
MetroGo
A UXD Case Study
PT
TAXI
0352 PS
SmartBus
682
MAN

Problem Space: Metro Travel

- Metropolitan travel involves a plethora of **choice**
  - Trains, Trams, Buses, Taxis and more…
- Users need access to the **right information** to make good decisions, especially for **unfamiliar** or **irregular travel**
- **Numerous products exist** that provide travel information, each with a different transport focus and UI

Early Assumption

- The combination of irregular travel and the need to switch between products to compare transport options can **hamper decision-making** and **frustrate users**, particularly when the need for travel is **immediate**

Proposed Solution: MetroGo

An app that helps people make rapid travel decisions by combining comprehensive information for **all** of the readily available Metropolitan transport modes…
Public Transport (PT – Trains, Trams, Buses) *and* **Taxis**

- Business Goals
  - Be "the app of choice" supporting Metropolitan travel
  - Promote the availability and use of each transport mode
  - Support the entire travel process: from planning to completion
- Target Audience
  - Anyone with a need for travel around a Metro region
  - Local residents and tourists
  - Smartphone users – iPhone, Android

User Research

Interviews, Personas, Storyboarding, Goals & Tasks

Research Findings

- Interviewed 6 potential users to explore…
  - Current travel patterns and behaviours (using PT and Taxi)
  - How and when people plan their Metro travel
  - The information they need to make transport choices
  - Use of / problems with existing transport apps and websites

- Key insights
  - Most people use multiple apps to address their travel needs
  - Existing 'multi mode' apps often have confusing workflows and non-intuitive UIs that can be difficult to learn with ad hoc use
  - Access to real time data is considered important, but is limited
  - Choices between PT and Taxi are generally based on assumptions and previous experience
  - The cost of travel is important for comparison where Taxis are involved

Marc Rollins*

The Social Traveller

* Key Persona

Pain Points

- Reliable, real-time timing information is not available for trains or buses.
- Finds existing combined PT apps more difficult to use/learn than single-mode apps.
- Rarely knows where the nearest taxi rank is.

"I hate it when I get to a bus stop with at least a minute to spare, only to find out that I've missed it because it came early"

Age	31 years old
Family	Single
Lives	Richmond
Work	Software Analyst
Personality	Likes to spend time with friends and enjoys new experiences

Behaviours and Motivations

Marc moved to Melbourne 5 years ago and is now a seasoned PT user, regularly taking trams, trains and buses to get to/from social engagements after work and on the weekends. He also occasionally takes taxis or Uber, but usually only when PT options are scarce.

Although Marc has developed a good knowledge of inner metro Melbourne, he is still discovering new places so often finds himself travelling to/from unfamiliar locations. If he knows he's going somewhere new, he'll always do some pre-planning to check the available PT options. He also does a lot of 'on-the-go' planning while out and about and moving between different locations; not only to figure out his options but also to check on a chosen service (When will it pick me up? Where am I now? When do I get off?).

Travel Goals

- Minimise costs
- Maximise convenience
- Simplicity – avoid hassle

Louise Freeman
The Commuter

Pain Points

- Switching between multiple apps to compare different transport modes when under time pressure creates stress and often delays her decisions.
- Existing PT apps rarely communicate reliable information about unplanned train delays and cancellations.
- Taxi journey cost and time estimates are often inaccurate.

Behaviours and Motivations

Louise uses PT daily for her commute to work, having the choice between a train and tram which both run close to her home. While most of this travel follows a regular schedule with familiar locations, she often has to change the timing of her commute to juggle work and family commitments. She also occasionally attends meetings at client sites in the metro area, using a mixture of PT and Taxis to do so.

Louise values timeliness and hates arriving late. She generally pre-plans any unfamiliar PT travel, and prior to her trip to work/home she'll often use one or more apps on her phone to check whether there are any delays or cancellations – this allows her to adjust her choice of transport at the last minute.

Travel Goals

- Arriving on time
- Maximising efficiency
- Accessing the most up-to-date transport information

"The thought of missing my best option because I'm too busy trying to compare info between different apps frustrates me no end"

Age	37 years old
Family	Married, with 2 young kids
Lives	Coburg
Work	Project Manager
Personality	Likes to be in control and and not waste time

Rodney Baker

The Business traveller

Pain Points

- Many existing apps are confusing for someone who remains a 'novice' through infrequent use.
- Most apps seem to be specific to a particular State – and they are all different.

"I wish there was one, simple tool that I could use to compare my options, regardless of what State I'm currently in"

Age	45 years old
Family	Married, with 1 teenage son
Lives	Eltham
Work	Business Devt Manager
Personality	Doesn't like to think too much when he's travelling

Behaviours and Motivations

Rodney is an occasional PT user, taking the train to/from work only when he knows he is going out drinking in the evening. He often attends meetings at client sites, generally taking Taxis or else walking (if close by). He also regularly travels to meetings interstate, again favouring Taxis but occasionally using PT if it's familiar to him.

Rodney doesn't do much trip planning. If anything, he will look up a meeting location while at the airport, and occasionally uses a PT app on his phone to see whether it's worth waiting for an express train. He never looks up Taxi estimates, instead relying on experience. While he rarely makes decisions between travel options, Rodney is increasingly feeling pressure at work to decrease spending and so has begun to consider using PT for visiting client sites, both locally and interstate.

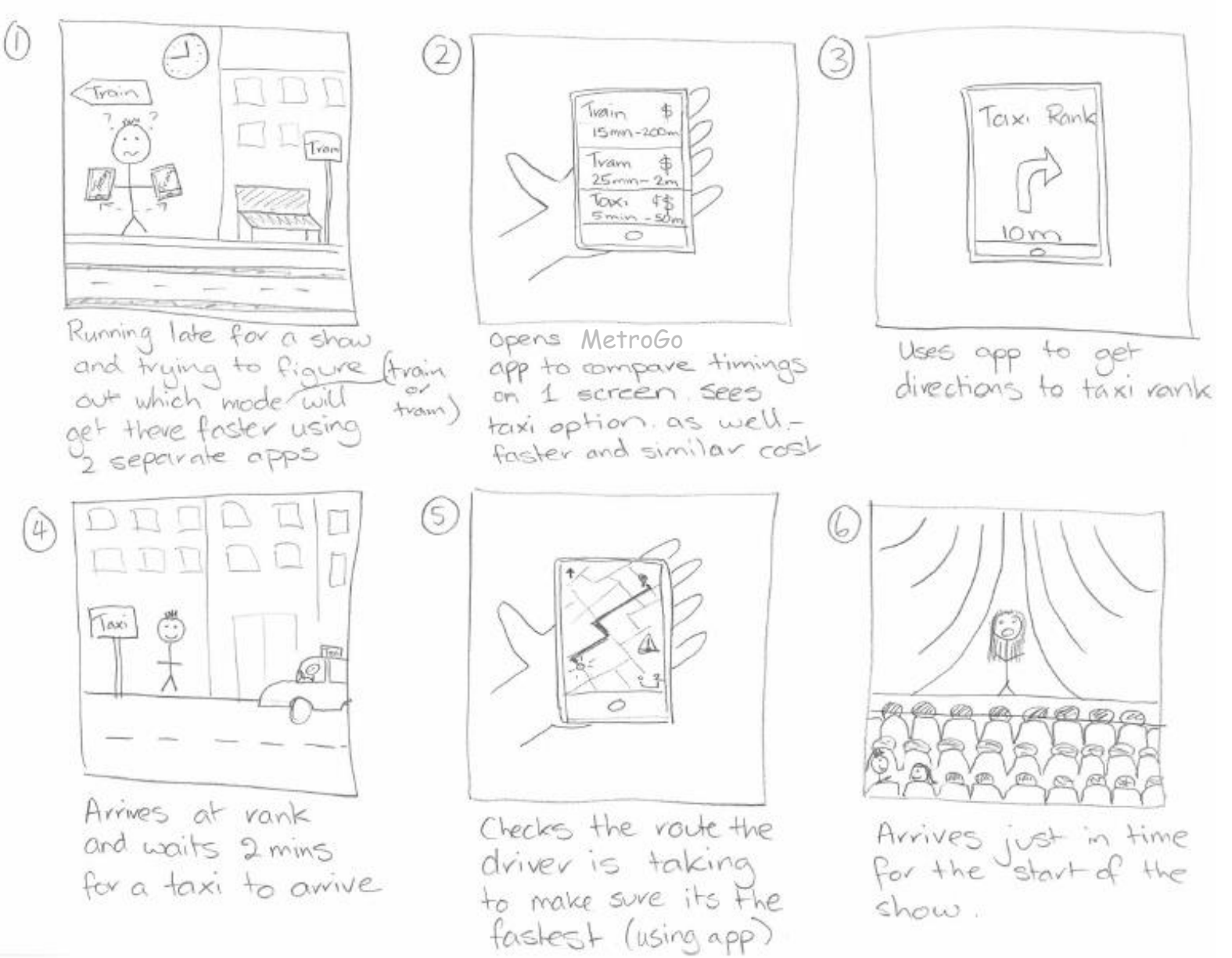
Travel Goals

- Maximise convenience *and* efficiency
- Minimise costs

Key User Goals

1. Identify what transport services are **available nearby**.
2. **Specify a journey** – origin and/or destination location and time.
3. **Identify/compare all transport services** that will get to the destination.
4. Get **information** about a transport **service** or **journey** option.
5. Make transport **decisions** based on the **currency** and **accuracy** of the information.
6. Visualise **how to get to/from** a chosen transport service.
7. Visualise and **track the progress** of a current transport service or journey along its **route**.
8. **Personalise/control** the information access.
9. **Be informed** of any **changes** to transport services.

Storyboarding: common scenarios of use



Features and Structure

Competitive Analysis, Information Architecture, User Flows

Competitive Analysis

		Existing Apps							
		PTV	Moovit	tramTRACKER	Train Trapper	metroNotify	13CABS	goCatch	Uber
	Transport mode(s)	Tram, Train, Bus	Tram, Train, Bus	Tram	Train	Train	Taxi	Taxi	Uber, Taxi, Limo
User Needs and Goals	Nearby transport services	✓	✓	✓	✓	x	✓	✓	✓
	Journey planning & option comparison	✓	✓	individual services	indirectly	x	single option	single option	single option
	Transport service or journey info	✓	✓	✓	✓	x	x	limited timings	limited timings
	Costs	x	x	x	x	x	✓ estimate	x	✓ estimate
	Real time data/estimates	Trams only ('Next 5')	Trams only	✓	x	✓ alerts	Taxi location	✓	✓
	Directions to/from/btw services	✓	✓	x	x	x	✓ to ranks	x	x
	Routes	✓ list and map-based	✓ list and map-based	✓ list and map-based	✓ list-based	x	limited	x	✓ map-based
	Service vehicle tracking (along route)	x	Trams only	✓	x	x	limited	✓ no route	✓
	Personalisation options (incl. Favourites)	✓	✓	limited	limited	✓ alerts	✓	x	limited
	Alerts for delays/changes/other	summary page only	✓ configurable	✓	crowd-sourced	✓	x	pick-up only	pick-up, rate changes

Content Strategy

- **Business Objective**
- **Target Audience**
- **User Goals**
- **Content Goals**
- **Key Message:** satisfying the user's immediate travel needs
- **Voice and Tone:** authoritative, supportive, trustworthy
- **Context:** connected, context-aware, real time
- **Presentation Types:** text, icons, maps, imagery?
- **Publishing and Governance:** real time info, updates

Information Architecture

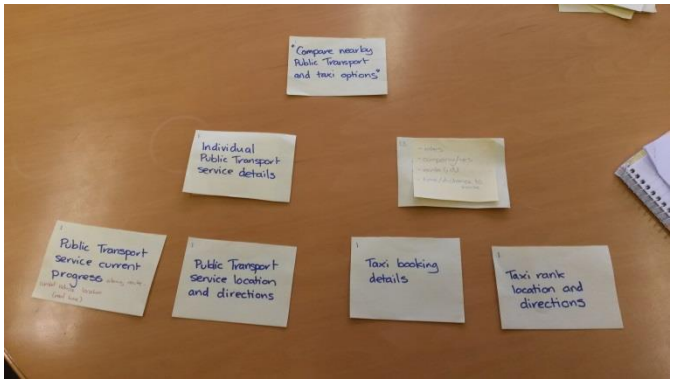
- Types of content

Service info	Costs	Routes	Delays and cancellations
Timings	Locations	Directions	Real-time info

- 4 major functional areas

Compare nearby transport options	Compare options that will take me to my destination	Track the progress of my current service	My regular services / journeys

- Card sort activity
  - 5 potential users
  - Assessed functional areas
  - Established **primary** vs. **secondary** content



IA – Taxonomy (PT)

Primary content

Secondary content

Public Transport

Compare nearby transport options

- Mode
- Id
- Departure time+
- Departure point
- Time/distance to departure point*

- Stop timings+
- Directions to departure point*
- Current vehicle location+
- Ticket requirements
- Stop accessibility

Compare options that will take me to my destination

- Mode
- Id
- Departure time+
- Arrival time+
- Trip duration+
- Cost
- Interchanges+

- Departure point
- Time/distance
  - -to departure point*
  - -at interchange(s)
  - -from arrival point
- Stop timings+
- Directions
  - -to departure point*
  - -at interchange(s)
  - -from arrival point
- Current vehicle location+
- Ticket requirements
- Stop accessibility

Track the progress of my current service

- Mode
- Id
- Departure time+
- Arrival time (journey)+
- Trip duration (journey)+
- Departure point
- Stop timings+
- Current vehicle location+
- Delay, cancellation info

- Interchanges
- Time/distance
  - -at interchange(s)
  - -from arrival point
- Directions
  - -at interchange(s)
  - -from arrival point
- Current user location
- Ticket requirements
- Stop accessibility

My regular services / journeys

- Mode
- Id
- Departure time+
- Arrival time (journey)+
- Trip duration (journey)+
- Interchanges (journey)+
- Delay, cancellation info

- Departure point
- Time/distance
  - -to departure point*
  - -at interchange(s)
  - -from arrival point
- Stop timings+
- Directions
  - -to departure point*
  - -at interchange(s)
  - -from arrival point
- Current vehicle location+
- Current user location
- Ticket requirements
- Stop accessibility

* Accounts for user location

+ Accounts for delays and cancellations

IA – Taxonomy (taxi)

Primary content

Secondary content

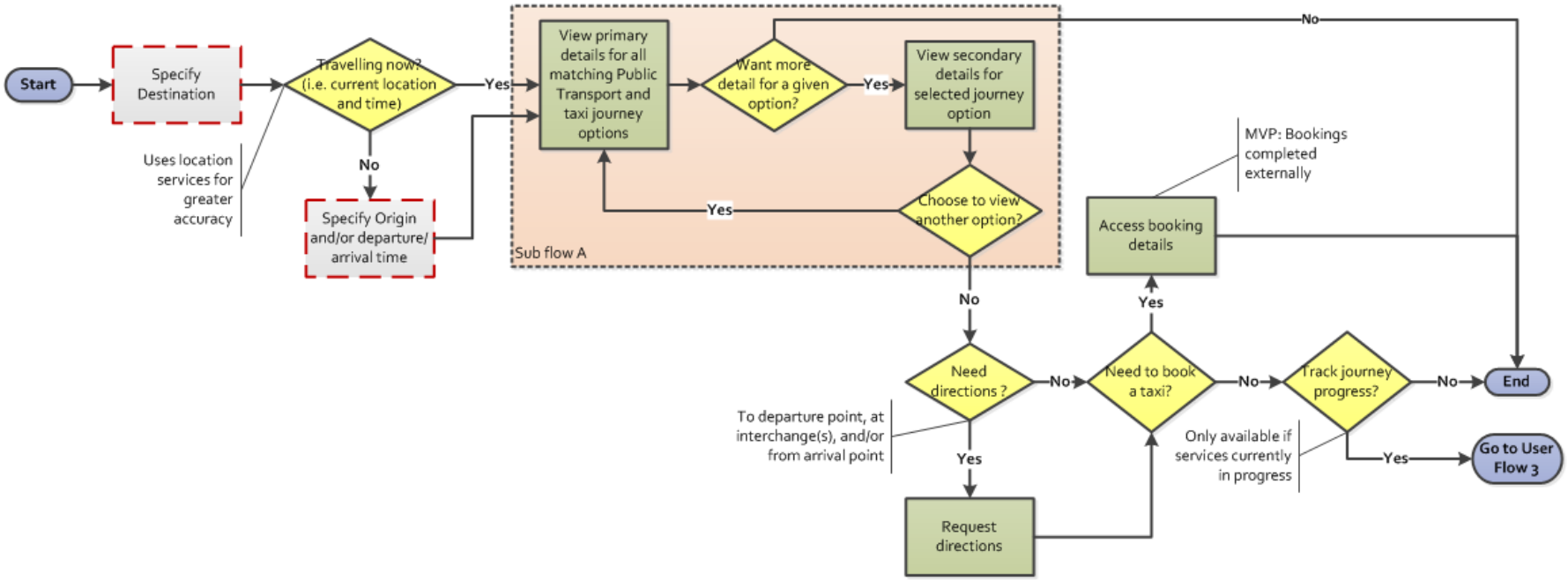
Compare nearby transport options	Compare options that will take me to my destination	Track the progress of my current service	My regular services / journeys
Taxi			
○ Rates ○ Company ○ Rank ○ Time/distance to rank*	○ Departure time (estimate)+ ○ Arrival time (estimate)+ ○ Duration (estimate)+ ○ Cost (estimate) ○ Company	○ Departure time (estimate)+ ○ Arrival time (estimate)+ ○ Duration (estimate)+ ○ Cost (estimate) ○ Route (estimate)+ ○ Current vehicle location+ ○ Current user location ○ Delay, cancellation info	○ Departure time (estimate)+ ○ Arrival time (estimate)+ ○ Duration (estimate)+ ○ Cost (estimate) ○ Company ○ Delay, cancellation info
○ Directions to rank* ○ Booking details ○ Current vehicle location+ ○ Current user location	○ Rates ○ Rank ○ Time/distance to rank* ○ Directions to rank* ○ Route (estimate)+ ○ Booking details ○ Current vehicle location+ ○ Current user location	○ Rates ○ Company	○ Rates ○ Rank ○ Time/distance to rank* ○ Directions to rank* ○ Route (estimate)+ ○ Booking details ○ Current vehicle location+ ○ Current user location

* Accounts for user location

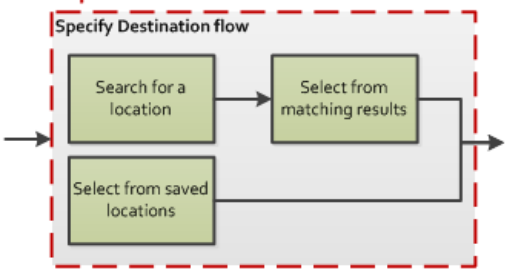
\+ Accounts for delays and cancellations

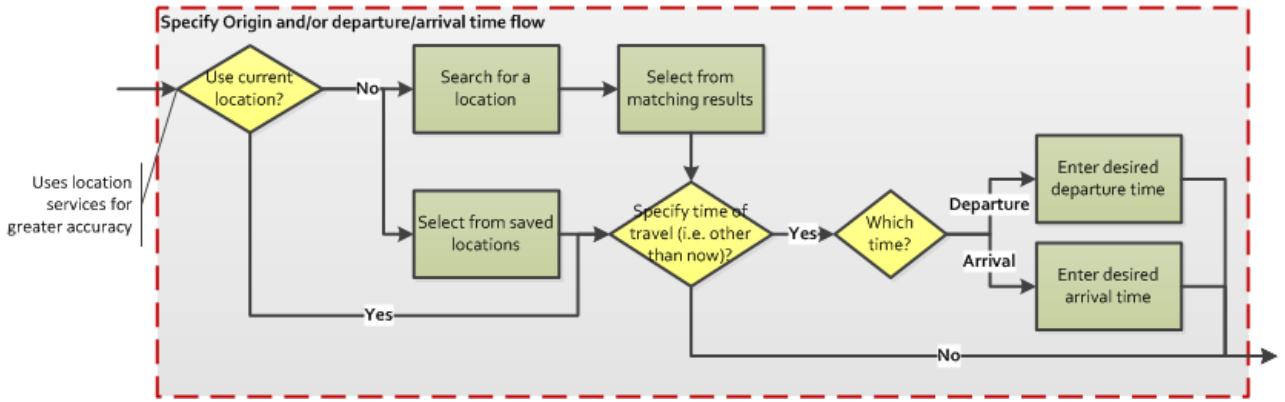
User Flows

Flow 1: Compare and select transport options for travel to a destination

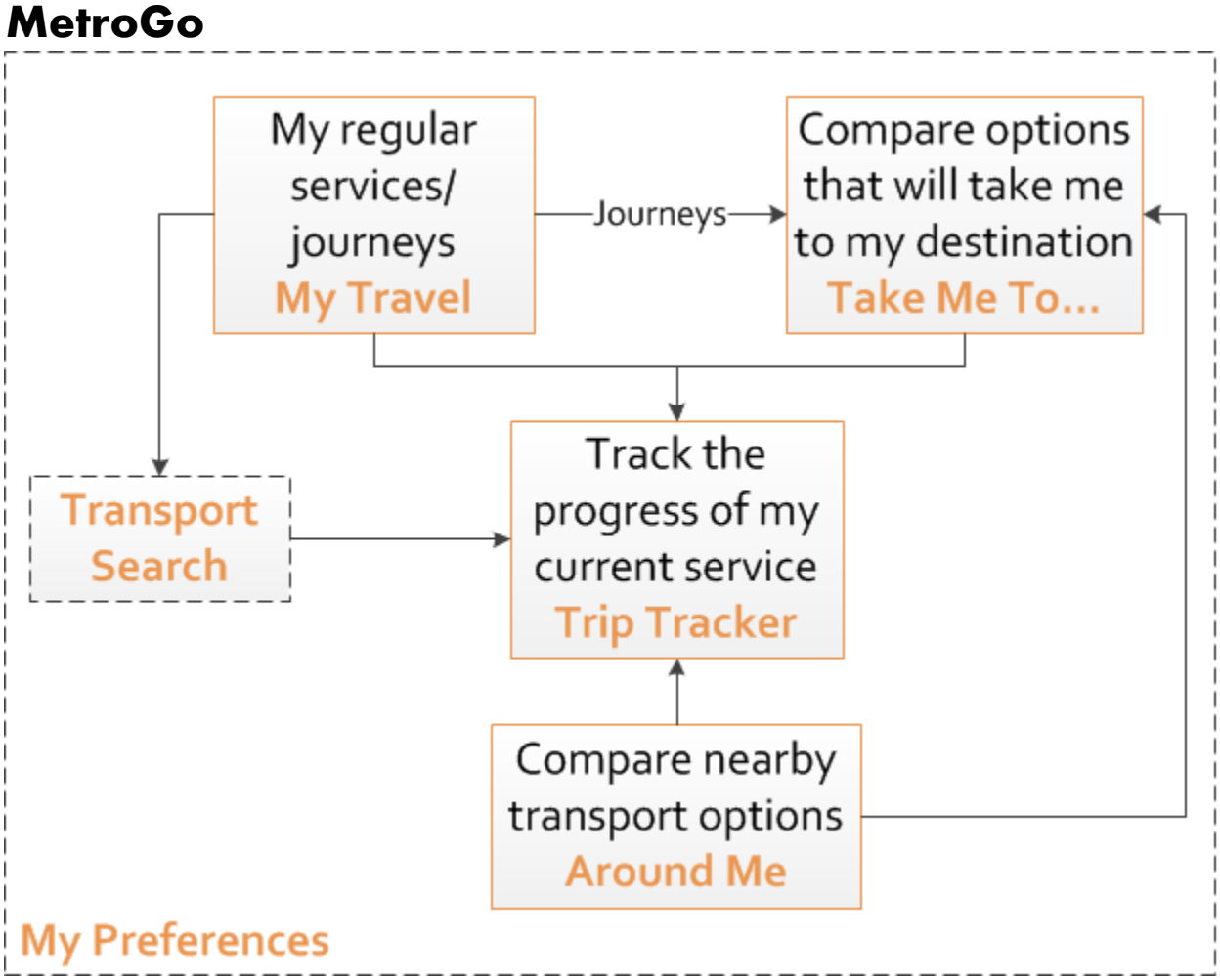


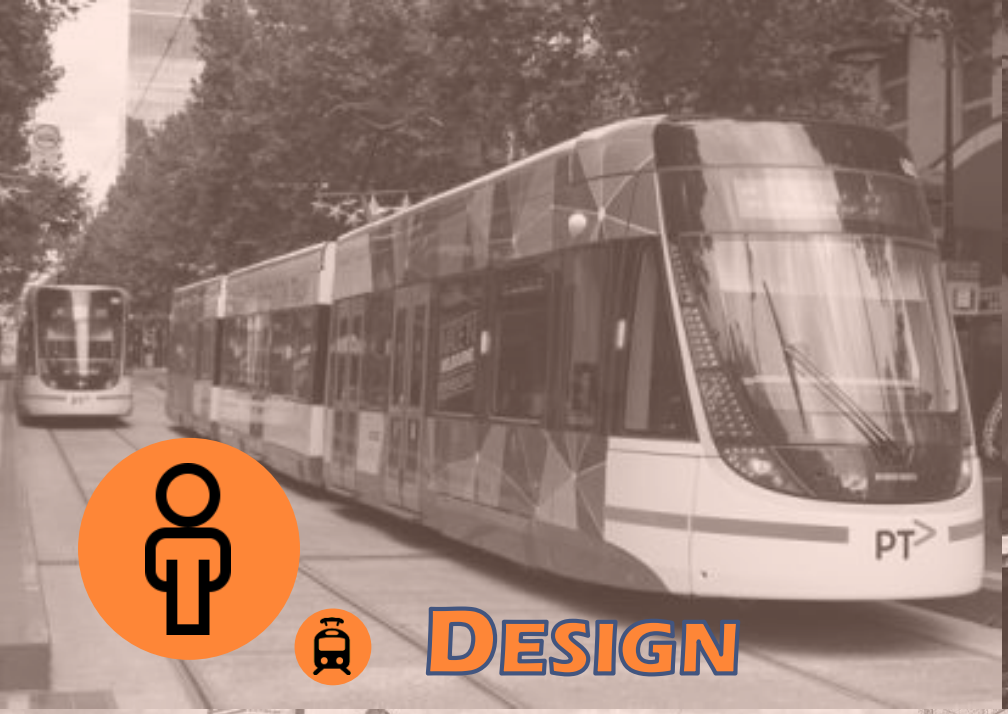
Expanded Flows





Feature Map


MetroGo
My regular services/ journeys
My Travel
Journeys
Compare options that will take me to my destination
Take Me To...
Transport Search
Track the progress of my current service
Trip Tracker
Compare nearby transport options
Around Me
My Preferences

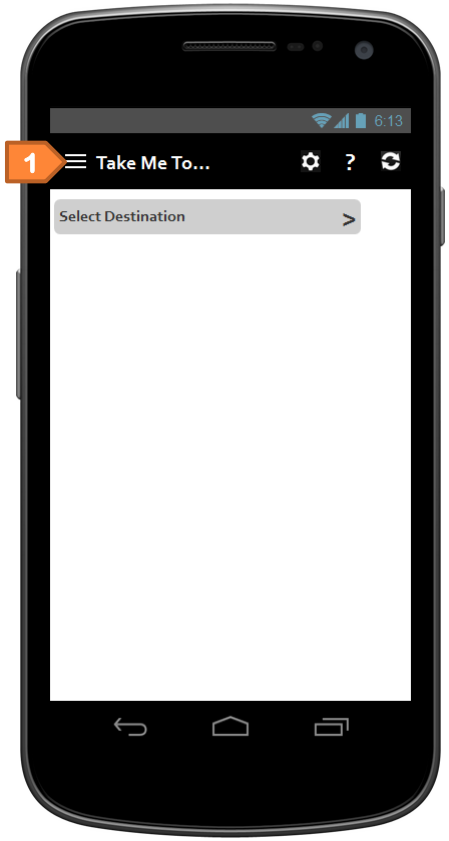


Design

Wireframes, Prototype, Usability Testing

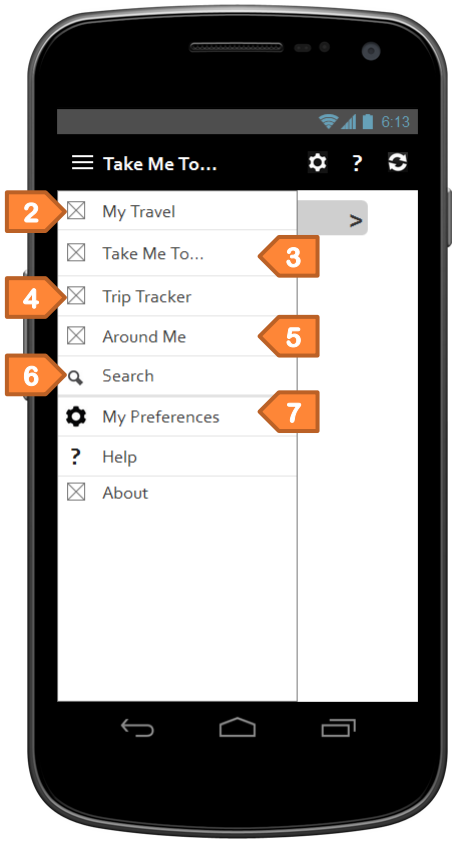
Wireframes

Landing Page



The page loaded each time the app is started (i.e. when not already open) will change over time, defaulting to the landing page for the most commonly accessed functional area, or the user's preferred landing page – where specified.

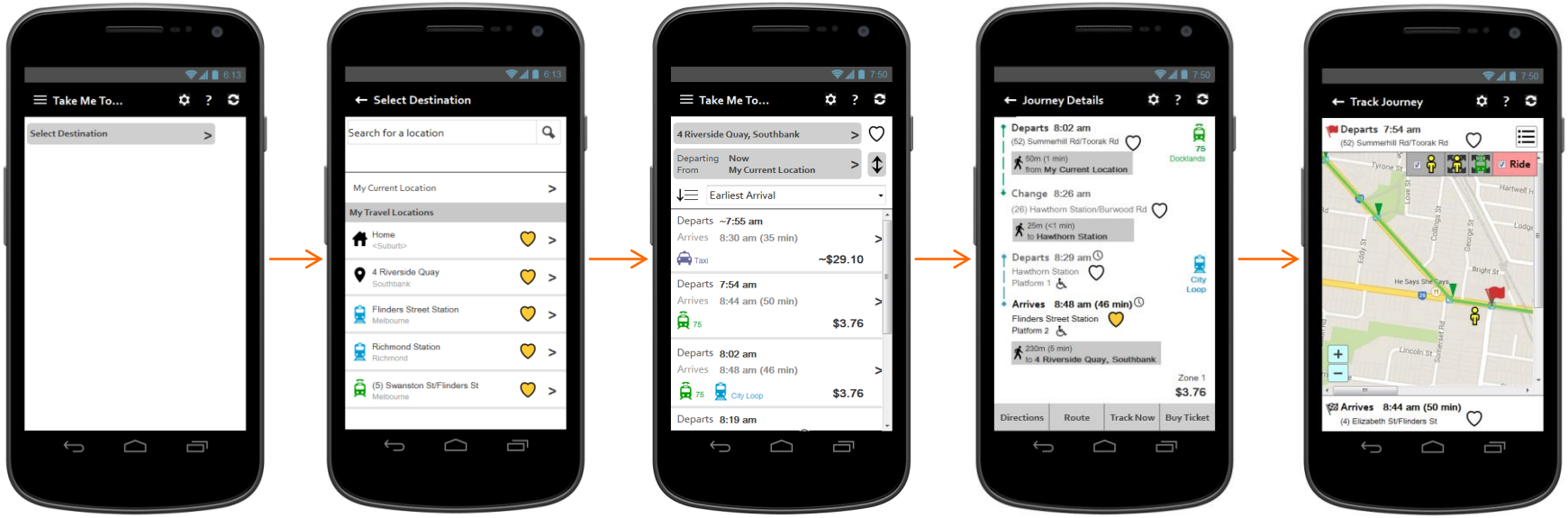
Navigation Drawer



1. Menu icon opens the Navigation Drawer (main menu)
2. Tap to open the 'My Travel' landing page
3. Tap to open the 'Take Me To…' landing page
4. Tap to open the 'Trip Tracker' landing page
5. Tap to open the 'Around Me' landing page
6. Tap to open (Transport) 'Search'
7. Tap to open app-wide 'My Preferences'

Wireframes – Take Me To...

Basic screen flow



Start

Select Destination

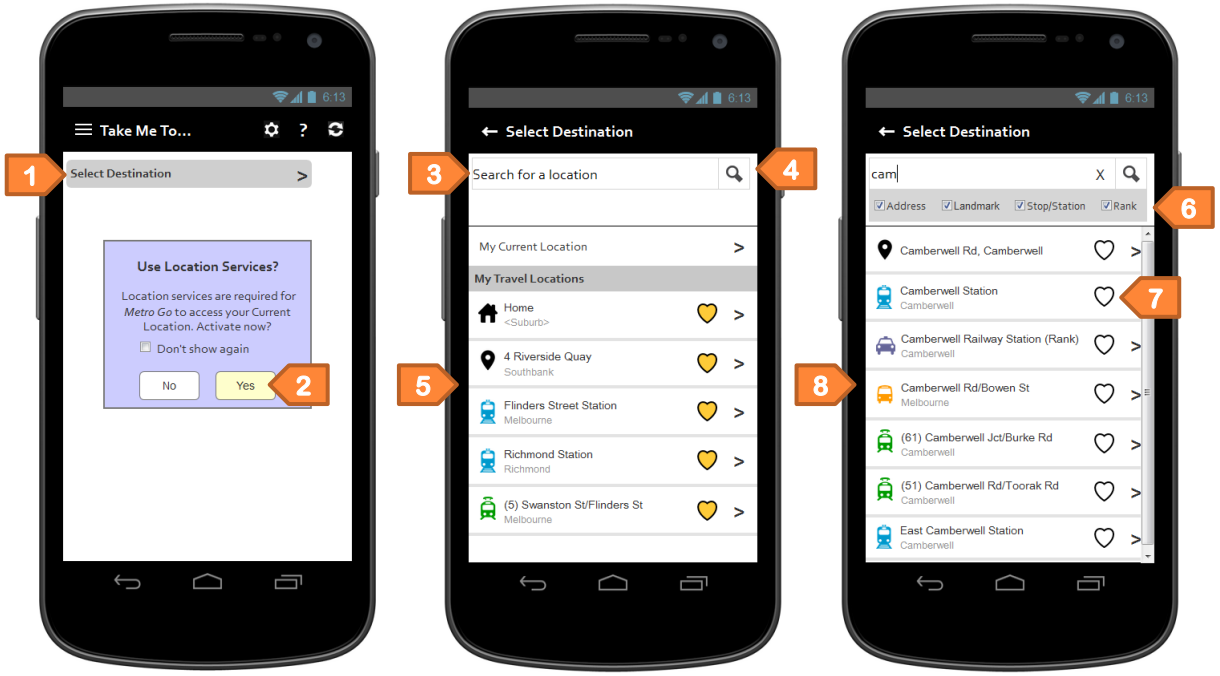
View Journey Options

View Journey Details

Track Journey

Wireframes – Take Me To...

Select Destination

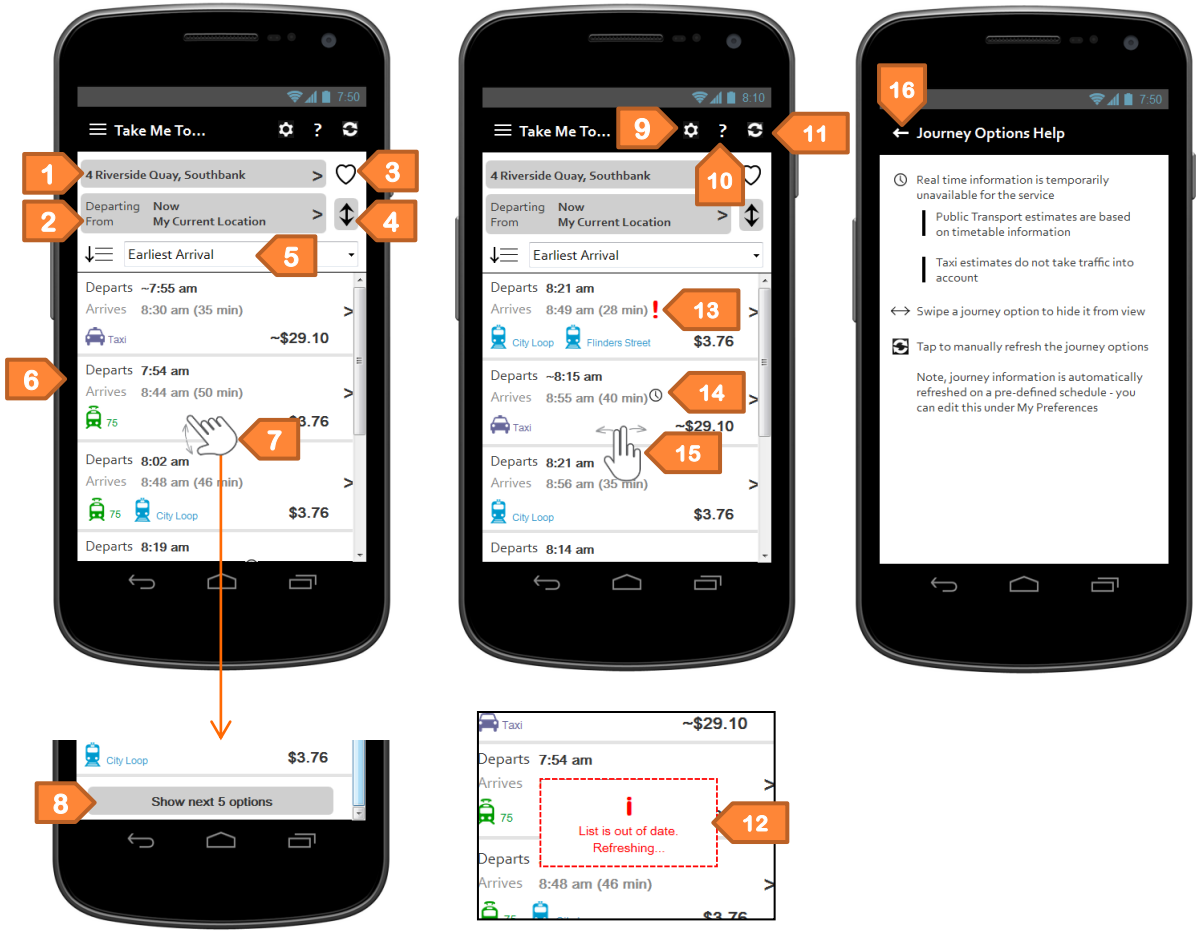


1. Tap button to open the Select Destination page
2. Turns on the phone's location services (GPS)
3. Typing in the Search field prompts a dynamic list of predictive results (see #7)
4. Tap Search icon to conduct a full search using the input text
5. Tap a location from the saved list to select as Destination*
6. Check/uncheck location types to filter the search results (predictive or full)
7. Tap icon to save location to 'My Travel' (icon changes colour); tap again to remove
8. Tap a location from the search results (predictive or full) to select as Destination*

* Prompts the journey planning process and opens the list of journey options

Wireframes – Take Me To...

Journey Options

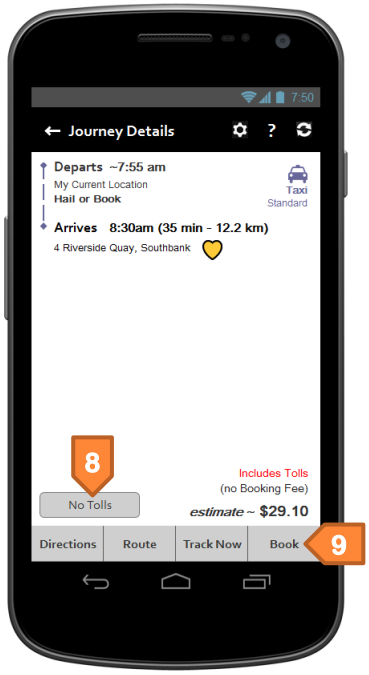


1. Tap button to change the Destination (opens Select Destination page)
2. Tap button to change the Origin and travel time (opens Select Origin/Time page)
3. Tap icon to save journey to 'My Travel' (icon changes colour); prompts to include/not include current time; tap again to remove
4. Tap to reverse the journey direction
5. Open selection list to change the sort order of the journey options
6. Tap an option to view more detail (opens Journey Details page)
7. Scroll the journey options to see full list
8. Tap button to add next 5 journey options to list (based on current sort order)
9. Tap icon to view/edit 'Take Me To...' preferences (opens contextual 'My Preferences' page)
10. Tap icon to open contextual Help page
11. Tap icon to manually refresh the journey options (based on real-time data)
12. The journey list is auto refreshed on a pre-defined schedule; a message is displayed where there are significant changes
13. Indicates important changes to an existing journey following a refresh
14. Indicates non real-time data
15. Swipe left/right on a journey option to hide it from the current list
16. Tap icon to return to Journey Options

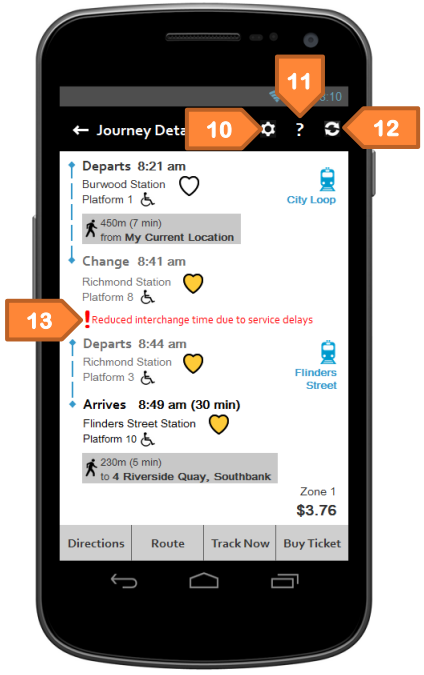
Wireframes – Take Me To...

Journey Details

Taxi example



Single PT mode example



Interchange example

1. Tap icon to return to Journey Options
2. Shows distance and time to departure point/at interchange/from arrival point; transfer mode is set under My Preferences
3. Tap icon to save service location to 'My Travel' (icon changes colour); tap again to remove
4. Tap button to open the Directions page
5. Tap button to open the journey Route page
6. Tap button to track the journey (opens Track Journey page); only available if journey services are currently underway
7. Tap button to access external functionality for purchasing a PT fare (MVP)
8. Tap button to include/exclude tolls in the (Taxi) journey estimates
9. Tap button to access external functionality for booking a Taxi (MVP)
10. Tap icon to view/edit 'Take Me To...' preferences (opens contextual 'My Preferences' page)
11. Tap icon to open contextual Help page
12. Tap icon to manually refresh the journey details (based on real-time data); nb. the details are auto refreshed on a pre-defined schedule (a message is displayed where there are significant changes)
13. Indicates important changes to the journey following a refresh

Wireframes – Take Me To...

Track Journey (Trip Tracker)

1. Tap icon to return to Journey Details
2. Activates alerts for the journey (Ride mode)
3. Tap icon to save service location to 'My Travel' (icon changes colour); tap again to remove
4. Tap to switch between map and list view
5. Check/uncheck to show/hide user's location on the map
6. Tap to centre the map on the user's location
7. Tap to centre the map on the service vehicle's location
8. Check/uncheck to activate/deactivate Ride mode
9. Tap transport stop to view id info
10. Drag the map to pan the view
11. Alerts are automatically displayed – when in Ride mode – based on important journey triggers (e.g. imminent departure/arrival, delays)
12. Scroll to see the full list of stops and timings for the journey
13. Nearest stop(s) to current vehicle location are highlighted
14. Journey departure point is designated

Prototype & Usability Testing

- Potential improvements
  - Include ability to view the user's derived location, either on a map, as an address or both
  - Show the currency of the journey information (e.g. "last updated at 7:04pm")
  - Include the distance to the departure point (from Origin) and from the arrival point (to Destination) within the Journey options
  - Make the Journey details 'Action' buttons more obvious
  - Do not rely on Help pages for explaining real time data concepts
  - Set the initial map view to show the location of both the user and the service vehicle
  - Allow the user to easily view the departure time of the next scheduled service (PT) when tracking a journey

Beyond the MVP

- My Preferences feature (comprehensive coverage)
- Transport Search feature
- Integrated Taxi bookings and PT fare purchase/top-up
- User feedback suggesting additional or better routes
- Support interstate metro travel
- Additional transport modes (e.g. hire car, car share, bike share)