

Light Rail Field Study Report

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Goals & Context

The goal of our field study observations is to learn more about the behaviors of those commuting on the Seattle-based Light Rail. We aim to answer the following design question: how can we help Light Rail system users feel safe when commuting at night time?

The Light Rail has made it significantly easier for residents to commute throughout Seattle, providing an efficient public transportation system that serves approximately 80,000 riders daily. [1] The system stretches over 25 miles and includes 19 stations, serving anywhere from adults on their work commute to college students exploring the city. While this system has grown to be incredibly beneficial, there are rising concerns about public safety and crime on transit. In a 2014 data collection, it appeared that 70-75% of robberies in the South Seattle area occurred in close range of all public transit routes. [2] Since 2014, the Light Rail has added multiple stations to their route which has increased their ridership and the need for security at all stations. Despite increased security measures, we find that it is necessary to explore how to make individuals feel safe on the Light Rail, especially when commuting at night time.

Our group conducted observations both at various stations and while riding the Light Rail, more details can be found under Method. Some of the primary research questions we hoped to answer through our study include the following (rest can be found in Appendix 1).

1. How are people behaving around others at the station?
2. What factors contribute to an unsafe Light Rail experience?
3. Are there resources to help people keep safe at the stations?

Overall, following our observations, we hope to engage in further research methods that can inform design requirements that address our design question.

Method

The research team attempted to capture as much data about the Light Rail experience as possible. We focused on the built environment to see if there were relations between stations and train layouts to where commuters waited in addition to seeing what components of the station contribute to safety or lack of safety. We also focused on learning about the possessions, tools, and technology that commuters brought or interacted with

while using the Light Rail system to see what they did with them and where they placed them. Lastly, we focused on the interactions that individuals performed to see how they responded to others around them or how they kept to themselves. Anyone who was at a station or on a train was considered a candidate for observation. Each of the four members of the team collected three 30-minute observations, for a total of 12 observations spanning six hours.

Two kinds of observations were performed:

1. Researchers remained at a single station for the entire duration of the observation.
2. Researchers rode on the Light Rail train between two stations (e.g., between the U-District Station and Westlake stations) back and forth throughout the duration of the observation.

To help increase variability in field observations, no station or route was observed more than twice. A sheet documenting the time, location, and researcher was created to help assign stations and routes. Seven stations and four routes were observed (See Appendix 1, "Observation Planning Table").

Notes were collected on mobile devices for both convenience and to stay subtle with our observations, ensuring that researchers were not noticed by subjects. The mobile devices were also used to take photographs of the stations and trains; subjects' faces were not photographed. Observation notes were then moved to Google Documents (See Appendix 2) where they were cleaned up for clarity.

Each individual observation was then moved onto a sticky note on a Miro board. The stickies were broken into three separate categories, one for each of the focus areas previously mentioned. The stickies were then further broken down into common themes and tagged; some stickies were assigned multiple tags. The work in the Miro board allowed the research team to parse through all of the data and look for major overlying themes/issues. We were able to then quickly find supporting data for each theme/issue by filtering by tag.

Results

From our field research based on commuters' behaviors at the stations, on the Light Rail, and in the built environment of the stations, we found issues with the stations' layout, security presence, and commuter phone usage.

Station layout gives way for individuals to hide from line of sight

Each Light Rail station has a different layout; however, during our observations, we found that many of the stations had physical structures such as pillars, elevators, and stairs that reduced the visibility of certain parts of the platform. Many of these physical structures made it difficult to make out what individuals were doing without moving from our

observation spot. (Images 1 and 2) During our observations, certain individuals would move to the opposite ends of the stations, which often had physical structures that blocked the line of sight from this area to the central platform area, where most commuters would wait for the Light Rail train. Some layouts had nooks and corners that people gravitated toward instead of the open space closer to the platforms, hiding from others. Ultimately, we found that the reduced visibility as a result of the physical structures made it difficult to observe all of our surroundings at once, which is a significant factor in personal safety. Without proper awareness of their surroundings, commuters are vulnerable and can be put in unsafe situations.

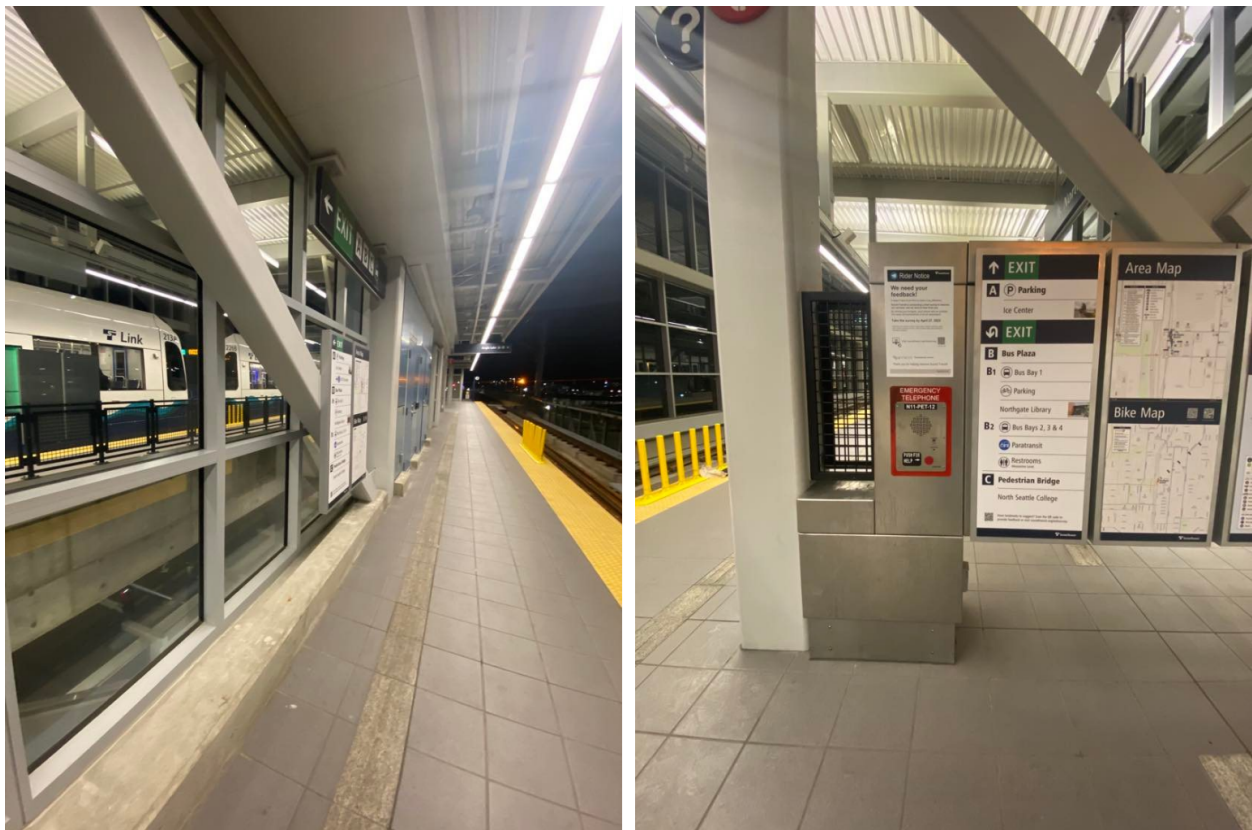


Image 1 (left): Physical Structures make it difficult to see the far end of the station where benches and elevators are located. Image 2 (right): Pillar with signage is informative but it also blocks the other half of the platform.

9:34 PM "The pillar makes it difficult to see the whole platform and who is there."

11:14 PM "Two male-presenting individuals get up from the bench, go to the very end of the platform and start talking again. I think they go up the elevator. I don't know, it is difficult to know where they went."

9:52 PM "Male-presenting individual pushing a wheelchair moves towards the opposite end of the station away from the crowd of people."

9:55 PM "Male-presenting individual with a limp and wearing a dark jacket sits down at the far opposite end of the station and turns around to look at me from a distance."

Prevalence of Station Security Resources

Our observations about safety resources was almost all about security personnel, with only 1 observation for another resource (the emergency telephone). Most of the stations have 1-2 security guards who have to watch the entire station. Besides the security personnel, there are few resources (e.g., posters, signs, etc.) that clearly communicate what safety measures are in place at the Light Rail stations and trains, e.g., the cameras, and emergency telephones. We found that these security guards were not able to stay at a single location for the entire duration of our observation, often having to get on an arriving train and leaving the station unattended, i.e., leaving only commuters at the station. Without the presence of security personnel, the stations and trains were left without their most prominent safety resource.

10:23 PM "Another security person walks by. They are walking back and forth."

8:52 PM "Call lines are located at the ends of each platform"

9:28 PM "The male-presenting individual in black is not in the security's line of site"

9:29 PM "Security are more occupied with talking than looking at the whole platform"

9:50 PM "The security guard turns their head away from the cussing individual, then continues their conversation with a female-presenting individual with red hair."

9:23 PM "Group 2 enters and the security guard has stayed in the middle of the platform."

9:30 PM "The security guard gets on the next Light Rail leaving the station alone."

Phone Use

Almost all commuters brought smartphone devices with them into the Light Rail stations. From our observations, commuters primarily used their devices while waiting for the trains or while aboard them. Notably, commuters seemed to ignore noteworthy events happening around them, e.g., announcements and burrito-making, instead opting to continue using their devices.

Evidence

9:44 PM "Pause as the Light Rail has stopped momentarily as announced by the speaker and the word display. No one is really looking around, they're on their phones"

10:50 PM "POC female-presenting 30-40s; denim bag; comes down stairs; taps orca card to reader; waits for a moment before pulling out phone"

10:12 PM "Black male-presenting individual making a burrito in the middle of the car. No one else is looking instead they are on their phones"

9:45 PM "Middle age male-presenting individual sits and starts to read messages on phone as we wait"

10:46 PM "3 male-presenting and 1 female-presenting individuals sit in 2 rows and converse with one another. One of the male-presenting individuals looks at his smartphone while talking and holding onto the car railing"

Prioritization

1. Station layout gives way for individuals to hide from line of sight
2. Prevalence of Station Security Resources
3. Phone Use

The Station's Layout is our first priority because it addresses how commuters and security personnel are unable to keep an eye on all of their surroundings and the implementation of adding mirrors to the stations is not resource-intensive, making this the most feasible priority. To increase safety, above all else, we need to make it easier for individuals to be aware of their surroundings and scan the entire environment. Prevalence of station security resources is the next significant finding because it involves the user's pain point for a lack of communication about all of the available safety resources. Commuters should be made aware of all of the safety resources present at the stations and trains, especially because at present, our observations show that security personnel are the only visible resource. The last significant finding would be phone use as almost every individual that we observed spent some time on their device while at a Light Rail station or onboard a train. Commuters being preoccupied with their phones causes them to miss out on important events occurring in their surroundings, but this is not as critical of an issue as the first two, as the first two help to prevent the crime from happening, and this one just allows the commuters to be aware when it is happening. This information can be leveraged to tailor safety messaging that can be accessed via smartphone (e.g., QR codes on posters).

Recommendations

It may be difficult and costly to make significant changes to the layout of the Light Rail platforms and stations, so our recommendations for this result may be more relevant for future expansions of the line.

To address the current layouts of stations, we realize that redesigning the physical structures such as pillars or stairs is too invasive on the existing infrastructure. However, a design recommendation we have for current stations is to place safety mirrors around the perimeter to allow individuals to scan areas of the platform that are out of their line of sight.

To address the issue of station security we recommend making the other safety resources, like the emergency telephone and security cameras, more noticeable to commuters. Large and prominent signs that clearly point out these resources would help communicate to commuters that security personnel is not the only resource they can depend on.

To address the issue of phone usage, we recommend conducting further research on how cell phones might hinder awareness of surroundings through user interviews. In addition, we would like to explore a potential safety solution in which Sound Transit could leverage this information by including QR codes on safety materials (e.g., posters or banners) to help communicate resources regarding safety. With regard to the kind of resources that should be prioritized, we recommend a hotline for reporting suspicious activity. See Image 3 below for an example of a potential poster containing info about a hotline, with additional info being accessible via QR code.



Image 3: Sketch of what a phone safety materials could look like at a Light Rail station

Discussion & Reflection

For understanding our results based on the Light Rail System, it is important to understand that commuters are to tap and pay for fare at a card scanner and that fare enforcers are there to check occasionally if they have paid while riding the Light Rail. With this, there are

no staff stationed to be at the Light Rail at all hours of operation so anyone can freely walk in and out of the station and no two stations nor platforms have the same layout.

The limitation of these results is that they are based within six out of the 19 total Light Rail stations on the northern part of the line at night. This causes our findings to be more generalizable to stations located within the city than those located more southwards.

The strength of this work is that by observing multiple stations we gained an insight into how the built environment with the different layouts of the platforms have benefits and downsides, while the similar observations on the people's behaviors at different times and locations indicate a strong pattern for what we need to pay attention towards.

In our next field research study, we would do more observations at stations that are located south of the Stadium Station to see more stations that are outdoors and see how their layouts can create a safer experience. For observations that involve riding the Light Rail, riding in different spots of the car would help us see more people in the different seats when it gets more crowded..

Something that was fun and surprised us about our field research study was how some passengers didn't pay attention to some of the strange actions like making a burrito in the middle of the car or placing and then picking up cardboard from the tracks. Also, we were surprised at how many folks initiated a conversation with us at their own discretion.

Next Steps

Based on the results of our field observations we hope to utilize interviews to gain a better insight into the why's and inner thoughts of our users that field observations didn't allow us to do. With our interviews, we hope to learn more about how the built environment of the station layouts affects how safe our commuters feel in addition to learning about phone usage and safety resources.

Appendixes

References

[1] SoundTransit. "Seattle Area 2019 Regional Report." SoundTransit, Jan. 2019.

[2] Chen, Natasha. "Statistics Show Robberies near Public Transit Have Increased." *KIRO 7 News Seattle*, KIRO 7 News Seattle, 24 July 2014, <https://www.kiro7.com/news/statistics-show-robberies-near-public-transit-have/81752944/>.

Appendix 1. Planning materials

Research Questions

1. Where are people waiting at the stations?
2. How are people behaving around others at the station?
3. What factors contribute to an unsafe Light Rail experience?
4. Who (what demographic) uses the Light Rail system the most often?
5. Who is most likely to feel unsafe using the Light Rail?
6. What methods or tools do commuters use to protect themselves on the Light Rail?
7. Are there resources to help people keep safe at the stations?

Participant Profile

- Any age group
- Any individuals that use the Light Rail at night

Our group chose these characteristics because our main focus is on commuters, defined by us as anyone who is using the Light Rail systems. We decided to leave the general backgrounds and demographics of our participants open as we want to observe how these identities may connect to their experiences.

Areas of Focus

Built environment

- How are the stations laid out?
- What elements of the station are contributing to safety?
- What elements are fostering an unsafe environment?

Demographics

- What groups of people are there at the Light Rail station?

- What groups of people are facing the most problems?

Overall experience

- How does an individual's body language communicate their feelings while taking the Light Rail?
- What do people do while waiting to board the Light Rail at night?

Tools and technology

- How does the person interact with technology while they are at a Light Rail station?
- Do people prefer using one technology/tool over another?

Possessions

- What are they holding/wearing?
- Are their hands full?
- Do participants tend to equip themselves with safety or self-defense tools?

Family and kids

- How do families and those with kids behave at the station?
- Do minors tend to use the Light Rail unoccupied by an adult?

Traffic

- Where are people coming in from and waiting at the station?
- What is the flow of traffic for individuals leaving the Light Rail car and those entering?

Observation Planning Table

Name	Obs. #	Station Start	Observation Type	Status	Date Done
Katie	2	Roosevelt Station	Station	Complete	4/8
Katie	3	U-District	Station	Complete	4/8
Katie	1	Northgate Station	Train	Complete	4/8
Ryan	2	Int. District.	Station	Complete	4/9
Ryan	3	Stadium	Station	Complete	4/9
Alfie	1	Capitol Hill	Station	Complete	4/10
Alfie	3	U District	Station	Complete	4/10
Alfie	2	U District	Train	Complete	4/10
Frannie	2	Northgate	Station	Complete	4/11
Frannie	1	Roosevelt Station	Train	Complete	4/11
Frannie	3	Roosevelt Station	Train	Complete	4/11
Ryan	1	U-District	Train	Complete	4/14

Appendix 2. Field Notes

Frannie Ello's Observation #1

Background

- Location: Roosevelt Light Rail Station -> UW Station -> Northgate Light Rail Station
- Start Time: 9:18 PM
- End Time: 9:48 PM
- 2 sets of stairs, 2 sets of escalators, 1 visible elevator

At Roosevelt Station Platform

1. 9:19 - station is empty except for a single male-passing individual sitting at a bench near the north gate station line
2. 9:19 - a Light Rail train proceeding towards north gate station arrives, several individuals are walking toward different sets of stairs at the station,
3. 9:21 - MP with teal jacket comes down the stairs and walks toward the angle lake station car, is wearing white earphones and is holding smartphone in his right hand
4. 9:22 - a feminine voice announces that a "northbound train is arriving in 2 minutes"
5. 9:23 - MP with blue jacket walks to far left area of station while walking his bicycle to the platform
6. 9:24 - feminine voice on intercom announces "sound transit does not tolerate harassment, please report anything suspicious to transit employees"
7. 9:25 - maskless MP walks to southbound platform, holding a set of keys with his hand on what appears to be a pocket knife
8. 9:27 - southbound train arrives at the south platform

On Southbound Train

9. 9:28 - MP walking bicycle enters southbound train, is on their smartphone while holding their bicycle and sits down
10. 9:29 - a MP and FP couple sit to the front left of the MP with the bicycle, they are on their smartphones while the MP is tightly holding onto his backpack
11. 9:30 - arrive at U District station, two individuals enter the car
12. 9:31 - an older looking MP enters the car and sits in front right of me, he is crossing his arms in front of his red purse and appears to be wearing white earphones
13. 9:31 - MP individual with short brown hair sits opposite right of me, his is looking down towards the ground to what I assume is a smartphone or object]

Exit Light Rail at UW Station

14. 9:32 exit UW station, MP with red purse exits station
15. 9:33 - MP individual is walking around with a cane, appears to have a slight limp and walks around a wheelchair

16. 9:34 - MP with traffic vest is mopping up northbound platform, stands next to 3 "wet floor" cone-shaped signs

On Northbound Train

17. 9:36 - MP at right with beanie has hands closed together, not holding any visible objects
18. 9:37 - FP sits in middle of car at inward facing seats, is holding onto luggage and looks at round at other individuals on the train, scanning other folks
19. 9:38 - arrive at U District station, 10 individuals exit the area and 4 enter
20. 9:39 - MP with sound transit jacket exits the station
21. 9:39 - FP with leather jacket sits in front of me, is putting earphones and smartphone in jacket, adjusts body to sit more upright and [appears to be preparing to exit the car upon arrival]
22. 9:40 - FP that scans the room with luggage starts up and collects her belongings, then leaves the car
23. 9:41 - male with dark hair exits light rail car, carries skateboard on left hand
24. 9:42 - MP wearing hoodie is nodding head, swings foot over seats and lies backward
25. 9:43 - FP individual sits with eyes closed and earphones in ear, [appears to be sleeping] as head [nods involuntarily]

Frannie Ello's Observation #2

At Northgate Station

1. 9:50 - Individual holding onto multiple leases with 3 dogs attached is holding 2 luggage's and is cussing, "this is the fucking angle lake station"
2. 9:50 - the security guard turns their head away from cussing individual, the continues conversation with woman with red hair
3. 9:52 security guard ends conversation with red haired FP, walks to opposite end of station
4. 9:52 MP pushing wheelchair moves toward opposite end of station away from crowd of people
5. 9:54 MP is with dark jacket is with a limp walking [towards me and appears to follow me as I walk around the corner of the opposite end of the station]
6. 9:55 MP with limp and dark jacket sits down at far opposite end of station and turns around to look at me from a distance
7. 9:57 - security guard returns to original spot, listens to radio sound
8. 9:58 - MP with dark jacket and limp enters southbound train
9. 9:59 - MP individual with tan jacket has hands in pockets, takes hands out and is grasping a pocket knife in one hand and a small flashlight in the other
10. 10:00 - second individual with sound transit vest is walking with a blue backpack on
11. 10:00 - MP covered in gray blanket walks towards us, says "hey hey, if you push the button you can get into the train"

12. 10:02 - notice an "emergency telephone" push for help button on information pillar
13. 10:05 - multiple individuals [10-15] exit northbound train, 6 of them are holding onto their smartphone in one hand
14. 10:08 - MP wearing sound transit vest is carrying backpack and exits stationary light rail car
15. 10:09 - a hooded man sits inside the stationary light rail car and is looking downward, [does not appear to be looking at anything in particular but rather lost in thought]
16. 10:12 - individual is lying on the station seats and [appears to be sleeping]
- 10:12 - tall MP wearing leather jacket exits light rail car with a lit cigarette in hand

Frannie Ello's Observation #3

Background

- Location: Northgate light rail
- Start Time: 10:20 PM
- End Time: 10:50 PM

Northgate Light Rail

- 10:25 PM - light rail car is empty
- 10:26 PM - two individuals exit northbound light rail car
- 10:26 PM - FP with backpack and handbag enters light rail car, walks to opposite car and is holding a white napkin
- 10:29 PM - FP with napkin wipes her hands and handbag with napkin then rummages through her backpack

Roosevelt station

- 10:31 MP with a red backpack enters a light rail car and sits in front of us. He crosses his hands in front of him as he sits
- 10:32 FP with napkin is rummaging through her pockets and backpack, [appears to be looking for something]

U-District station

- 10:34 MP with dark hair enters light rail car while holding phone and a bag, sits at inner facing seats
- 10:35 - FP with napkin stops rummaging through her objects, faces body towards my right side of the train

UW Station

- 10:37 - i exit train and reposition to northbound platform
- 10:38 - man with cast on right leg and holding crutch underneath right underarm is walking around the station near the northbound platform

- 10:38 - group of 3 MP holding large shoulder bags [gym bags?] are conversing and looking at their smartphones while standing at the northbound platform
- 10:39 - 14 individuals (FP and MP mixed) stand on the northbound platform
- 10:40 - 4 MP and 1 FP stand near the elevators, are conversing in a circle and some on their phones, a couple of them have backpacks on with what [appear to be tennis rackets attached to the back]
- 10:42 - blonde FP walks toward northbound platform and fiddles with hands while looking around at other individuals at platform

On Northbound Train

- 10:43 while entering train, waiting for group of 3 MPs walk up stairs of back of train, a MP with dark hoodie is waiting to exit train and says, "hurry yo ass up" to the 3 MP
- 10:44 - a FP sitting to the back of the train is sitting with a luggage bag and appears to be reading a book
- 10:45 - FP enters train at u district station and stands with back to the emergency intercom push button panel
- 10:46 - 3 MP and 1 FP sit in 2 rows and converse with one another. One of the MP looks at his smartphone while taking and holding onto the car railing
- 10:50 after i exit the station, a transit security man with a walkie talkie walks around the station entrance on 65th

Alfie Aguilar Vidrio's Observation #1

Background

- Location: U-District Station
- Start Time: 9:50 PM
- End Time: 10:20 PM
- 2 sets of stairs, 2 sets of escalators, 1 visible elevator

At U-District Station Platform

1. 9:50; *I arrive at station via escalator (42nd st entrance)*
2. 9:50; noticed that a w f-p middle-age woman with 2 bags (one traditional handbag and what appears to be a grocery bag) was sitting down on the benches facing the south-bound train; using sort of foot prop; hunched over, holding phone in hand, but not really paying attention to it; seemingly trying not to fall asleep
3. 9:53; *[did a little lap around the station]*
4. 9:54; noticed a 20-30s couple poc m-p and w f-p couple (no masks) standing together; walking around each other; talking; both holding brown grocery bags; the m-p walked around, making a lap and rejoining the f-p
5. 9:55; poc asian 20-30s f-p, waiting by the north gate line; holding a green handbag;
6. 9:56; *[NB train arrives]*

7. 9:57; two w 30-40s m-p walk down and stand next to each other; do not acknowledge one another; one holding a plastic bag; one without anything; one without anything walks away to other side of station; probably not together
8. 9:58; *[SB train arrives]*
9. 9:59; passengers board and deboard the train; 1 w f-p individual wearing backpack walks to escalator and goes up
10. 10:00; 30-40s poc 2 f-p wearing headscarves, both carrying handbags, 1 with a brown tote; talk to one another
11. 10:01; 20-30s asian m-p walks down from escalator, stops next to the sign, in front of benches, looks at their phone, paces around line; looking around
12. 10:02; 40s-50s w m-p in electronic wheelchair arrives via elevator; move under the sign for the north gate line; does not move further; on phone;
13. 10:04; 20-30s w m-p, sits down on bench facing SB train; reclines; looks at phone
14. 10:05; poc aa 20-30s f-p, sits down next to them (2 seats down); also stays on phone
15. 10:05; *[NB train arrives]*
16. 10:05; people get off train; use stairs to go up
17. 10:07; two men, pocs, 20-30s; one wearing a brown side bag arrive within a mins of each other; stand near one another but never acknowledge each other;
18. 10:08; SB train arrives; everyone boards/unboards
19. 10:09; person wearing all black and carrying a brown paper bag rush on literally as doors are closing
20. 10:09; couple; 20-30; w m-p & asian f-p; arrive as train is leaving; watch it pass by; walk to bench and sit there, in the middle two seats; talking to one another; no masks; m-p drops phone at one point
21. 10:09; sanitary worker rides down on elevator; starts sweeping
22. 10:10; m-p, 20-30s; carrying 2 backpacks stacked on one another and a plastic bag stuffed with items arrives; sets down their things next to the bench; pulls out a bunch of cut up amazon boxes and places them briefly on the tracks; walks back to their things; looks through one of the bags; the couple occasionally look over (to their left) to look at m-p; puts on both backpacks on again; walks around the station, occasionally stopping to look at something; perhaps shelter insecure
23. 10:14; w 20-30s m-p; with hat and drink sit on the bench, facing NB train; uses phone as they wait
24. 10:15; w 20-30s m-p; sits on the other side of the bench; uses phone as they wait
25. 10:15; *[NB train arrives]*
26. 10:16; people board & unboard
27. 10:17; m-p 20-30s w; wearing large raincoat; stands by SB train near escalator, just looking around
28. 10:18; *[SB train arrives]*

Alfie Aguilar Vidrio's Observation #2

Background

- Location: U-District Station to University Street Station
- Start Time: 10:27 PM
- End Time: 11:02 PM

U-District Station

1. 10:27; security guard is walking around station
2. 10:28; w m-p 20-30s, carrying backpack arrives, walks from one side of the platform to the other; boards the NB train
3. 10:28; *[NB train arrives]*
4. 10:30; poc asian 20s m-p, arrives and quickly walks over to bench and sits facing SB track
5. 10:31; 2 f-ps 20-30s; come down stairs, walk to bench facing NB; sit and talk to one another; one rests their head briefly on the other (GAY??); shows something to the other one on their phone
6. 10:33; *[SB train arrives; I board]*

On Southbound Train

7. 10:33; m-p w 20-30s; wearing hoodie, scarf, boots, large coat; stands near door on their phone; wearing earbuds of some sort; gets off at cap hill
8. m-p 30-40s, wearing large headphones; sits in seats near back of car
9. 10:35; *[train arrives at UW]*
10. 10:35; w 20-30s f-p with phone and large headphones boards the train and seats next to the accessible middle seats; places backpack in seat next to her; sitting in seat closest to window
11. 10:35; poc 20-30s f-p; wearing wired headphones; sits in back of car; completely opposite side of me; also chooses seat closest to window;
12. 10:39; *[train arrives at Capitol Hill]*
13. 10:39; poc m-p wearing a red jacket and matching gloves and beanie gets on train and sits in the window seat in the first row of the back of train; has airpods in; carrying UW drawstring backpack
14. 10:39; poc f-p gets on train; white tote; sits across from previous passenger; sits in aisle seat
15. 10:42; *[train arrives at Westlake]*
16. 10:42 m-p in flannel gets off (where did he come from??)
17. 10:43; poc m-p 20-30s; large backpack; sits in town in front of me; 3rd from back; places backpack next to them
18. 10:43; *[train arrives at University Street; I get off]*

University Street Station

19. 10:43; asian m-p from earlier (@10:30) gets off
20. 10:44; *[I make it to the northbound side of the platform]*
21. 10:44; heterosexual presenting couple, w, 20-30s, is standing next to stairs; holding each other; leaning against wall
22. 10:45; individual with bright blue hair; hoodie drawn; all black clothes; seated on bench closet to platform; has large paper bags placed next to them; occasionally glances up; many face piercings & tattoo
23. 10:50; poc f-p 30-40s; denim bag; comes down stairs; taps orca card to reader; waits for a moment before pulling out phone
24. 10:51; *[NB train arrives; I board]*

On Northbound Train

25. 10:52; the het couple sits in the second to last row on the train; m-p rests head on f-ps shoulder; the poc f-p sits in the seats closest to the doors, gets off at cap hill
26. 10:52; *[train arrives at Westlake]*
27. 10:52; w m-p 50-60s; stands up; no devices visible; carrying large suitcase, lifts it with ease; gets off
28. 10:53; a couple walk onto the train; 20-30s; holding hands; sit in first row in my section; m-p is w; f-p is asian;
29. 10:55; *[train arrives at Capitol Hill]*
30. 10:56; w m-p 20-30s, dressed elegantly (i.e., GAY) gets on opposite of train; sits at the back; large hat covers most of face; looks over briefly; not wearing mask; on phone
31. 10:56; 20-30s m-p poc sits down in the middle part of the train; placed backpack between legs; phone in hand, but not using it; seems to be vibing hard to music; earbuds in; dyed blonde buzzcut
32. 10:59; *[train arrives at UW]*
33. 11:02; *[train arrives at U-District]*

Alfie Aguilar Vidrio's Observation #3

Background

- Location: Capitol Hill Station
- Start Time: 11:09 PM
- End Time: 11:40 PM
- One platform at the center of the station; tracks on both sides; 4 escalators, 2 pairs, 2 going down, 2 going up

At Capitol Hill Station Platform

1. 11:09; *[I arrive at station via SB train]*

2. 11:09; m-p; sitting at bench facing NB leaning over on their phone; wearing airpods
3. 11:11; two 30-40s w & poc m-ps talk to each other on the bench facing the SB track;
4. 11:12; m-p 20-30s, wearing short shorts, large backpack, umbrella; wearing airpods sitting on bench facing NB, 2 seats down from other m-p
5. 11:13; *[NB train arrives]*
6. 11:13; people board & unboard; only aforementioned people left at station
7. 11:14; 2 m-p get up from bench, go to the very end of the platform and start talking again; go up elevator?; idk where they went
8. 11:15; poc aa 20-30s m-p arrives via escalator; places backpack in front of them; waits while on phone;
9. 11:17; w f-p 20-30 comes down escalator and stands near the NB tracks
10. 11:17; heterosexual-p couple comes down escalator; m-p asian; f-p w; stand next to SB track; talking
11. 11:18; individual (no demos visible) in backpack runs down escalator, runs to the SB track, to the very end of the platform
12. 11:19; couple; a, 20-30s; comes down the escalator, stand in front of it for a moment looking around; make their way to the center of the platform near the NB track
13. 11:20; m-p, all black clothes, hoodie up, black hat; very few physical attributes visible; slowly walks down escalator; stands near the SB track
14. 11:22; elderly w m-p stands near SB track, occasionally walks around; never veers far from spot at center of the platform
15. 11:22; a pair of f-p 20-30s walk down the escalator; one of them has a pack of white claws; one places their arm around the other and starts touching their face (GAYYY??)
16. 11:23; *[NB train arrives]*
17. 11:24; *[SB train arrives]*
18. 11:24; basically everyone leaves platform
19. 11:26; m-p w 30-40s, carrying a backpack & skateboard arrives via elevator
20. 11:26; m-p 20-30s poc; arrives via escalator and walks to the far end of the platform, stopping briefly to look at the map
21. 11:27; m-p w 20-30s comes down escalator, looks around, goes back up another escalators on other side; probably went the wrong way after getting off train
22. 11:28; f-p poc 30-40s comes down escalator; holding a small white to go box in hands and a white tote in the other; walks to area behind escalators to sit on benches
23. 11:28; w m-p 30-40s comes down carrying a guitar and plucking the strings but not really playing; goes to stand near NB track
24. 11:30; group of 4 m-p pocs 20-30 come down via elevator, walk to other side of platform near benches
25. 11:31; w f-p 20-40 with backpack and bright pink over ear headphones gets off escalator; stops on other side and looks at phone for a few mins before making their way to the other side of the platform
26. 11:32; m-p poc 20-30s w/ backpack and airpods gets off esca and walks to opposite side of the platform

27. 11:33; 2 individuals with masks and hats walk off escalator; stop in front of map; lean on it; close to NB track
28. 11:34; 2 f-p 20-30s get off the escalator and don't really move very far away from it; stand their talking to each other; one is holding their phone in hand
29. 11:36; m-p 20-40s poc; with a plastic bag quickly walks from the escalator to other side of platform
30. 11:37; m-p 20-40 w with black backpack walks off escalator, doesn't go far, stops in front of NB track;
31. 11:38; m-p in raised hoodie gets off escalator and moves next it, to the NB side, placing a drink on the rail and standing next to it
32. 11:39; fp 30-40 poc walks down from esca, doesn't move far from bottom; moves towards SB track
33. 11:40; *[NB TRAIN ARRIVES]*

Ryan Bautista's Observation #1

Light Rail

Time: 9:31pm-10:32pm

Perspective:

In the back of the cart, sitting in the inner seat.

Overall atmosphere & first impressions:

- Not too crowded with the sounds of the Light rail traveling and minimal sounds coming from commuters.

Field Notes:

1. 9:31 U District
2. 9:32 Black female with headphones on, sitting alone while one phone
 - White male on phone with a mask
 - POC male on phone with a suitcase under their seat
 - Asian male wearing AirPods masked sitting alone
 - 2 white males sitting and talking to each other on the side of the car
 - Black Female Wearing AirPods typing on their phone while standing
3. 9:33 UW Station
4. 9:34 white male sits in back massless with earphones
 - w male w/ bike mask less backpack dark clothes fidgeting with bike near the entrance
5. 9:35 white male old standing near door looking down
 - w male old standing at door looking around
6. 9:36 Male In a neon hoodie sitting by themselves hunched back with their hood up
 - 2 White Female sitting together and being friendly and comfortable
7. 9:37 Capitol Hill

- Man with bike is in the way of people preparing to leave
 - Girls laughing as they leave
 - POC Male and female couple stand near door
 - The Bike mans leaves bike standing and sits down away from it [it's in the way]
- 8. 9:38 Toolbox next to bike falls and makes a large sound everyone looks back at the source even guy with hoodie
 - 1/2 of the chatting guys get up and they both are preparing to leave
- 9. 9:39 west lake Man with bike gets up and preps to leave 1/2 stair as the man others are staining
 - The couple moved up cart the car towards the doors
- 10. 9:40 White male sits down masked and puts bag towards window
- 11. 9:41 Man in the back is resting his head on corner
 - White female on phone sitting alone bag next to her tote near her feet. Hold on to the bag.
- 12. 9:42 university street
 - White male (middle aged) sits alone in the middle has a magazine in hand
- 13. 9:43 Asian Female sitting and talking to another across the aisle facing the other half
- 14. 9:44 Pause as the Light Rail has stopped momentarily as announced by the speaker and the word display. No one is really looking around more they're on their phones
- 15. 9:45 Middle age man man sits and starts to read message as we wait
 - Many people are wearing darker colors and mostly black and blue
 - Girl talking at the aisle is more into the conversation with feet in aisle doing big hand gestures
- 16. 9:46 another announcement
 - Girl whips out a bag from the seat I. The front of here and now is on her phone.
- 17. 9:47 A person all in black walked in and sat in the middle bendy part.
- 18. 9:48 everyone is really into the devices that they are using
 - Female in black moved to a seat closer to an edge next to another person and says sorry
- 19. 9:49 [this is a little weird] It is silent, no one is really talking, the female in black moves again to the door and then out of the cart.
- 20. 9:50 a huge group of students is passing everyone is looking at them some may be drunk Many of them female and male mainly white enter a cart all are a bit loud, but silent in the cart sitting together and crunched together
- 21. 9:51 there was an announcement by a real voice but it was barely audible and barely explained what was happening.
- 22. 9:52 students fun out of cart people look at little at them
- 23. 9:53 still at the station some new people entered a couple female male white b touchy
 - announcements that we are leaving
 - m b started to doze as he sat
 - people on phones continue to be on phones man in the back changes his resting position

24. 9:54 pioneer square
 - o POC male picks up middle man's magazine w/o asking and then puts it back down
25. 9:55 White male in black light suit with a schooler in cart in the very middle
 - o International District
 - o Couple leave
26. 9:56 male white sits down on putter seat in the mid male b mid looks around and waves older
27. 9:58 Entering Stadium Man looks around and moves to another seat to be by himself
28. 9:59 people don't really move or change positions
29. 9:59 woman initiates convo with a man w/ magazine and they chat about it
30. 10:00 in SODO Male enters and goes straight to leaning near the door Man walks through whole cart peers out and then sits on outer seat male white 01 scoots over
 - o Guy with a blue hat drops something people in the surrounding area looks
 - o Black Female looks around a bit
 - o White Female has a boba in their lap
31. 10:02 the two are still chatting at a reasonable level leans in to hear better
32. 10:03 beacon hill People shuffle to leave
 - o Convo ends man leaves his magazine on the chair People with luggage move from the mid to the other mid to put luggage into a cubby B male
33. 10:04 IS shaking a water bottle at nothing. End of my baker Local mid seat
34. 10:12 male b making a burrito in the middle of the car No one else is looking bc they are on their phones not acknowledging it
35. 10:13 entering male and female white immodestly moves someone luggage in the cubby and the man looks up at them (kinda loud)
36. 10:14 male v burrito still eating massless tortilla is on his lap Fam is looking at the loud couple,
37. 10:15 sodo male b grabs bag of tortillas Family are all chilling I'm the back daughter is lounging Mask case is empty
38. 10:16 Kinda dirty orange on the group, a scrap and a mystery bag in the seat in front of me.
39. 10:18 Air system is kinda loud and family is maskless
40. 10:20 Daughter is just looking around playing with hands
41. 10:20 Chinatown Fam dad puts away phone and walks to partner male b packs up and gets up leaves and takes the elevator up
42. 10:21 male a gray beaming and clothed sits on outer edge and gets on phone
43. 10:22 pioneer The fam is prepping to leave putting on things and stretching Move to back Guy talks to girl who just got on g had AirPods on
44. 10:23 uni street
45. 10:24 couple has not stopped talking and same volume
46. 10:25 Westlake people on edge have possessions next to them
 - o Couple say good bye maybe just co workers

- Guy with red beanie male white muscular mask but down goes straight to back from mid and and then window, at next to them
- 47. 10:27 announcement of suspicious activity and again but with the phone number Even on the word monitor
- 48. 10:28 guy chatting now has resorted to phone and backpack in his lap
- 49. 10:28 cap hill Many young people enter along phone a group talk and near each other Some prefer to go straight to standing near the door 2 male white 1 male white stand in the middle (maskless)
- 50. 10:30 male I sits in bend mid and legs spread
- 51. 10:31 female white had tote secured to her
- 52. 10:31 male white has hand draped over bag
- 53. 10:32 enter uw
 - End

Ryan Bautista's Observation #2

International District Station

Time: 8:38pm-9:08pm

Perspective:

In the back of the cart, sitting in the inner seat.

Overall atmosphere & first impressions:

- Open space to the outside the station is kinda station kinda cold

Field Notes:

1. 8:38 People waiting for the next Light Rail
 - 2 female male standing mid from the platform
 - 2 males (White and Asian) and a POC Female are standing together right next to the bench across a group comes down from the elevator
 - 2 Female (WHite and Asian) walk from the left entrance to the middle to an available bench
2. 8:39: I see a pidgin
3. 8:40: Northbound train is arriving Left group of a are standing next to the staircase little rowdy
 - Total of 5 benches on each side of the tracks [if you got on the wrong side you would have to up and to the other side]
4. 8:41 escalator only goes up one set is broken
5. 8:42 Suspicious activity announcement
 - People peered over to see the train arrive and stay behind the yellow line
6. 8:43 Someone was trying to get off but the door wouldn't open for them.
7. 8:44 I'm on the wrong side I need to be on.
8. 8:45 Elevators are well lit

9. 8:46 outside is also very well lit and another of the escalators is broken
 - o A family walked down from stairs with kids and luggage (side with nf escalator)
 - o This side of the tracks isn't as well lit as the other side
10. 8:48 On the outer side of the rails, rail workers are walking alongside the tracks.
 - o There is 3D art on the wall cool but makes it difficult to lean on
11. 8:49 male a is leaning on a pillar All but one of the benches are occupied but there are people standing near it
12. 8:50 A good handful of people prefer to stand at the midline than sit or lean.
 - o There are updates on when the bus arrives 2 mins before and when it arrives
13. 8:52 call lines are located at the ends of each platform
 - o The worker is cleaning the staircase with a leaf blower female a is waiting on a bench while using her phone
14. 8:53 POC Male enters on the right side and walks towards the middle
 - o The train arrives at a slow pace that's not frightening.
15. 8:54 people who get off the platform near an elevator take while most walk to the nearest staircase
16. 8:55 Workes clean from above the trash and blow it to the platform one on the platform calls up them will a vocal signal
 - o A female/male couple gets to the platform and go to a corner where the elevator is
17. 8:56 Worker picks up trash but blows others like leaves off the platform to the tracks
18. 8:57 Again people are standing near the benches but not at them
 - o lost of students of mixed races or one (typically Asian or White) together
19. 8:58 Groups are typically spaced out very far
 - o Worker POC male picks up trash with a stick and with it puts a drink in the track but lets the straw fall.
20. 8:59 2 male 3 female Asian family get to the platform and stand closer to the elevator in a circle pattern one is drinking a drink
21. 9:00 hooded individual poc walks around as they wait holding a bluffing plastic bag
22. 9:01 female b headphones and drink walk down the stairs and across the whole platform
23. 9:02 when people are by themselves they are still and don't move too much but groups see more movement and interaction as they are conversing
24. End

Ryan Bautista's Observation #3

Stadium Station

Time: 9:07-9:37pm

Perspective:

Near the side of a bench booth in the middle of the platform

Overall atmosphere & first impressions:

- Outside, cold and chilly, one platform for both sides and a little wet.

Field Notes:

1. 9:07 A group of college students intoxicated some go the wrong way off the platform some go the right way. and info to get to the edge of the platform
2. 9:08 Female POC with a dog gets on Light Rail
 - Group of 5 with luggage get off the Light Rail
3. 9:09 Two emergency call/info areas in the middle of the platform
4. 9:10 The platform is near the bus depot
 - Announcement for looking both ways and using designated crosswalks for safety
5. 9:11 Very well lit and evenly distributed
 - Card scanners are only on one end of the station to designate the entrance
 - Garbage is at both ends of the platform
6. 9:12 Pathway out is not well lit
7. 9:13 4 benches total
8. 9:15 Lots of signage for which side is which
9. 9:16 Middle-aged Asian male stands and goes on their phone
10. 9:17 Security comes off the station and leaves the
 - A white male with a bike gets off the bike trail and onto the platform
11. 9:18 Asian male is occupied with their phone but glances at the announcement display
12. 9:19 Asian male above puts down the bag and slips on a coat and goes back to the phone
 - A White male tried to throw something on the track and landed on the yellow line
13. 9:20 no one gets off lin
 - An elderly Asian female goes to the nearest bench (2/3) on the platform and sits
14. 9:21 The two security come back and wake around the platform
15. 9:22 Begins to sprinkle
 - An out of service Light Rail stops by then leaves
16. 9:23 Group 2 enters and Security has stayed in the middle of the platform

17. 9:24 now the security are at one of the benches areas
18. 9:25 Light Rail rings to indicate it's coming
 - White male/female couple get off and don't know which side to go to at first
19. 9:26 White middle-aged male in black hobble not in a straight line. He is sagging that when he turned around his rear was present and holding food in his hands
20. 9:28 The man in black is not in the security line of sight
21. 9:29 Security are more occupied with talk than looking at the whole platform
 - The man did not read the sign and just walked to the other side to get out of the Light Rail
22. 9:30 security gets on Light Rail leaving the station alone
23. 9:32 White male waits standing for the train near the entrance
24. 9:34 The pillar makes it difficult to see the whole platform and who there
25. 9:35 White male gets off of Light Rail and a white middle-aged male wait leaning at post stop and is on phone
26. 9:36 Station is very cold because it's outside
 - End

Katie Hancock's Observation 1

Background

- Location: U District
- Start Time: 10:00PM
- End Time: 10:30PM

Jottings

1. 10:03 - huge group of people chatting amongst each other in a circle.
2. 10:04 - family sitting on the bench
3. 10:05 - a lot of chatter happening
4. 10:06 - a LOT of people hopping on and off the train
5. 10:08 - security walked by
6. 10:10 - another train comes
7. 10:10 - FP individual is alone, a lot more MP alone
8. 10:12 - another FP individual is alone
9. 10:14 - sketchy person walks by
10. 10:14 - another train comes
11. 10:17 - more security walks by(?) [note: people in yellow jackets]
12. 10:19 - another train comes
13. 10:19 - ~30 people hop on the train (a lot more than other ones). almost everyone is gone now.
14. 10:20 - another train comes
15. 10:22 - 3 more sketchy people come
16. 10:23 - another security person walks by. They are walking back and forth

17. 10:25 - another train comes
18. 10:25 - another train on other side comes
19. 10:26 - everyone is cleared out. only one FP person left
20. 10:28 - group of MP people come

Demographics

- Mostly young adults to middle aged adults

Tools & Technology

- Lots of people are just standing or sitting on their phones

Environment

- Mostly pretty empty, most people here are in big groups and not alone

Notes

- Overall interactions seem to be positive

Traffic

- Not too much traffic

Katie Hancock's Observation 2

Background

- Location: Roosevelt
- Start Time: 10:45PM
- End Time: 11:15PM

Jottings

1. 10:46 - two people tweaking out
2. 10:51 - two more people come
3. 10:52 - a train comes
4. 10:53 - ~20 people walk off. No one gets on
5. 10:59 - another guy comes with a bike
6. 11:00 - another train comes. Almost everyone here gets on
7. 11:02 - the station is completely empty
8. 11:04 - another security walks by. no strap
9. 11:07 - another train comes
10. 11:14 - security walks by again
11. 11:15 - two people left in station

Demographics

- Mostly middle aged - older adults

Tools & Technology

- People on their phones

Environment

- Very empty at this time

Traffic

- Almost no one is here

Katie Hancock's Observation 3

Background

- Location: Northgate
- Start Time: 11:50 PM
- End Time: 12:20 AM

Jottings

1. 11:52 - firefighters and cops hop onto the train. Not sure why
2. 11:52 - they escort a guy off the train who passed out
3. 11:52 - another guy is tweaking out
4. 11:53 - someone is standing with a suitcase
5. 11:55 - probably 4 people in the entire station
6. 11:58 - security guard confronts someone who is tweaking out
7. 12:00 - last train leaves

Demographics

- All older adults (50+ years)

Tools & Technology

- None

Environment

- Very very empty

Traffic

- No traffic at all

Appendix 3. Images of Data Analysis

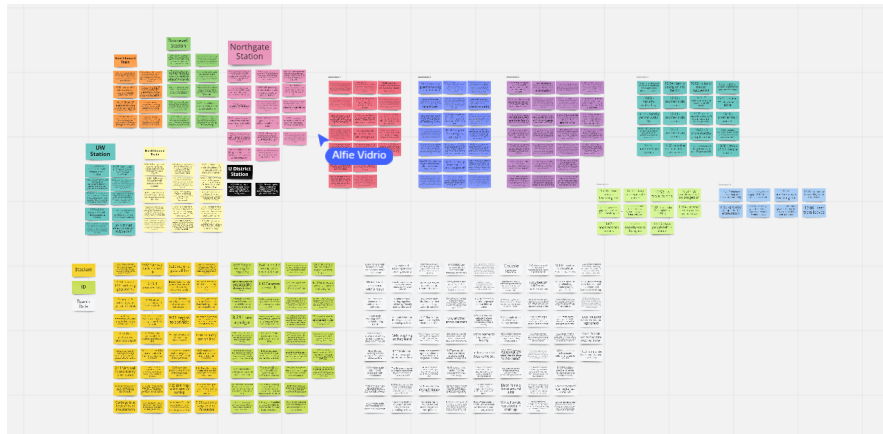


Image 4: Unsorted Observations.

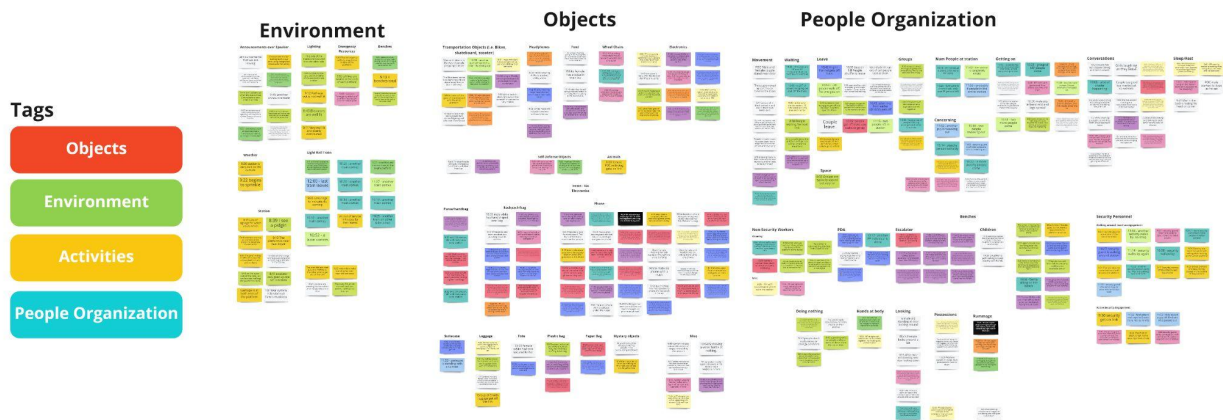


Image 5: Observations sorted through Affinity Diagramming using the AEIOU Framework.