MARTA On The Go — UX Case Study

UX Case Study: Redesigning Atlanta's public transportation mobile app

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MARTA On the Go mobile app proposed redesign concept

Introduction

So it's another muggy day on the Georgia I-75 with traffic barely crawling through Atlanta's bustling downtown. You curse city traffic and swear you'll start using the MARTA public transportation system, but every time you try it seems like the trains never arrive, leaving you in subway platform limbo. Refilling Breeze Cards feels anything but breezy and you're often left on the platform wondering if catching the bus or an Uber would have brought you one step closer to peace of mind.

This UX case study identifies these core friction points, collating industry research, user interviews, and user personas into a targeted redesign of the MARTA On The Go public transportation app for the Atlanta metropolitan area.

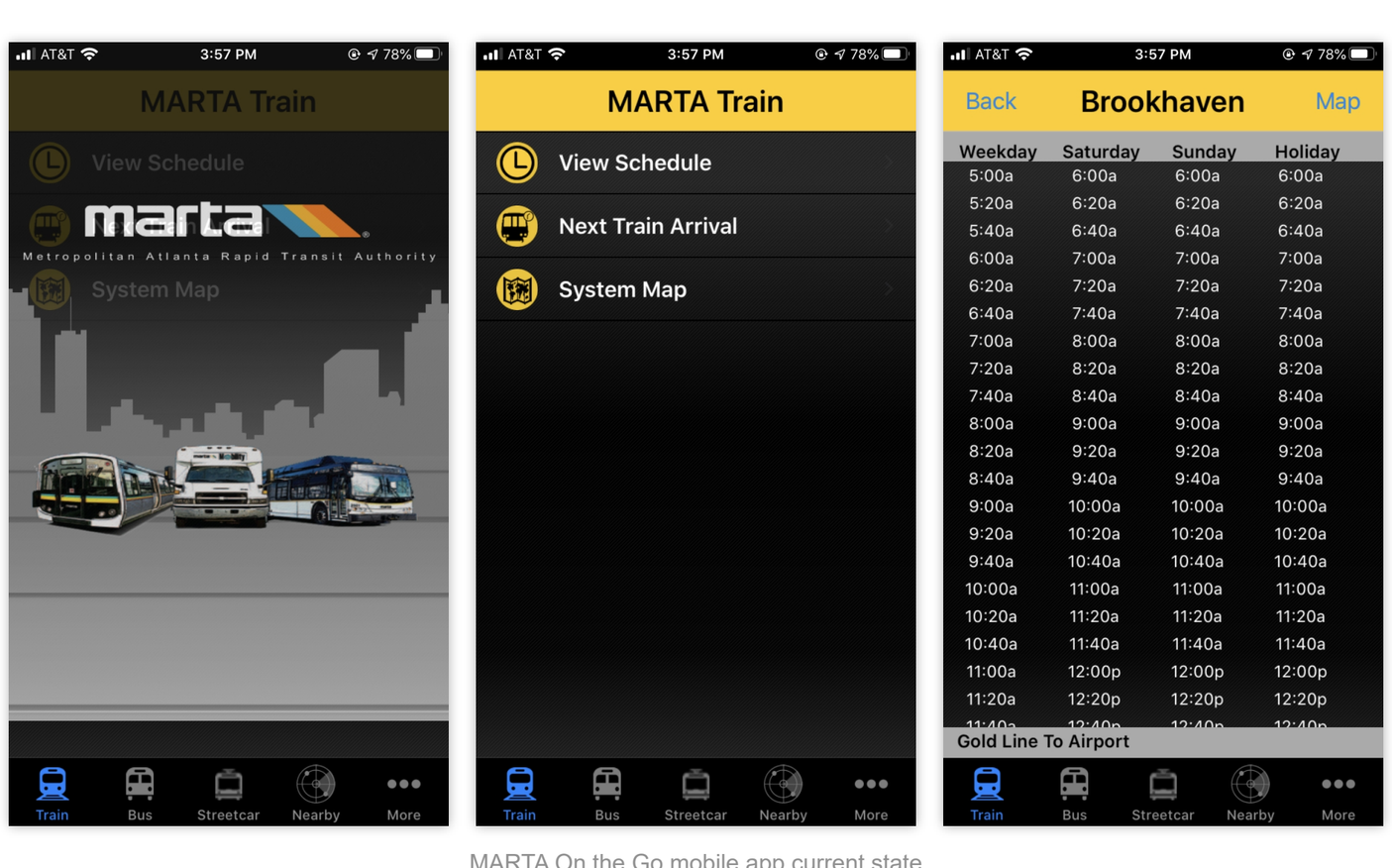
Design Process

By collecting industry research and user research into actionable redesign elements, this case study aims to augment the user experience, intractability, and engagement of the MARTA On The Go mobile app. This process was broken down into the following segments:

01 Product Research
02 User Research Plan
03 User Interview Screener & Protocol
04 User Interview Results & Analysis
05 User Personas
06 Competitive Analysis
07 Epics & User Stories
08 Next Steps: Design Iteration

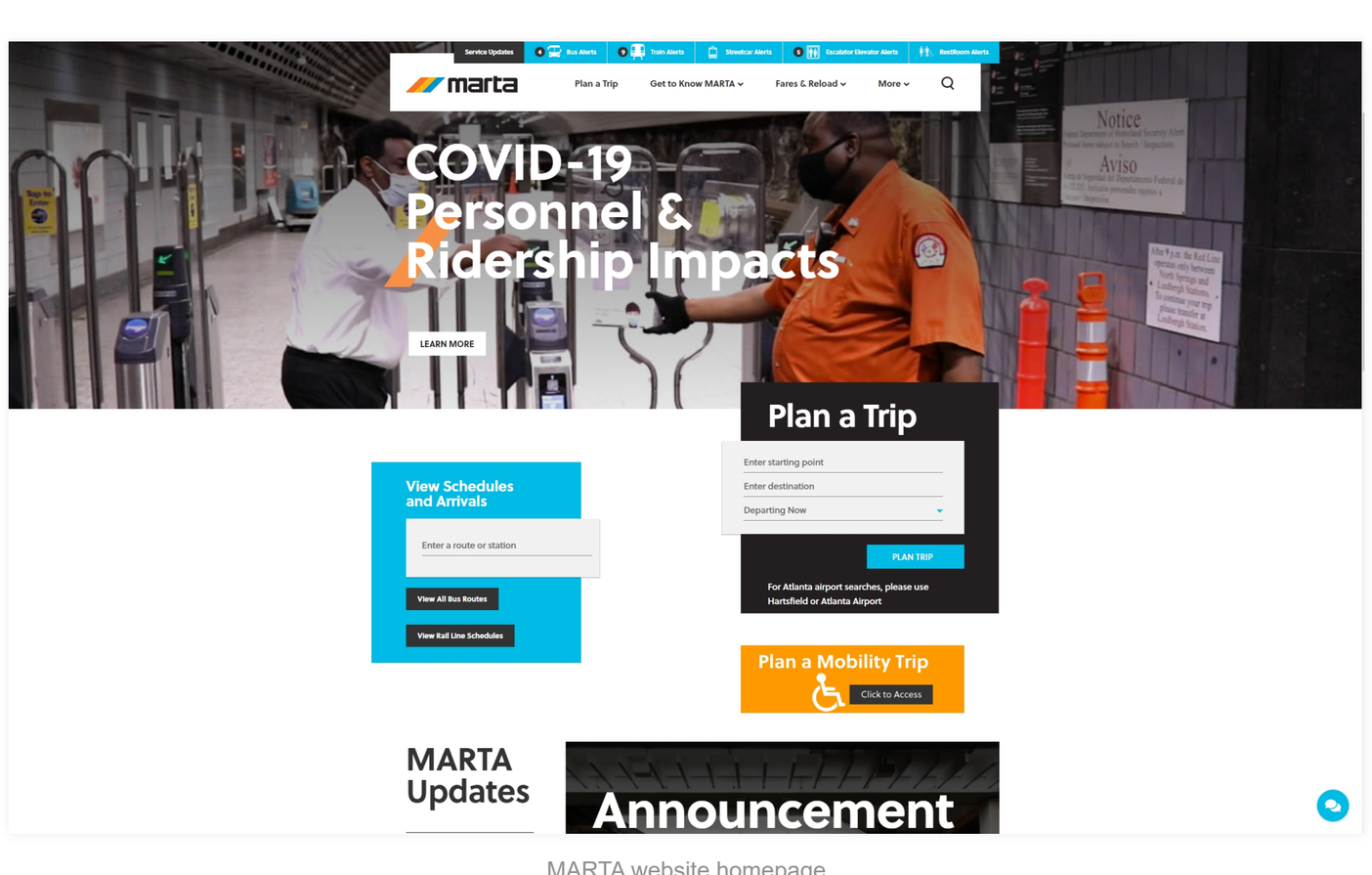
Product Research

The Metropolitan Atlanta Rapid Transit Authority, or MARTA, is the primary public transportation operator for the Atlanta area with over 134 million riders annually. As the 8th-largest rapid transit system in the United States, the 48 mile-long system services nearly 450,000 riders daily. Although route, schedule, and fare information is posted in all 38 stations, the system also offers riders the MARTA On The Go mobile app. The app highlights schedules, routes, and maps for the bus, rail, and streetcar systems. Users can also add their Breeze Card ID in order to check the number of fares remaining on any active card.



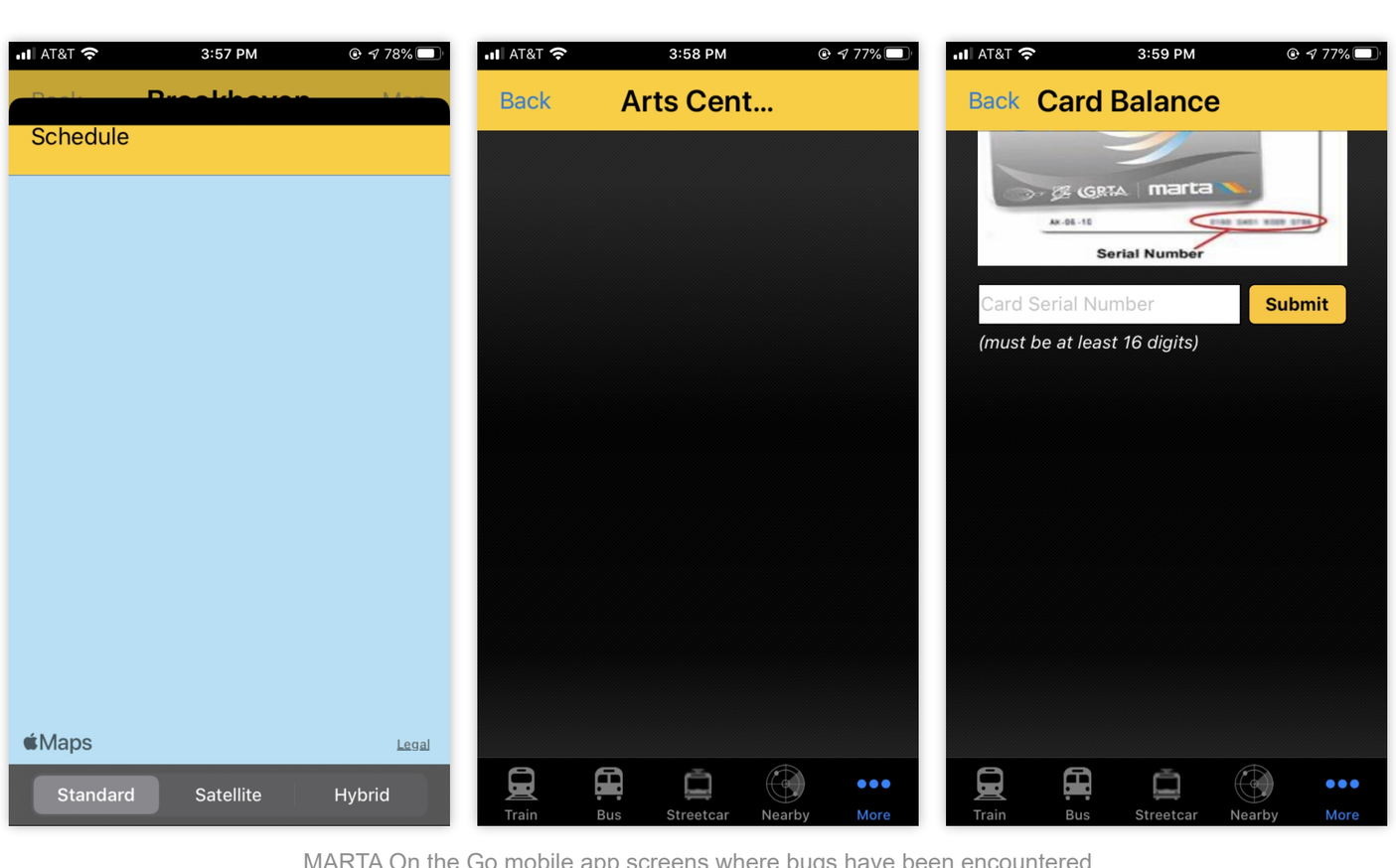
MARTA On the Go mobile app current state

The MARTA On The Go app provides basic functionality with limited bells and whistles. Sporting a dated look, the app deviates from the style of it's companion webpage.



MARTA website homepage

Continuing, MARTA On The Go presents hard-to-wrangle information in a non-intuitive format that is apathetic to user travel needs. Even further several key features, such as the maps, are plagued by both functional and visual bugs.



MARTA On the Go mobile app screens where bugs have been encountered

User Research Plan

The following user research plan for this case study focused on identifying the Client, the Product, the User Types, and any Additional Considerations pertinent to the product.

Client

The Metropolitan Atlanta Rapid Transit Authority (MARTA)

Product

Redesign of the MARTA On the Go companion app
https://www.itsmarta.com/app-station.aspx

User Types

- Residents
  Individuals who live within the Atlanta metropolitan area community. These users will use the MARTA system and companion app to commute to/from workplaces and to generally traverse the city frequently. These users engage with the MARTA system weekly and often need to plan routes around work schedules with hard deadlines. These users have Breeze Cards, the reusable fare system. Resident users are often familiar with the routes and primarily seek information on schedules, delays, and service disruptions. These users will also use the app to refill their Breeze cards and complete any other necessary maintenance tasks.

- Non-Residents & Tourists
  Individuals who do not live within the Atlanta metropolitan area. These users engage with the MARTA system and companion infrequently and/or sporadically. For example, a user may engage with the system multiple times within a single weekend, and then not revisit the system for several months on-end. Non-resident users more often use the system casually with relaxed schedule needs. These users are not familiar with the routes and primarily seek information on stops, routes, and indications regarding which stops to use for various city resources. For example, a user may need information on which subway stop is best utilized for attending the Georgia Aquarium. Users will use the app to purchase fares and research / plan their trips.

Additional Considerations

- Product and Features
  Redesigning the route visualization to create a more simple and digestible graphic.

  Creating route favorites and push notifications indicating upcoming arrivals, potential delays, and service disruptions for a user's chosen commute.

  Augmenting the fare and ticketing system.

  Adding search mechanics and information widgets that illustrate what city resources are near each stop so that users may determine route based on intended final destination.

  General improvements to the information architecture, interaction design, and visual language of the app with a focus on elements causing usability frictions as determined by usability testing.

- Research Questions
  What are the primary friction points inhibiting usability of the companion app?

  Which friction points are shared between the user groups and which are not?

  What are the motivations and goals driving users to interact with the app for each user type?

  What experiences within the app feel interactive and leave a user with positive emotions? Which do not? Why?

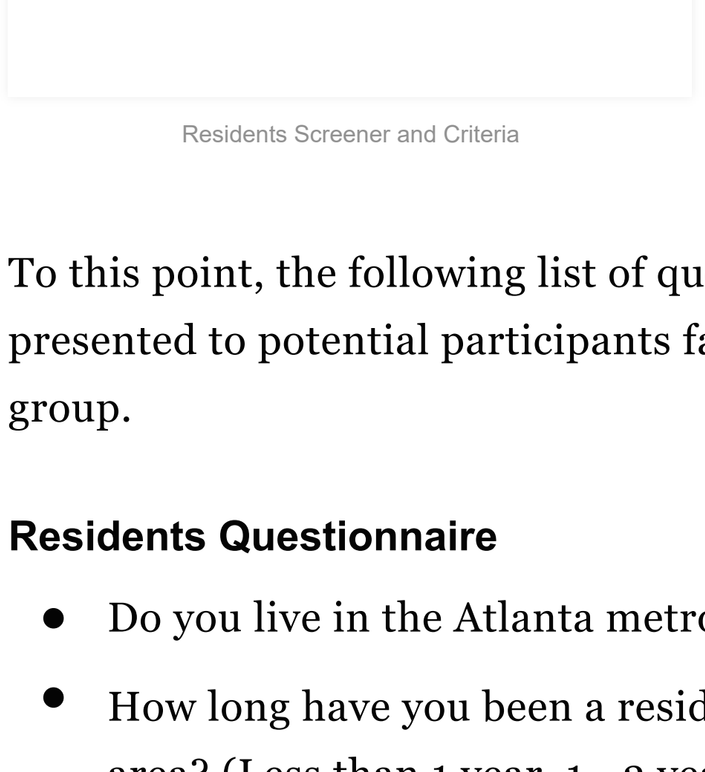
  What paradigms drive user interaction with the app? How do users mentally visualize their routes?

  What industry standards can the redesign learn from and introduce to the existing design?

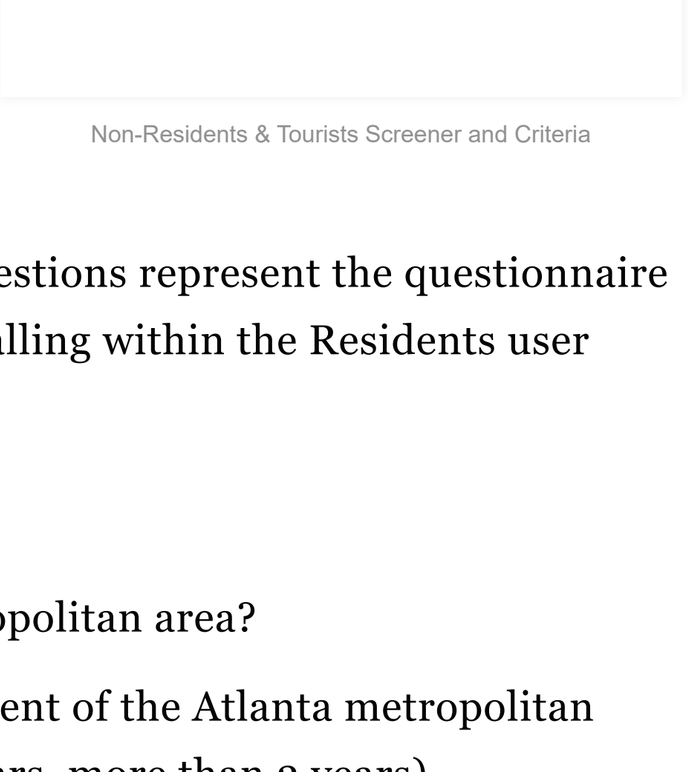
  How does this app compare with the apps of Amtrak, Delta, or other industry-leading companies working within transportation?

User Interview Screener & Protocol

A user interview screener was created for each user group to qualify potential participants and determine if those participants best suited the Residents or Non-Residents & Tourists groups studied. The screeners included demographic, geographic, and behavioral questions. In tandem with the user group screeners, corresponding criteria were defined to ascertain which participants may be appropriate users for the subject of this case study.



Residents Screener and Criteria



Non-Residents & Tourists Screener and Criteria

To this point, the following list of questions represent the questionnaire presented to potential participants falling within the Residents user group.

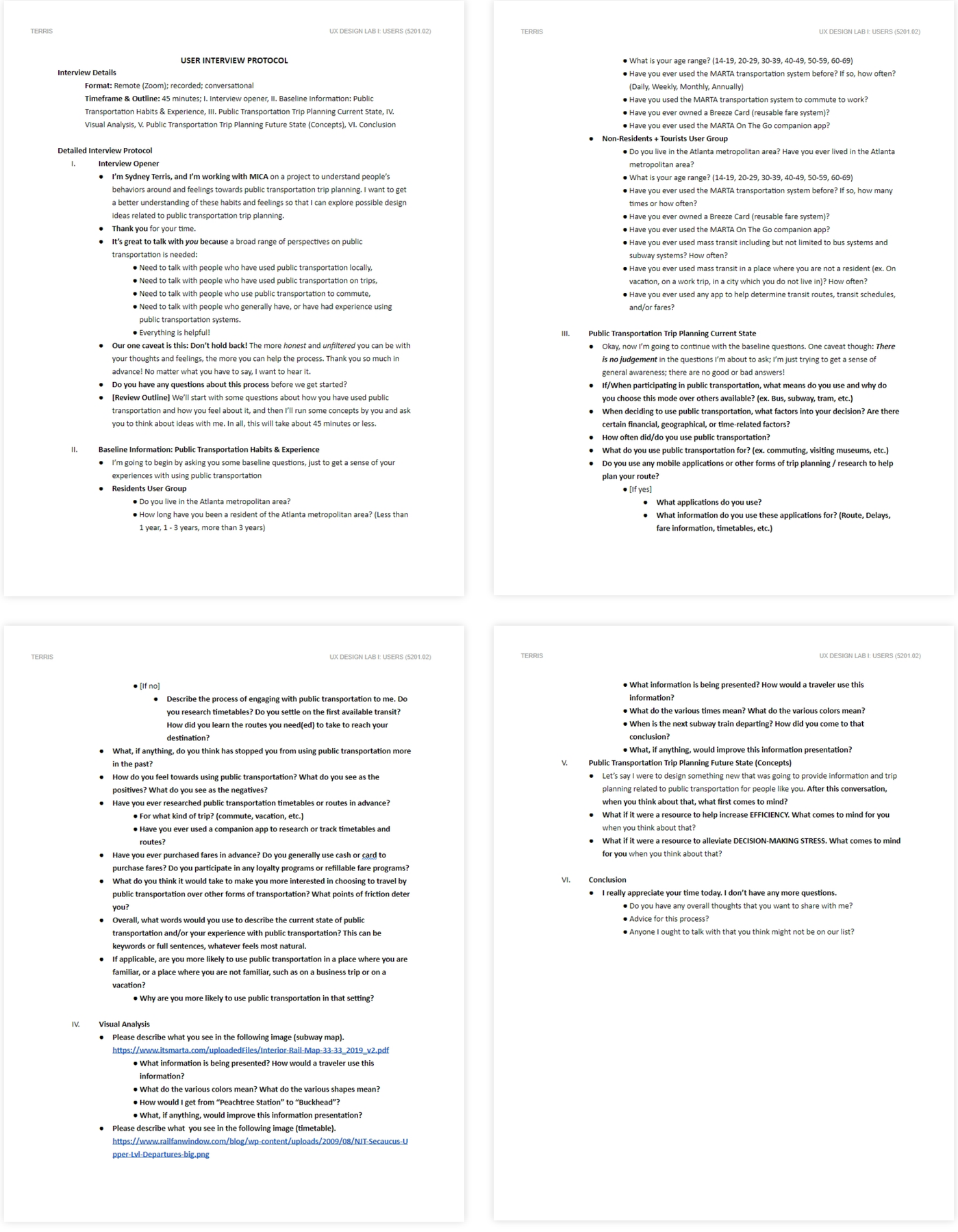
Residents Questionnaire

- Do you live in the Atlanta metropolitan area?
- How long have you been a resident of the Atlanta metropolitan area? (Less than 1 year, 1 - 3 years, more than 3 years)
- What is your age range? (14-19, 20-29, 30-39, 40-49, 50-59, 60-69)
- Have you ever used the MARTA transportation system before? If so, how often? (Daily, Weekly, Monthly, Annually)
- Have you used the MARTA transportation system to commute to work?
- Have you ever owned a Breeze Card (reusable fare system)?
- Have you ever used the MARTA On The Go companion app?

Using the screeners shown, three participants representing the Residents category and three participants representing the Non-Residents & Tourists category were ascertained for user interviews. To conduct user interviews with these participants, an extensive user interview protocol was developed. The protocol walks participants through six discussion sections as follows:

I. Interview opener
II. Baseline Information: Public Transportation Habits & Experience,
III. Public Transportation Trip Planning Current State
IV. Visual Analysis
V. Public Transportation Trip Planning Future State (Concepts)
VI. Conclusion

The interviews were conducted remotely through recorded 45-minute Zoom meetings with a conversational approach. During the Opener and Baseline Information phases, users were informed on their privacy rights, encouraged to provide honest feedback, queried about additional demographic, geographic, and behavioral questions. During the Public Transportation Trip Planning Current State section, participants discussed their current habits, desires, aspirations, friction points, and hesitations regarding their experiences with public transportation. In the Visual Analysis portion, individuals detailed their understanding of and reaction to subway system maps and train schedule graphics. Finally, in the Public Transportation Trip Planning Future State and Conclusion, users reviewed their core desires when engaging with public transportation and their hopes for future functionality.



User Interview Protocol

Results & Analysis

After completing all six user interviews, the key words, shared sentiments, direct functionality requests, user experience feedback, and overall habits surrounding public transportation were transcribed and analyzed. The following key takeaways represent sentiments shared by all six users surveyed and focus on re-aligning the companion app's UX with consumer-centric habits.

Key Takeaways

- Users generally prefer public transportation to owning a private vehicle and participate in public transportation whenever possible. Users associate public transportation with consistency, circumventing traffic, cost-effectiveness, and ease of access. The emergence of mass-market route planning apps including Google Maps, Apple Maps, Waze, and respective airline apps deeply affects the lens through which consumers view and plan their travel. Therefore, these apps inform and guide the expectations of the consumer.
- Users seek out opportunities to plan routes based on current location and desired destination. Rather than see a timetable of all trains leaving a station, users felt a strong desire to input their intended destination and have modes of transportation suggested to them based upon their needs, the desired departure/arrival time, and schedule disruptions. Users prefer the Google Maps approach to route planning over the airport terminal timetable approach.
- Users want to filter out extraneous information, being presented with only the options that are most relevant to their current needs. This includes the desire to have an app recognize travel patterns, such as work commutes, and somehow bubble these suggestions to the top levels of interaction.

Continuing, the behavioral patterns outlined next more deeply review the user experiences shared by interview participants.

Behavioral Patterns & Lessons

- The biggest inhibiting factor to users participating in public transportation more is a lack of access to adequate resources. This includes both an overall lack of systems, such as a subway system, as well as a lack of adequate services, such as too few serviced stations.
- Users often use public transportation in metropolitan areas for financial and time-saving reasons. Users most often cited the cost of tolls and parking as factors dissuading them from driving personal vehicles into urban areas. Additionally, users felt that eliminating the need for parking reduced time spent as well as stress and anxiety related to the process of finding parking.
- All users polled have used some sort of public transportation in unfamiliar places including while visiting other folk, while on vacation, or when in an otherwise unfamiliar area. This is noted as resulting from a lack of access to private transportation and financial preference for using public transportation over renting a private vehicle.

Lastly, the Additional Insights outlined below help illustrate the context through which each interviewee engages with public transportation.

- All users surveyed leveraged public transportation for recreational and travel purposes. Three of the 6 users surveyed have used public transportation as a means of commuting to and from their workplace.
- Five out of six users surveyed cited the time they spend on a subway or train system as a positive experience that allows them to listen to music, read a book, have quiet moments with one's self, and more. These users specifically noted that this is different from time spent in a personal vehicle where one has to focus on driving and cannot engage in self-soothing activities to the same extent.
- All six users surveyed cited the lower financial burden of public transportation as a motivating factor.
- All six users surveyed cited the reason for not using public transportation more in the past as geographical. Specifically, the users stated that they use public transportation whenever available and only use private transportation when it is the only option due to a lack of available systems. One user cited safety as the second inhibiting factor, noting concerns about crime on public transportation, particularly when in an unfamiliar place.

User Personas

Continuing, user personas fitting the identified user groups, Residents and Non-Residents & Tourists, were created by leveraging the information collected through user interviews. These personas are archetypal users of the MARTA On The Go system and represent the general needs of user groups in terms of their goals and characteristics. The following personas act as "stand-ins" for real users to help guide design decisions moving forward and are meant in no way to be a comprehensive representation of the MARTA system's userbase.

The first persona, Alek, represents the Residents user group. At the core, Alek's aspiration is:

"I want to support and feel connected to my community. I want to reach both usual and new places with the subway so that I can eliminate the need for my personal vehicle and practice environmental sustainability."

Alek is motivated by a lower cost of living, a sense of connection with the community, and flexibility. However, his hesitations stem from route delays, limited weekend service, and safety concerns.

Residents user group persona: Alek

Next, the second persona, Layla, represents the Non-Residents & Tourists user group. Layla's aspiration is:

"I want to engage with the city without experiencing the anxiety of navigating in a personal vehicle and without paying exorbitant prices for parking my vehicle. I wish I also had more access to public transportation in my day-to-day life."

Layla is motivated by a lower financial impact, the desire to avoid parking stress, and an enjoyment of the "Me Time" she gets while using public transportation. On the other hand, Layla's hesitations stem from route unfamiliarity, difficulty navigating transfers, and safety concerns.

Non-Residents & Tourists user group persona: Layla

Competitive Analysis

With a broadened understanding of the specific needs of MARTA On The Go users informed by user interviews and illustrated through the personas of Alek and Layla, tangible friction points in the user experience have been identified. Next, a competitive analysis is performed to assess the product's current state, especially as it compares to the functionality and experience of competing products.

For this competitive analysis, MARTA On The Go was compared with Waze, Uber, and Transit. Waze is a wayfinding app owned by parent company, Google, that crowdsources traffic data. Uber is the largest ride sharing technology with a global footprint that services over 100 million customers. Uber features dynamic pricing, an adaptive business model, and lower cost compared to traditional taxi services. Transit is a public transportation app that provides up-to-date bus and train arrival times with integrated options including bikeshare and Uber. Transit also provides insights on weather, nearby stops, transfer instructions, and alternative route suggestions.

Each of these brands is assessed according to a Strengths - Weaknesses - Opportunities - Threats (SWOT) matrix. This criteria is intended to ascertain the digital landscape, feature set, experience, competitive advantage, and areas of weakness for each mobile app.

Competitive Analysis Meets SWOT (Strengths, Weaknesses, Opportunities, and Threats)

Strengths	MARTA On the Go	Waze	Uber	Transit
What are your business advantages?	In-depth knowledge of and integration with the MARTA public transportation system. Direct access to up-to-date timetables, service disruptions, and ticketing.	A community-driven traffic and navigation app with over 115 million monthly active users. Providing live, real-time traffic reports from other drivers on the road. The reports are made both passively and actively through sharing functionality wherein a driver can report incidents, speed traps, traffic, etc. Backed by Google and Google Maps, integrating Google Maps' comprehensive mapping system.	Largest ride sharing technology: As the largest and one of the oldest ride sharing apps, Uber has an impressive global footprint servicing over 100 million customers in more than 760 countries internationally. The strong brand recognition, overtaking that of GM, Honda, and Ford. Dynamic pricing and adaptive business model are successful approaches, rewarding drivers for participating during night time, poor weather, holidays, and events. The low cost compared to traditional taxi services generates customer interest and loyalty. The rating system used creates accountability and rewards high performers for both customers and drivers. Drivers maintain their own vehicles so operational costs are low and the vehicle fleet is unlimited.	Reliable, up-to-date bus and train arrival times with integrated options including bikeshare and Uber. "Nearby Stops" features provides a user-centered approach to wayfinding that traditional navigation apps don't focus on. Provides routing information based on weather, "Rain Safe" routes, on ease of transfers, alternative transportation methods, and city-specific metrics. Provides ability to favorite routes, quickly reverse route directions for return trips, and flexibility to plan a route according to a transit line's path or according to the user's desired destination.
What are your core competencies?	Providing specific information on navigating the Metropolitan Atlanta Rapid Transit Authority and its associated transportation methods including, but not limited to busing, trains, subways, and trams.	Providing the most up to date, specific, and crowd-sourced traffic information to drivers. This includes alerting drivers to alternate routes, traffic stops, speed traps, accident reports, objects on the road, and more. Providing insight into local resources such as restaurants, gas stations, service stations, and rest stops.	Accountability rating system, dynamic adaptive pricing, brand recognition & global footprint.	Providing specific, up-to-date, and reliable public transportation information. Supplementing public transportation information with integrated options and user-centric practices that help a user move fully from point A to point B quickly, easily, and on-time.
Where are you making the most money?	As a first-party app for the MARTA system, the app is sustained by the MARTA system's revenue through ticket sales, advertising, and relationships with local businesses.	Waze is a free to use traffic and navigation app that collects revenue through local advertising that is location-based. Waze also introduced a carpooling service that, unlike common rideshare services such as Uber, encourages the everyday user to provide carpool services	Taxi services in the traditional ridesharing app is the core of the business's profitability. Additional services and markets have emerged in food delivery services (UberEats) and motorized bicycle + scooter rentals within select cities.	Mobile ticketing and hyperlocal advertising. Transit is a free to use public transportation app that collects revenue through local advertising that is location-based. Transit also introduced mobile ticketing integration
What are you doing well?	Providing in-depth information on the MARTA transportation system.	Crowd-sourcing traffic data and providing navigational routes that adjust accordingly. Providing Ad services that are location-based, best serving the needs of local businesses and the interests of customers.	Visibility into pricing adaptivity, driver/customer accountability, and route planning. Low fixed investment decreases the long-term risk for the company. Expansion into global economies and navigation of both domestic and foreign regulation has steadily broadened the markets available to Uber, though there have been difficulties as the company grows.	Where available, the Transit app provides highly accurate and up to date information on service delays and disruptions in public transportation. Transit also excels at providing a user-centered, rather than transportation line-centered, approach to wayfinding in non-private vehicles.
Weaknesses				
What areas are you avoiding?	Creating a user-centric approach to wayfinding through public transportation in Atlanta. Integrating the renewable fare program, the Breeze Card, with the app to fully digitize the experience. Improving timetable, traffic, and service disruption information. Providing information on public transportation that extends beyond the Atlanta area. Providing integration with other rideshare experiences including bicycles, scooters, taxi services, local university services, and more.	Full integration with Google Maps. Monetization or clarity of use for user location data.	Uber lacks a consolidated, user-friendly method for reporting safety violations, retrieving information on safety violations incurred by drivers, and reprimanding drivers for failing to follow company protocol. This has hurt Uber and been the core business solution of some competitors threatening Uber's success.	Integration with additional rideshare apps such as Lyft. Expanding service into suburban areas. Expanding service into large-scale routes including interstate or international train and bus systems.
Where do you lack resources?	Access to an expanded data set that includes interstate travel. Resources to more adequately update the live timetable information with traffic or closures.	Reliance on Users: The app relies heavily on users engaging with and providing crowd-sourced traffic data feedback based on personal experience. This means in less popular areas, the app suffers from a lack of drivers and diverse information sets and is more vulnerable to false information, poor reporting, and lack of usefulness.	Drivers: Uber relies heavily on trusting its drivers to properly represent the company's image. Cases of sexual misconduct, violence, scandal, and vulgarness have deeply affected the company's public image. Increase driver resources and resources to regulate driver behavior with additional check ins and reporting systems are needed.	Inadequate resources to integrate with the schedules or services of public transportation in less densely populated areas, such as the suburbs in the United States. Available in only 37 global cities.
What are you doing poorly?	The experience relies on in-person interaction with teller machines and does not have a fully digital experience. Users cannot use their phones as proof of fare membership and users must interact with teller machines to obtain Breeze Cards. Users do not have access to up-to-date information on train or bus arrivals, disruptions to service, traffic information, arrival estimates, etc. Although thorough, the MARTA system information is static and not centered around the user goal of moving from point A to point B. Users are left to determine which stops are closest to them, which stops are near their intended destinations, and how to get from a station to a destination (walking, taxi, biking, etc.)	The app currently provides Ads based solely on user location. The app does not seek to suggest rest stops based upon fuel needs, driver preferences, business operating hours, or known user habits such as data on where the user has previously visited.	Public Relations and Scandals in the Public Eye: Uber has been the center of multiple lawsuits, scandals, and controversies after its rise to the public eye. Sexual harassment, poor employee compensation, and predatory pricing practices (such as raising prices in natural disaster affected areas) have been at the center of Uber's PR backlash. In 2017, a related #DeleteUber campaign caused ~500,000 registered users to delete their accounts.	Incomplete or non-existent services for less populous regions. The app does not currently support a variety of cities and public transportation services, focusing primarily on major cities and areas of tourist activity. Walking directions offer a directional line to guide, but do not have the adaptive, rotating functionality native to Google Maps. This creates a disconnect between the user's current walking direction and the intended direction.
Where are you losing money?	The app is not integrated with ridesharing services or local businesses. Allowing these to advertise on the app or integrate with the app's functionality provides an opportunity to generate advertising revenue or service fee revenue.	The current business model is exposed to company liability for accidents incurred while illegally engaging with the app.	Rising competition from direct and indirect competitors, such as Lyft, wherein discounts and incentives are offered to drives & customers has caused Uber to lose momentum and suffer user base losses. Bonuses and discounts provided to the user base to combat customer retention issues has resulted in increasingly large debt accumulation, reaching $2.75 billion in 2016.	The company has not fully capitalized on mobility as a service. Additional areas of functionality including ticketing, increasingly targeted advertising, and integration with local businesses would increase the footprint of influence as well as opportunities to provide services for a fee.
What needs improvement?	Wayfinding functionality is static and difficult to align with user goals. Timetable information is often out of date or irrelevant to a user's intended pathway to a destination. Users are unable to purchase fares or renew Breeze Card memberships. Users cannot favorite or otherwise save routes that they often take or are interested in getting up-to-date information on. Users cannot set reminders, notifications, or any other push communications related to the routes they intend to take.	The app needs improvement in its hands-free interaction design. Currently, uses must illegally engage with the app to provide the essential traffic feedback data. Creating an interaction methodology wherein users can learn from and contribute to shared knowledge on current traffic trends would ease legislative pressure and lost reporting opportunity (including accidental false reporting).	The company's public image and safety protocols / incident reporting methods most need improvement.	The application currently serves only a limited portion of cities and, therefore, is out-performed by larger competitors such as Google Maps. Increasing the footprint of service most directly corresponds to improving the business's output by tapping into larger markets.
Opportunities				
Any beneficial trends?	Increased focus on environmental sustainability driving users to seek public transportation and electric transportation. Increasingly user-centric design trends driving users to seek services built around the customer experience rather than the business goals. This includes wayfinding through user lenses of time, financial impact, environmental impact, points of interest, intended final destination, and more.	Increased focus on environmental sustainability driving users to seek public transportation and electric transportation. Increasingly user-centric design trends driving users to seek services built around the customer experience rather than the business goals. This includes wayfinding through user lenses of time, financial impact, environmental impact, points of interest, intended final destination, and more.	Driverless technology, driver accountability, digitization of services, digital payments, and increasing environmental sustainability awareness.	Increased focus on environmental sustainability driving users to seek public transportation and electric transportation. Increasingly user-centric design trends driving users to seek services built around the customer experience rather than the business goals. This includes wayfinding through user lenses of time, financial impact, environmental impact, points of interest, intended final destination, and more.
Niches that competitors are missing?	Setting up regular reminders notifying a user of when they should begin walking to a station to reach the station in time for a particular transportation departure. Saving or favoriting routes, schedules, or daily commutes. Determining wayfinding based upon user needs including time, financial impact, safety, weather, accessibility, and more.	Catering to driverless technology and electric vehicles / electric vehicle charging. Supporting crowd-sourced public transportation traffic information and scheduling updates.	Motorized bike and scooter rentals. Healthcare services including ambulance substitutes and transportation of the elderly. Middleman for the service industry - this currently includes food delivery but the company can further explore product transportation and delivery.	Providing wayfinding options centered around user goals rather than pre-set service routes. This includes the user experience of daily commuters such as avoiding inclement weather, finding alternative routes or modes of transportation during a service disruption, centralizing fare memberships and renewals, and providing up to date information on the impact of Covid-19 on service and practices.
New technologies?	Digital payment methods, real-time transportation vehicle tracking (reminiscent of Uber's live-updating car tracking), expanding traffic and delay reporting services, increasingly popular electric vehicle alternatives including motorized bicycles and scooters.	Increasingly widespread hands-free interaction, smartphone ownership, and bluetooth capabilities globally. Increasingly popular electric vehicle alternatives including cars and motorized bicycles/scooters.	Driverless technology presents an opportunity to shift the business model to a more user and vehicle centric state.	Digital payment methods, real-time transportation vehicle tracking (reminiscent of Uber's live-updating car tracking), expanding traffic and delay reporting services, increasingly popular electric vehicle alternatives including motorized bicycles and scooters.
New needs of customers?	Real-time feedback on business practices and closures during Covid-19 restrictions. Integration with ridesharing resources including bikes, scooters, and taxi services. Augmented incident reporting, response, and feedback methodologies alongside increased safety information visibility.	Hands-free interaction alternatives. Increasing support for electric driving and electric car charging. Real-time feedback on business practices and closures during Covid-19 restrictions.	Increasing reliance on digital payment methods rather than physical - customers are more likely to engage with transportation services if they are able to utilize digital payment methods. Customers have an increasing desire for service industry delivery functionality, including delivery of groceries, food, store-bought items, large items such as furniture, and routines such as dry cleaning services.	Real-time feedback on business practices and closures during Covid-19 restrictions. Integration with ridesharing resources including bikes, scooters, and taxi services. As the world continues to globalize, the need for information in unfamiliar areas including foreign countries tangibly grows, particularly those wherein the user does not speak the local language.
Threats				
Obstacles to overcome?	Access to an expanded data set that includes interstate travel. Timetable information is often out of date or irrelevant to a user's intended pathway to a destination. Users are unable to purchase fares or renew Breeze Card memberships. Users cannot favorite or otherwise save routes that they often take or are interested in getting up-to-date information on. Users cannot set reminders, notifications, or any other push communications related to the routes they intend to take.	Legislation surrounding engaging with apps while driving and the legality of pinging drivers with updates that require touch feedback.	Driver dissatisfaction with payments and profit margins. Customer and employee retention. Safety concerns including multiple allegations of sexual misconduct against drivers. Driverless technology presents needs for a new business model that is less driver-centric.	Inadequate resources to integrate with the schedules or services of public transportation in less densely populated areas, such as the suburbs in the United States. Available in only 37 global cities.
Aggressive competitors?	Google Maps, Uber, Transit, Apple Maps, Waze, Bing Maps	Google Maps	Lyft, Tesla, GrubHub, DHL, Apple, Amazon, OLA, Bolt, Grab	Moovit, CityMapper, Google Maps
Successful competitors?	Moovit, CityMapper, Google Maps, Apple Maps, MapQuest, Bing Maps, Uber, Lyft, Waze	Google Maps, Apple Maps, MapQuest, Here WeGo, Bing Maps	Lyft, GrubHub, OLA	Moovit, CityMapper, Google Maps, Apple Maps, MapQuest, Bing Maps, Uber, Lyft, Waze
Government regulation?	Privacy and locational data usage restrictions.	Liability for knowingly distracting a driver: increasing legislation in densely populated regions cites apps requesting traffic data updates from users as accountable for accidents resulting from those requests. Additionally, use of apps while driving, particularly those that are not touch-fee, is illegal in most states, rendering the functionality of the app less useful.	Lawsuits from Uber drivers concerning minimum wage policy and the effect on Uber's public image. Various cities and countries have added increasing regulation to limit or fully ban ridesharing apps such as Uber. This decreases Uber's footprint globally.	Privacy and locational data usage restrictions.
Changing business climate?	As the selling and marketing of personal data becomes an increasingly politicized topic, MARTA On the Go is at risk from both legislation and public relations for the impacts of politics surrounding individual data and the use of that data in business practices.	As the selling and marketing of personal data becomes an increasingly politicized topic, Waze is at risk from both legislation and public relations for the impacts of of politics surrounding individual data and the use of that data in business practices.	Driverless Technology: The emergence of driverless technology lessens the need for employees / drivers and heightens the need for vehicle resources. Uber may need to pivot the driver - customer business model to accommodate a more vehicle-centric transportation norm.	As the selling and marketing of personal data becomes an increasingly politicized topic, Transit is at risk from both legislation and public relations for the impacts of politics surrounding individual data and the use of that data in business practices.
Vulnerabilities?	The small service availability footprint leaves MARTA On the Go vulnerable to being overtaken by more established apps such as Waze and Google Maps. This also leaves MARTA On the Go vulnerable to be overtaken by other growing, non-local transit apps that may have better integration with Google, Apple, or Bing or those who have more widespread access to transit timetables.	Legislation surrounding company liability for accidents incurred while engaging with an app is the biggest vulnerability Waze faces. The next vulnerability is monetization of the service. Waze has limited avenues for monetization through ads and would benefit from exploring alternate approaches to creating value within the product.	Customer and Employee Retention: Financial incentives from competitors to Uber drivers often cause both customers and drivers to stray from the company.	The small service availability footprint leaves Transit vulnerable to being overtaken by more established apps such as Waze and Google Maps. This also leaves Transit vulnerable to be overtaken by other growing transit apps that may have better integration with Google, Apple, or Bing or those who have more widespread access to transit timetables.

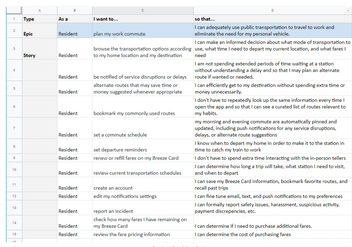
SWOT Matrix Competitive Analysis: MARTA On The Go, Waze, Uber, Transit

Epics & User Stories

Finally, a set of epics and user stories were created in order to distill the extensive research and insights collected during the discovery process into scoped-down, actionable items. Each epic includes the user type addressed, the action to be completed, and the intended outcome. For this case study, the following epics were used:

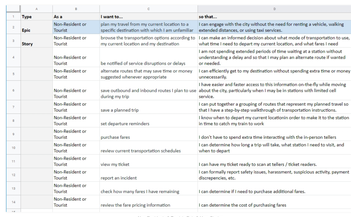
- Residents
  I want to plan my work commute so that I can adequately use public transportation to travel to work and eliminate the need for my personal vehicle

- Non-Residents & Tourists
  I want to plan my travel from my current location to a specific destination with which I am unfamiliar so that I can engage with the city without the need for renting a vehicle, walking extended distances, or using taxi services.



	Type	As a	I want to...	so that...
2	Epic	Resident	plan my work commute	I can adequately use public transportation to travel to work and eliminate the need for my personal vehicle.
3	Story	Resident	browse the transportation options according to my home location and my destination	I can make an informed decision about what mode of transportation to use, what time I need to depart my current location, and what fares I need
4		Resident	be notified of service disruptions or delays	I am not spending extended periods of time waiting at a station without understanding a delay and so that I may plan an alternate route if wanted or needed.
5		Resident	alternate routes that may save time or money suggested whenever appropriate	I can efficiently get to my destination without spending extra time or money unnecessarily.
6		Resident	bookmark my commonly used routes	I don't have to repeatedly look up the same information every time I open the app and so that I can see a curated list of routes relevant to my habits.
7		Resident	set a commute schedule	my morning and evening commute are automatically pinned and updated, including push notifications for any service disruptions, delays, or alternate route suggestions
8		Resident	set departure reminders	I know when to depart my home in order to make it to the station in time to catch my train to work
9		Resident	renew or refill fares on my Breeze Card	I don't have to spend extra time interacting with the in-person tellers
10		Resident	review current transportation schedules	I can determine how long a trip will take, what station I need to visit, and when to depart
11		Resident	create an account	I can save my Breeze Card information, bookmark favorite routes, and recall past trips
12		Resident	edit my notifications settings	I can fine tune email, text, and push notifications to my preferences
13		Resident	report an incident	I can formally report safety issues, harassment, suspicious activity, payment discrepancies, etc.
14		Resident	check how many fares I have remaining on my Breeze Card	I can determine if I need to purchase additional fares.
15		Resident	review the fare pricing information	I can determine the cost of purchasing fares

Residents Epic & User Stories



	Type	As a	I want to...	so that...
2	Epic	Non-Resident or Tourist	plan my travel from my current location to a specific destination with which I am unfamiliar	I can engage with the city without the need for renting a vehicle, walking extended distances, or using taxi services.
3	Story	Non-Resident or Tourist	browse the transportation options according to my current location and my destination	I can make an informed decision about what mode of transportation to use, what time I need to depart my current location, and what fares I need
4		Non-Resident or Tourist	be notified of service disruptions or delays	I am not spending extended periods of time waiting at a station without understanding a delay and so that I may plan an alternate route if wanted or needed.
5		Non-Resident or Tourist	alternate routes that may save time or money suggested whenever appropriate	I can efficiently get to my destination without spending extra time or money unnecessarily.
6		Non-Resident or Tourist	save outbound and inbound routes I plan to use during my trip	I can discover and faster access to this information on-the-fly while moving about the city, particularly when I may be in stations with limited cell service
7		Non-Resident or Tourist	save a planned trip	I can put together a grouping of routes that represent my planned travel so that I have a step-by-step walkthrough of transportation instructions.
8		Non-Resident or Tourist	set departure reminders	I know when to depart my current location in order to make it to the station in time to catch my train to work
9		Non-Resident or Tourist	purchase fares	I don't have to spend extra time interacting with the in-person tellers
10		Non-Resident or Tourist	review current transportation schedules	I can determine how long a trip will take, what station I need to visit, and when to depart
11		Non-Resident or Tourist	view my ticket	I can have my ticket ready to scan at tellers / ticket readers.
12		Non-Resident or Tourist	report an incident	I can formally report safety issues, harassment, suspicious activity, payment discrepancies, etc.
13		Non-Resident or Tourist	check how many fares I have remaining	I can determine if I need to purchase additional fares.
14		Non-Resident or Tourist	review the fare pricing information	I can determine the cost of purchasing fares

Non-Residents & Tourists Epic & User Stories

Next Steps: Design Iteration

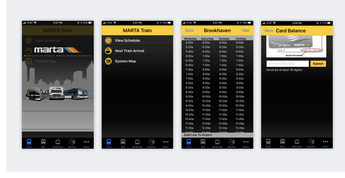
After completing the discovery process, the key friction points, functionality gaps, and user experiences have been identified for both primary user groups engaging with the MARTA On The Go mobile app. User interviews, industry research, personas, epics, and user stories, were each leveraged to pinpoint insights and behavioral habits surrounding public transportation and the friction points a MARTA app redesign can target. With these learnings in mind, this case study maintains that a redesign that addresses the following will be successful with the studied user groups, Residents as well as Non-Residents & Tourists:

- Restructuring the wayfinding system with key learnings from mass-market route planning apps including Google Maps, Apple Maps, and Waze. These apps inform and guide the expectations of the consumer.

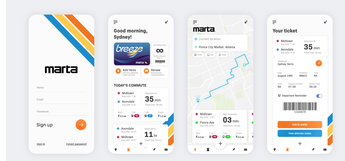
- Seek out opportunities to plan routes based on current location and desired destination. Rather than see a timetable of all trains leaving a station, users felt a strong desire to input their intended destination and have modes of transportation suggested to them based upon their needs, the desired departure/arrival time, and schedule disruptions.

- Filter out extraneous information, presenting only the options that are most relevant to their current needs. This includes the desire to have an app recognize travel patterns, such as work commutes, and somehow bubble these suggestions to the top levels of interaction.

Current State: MARTA On The Go App



Redesign Concept



In order to better illustrate the resulting design direction to the client, sample screen concepts and style tiles are created. These help the client visualize the design targets the project aims to hit and helps establish a personality for the brand. Additionally, these media samples are useful tools for internal marketing and value advocacy.

These style tiles establish a strong sense of branding with MARTA's iconic three stripes while also creating a flexible interface that allows users to choose either light or dark theming. They highlight essential functionality without limiting the scope of intended functionality.

Moving forward with this project, the next steps include creating a set of low-fidelity wireframes that illustrate general design intent as well as scope of functionality. The wireframes will need iteration until an adequate solution addressing both the client's needs and the user's needs is established. At this point, the wireframes will need to be brought into higher and high fidelity until they reach a compositional level and can be demonstrated using an interactive prototype. User testing and interaction feedback will be required throughout this process to fine-tune the product to the needs and mental models of the core userbase.

Design · UI Design · UX Design · Case Study · Mobile Design

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