

DTTPPM 2023

ParkWise

Product Requirement Document

A solution to help drivers park quickly, efficiently and legally.

Spec Status: Draft / Peer Review / Mentor Review / **Complete**

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I want to move forward to build this product with a cross-functional team in the Co.Lab Program: **Yes**

DTTPPM 2023 Cohort

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The Problem Space

Executive Summary

ParkWise is a mobile application that streamlines the process of locating available free and paid street parking, reducing time and frustration as well as the likelihood of parking violations for drivers, in urban cities, particularly Downtown Vancouver.

Problem Statement

Our aim is to minimize the time drivers spend to locate free and paid street parking, making it easier for all drivers, including new drivers, tourists, newcomers, and drivers with disabilities. We seek to reduce frustration and the risk of parking violations.

Hypothesis

We hypothesize that ParkWise will improve drivers' parking experiences by providing real-time information on available parking spots near their destinations. (Specific features and solutions are under development.)

Customers

Our target demographic includes Downtown Vancouver residents, as well as new drivers, tourists, and newcomers. Expansion to other urban cities is planned due to the universality of parking challenges.

Problem Background

The goal of ParkWise is to enable drivers to find free and available paid street parking in Urban cities with a focus on Downtown Vancouver.

Parking is a significant challenge in Downtown Vancouver, leading to frustration, parking violations, and traffic issues. Our research revealed the following:

- 100% of surveyed drivers reported frustration and an average of 15 minutes spent on parking.
- 20% had to park far from their destination.
- 90% expressed the need for real-time parking availability information.
- 50% expressed interest in receiving updates on our product by providing contact details.

Current “Solutions”

Currently, no tools are available to assist drivers in locating available free and paid street parking spots in Downtown Vancouver. Our research revealed that 33% of survey respondents and 100% of interviewees rely on a trial-and-error approach to find parking. Additionally, 10% of the survey respondents expressed uncertainty about the legality of their chosen spots due to complex parking signs.

The "Pay-by-Phone app" is commonly used by Vancouver drivers for making street parking payments and managing parking time limits. However, it lacks the functionality to suggest available parking spots. In our interviews, all users expressed a desire for the app to provide such suggestions, especially in situations where re-metering is not feasible, and they need to relocate their vehicles.

Why must it be addressed?

Parking difficulties are a common and widespread issue, especially in densely populated urban areas like Downtown Vancouver, causing lateness, violations, and frustration as drivers have reported spending a significant amount of time (at least 10 minutes), driving around their destination searching for parking. Thus, simplifying parking in Downtown Vancouver is essential.

Goals

1. To simplify the process of parking in Downtown Vancouver by helping drivers easily locate free and paid parking spots close to their destinations.
2. To reduce the chances of drivers getting parking violations due to illegal parking.
3. To assist drivers with disabilities, find appropriate disabled parking spots in Downtown Vancouver.
4. To help decrease the time spent searching for parking in Downtown Vancouver.
5. To alleviate parking-related anxiety and frustration.

User Stories

User Story 1: Simplified Parking Search

- As a driver, I want to enter my destination to receive live updates and suggested free and paid street parking spots that are available close to my destination.
- **Why:** This feature directly addresses the core problem of simplifying the parking search process, making it more efficient for users.

User Story 2: Personalized Parking Profile

- As a driver, I want to create a profile that stores information about my car, permits, and licenses so that available parking spots can be suggested based on my information.
- **Why:** Personalization enhances the user experience by providing tailored parking suggestions, taking into account individual vehicle details and permits.

User Story 3: Advance Parking Notifications

- As a driver, I want to know in advance if there are parking spots available at my destination so I can decide on alternative transportation methods if need be.
- **Why:** This feature helps users plan their trips more effectively, reducing uncertainty and frustration associated with parking availability.

User Story 4: Parking Time Management

- As a driver, I want to keep track of my parking time limit and receive notifications when my limit is about to expire so that I can re-park and avoid parking violations.
- **Why:** This feature addresses a common concern for drivers and helps them manage their parking time effectively, reducing the risk of violations.

User Story 5: Safety Notifications and Reporting

- As a user, I want to receive safety notifications in parking areas and have the ability to report safety issues so that I and other drivers can stay informed about safety conditions, enabling us to make informed decisions on where to park.
- **Why:** Safety is a critical aspect of the parking experience, and this feature empowers users to share and access information that can enhance their security.

The Solution Space

Proposed Solution (WIP)

We aim to develop a user-friendly platform that empowers drivers to easily locate free and paid street parking near their destination through real-time information. Users can create personalized profiles to receive tailored parking suggestions.

Scenarios

User Story 1: As a driver, I want to enter my destination to receive live updates and suggested free and paid street parking spots available nearby.

- **Scenario #1:** Enter destination and receive live updates on available parking spots

Acceptance Criteria:

- Users can enter their destination in the search bar.

- Users receive up-to-the-minute information on parking availability.
- Hands-free notifications are triggered as users approach their destinations

User Story 2: As a driver, I want to create a profile that stores information about my car, permits, and licenses so that available parking spots can be suggested based on my information.

- **Scenario #1:** Creating a User Profile

Acceptance Criteria:

- Users can input their personal details (First and Last Name, Date of birth, Home Address, Phone number) and Vehicle information.
- Parking permits, such as residence and disability permits, can be added.

- **Scenario #2:** Managing Frequently Visited Locations

Acceptance Criteria:

- Users can save frequently visited locations and associated parking spots.
- Suggestions for frequently visited spots are provided.

User Story 4: As a driver, I want to keep track of my parking time limit and receive notifications when my limit is about to expire so that I can re-park and avoid parking violations.

-**Scenario #1:** Time Limit Reminders

Acceptance Criteria:

- Users can record their parking start time.
- Users can enter details of parking time limit
- Notifications alert users as their time limit approaches (~10 minutes left).

-**Scenario #2:** Re-parking Suggestions

Acceptance criteria:

- Users are prompted to consider re-parking when their time limit expires
- Users can get recommendations about nearby available free and paid street parking options

User Story 5: As a user, I want to receive safety notifications in parking areas and have the ability to report safety issues so that I and other drivers can stay informed about safety conditions, enabling us to make informed decisions on where to park.

-**Scenario #1:** Receive safety alerts

Acceptance Criteria:

- Users can receive notifications regarding reported incidents informing them about safety concerns reported in the area such as possible break ins.
- Users can accept or refuse parking based on these safety alerts.

-**Scenario #2:** Reporting safety issues based on their experience.

Acceptance Criteria:

- Users can report safety concerns through provided text boxes.

Measuring Success

Co.Lab Success Metrics

By Demo day, we aim to achieve a fully functional platform enabling users to input their destination, create a user profile, and begin receiving parking updates. Thus, we would be prioritizing User stories 1 & 2. This would be finalized with input from the team, after Sprint velocity has been calculated.

Product Success Metrics

- Number of users signed up
- Number of parking sessions
- Track the number of drivers tracking time limit through the platform (i.e., Parking Time Limit Tracking Rate)
- Number of App Downloads
- Active User Count
- User Engagement Rate
- Customer Satisfaction (NPS)
- Retention Rate
- Conversion Rate

Milestones & Timeline

- Ideation
- Research
 - Interviews
 - User Stories
 - Scenarios
- MVP Determination
 - Feature Prioritization
 - Backlog Refinement
- Development Iterations
 - Mobile App & App Clip Design
 - User Journey Mapping
 - Wireframes & Mockups
 - Prototyping
- User/Usability Testing
 - Pilot Phase
 - Feedback Collection
- Implementation & Launch
 - Marketing Materials
- Beyond

- Expanding Beyond Downtown Vancouver
- Minimal Technical Upkeep
- Leverage Google Maps' API for navigation functionality.

Open Questions/Appendix

- Consider supporting drivers in urban cities outside of Downtown Vancouver.
- Explore the option of offering the app as an iOS App Clip for faster rollout.
- Incorporating a navigation feature within the app to provide users with a seamless experience, eliminating the need to switch between multiple apps. This integration ensures that both navigation and parking solutions are conveniently available within a single app.
- Implement color codes for parking spot availability (Green: Available, Yellow: 20 minutes left, Red: Unavailable).
- Automatically input parking time limits based on local regulations.
- Enable information sharing among users.
- Explore the possibility of integrating payment services within the app to offer users a convenient method for paying for parking, thus enhancing the overall parking experience.
- User research Data:
 - [Survey Questions](#)
 - [Survey Responses](#)
 - [Customer Interview Questions and Responses](#)

References

[Financial Post: Parking in Vancouver](#)

[Parklio: 5 urban parking problems and their smart solutions](#)

[Steve Saretsky: Vancouver parking problems](#)

[CBC News: Worst Parking lots in Vancouver](#)

[Trip Advisor: Safety when parking my car for a day or two](#)

[Quora: What are the best parking spots near Downtown Vancouver](#)

[CBC News: Why is Vancouver's Downtown Eastside so dangerous for pedestrians](#)