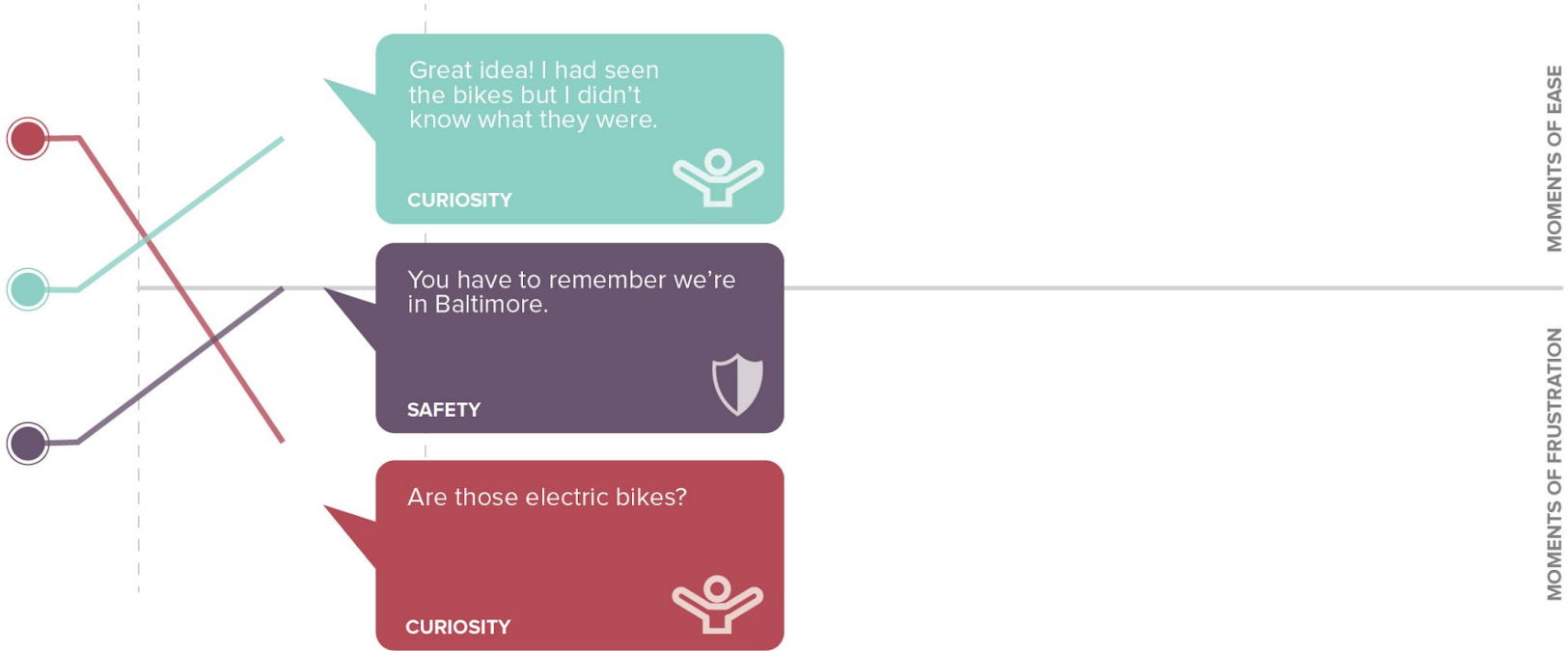
Patrick // 32 // M // White



Opportunity for design intervention

DISCOVERING

How they heard about Baltimore Bike Share (BBS)



 Garon // 28 // M // Black

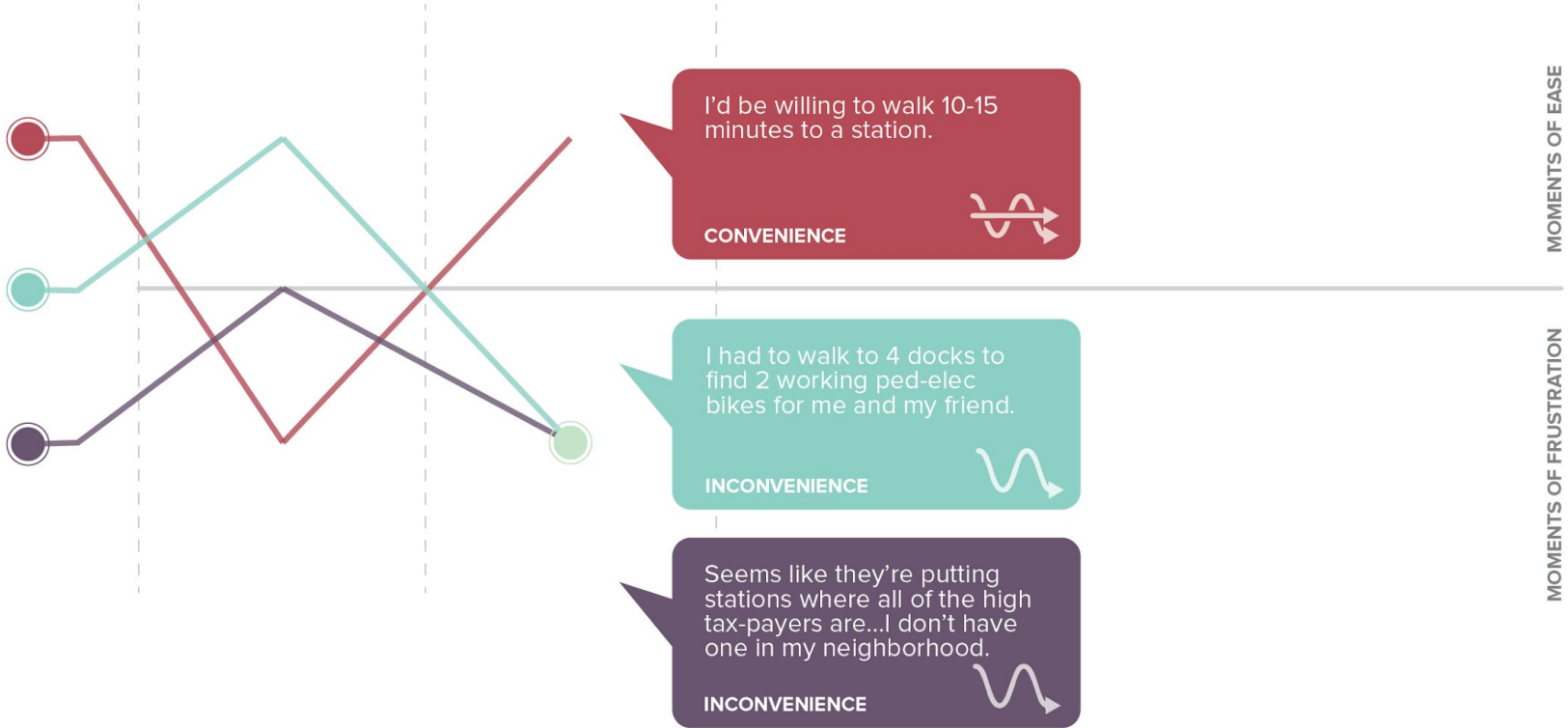
 Agatha // 42 // F // White

 Patrick // 32 // M // White

 Opportunity for design intervention

ACCESSING

How they got to one of the BBS stations



Garon // 28 // M // Black

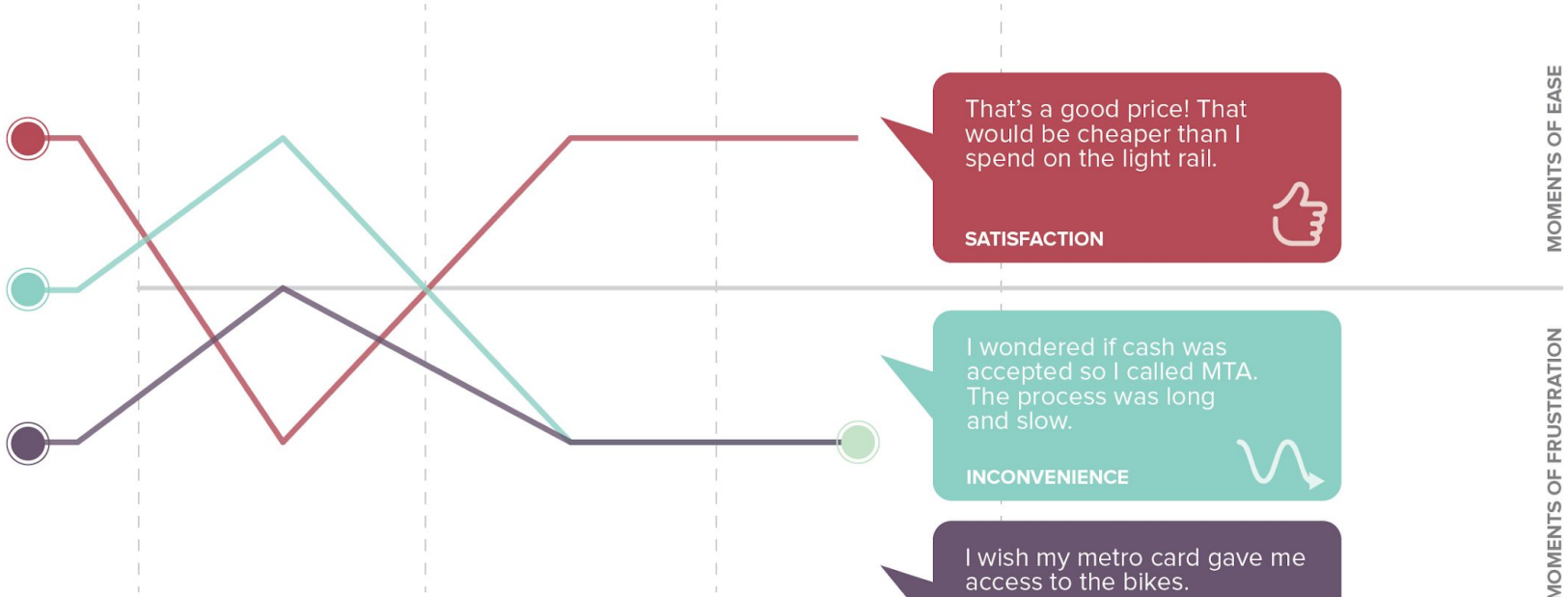
Agatha // 42 // F // White

Patrick // 32 // M // White

Opportunity for design intervention

PAYING

How they paid for their biking experience



That's a good price! That would be cheaper than I spend on the light rail.

SATISFACTION

I wondered if cash was accepted so I called MTA. The process was long and slow.

INCONVENIENCE

I wish my metro card gave me access to the bikes.

INCONVENIENCE

MOMENTS OF EASE

MOMENTS OF FRUSTRATION

Garon // 28 // M // Black

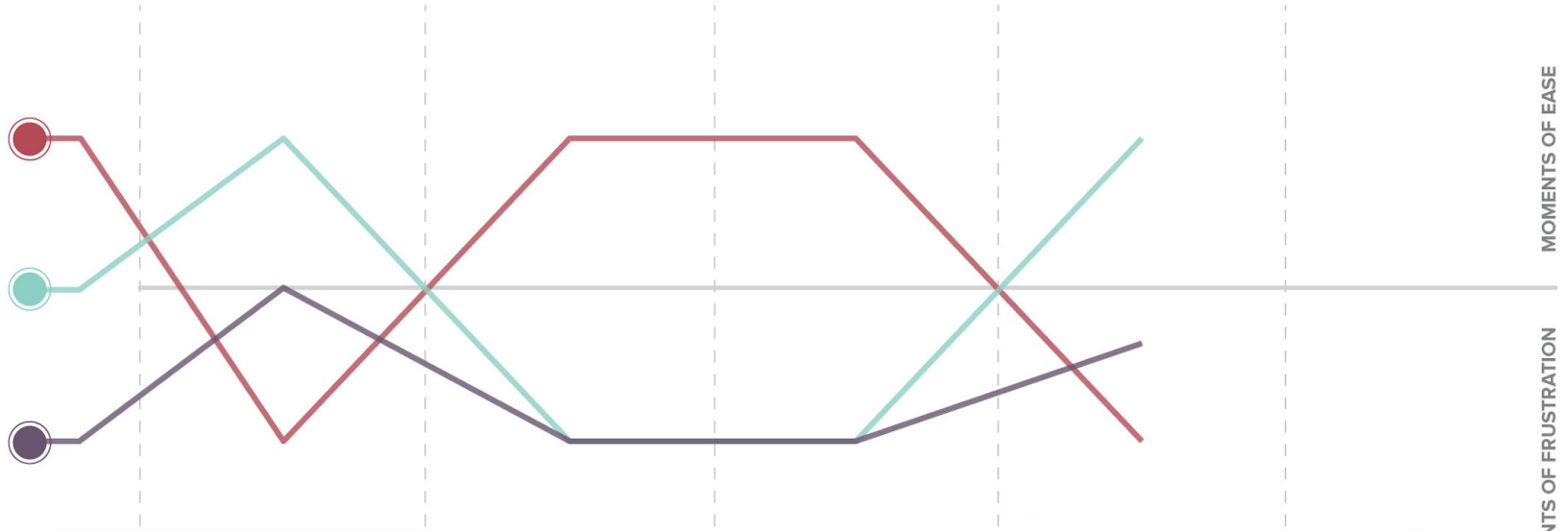
Agatha // 42 // F // White

Patrick // 32 // M // White

Opportunity for design intervention

BIKING

How they got from point A to point B



I love how easy it is to ride up hill.

SATISFACTION

That jolt was an adjustment.

SAFETY

I got re-routed for construction and it was hard to find my way...

INCONVENIENCE

Garon // 28 // M // Black

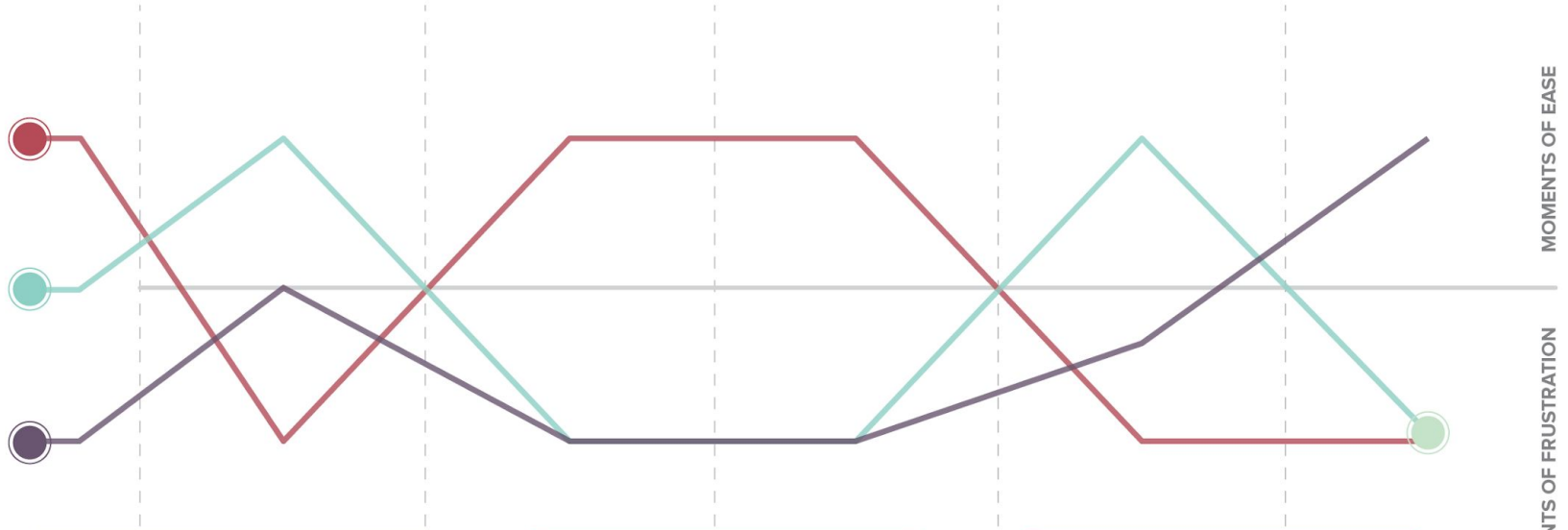
Agatha // 42 // F // White

Patrick // 32 // M // White

Opportunity for design intervention

RETURNING

How they made their way back to a station



You just have to get it, use it with respect, and return it—it was so easy to actually get from point A to point B.

CONVENIENCE



The bikes were difficult to re-dock. They required a lot of strength.

INCONVENIENCE



When I got back, the docks were full.

INCONVENIENCE



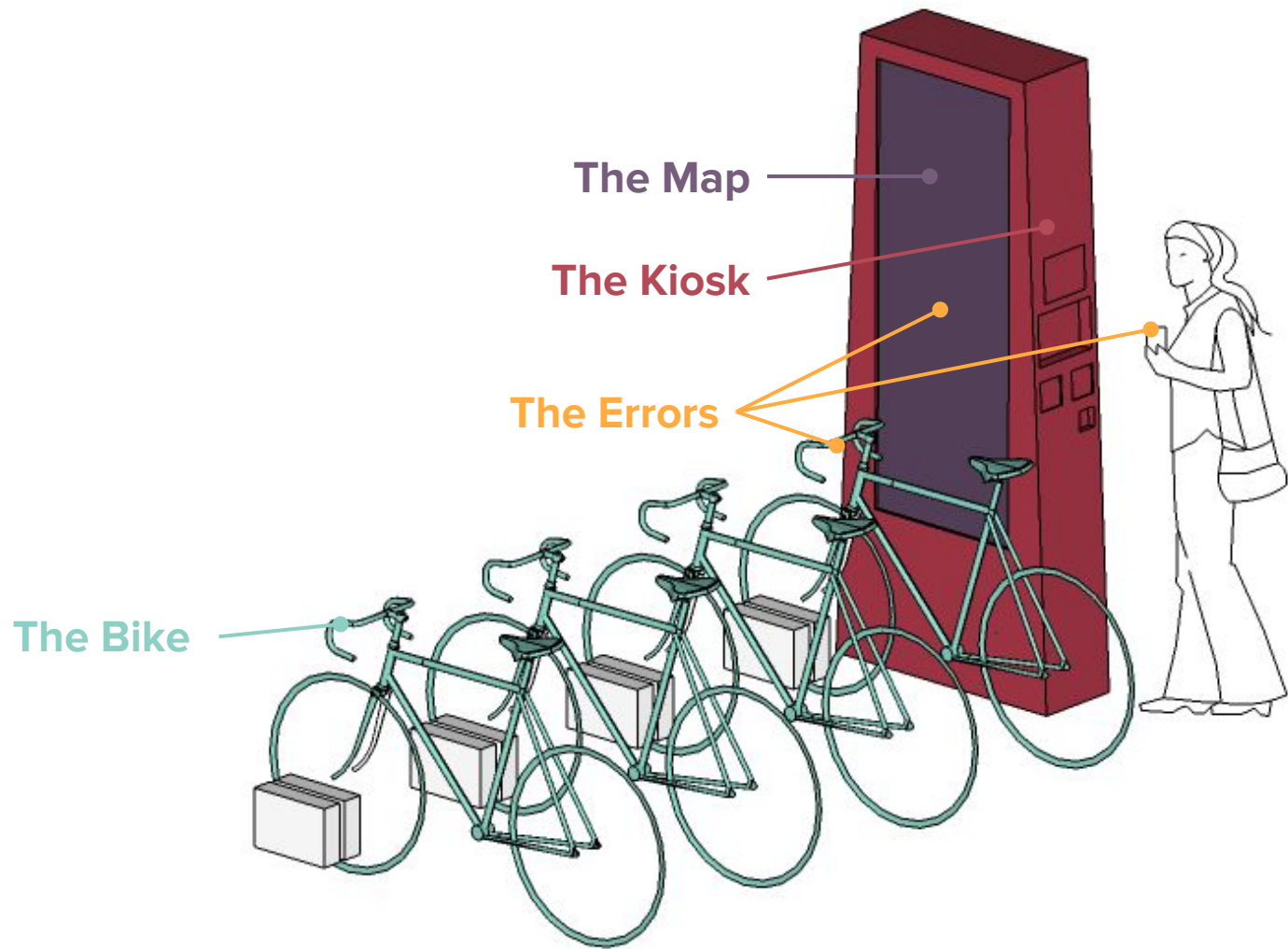
Garon // 28 // M // Black

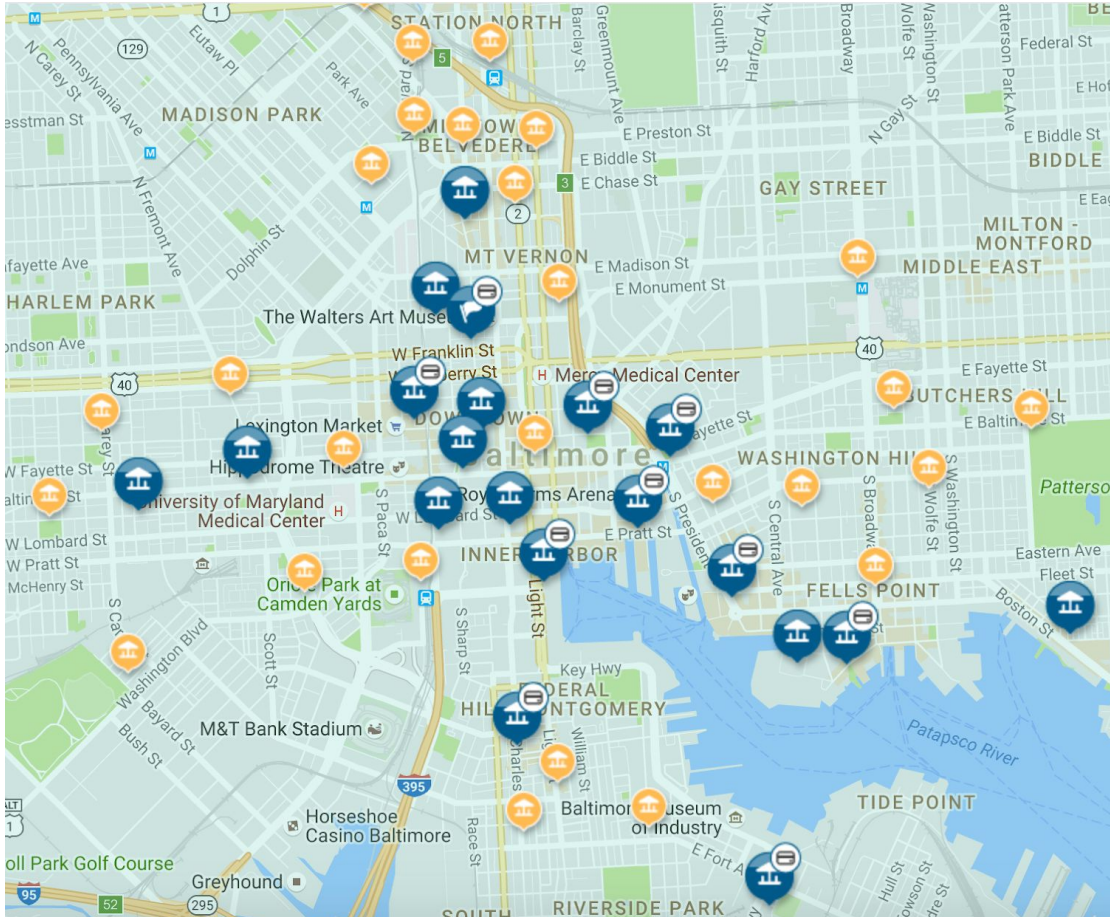
Agatha // 42 // F // White

Patrick // 32 // M // White

Opportunity for design intervention

JOURNEY (WHAT)

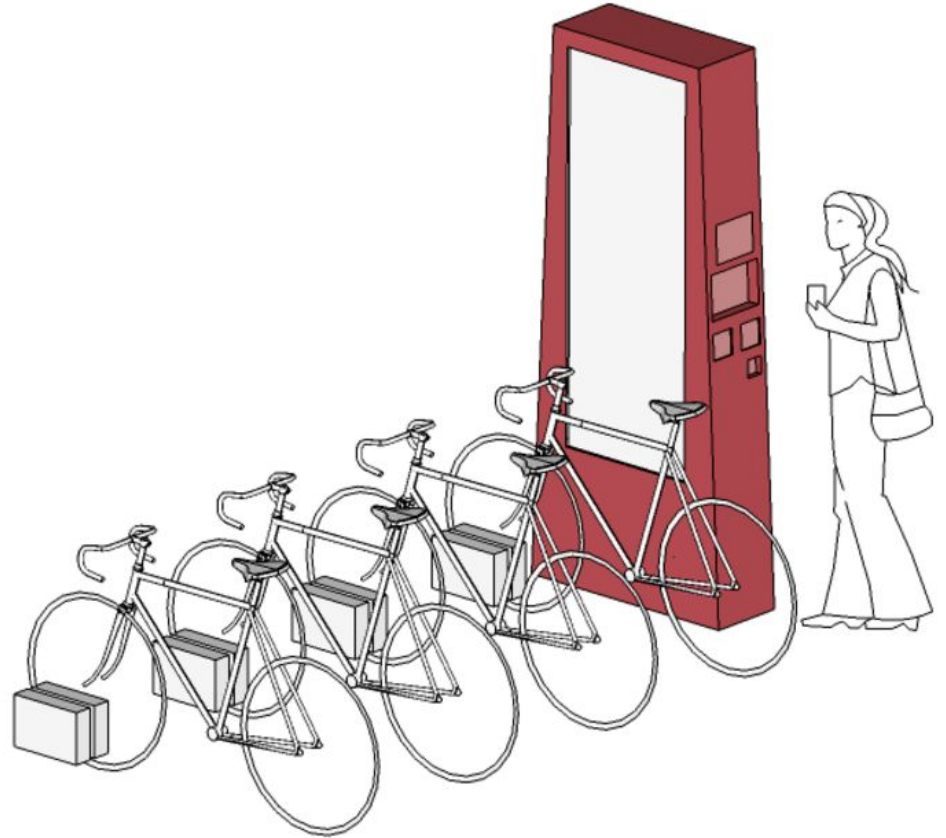




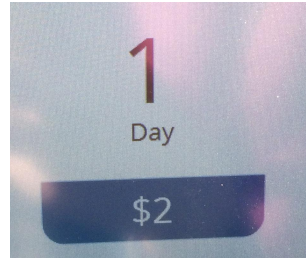
Stations We Visited:

- Shot Tower Station
- Pratt & Light
- City Hall
- Hopkins Place
- Inner Harbor/Visitor Center
- Hollins Market
- UMD Biopark
- Cathedral Station
- Washington Monument
- Station BGE at Center Plaza
- Lexington Market
- Mount Vernon Marketplace
- Howard & Pratt

THE KIOSK



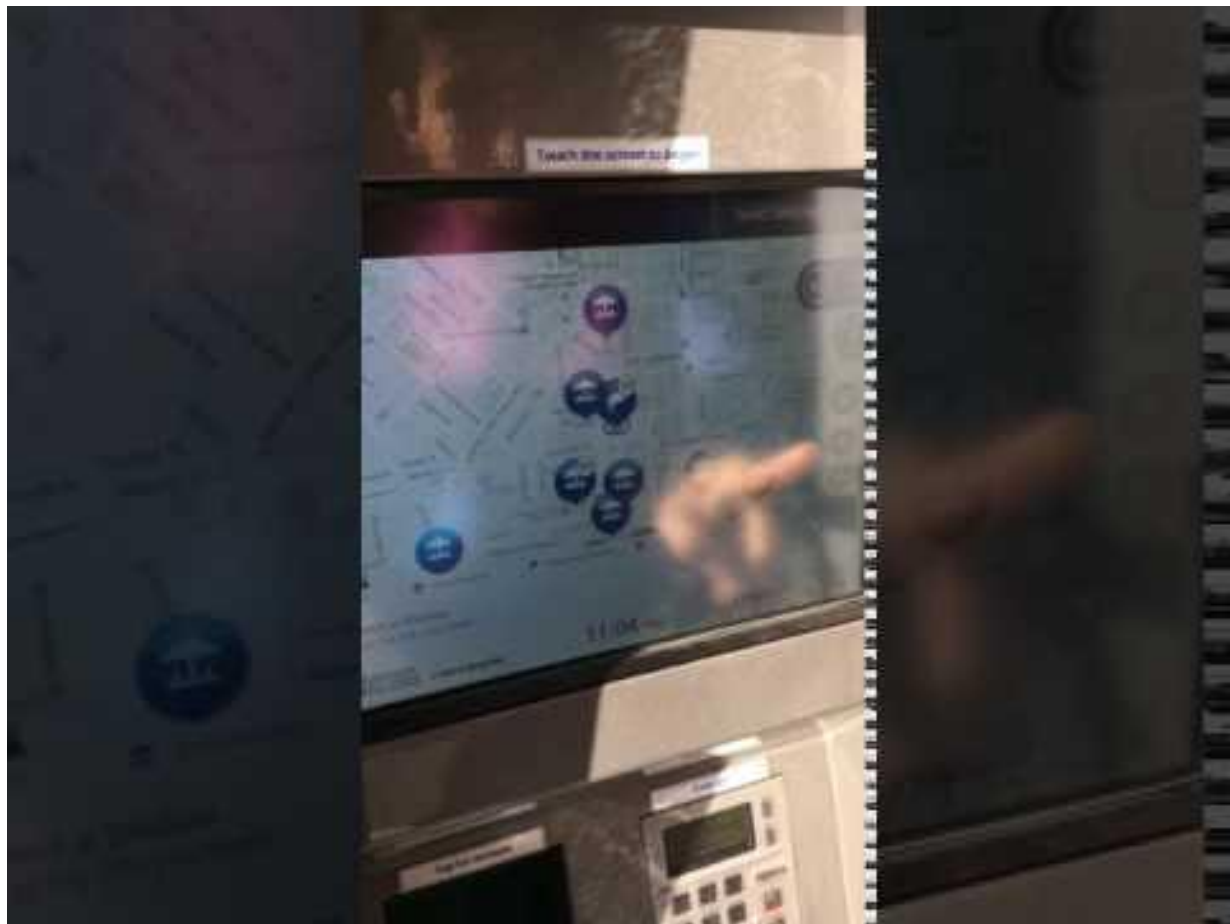
THE KIOSK: OBSERVATIONS



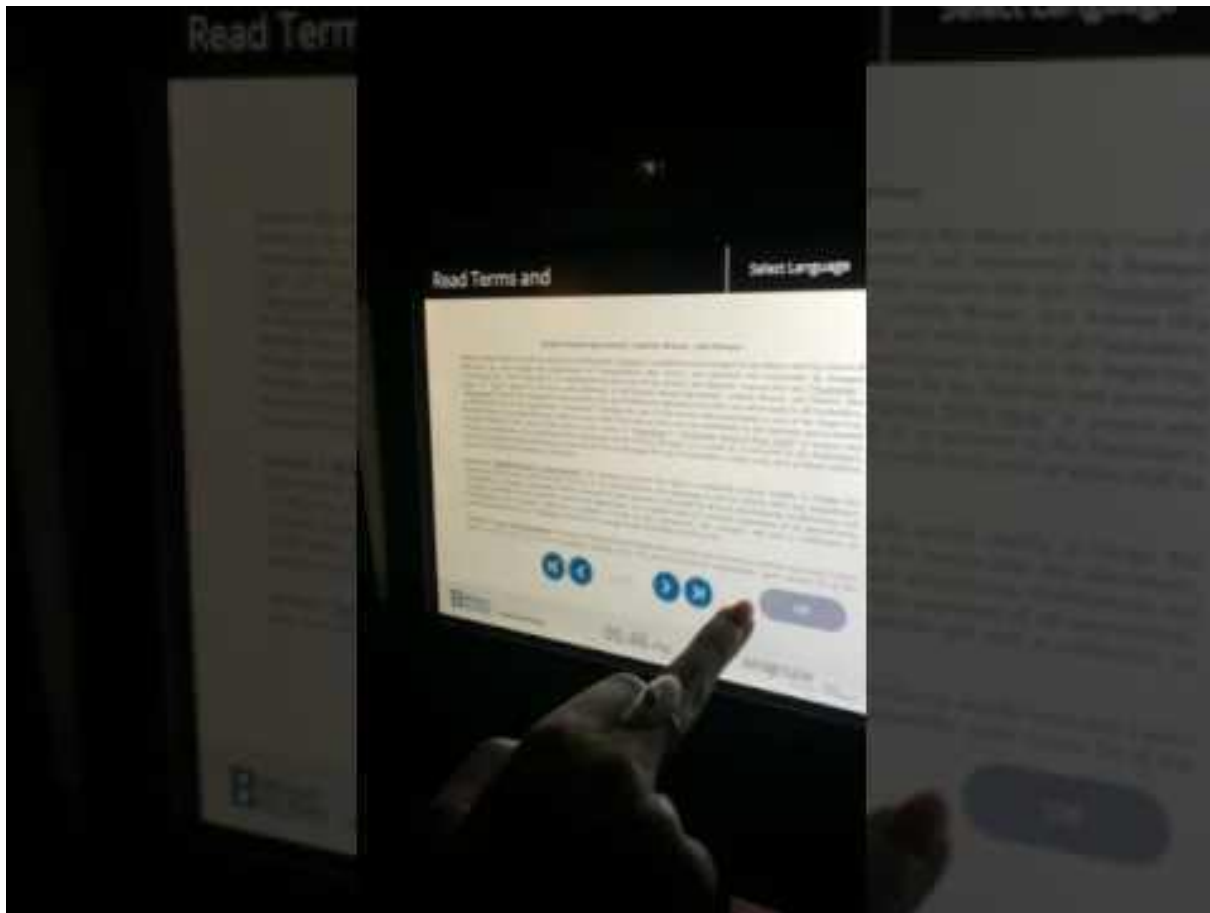
- + “Pros” use the bike share system with ease.
- Touch screens are often unresponsive.
- There is higher demand for credit card stations than are currently offered.
- Kiosk itself provides conflicting information on the \$2 purchase.
- Sign-up process for a \$2 purchase is long and confusing.



There's the professional.

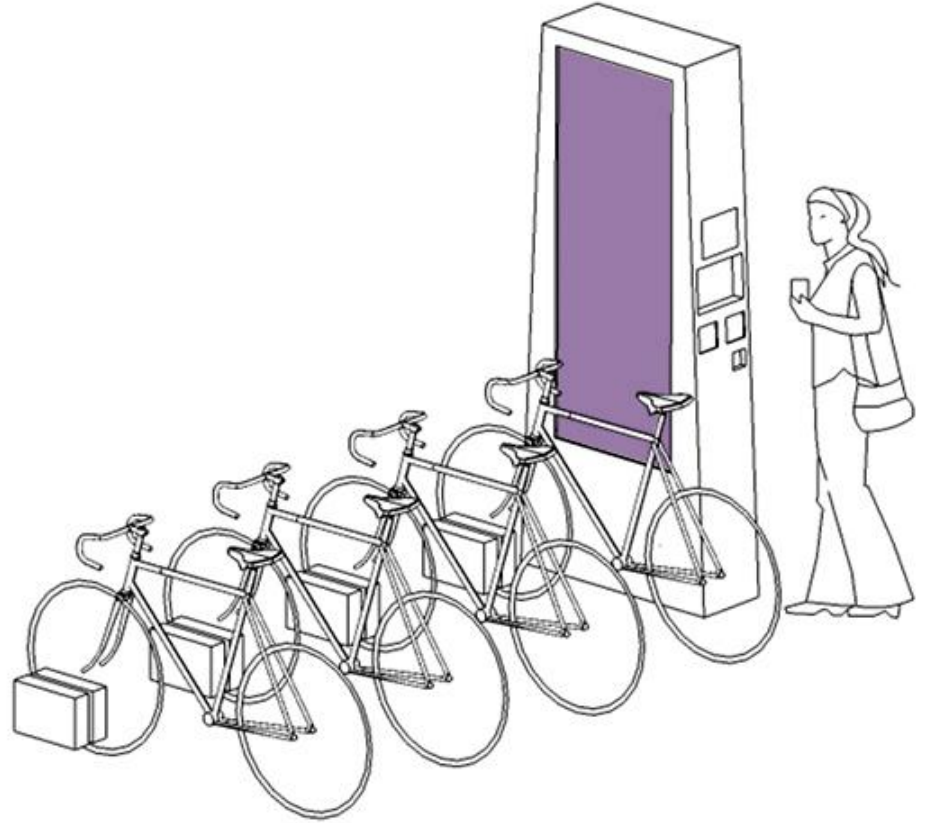


Maybe I have to try
a different finger.



Ten minutes later, I can finally start riding!

THE MAP



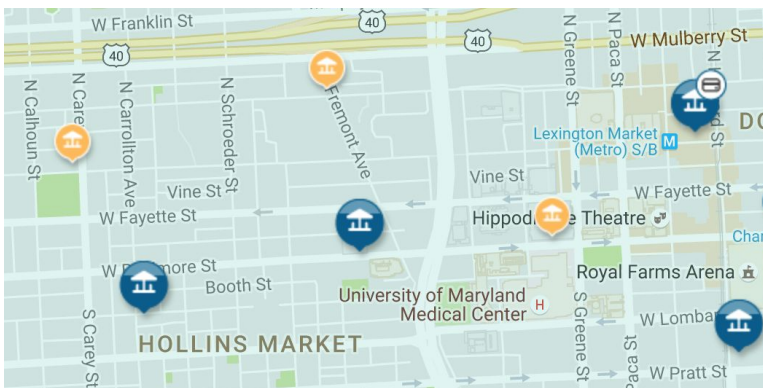
THE MAP: STRUCTURAL OBSERVATIONS

I literally had to squeeze in between the bike and the kiosk to read the information.

- Maps on the kiosk are currently positioned inwards towards where all the bikes are docked making it difficult for a person to stand and easily read everything.

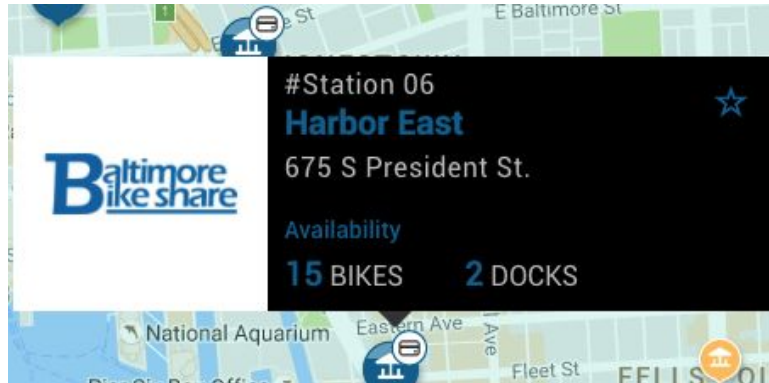
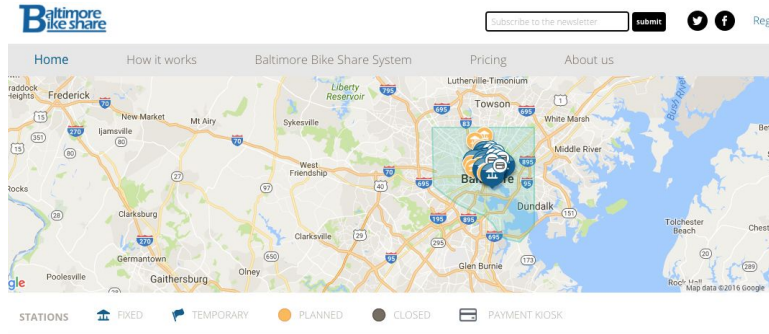


THE MAP: KIOSK OBSERVATIONS



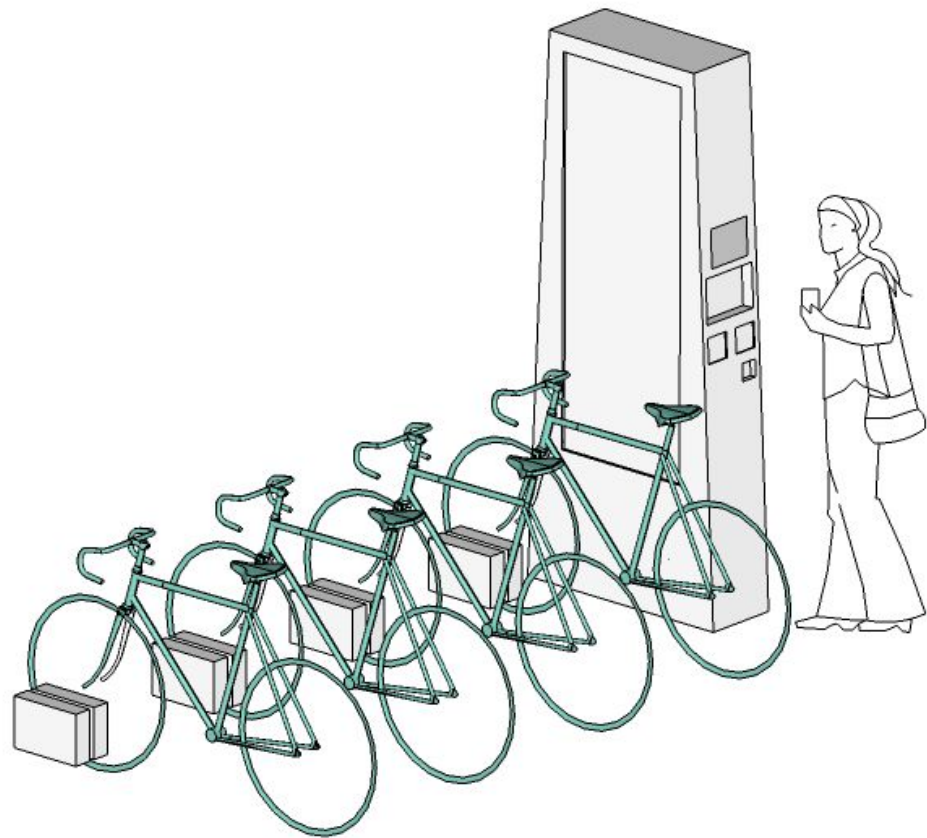
- Incorrect information regarding payment kiosks on the map at Hollins Market. The map shows the kiosk as a payment kiosk but it actually isn't.
 - The west Baltimore region only has one payment kiosk at the Lexington Market station as per the website.
 - Not all stations on the map have labelled cross-streets.
 - Maps don't have biking lane info for those unfamiliar with the city.
- The green dot is often so large, the precise location of the station is unknown.

THE MAP: WEB OBSERVATIONS



- A user said the first look of the map on the website isn't helpful since they had to zoom in quite a bit.
- The Star (add favourite) icon on the station detail pop-up doesn't seem to do anything.
- The "How it Works" clearly explains to users how membership works, but not how the actual process of renting a bike works.

THE BIKE



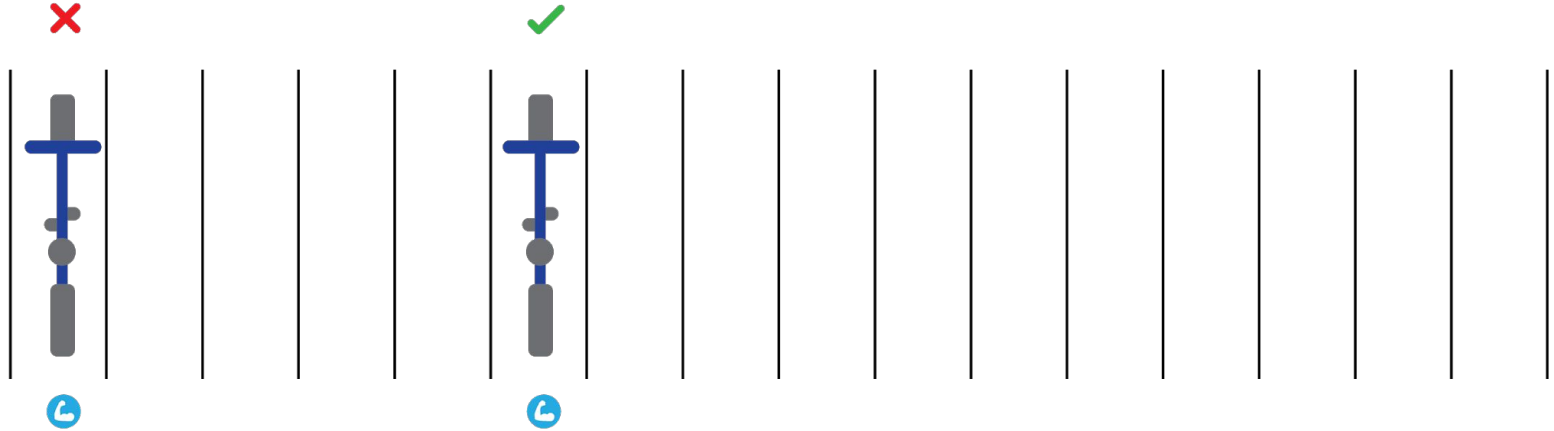
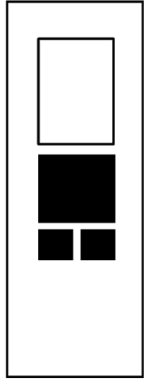
THE BIKE: OBSERVATIONS

“The bike was heavy and the initial jolt of the electric bike was shocking at first. It felt a little hard to control.”

“The lights aren’t powerful enough for night riding - I feel unsafe.”

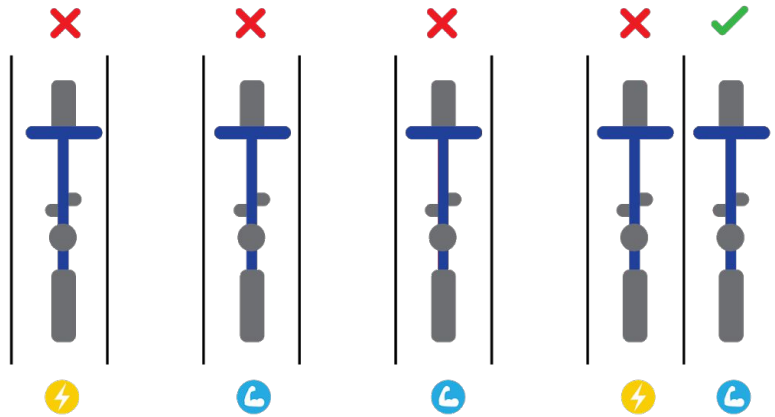
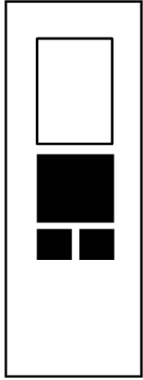
- + More electric bikes were checked out than manual bikes
- At least one bike at every station could not be checked out or was not working
- Multiple error messages were shown to users when a bike could not be checked out of the dock
- At some stations, bike seats were turned backward to indicate that they weren’t working - This is not a universal system
- Knowing which bikes are electric is not always apparent to users

STATION MAP: EAST



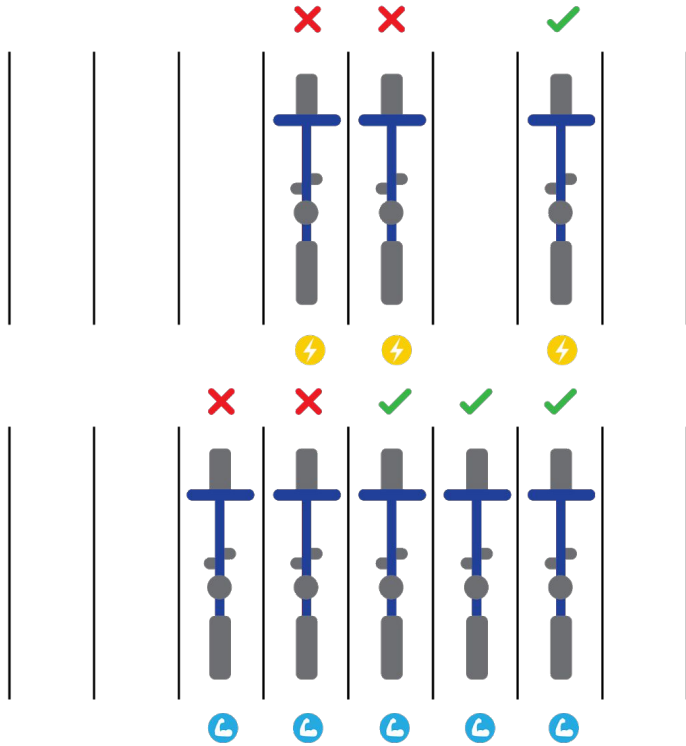
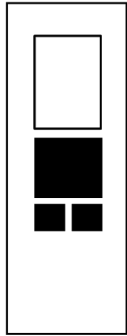
Shot Tower Station - Sunday, November 6 @ 5:45pm

STATION MAP: CENTRAL



Washington Monument Station - Saturday, November 5 @ 11:00am

STATION MAP: WEST

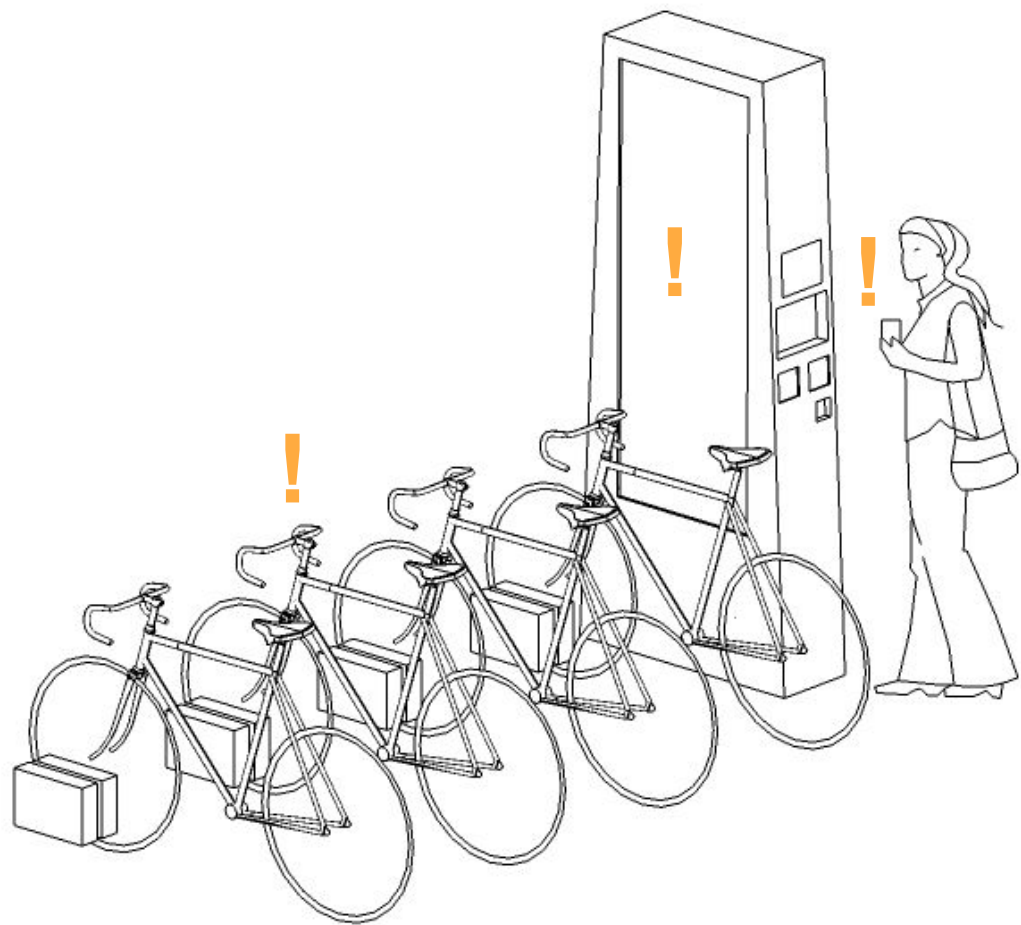


UMD Biopark - Friday, November 4 @ 5:00pm

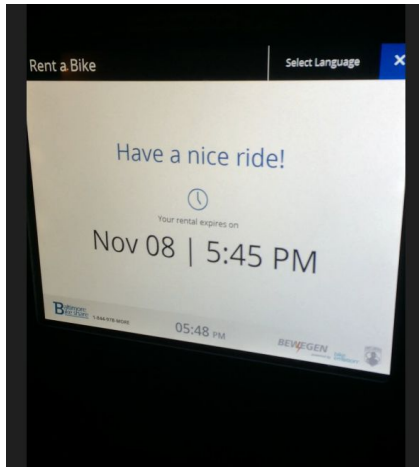


Which bikes are electric? This is too subtle.

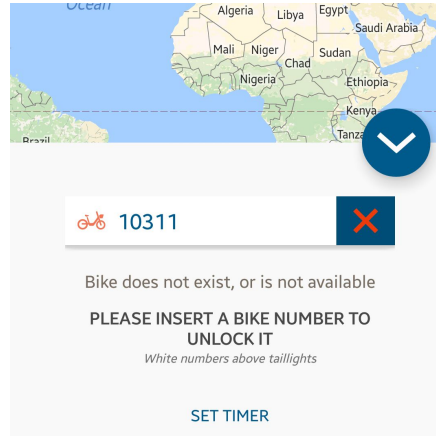
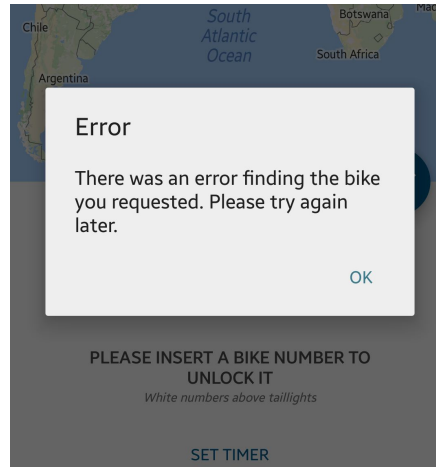
ERRORS



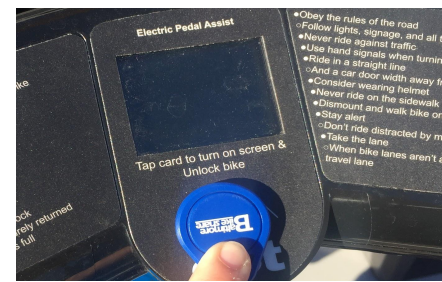
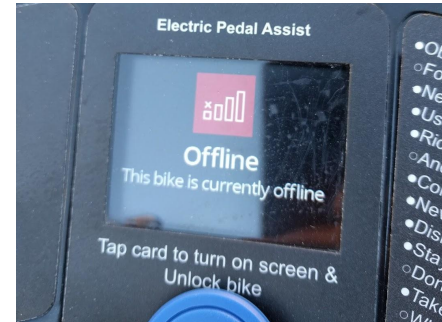
THE KIOSK



THE APP



THE BIKE



QUICK INTERVENTIONS

- Adjusting the kiosk placement
- Adjusting the map placement on the kiosk
- Adding a backlight to the map
- Having a more close up map on the website
- Adding more design elements to differentiate between the electric and manual bikes
- Clarifying the single ride trip and what is included.
- Correcting misinformation.



Baltimore Bike share

Design Research
11.10.2016