

Green P Mobile App Redesign Case Study



May 14, 2018

**By Jump UX
(Johnny Farr, Przemek Jalowski & Marc Richler)**

Thank You

To the team at Green P -

It has been an absolute pleasure for us to work on increasing the usability of the Green P app. Our team has thoroughly reviewed the heuristics of this project and would like to submit this proposal for you to review.

Please let us know if you have any questions, and we look forward to working together to rebuild the Green P app into an app that makes it easy for every user to pay for parking.

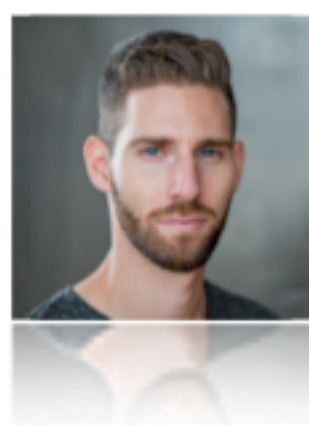
Thanks again,
JUMP UX



Johnny
Farr



Przemek
Jalowski



Marc
Richler

Proto-Persona

In order to guide us with identifying which parts of the Green P app need immediate attention, we developed a proto-persona and guided the decision making process through their eyes.



Meet Dianne Dickinson.

Dianne is a 26 year old HR Coordinator who lives in Vaughan and makes \$56K a year. As a foodie, she comes downtown every weekend to dine at a new, hip restaurant with her friends. These restaurants are usually in harder-to-reach areas, so Dianne prefers to drive instead of taking transit. Dianne prefers to use Green P as it is the only app in Toronto that allows her to use her phone to pay for a ticket.

We evaluated the heuristics of the task that Dianne used most - obtaining a parking pass.

Current Task Flow: Obtaining a Parking Pass

Enter Location ID	Select Vehicle	Length of Stay	Green P Account	Green P Account						
<p>Enter the Location ID posted at this location:</p> <input type="text" value="Enter Location ID"/> <p>Continue</p> <p>Most Recent Location</p> <table><tr><td>4814</td><td>></td></tr><tr><td>668</td><td>></td></tr><tr><td>854</td><td>></td></tr></table> <p>MOBILE PAY Visit greenp.com 000 Location ID</p> <p>Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,</p>	4814	>	668	>	854	>	<p>Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))</p> <p>BRBY957 (ON) - Nissan Coupe</p> <p>Add Vehicle</p> <p>Location Information Toronto Parking Authority - (416) 393-7275</p>	<p>Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.</p> <p>Flat Rate (until 6:00 AM on Wednesday) (\$12.00)</p> <p>Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing, you agree that you are abiding to all signage regarding restrictions and rules, including all posted signage where your vehicle is parked. All fees stated include HST.</p>	<p>Please select the Green P Account below to continue. This session will deduct from the following balance:</p> <p>VISA GreenP Account *2870 Current Balance: \$12.70</p>	<p>Please select the Green P Account below to continue. This session will deduct from the following balance:</p> <p>VISA GreenP Account *2870 Current Balance: \$12.70</p> <p>Please Confirm Is the following correct? Location: 854 Location: Ex-Place (Lot 854) License Plate: ON BRBY957 Start: Tue, May 08, 10:14 PM End: Wed, May 09, 06:00 AM Parking Fee: \$12.00 Total Fee: \$12.00 Payment Info: GreenP Account</p> <p>No Yes</p>
4814	>									
668	>									
854	>									

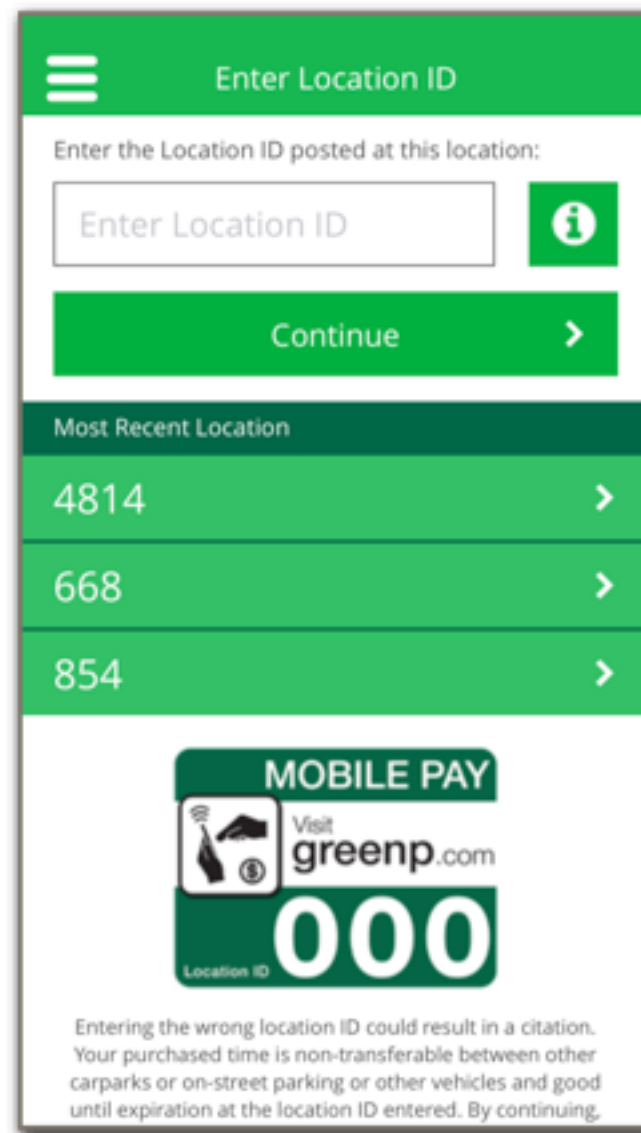
Heuristic Evaluation (of the main task flow):

The task flow was assessed 5 separate times, each time being viewed through a different heuristic lens, focusing on how it was applied. Each assessment was given a performance rating solely based on heuristics. These performance ratings were then applied to determine a final general usability rating out of 25 (5 points for each of the chosen heuristics).

List of Heuristics Evaluated in Usability Assessment:

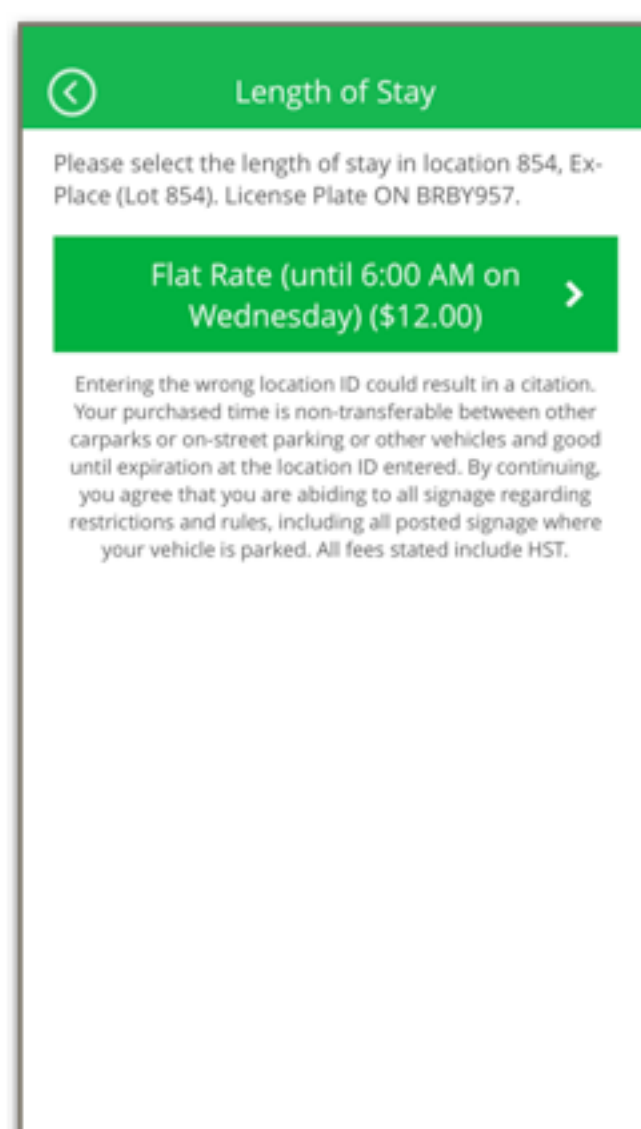
1. Aesthetic & Minimalist Design
2. Visibility of System Status
3. Match Between System and the Real World
4. Consistency and Standards
5. Recognition Rather than Recall

Heuristic #1 - Aesthetic & Minimalist Design



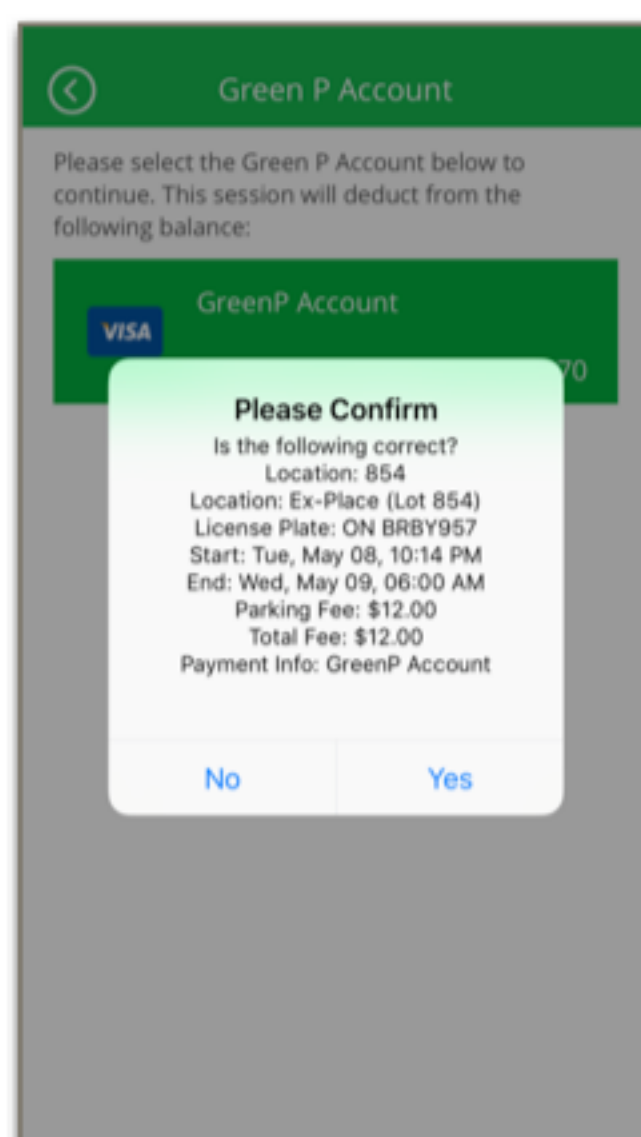
Screen 1 - There are too many units of competitive dialogue in the details section at the bottom of this screen. This is important information, but Dianne is unlikely to read it as the amount of content is overwhelming. Reducing this text to the most important line of information will increase its relative visibility and likelihood that Dianne will actually read it.

Recommended Improvements: Reduce this text to a single, succinct line and then include an “Info” icon next to this line of text so that the original additional information can be displayed in a pop-up dialogue.



Screen 3 - The same details section on screen 1 appears again on screen 2. This is completely irrelevant at this stage as Dianne has already seen this information.

Recommended Improvements: We will delete this unnecessary section.

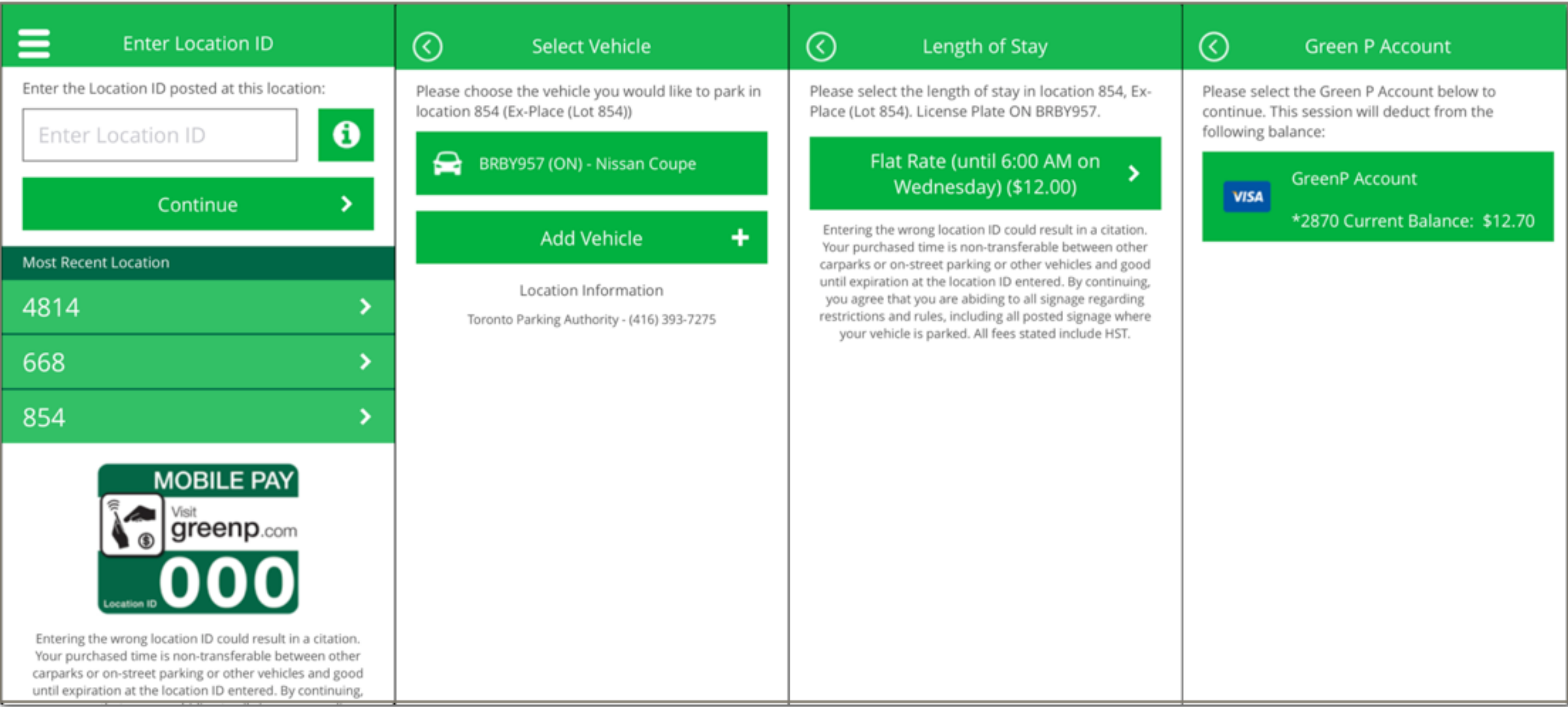


Screen 5 - The confirmation screen contains a lot of redundant information. As a result the important information stands the risk of being overlooked by Dianne who tends to get overwhelmed by too much text.

Recommended Improvements: Creating a different alert box with more succinct text will make this important information more notable to Dianne.

Aesthetic & Minimalist Design Rating: 2/5

Heuristic #2 - Visibility of System Status

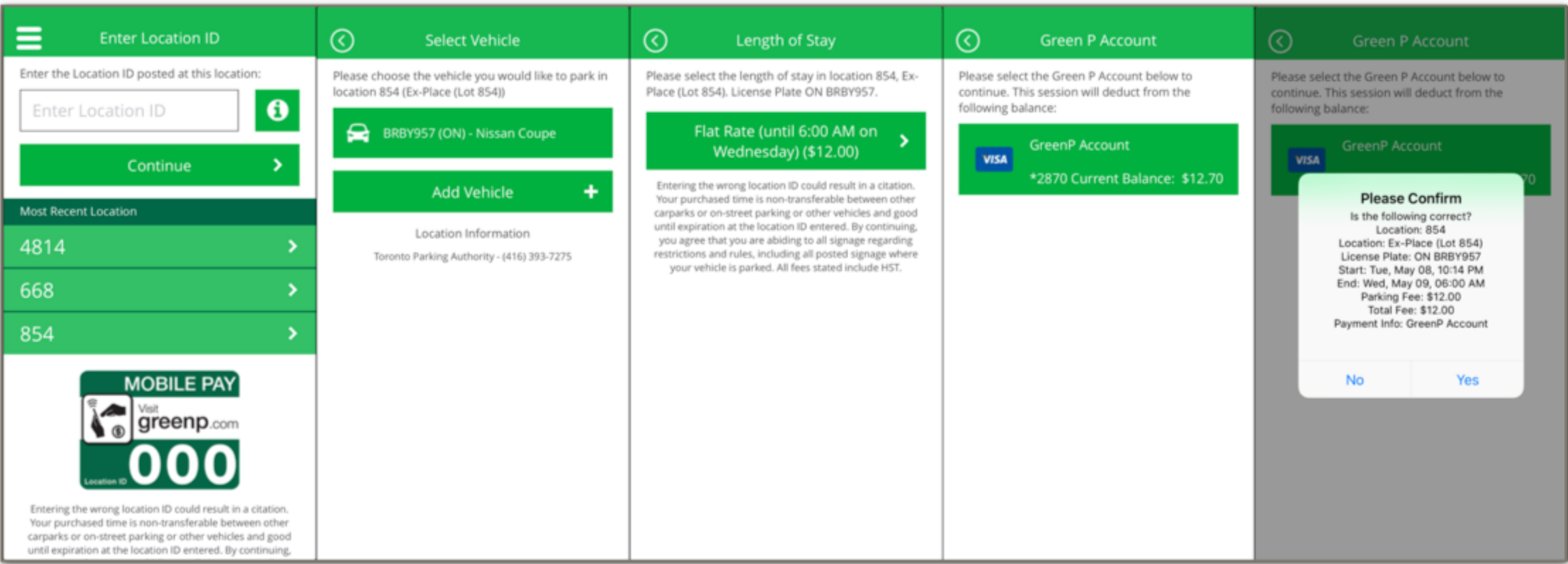


Screens 1, 2, 3, & 4 - App fulfils the heuristic of “visibility of system status” by keeping Dianne informed about what is going at each step of the process.. Although they are quick, there is confirmation in between each step informing her that it was completed or is being processed.

Recommended Improvements: No improvements necessary.. Although the status screens are very quick, we do not believe that extending the time they are displayed will be of any benefit.

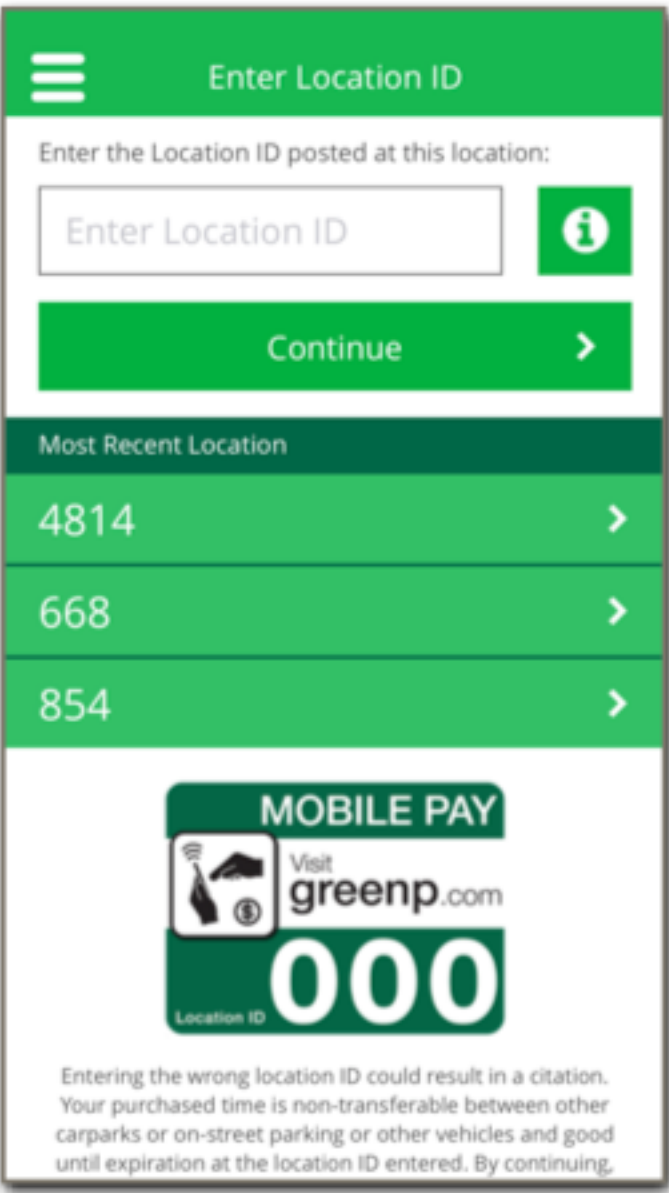
Visibility of System Status Rating: 4/5

Heuristic #3 - Match Between System and the Real World



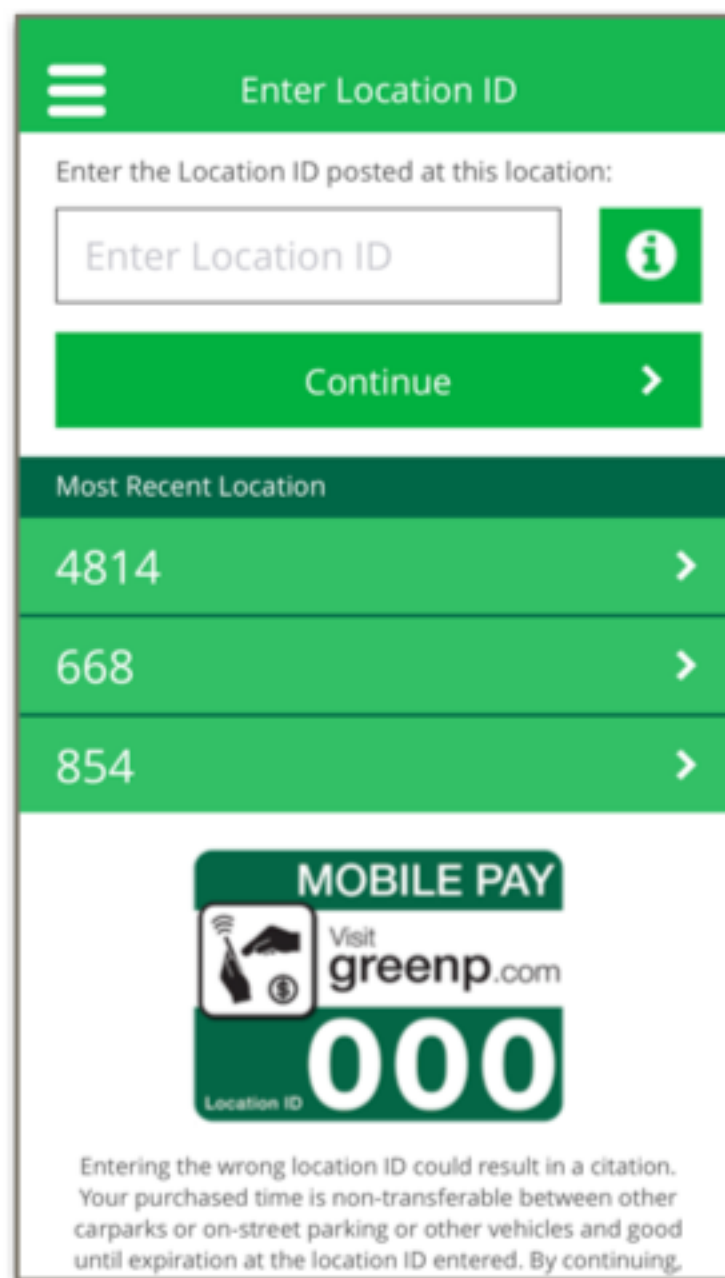
All screens - The system does a really good job of speaking in everyday language throughout the app. While not being overly friendly or conversational, the titles are descriptive, text is not too heavy on system-oriented language, and instructions are easily comprehensible.

Recommended Improvements Summary: No improvements necessary.



Screen 1 - In the “most recent locations” section, the locations are listed only in number form. When Dianne goes to park again at a recently used parking area it’s difficult for her to remember which number corresponds with which parking area. She either has to memorize a number, or find the posted parking number.

Recommended Improvements: While we can’t remove the numbers for logistical reasons, if we included the actual location or street names in this section - ex. Exhibition Place (854) - it will assist Dianne in remembering which number is associated with which lot or space.



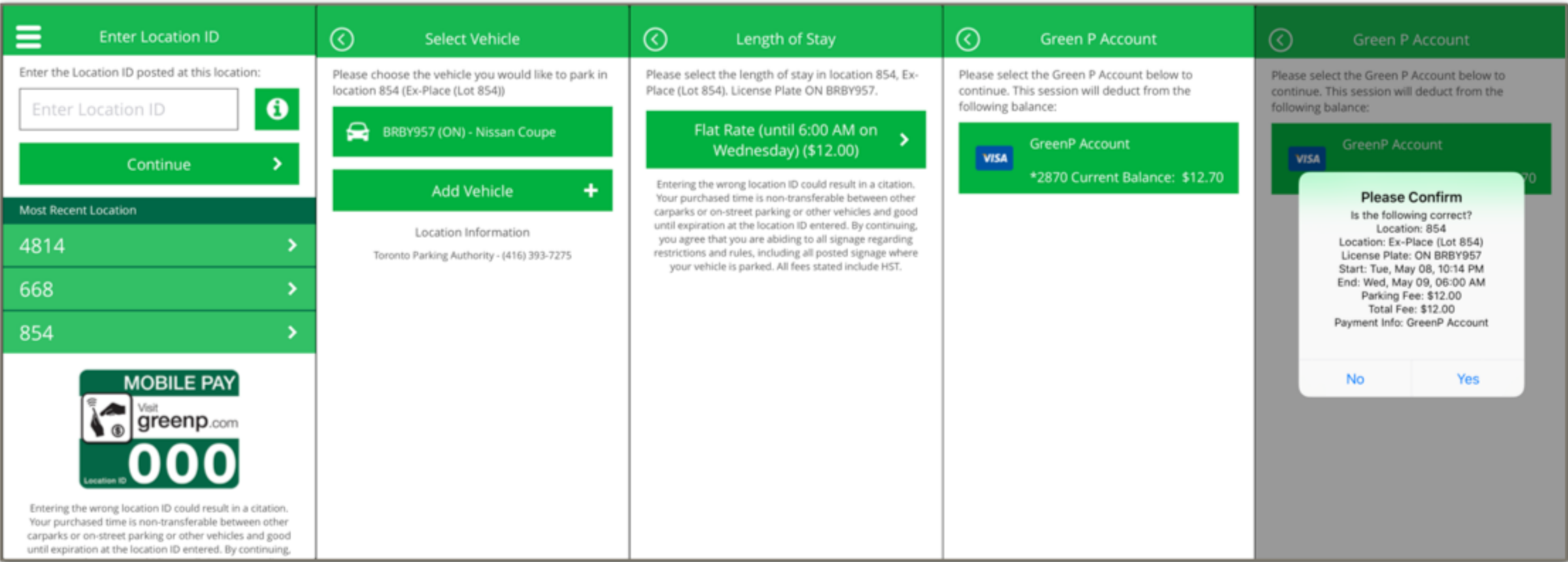
Screen 1 - There is a sign in the Exhibition Place parking lot that includes the lot number Dianne needs to enter in the app before she can pay. An image that replicates this real-world signage appears on the screen. This helps Dianne associate that the number she sees in the lot is the same one she's meant to enter in the app. This real-world replication does a really great job of orienting her by following real-world conventions.

However, in terms of the signage for street parking, there is no digital representation of this found in the app. As a result, the additional orientation Dianne received by parking in a lot, does not apply when she parks on the street.

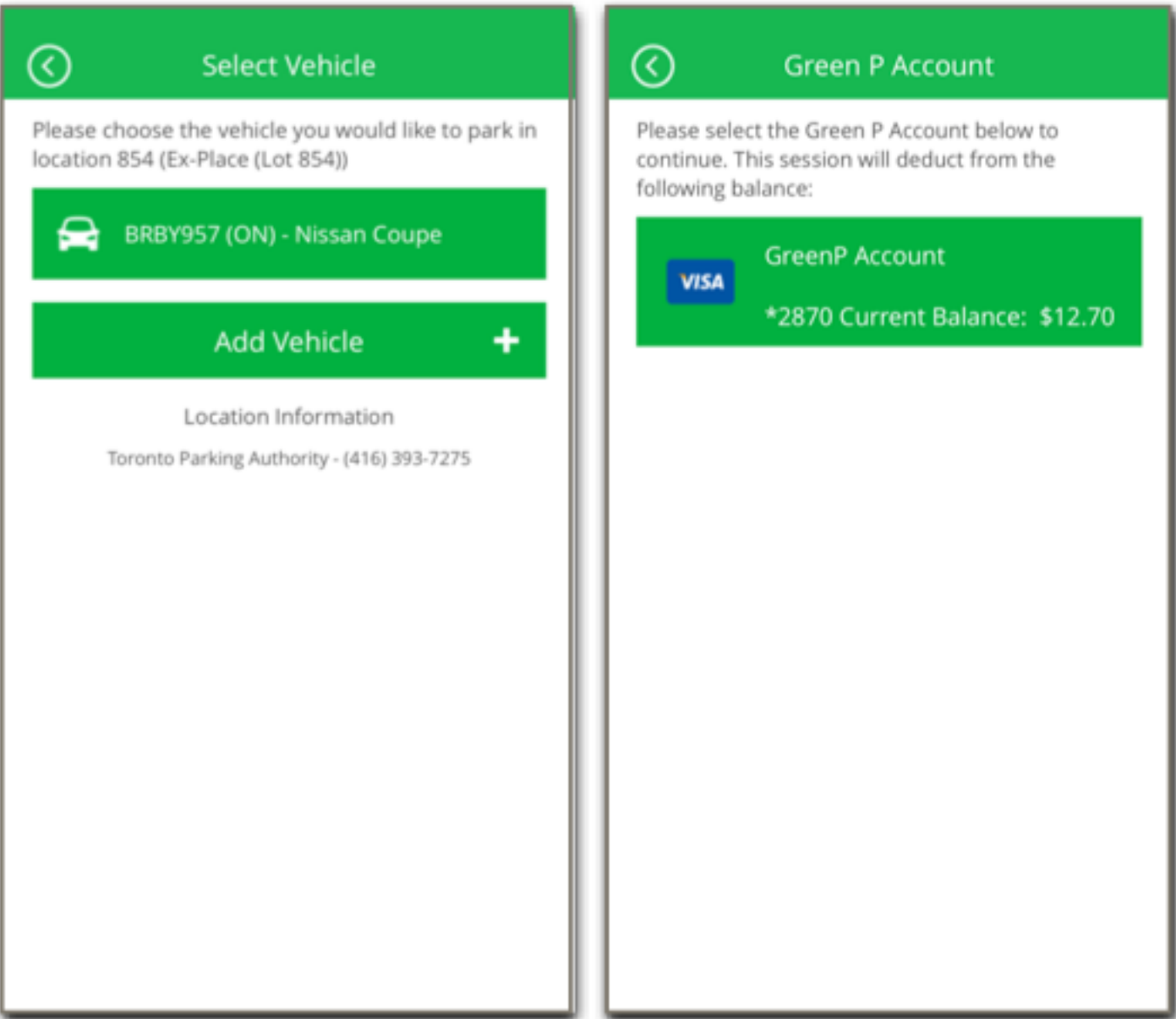
Recommended Improvements: By including an image of the street parking real-world signage in addition to the lot parking signage, Dianne will receive equal levels of assistance wherever she parks in the city.

Match Between Virtual & Real World Rating: 3/5

Heuristic #4 - Consistency and Standards

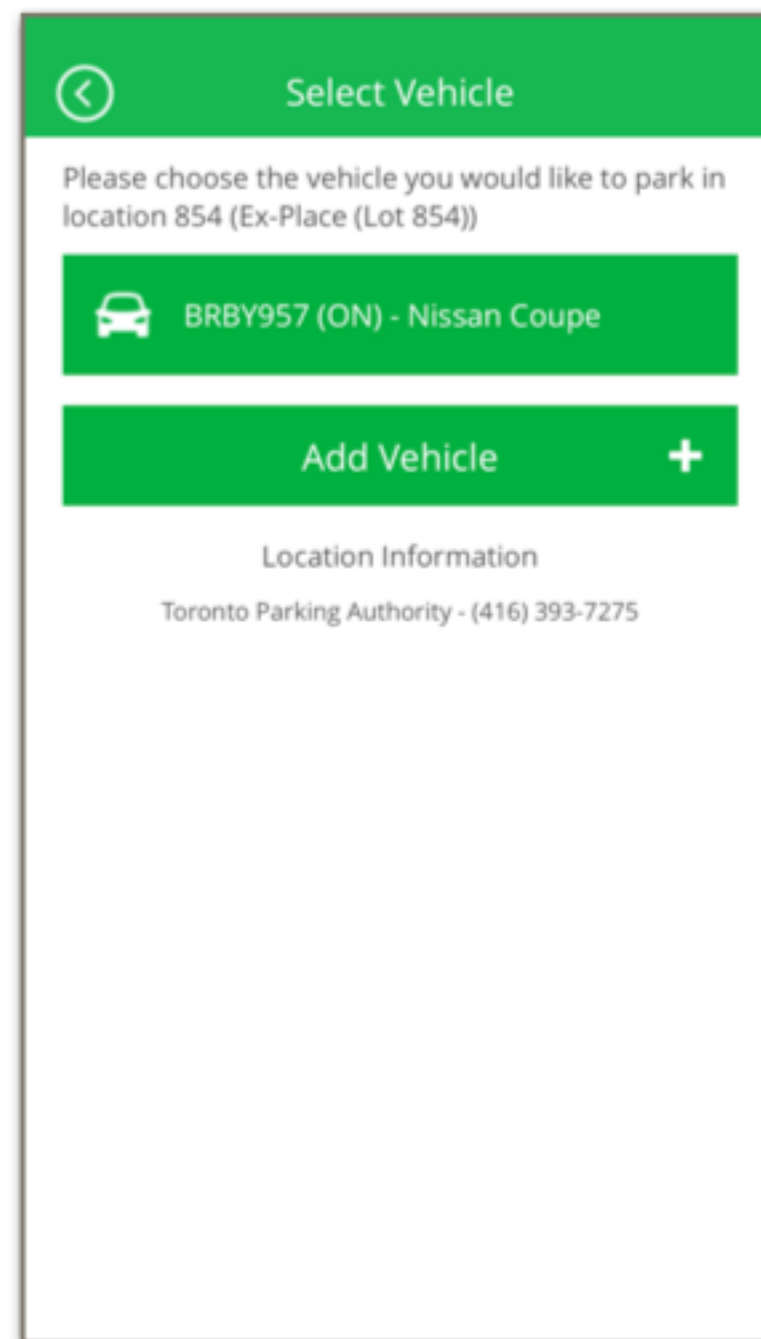


All screens - The app does a really good job of orienting Dianne to which screen she is on through the use of titles, as well as how to complete necessary page actions through well-worded instructions. It follows standard platform conventions through the use of consistent back navigation chevron buttons.



Screens 2, 4 - the forward navigation buttons are inconsistent. Sometimes “navigation next” chevrons are included to indicate tapping will bring you to a next screen, however on other screen these chevrons are absent. This lack of consistency may confuse Dianne’s understanding of which elements perform which actions.

Recommended Improvements: Add the missing chevrons in the appropriate places to create more consistency.

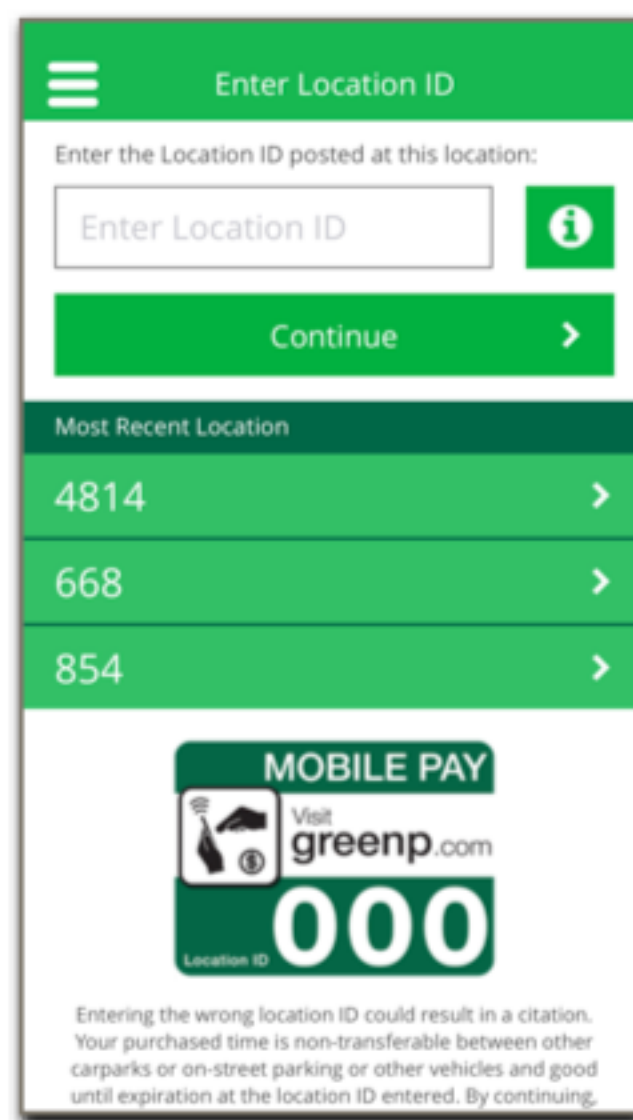


Screen 2 - The Toronto Parking Authority's phone number is listed for more "Location Information". Based on digital standards, Dianne would imagine that this number would be tappable to enable a phone call, however it is not. When tapped, there is no action that occurs.

Recommended Improvements: Add the missing chevrons in the appropriate places to create more consistency

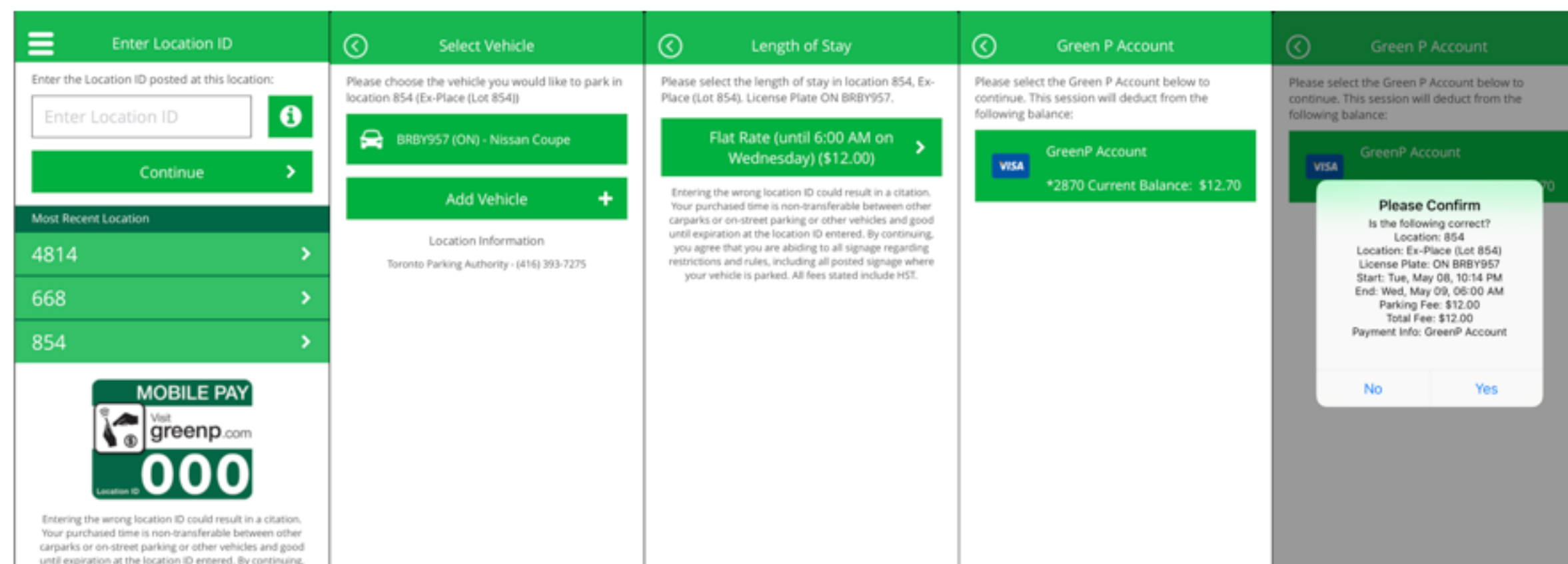
Consistency and Standards Rating: 3.5/5

Heuristic #5 - Recognition Rather than Recall



Screen 1 - The “Enter Location ID” field does a good job of making instructions for use of the system visible. It includes the command to enter the location ID in black above the entry field, as well as in greyed out text within the text field that disappears once Dianne starts typing. The greyed out text helps her know exactly where to type, and the black text above the entry field helps her not have to recall what the instruction was once she starts typing.

Recommended Improvements:
No improvements necessary.



All screens - The current app does not do a great job of helping Dianne remember information from one part of the flow to another. Once she advances, there are no indicators of previous or next steps. The only way for her to know what screens came beforehand is through recall.

Recommended Improvements: To minimize Dianne’s memory load, a checkout flow will be added to the top. Now as she moves along through her task, Dianne can easily recognize at what stage she’s in. A bonus advantage to this is it will also help out with the “Visibility of System Status” heuristic as it will help keep Dianne informed about what is going on at every step of her task flow.

Recognition Rating: 2.5/5

Overall Usability Score For The 5 Chosen Heuristics: 15/25

Solution

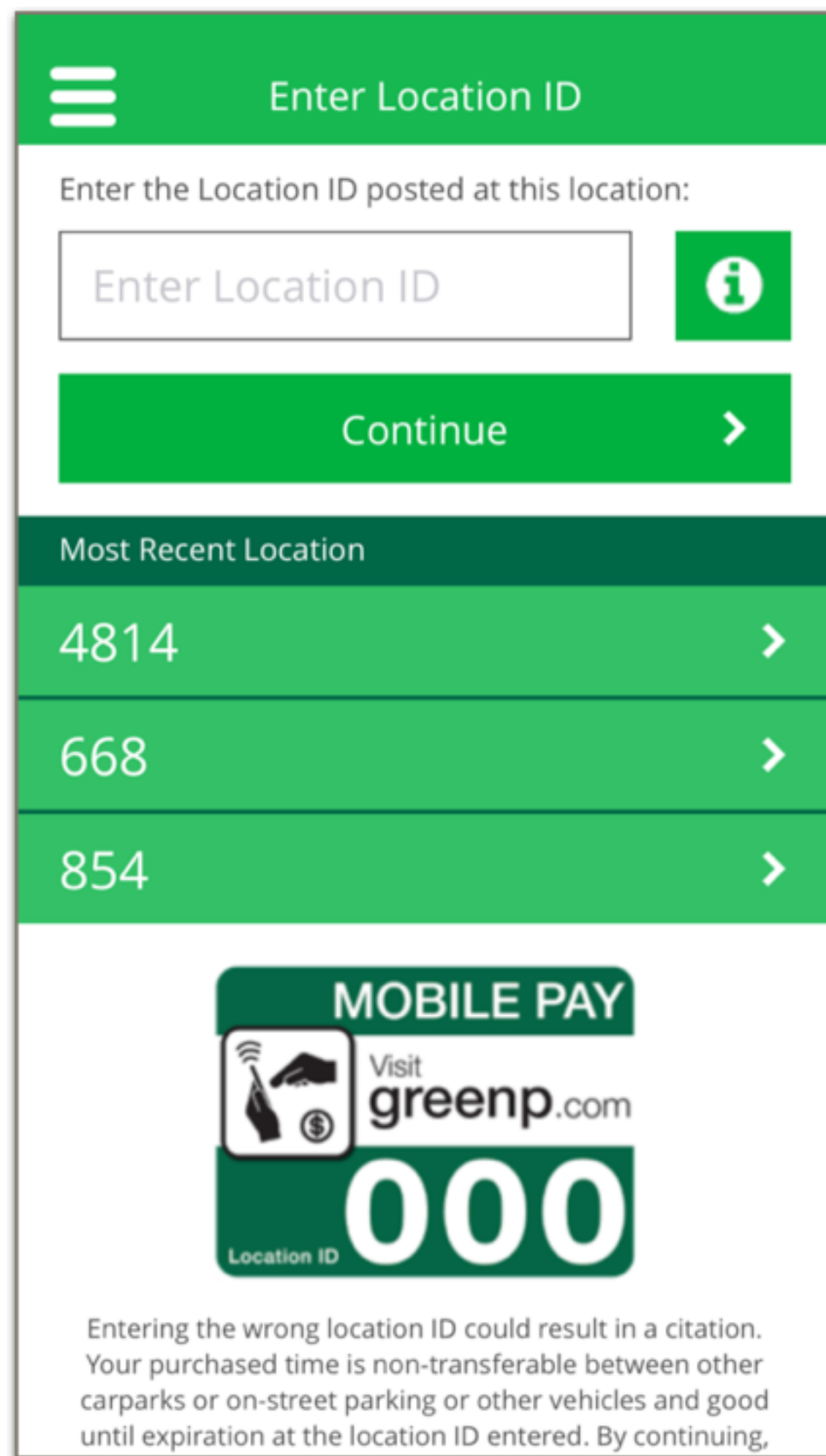
Based on the findings of the heuristic evaluation, solutions were created by taking the insights extracted regarding potential improvements and applying them to new designs via sketching, wireframing, and finally by designing high fidelity screens. Due to time constraints, we created wireframes of the existing Green P directly in Sketch and began our ideation there. This way, we were able to visually see the changes, compare different ideas, and finalize the redesign quickly. If we had more time, we would love to do user tests in our next steps to make sure our redesign is being consumed and interpreted correctly.



A sample of our digital sketching and ideation process.

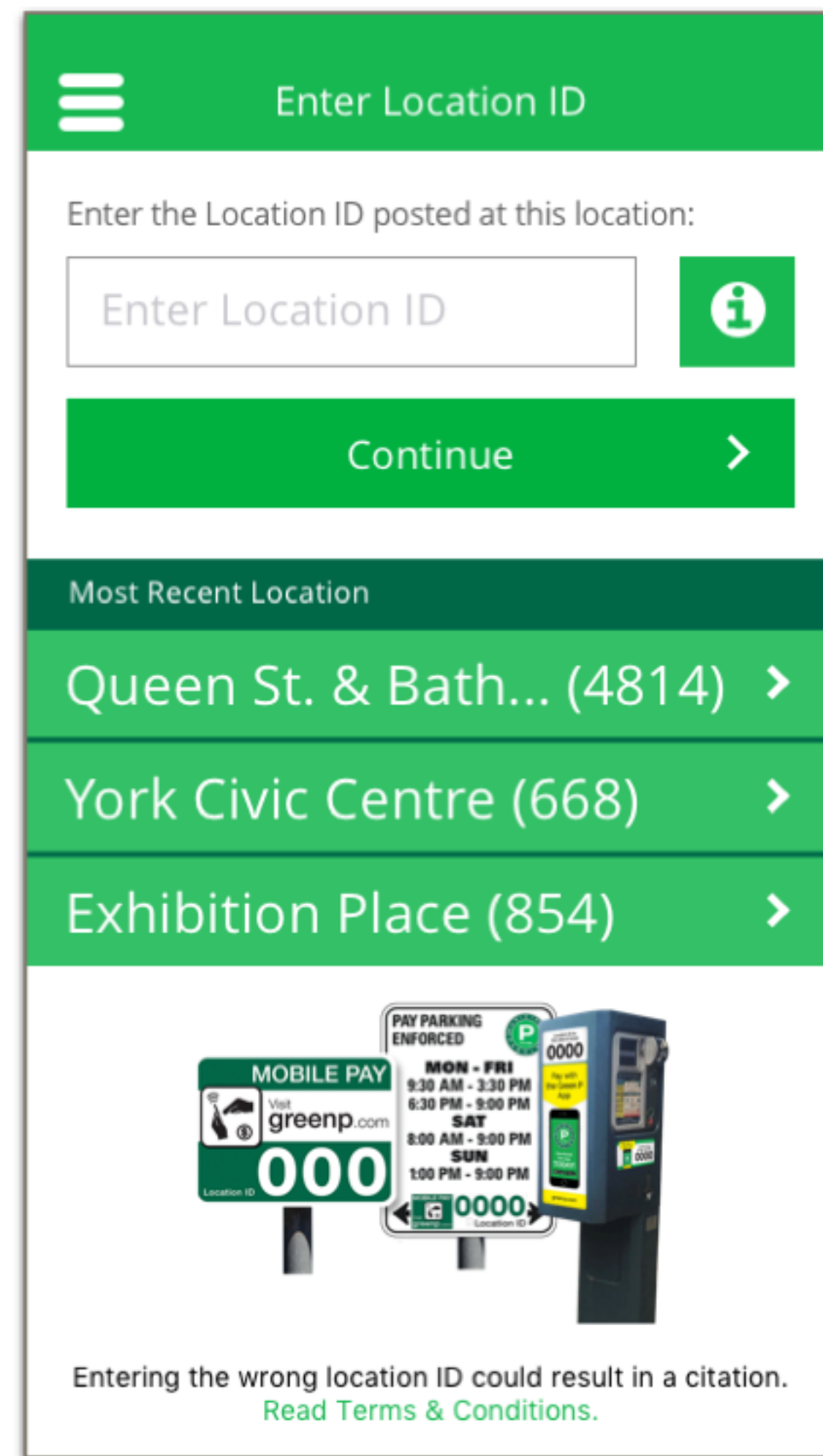
High Fidelity Screens

Screen 1



The 'Current' mockup for Screen 1 features a green header with a hamburger menu icon and the title 'Enter Location ID'. Below the header, a text prompt reads 'Enter the Location ID posted at this location:'. This is followed by a text input field with the placeholder 'Enter Location ID' and a green information icon to its right. A green 'Continue' button with a right-pointing chevron is positioned below the input field. A section titled 'Most Recent Location' contains three green rows, each with a location ID and a chevron: '4814', '668', and '854'. At the bottom, there is a 'MOBILE PAY' graphic showing a hand holding a phone over a sign that says 'Visit greenp.com' and '000'. Below the graphic, a disclaimer states: 'Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,'.

Current



The 'Redesigned' mockup for Screen 1 maintains the green header with the hamburger menu and 'Enter Location ID' title. The text prompt 'Enter the Location ID posted at this location:' is present. The input field and information icon remain. The 'Continue' button is green with a chevron. The 'Most Recent Location' section now displays three green rows with both the location name and ID, followed by a chevron: 'Queen St. & Bath... (4814)', 'York Civic Centre (668)', and 'Exhibition Place (854)'. The bottom graphic shows a collection of various Green P signs, including a 'MOBILE PAY' sign, a 'PAY PARKING ENFORCED' sign with time restrictions, and a '0000' sign. Below the graphic, the disclaimer is simplified to: 'Entering the wrong location ID could result in a citation. [Read Terms & Conditions.](#)'.

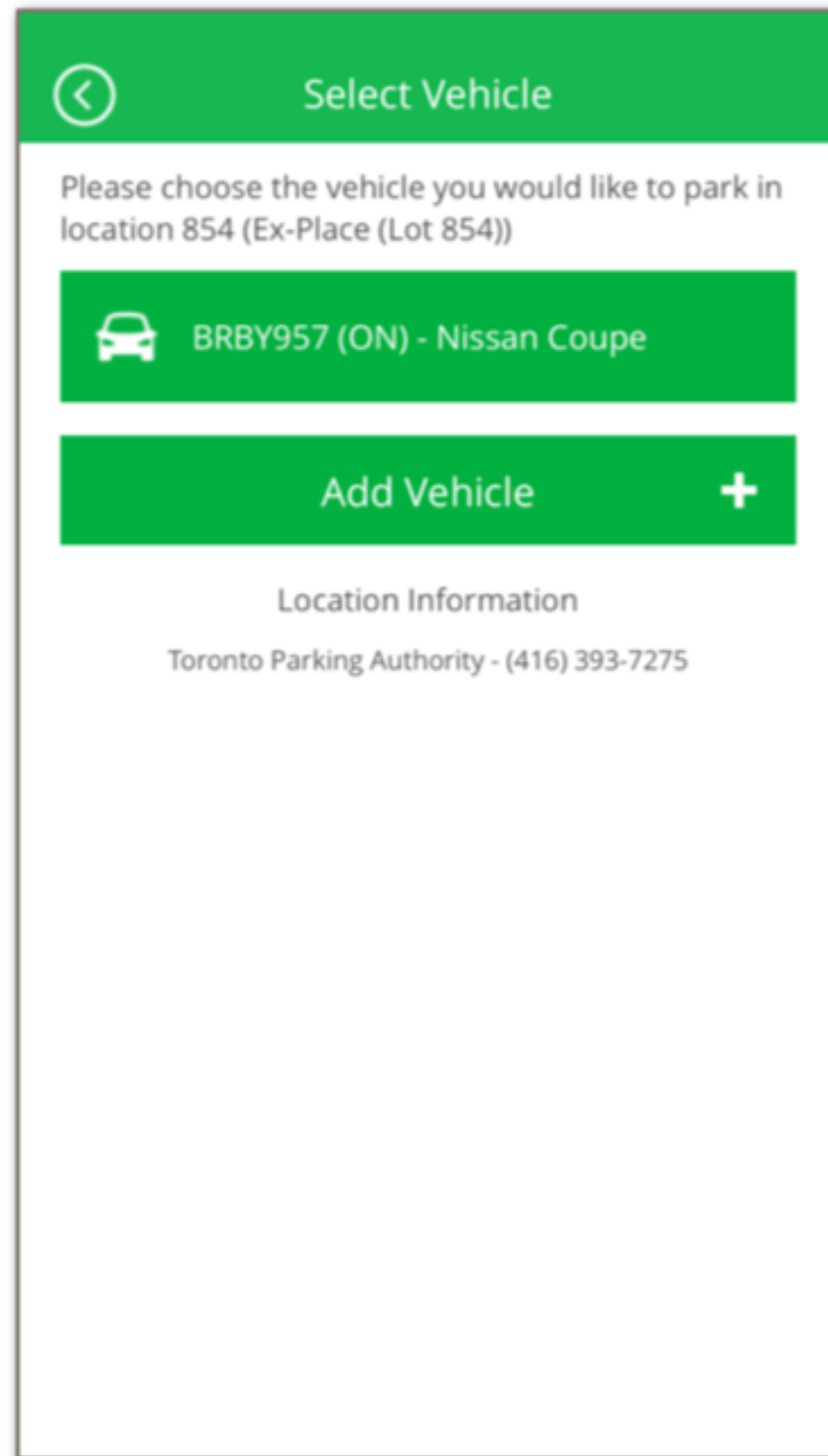
Redesigned

The Most Recent Locations will now have their location name beside them. This will help Dianne easily recognize locations she frequently visits and makes the task flow much quicker.

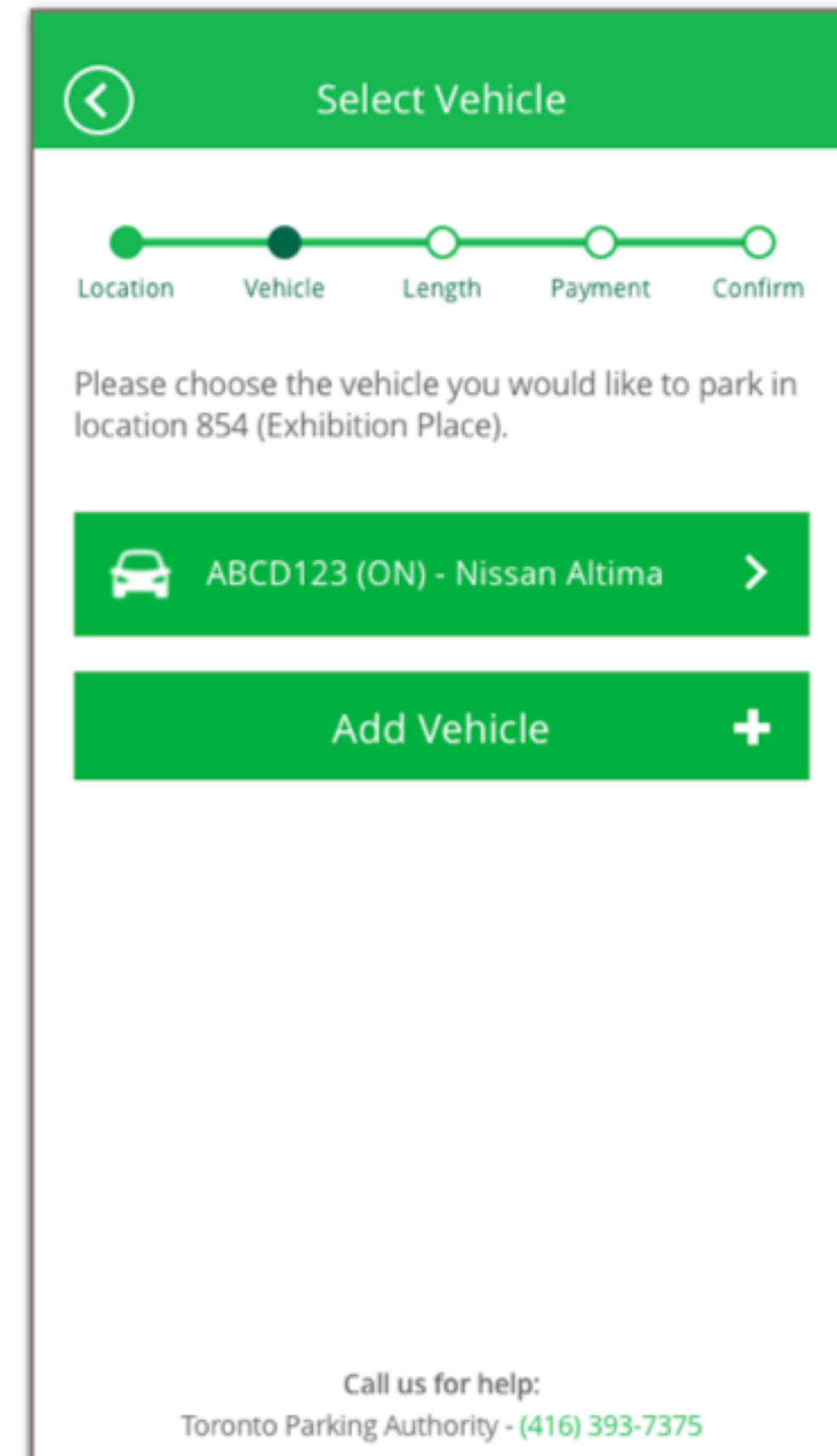
The picture here has also been changed to show the entire gamut of Green P signs that are accepted via the mobile app. Previously, this only showed one type of sign. This will help recognition for all users.

For aesthetic purposes, the legal information does not need to be present on every screen, as Dianne has already accepted the Terms & Conditions when creating an account. We decided to pare it down to the most pertinent disclosure and have moved all extra legal information to a separate screen in case Dianne ever wants to re-read it.

Screen 2



Current



Redesigned

The most prominent change we made here is introducing a checkout flow to the task flow. The checkout flow is present from screens 2-5, as it was unnecessary on the first screen where the checkout process hasn't started yet. This checkout flow was inspired by one of the biggest companies in the world - Amazon.

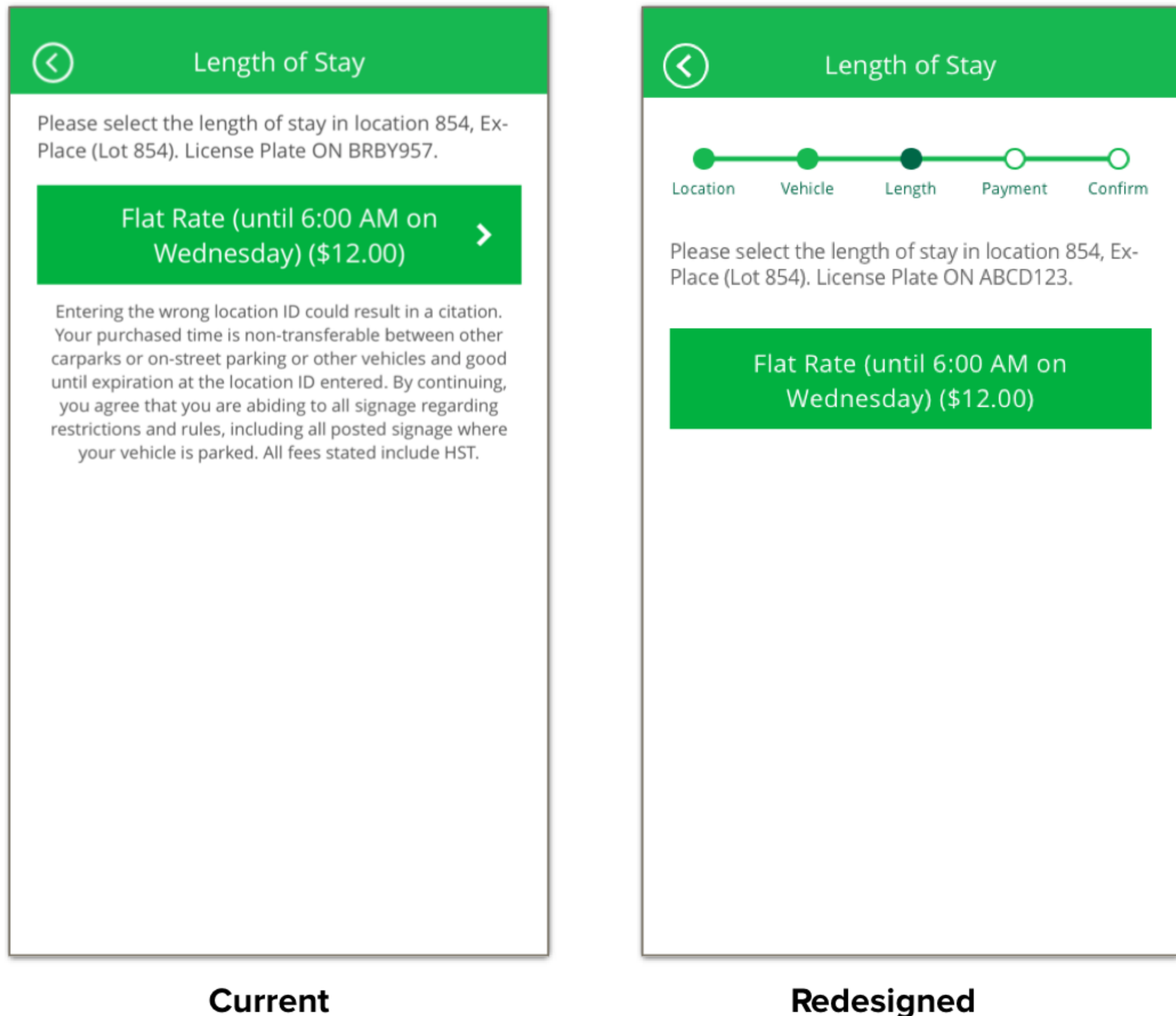


The flow will show all 5 stages of buying a parking pass, from location, vehicle selection, length, payment method, and confirmation. The flow is designed to show completed steps in Green P's primary colour (bright green), the current step in Green P's secondary colour (dark green), and yet to be completed steps in white or "unfilled" circles. This flow is clear and guides the user every step of the way.

In the old screen, the help information on the bottom was confusing. It had a heading stating "Location Information" but had no actual location information underneath other than the Toronto Parking Authority's (TPA) phone number which cannot be dialled within the Green P app - it has to be done in another app. Now,

we have a clear call to action - “Call us for help” and a tappable phone number for the TPA so the call can be made without leaving the app.

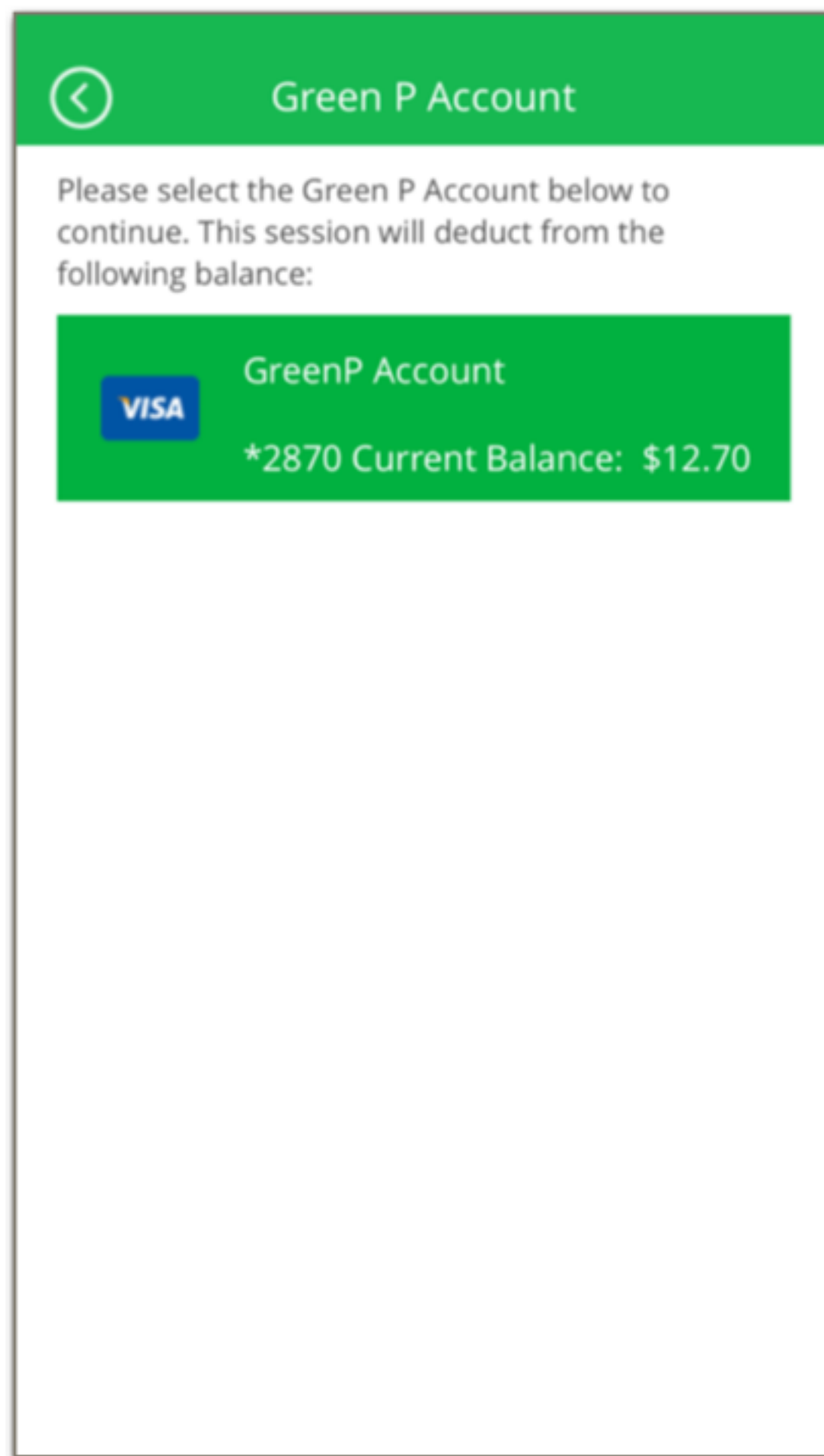
Screen 3



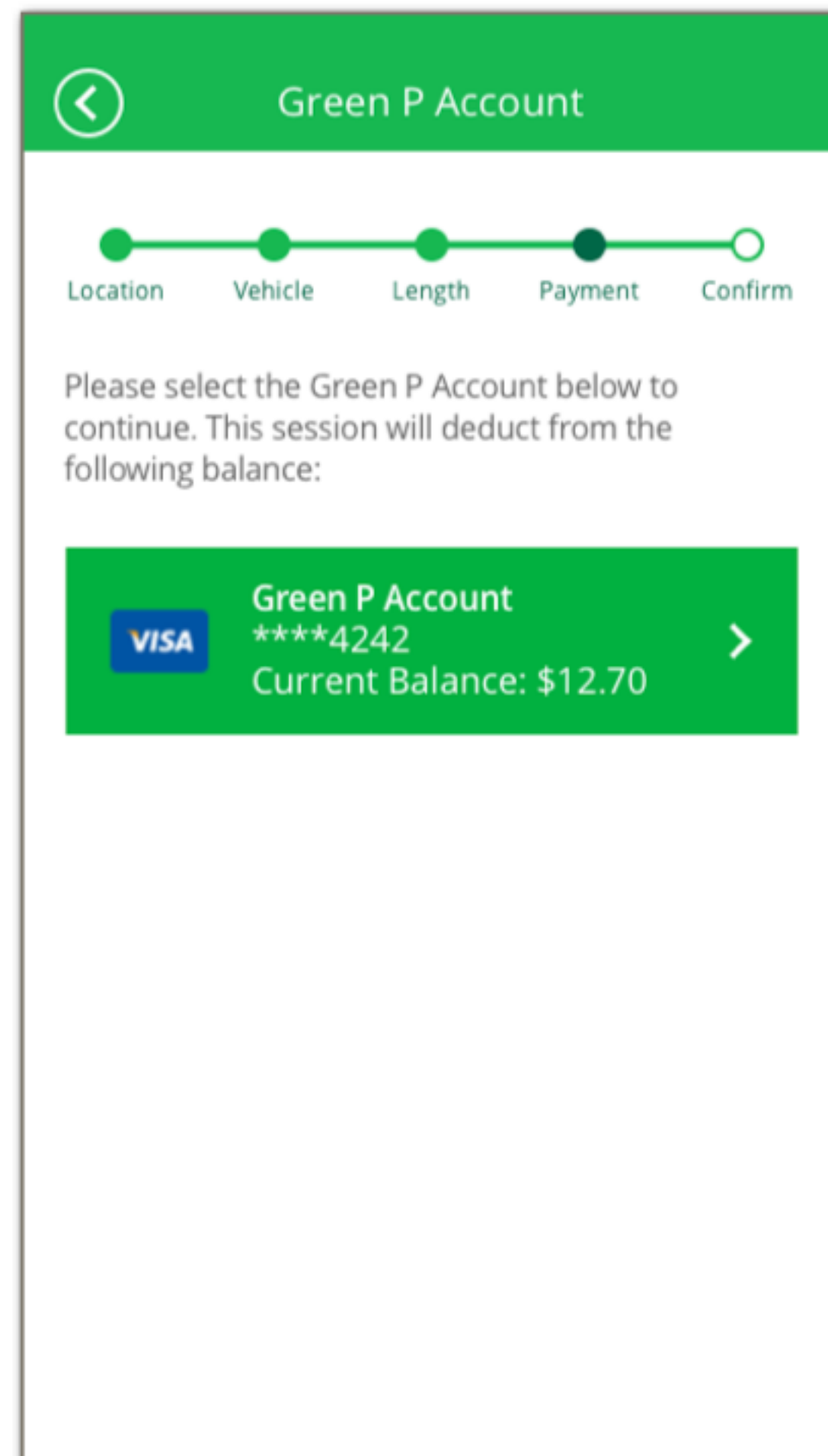
In addition to the checkout flow, this screen now clearly indicates the location ID, the address of the location, and the vehicle the user selected. These changes improve recall and recognition tremendously.

For aesthetic purposes, we have also removed the Terms and Conditions from the bottom since it has already been shown before, and there is no need to have it apparent once again. This also gives more room for additional options for the length of stay buttons depending on the time of day.

Screen 4



Current

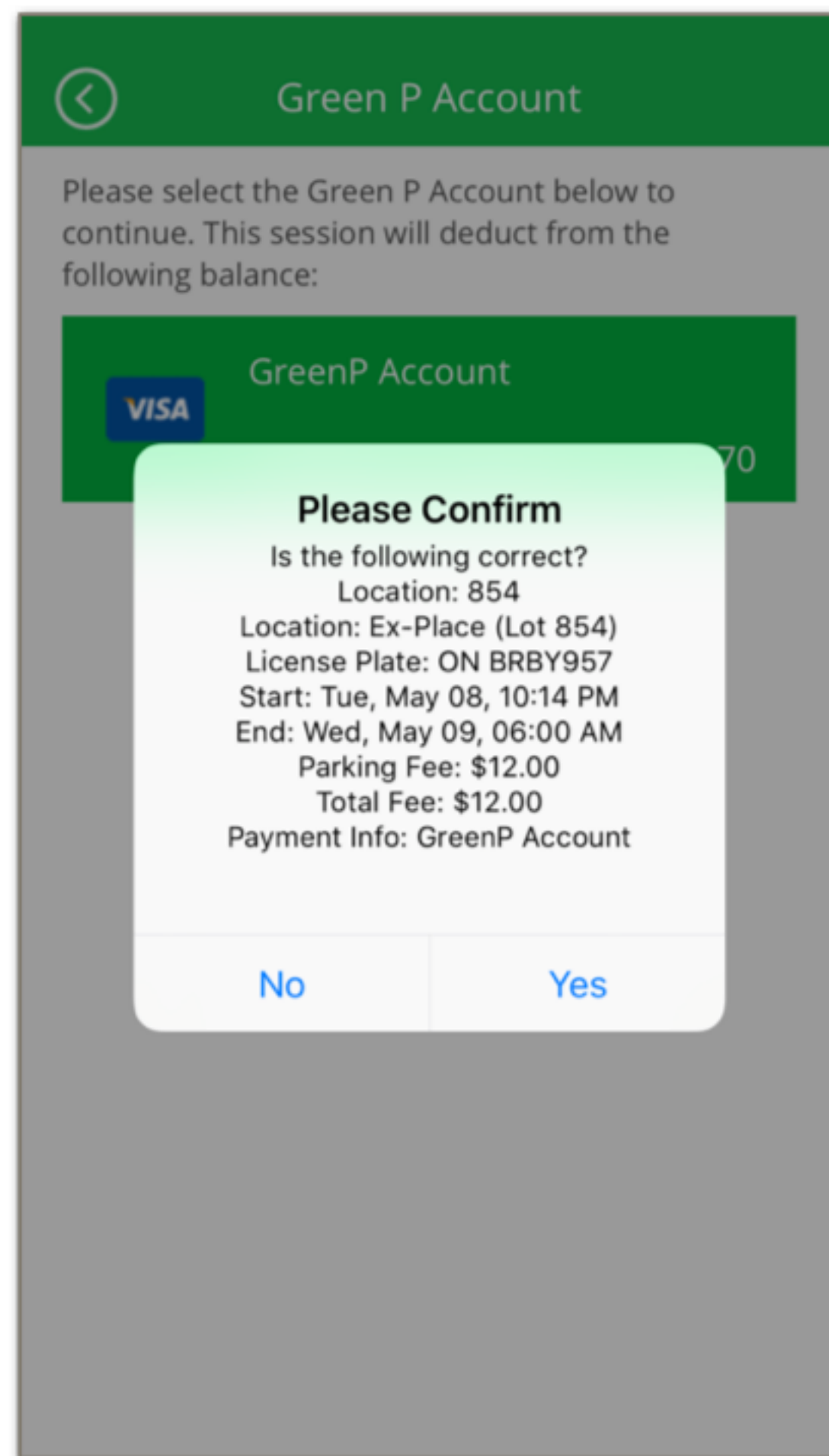


Redesigned

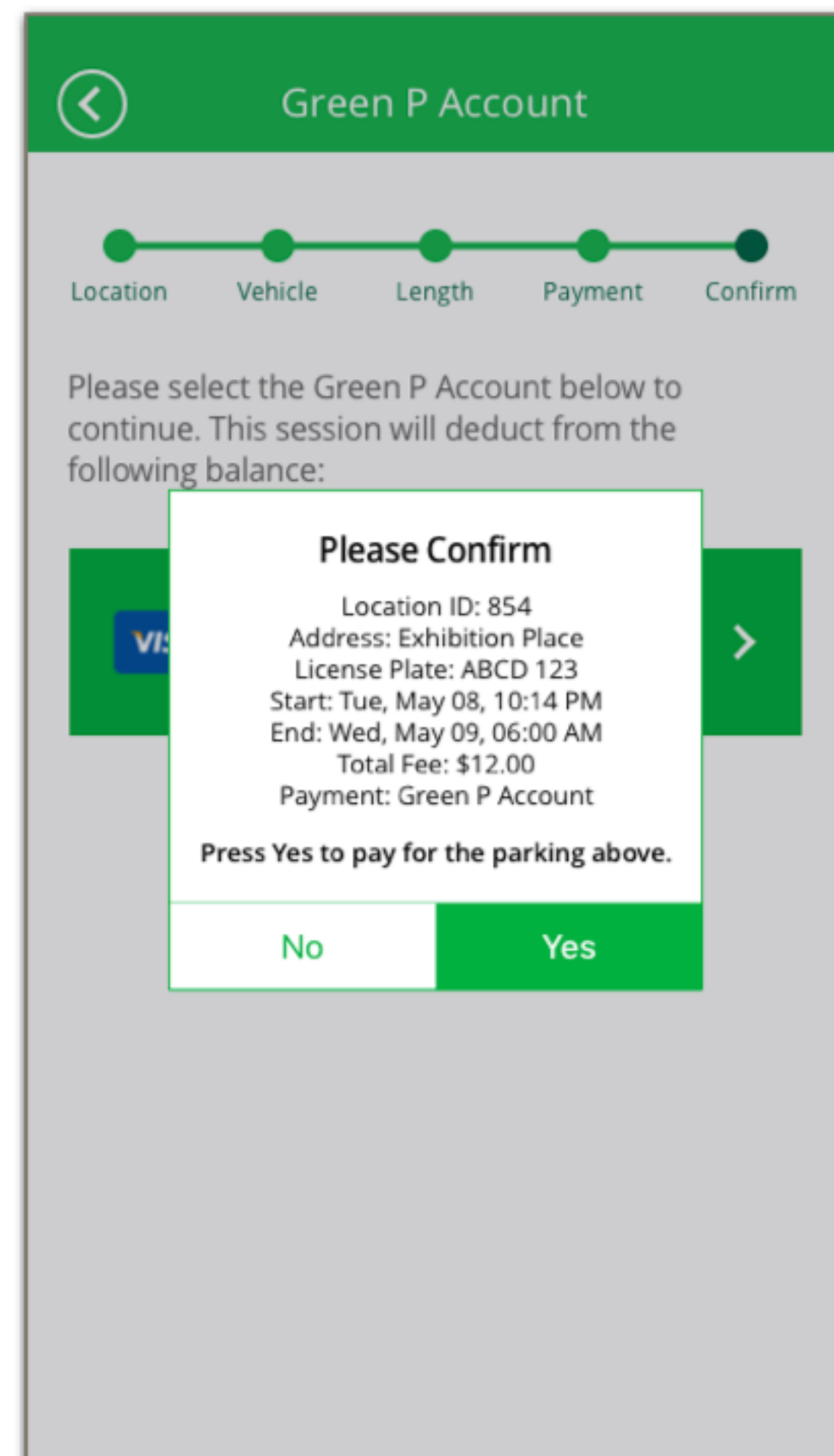
The current version didn't do well on most of the heuristics that were evaluated. A simple yet effective redesign was all that was needed to bring usability back.

1. The checkout flow was added to the top so Dianne could utilize recognition rather than recall to know where she is in this process. As mentioned earlier, this will minimize her memory load, and increase visibility of system status as well.
2. White spacing was increased between elements to create easier visual separation.
3. The button went through several changes:
 - 3.1. The chevron was added to maintain congruency among the rest of the buttons
 - 3.2. The text was separated into three lines - one for each piece of information.
 - 3.3. The button title "Green P Account" was emphasized as that creates hierarchy and lets Dianne quickly know which account she's using.

Screen 5



Current



Redesigned

The current version of the final step of the process - confirmation - is quite complicated and fails on several heuristics as previously noted in this case study.

First and foremost, the checkout flow indicated that this is the fifth and final step.


During our sketching and ideation, we noticed that a confirmation dialogue was more effective than a new screen that contained all the information. A darkened background with a bright popup demands our attention. As a happy coincidence, a popup is necessary to confirm payment in iOS; however, we decide to make it look as an intentional part of the flow and branded it with the Green P brand.

The content of the popup has been dramatically simplified and duplicate fields have been removed (i.e. Parking Fee and Total Fee). For congruency, we also added the address of the parking lot (as per Screen 1). Finally, the call to action, was rewritten, bolded, and placed above the final buttons as a way to reduce errors and increase clarity and comprehension.


Task Flows Compared

With the changes made to each of the screens, we can compare the task flows as a whole. It's apparent to see that by optimizing heuristics, Dianne will have a much easier time using the Green P app.

Current Task Flow

Enter Location ID	Select Vehicle	Length of Stay	Green P Account	Green P Account
<p>Enter the Location ID posted at this location:</p> <div>Enter Location ID</div> <div>Continue</div> <p>Most Recent Location</p> <div>4814</div> <div>668</div> <div>854</div> <div><p>Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,</p></div>	<p>Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854)).</p> <div>BRBY957 (ON) - Nissan Coupe</div> <div>Add Vehicle</div> <p>Location Information Toronto Parking Authority - (416) 393-7275</p>	<p>Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.</p> <div>Flat Rate (until 6:00 AM on Wednesday) (\$12.00)</div> <p>Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing, you agree that you are abiding to all signage regarding restrictions and rules, including all posted signage where your vehicle is parked. All fees stated include HST.</p>	<p>Please select the Green P Account below to continue. This session will deduct from the following balance:</p> <div>VISA GreenP Account *2870 Current Balance: \$12.70</div>	<p>Please select the Green P Account below to continue. This session will deduct from the following balance:</p> <div>VISA GreenP Account *2870 Current Balance: \$12.70</div> <div>Please Confirm Is the following correct? Location: 854 Location: Ex-Place (Lot 854) License Plate: ON BRBY957 Start: Tue, May 08, 10:14 PM End: Wed, May 09, 06:00 AM Parking Fee: \$12.00 Total Fee: \$12.00 Payment Info: GreenP Account No Yes</div>

Redesigned Task Flow

Enter Location ID	Select Vehicle	Length of Stay	Green P Account	Green P Account
<p>Enter the Location ID posted at this location:</p> <div>Enter Location ID</div> <div>Continue</div> <p>Most Recent Location</p> <div>Queen St. & Bath... (4814)</div> <div>York Civic Centre (668)</div> <div>Exhibition Place (854)</div> <div><p>Entering the wrong location ID could result in a citation. Read Terms & Conditions.</p></div>	<p>Location Vehicle Length Payment Confirm</p> <p>Please choose the vehicle you would like to park in location 854 (Exhibition Place).</p> <div>ABCD123 (ON) - Nissan Altima</div> <div>Add Vehicle</div> <p>Call us for help: Toronto Parking Authority - (416) 393-7375</p>	<p>Location Vehicle Length Payment Confirm</p> <p>Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON ABCD123.</p> <div>Flat Rate (until 6:00 AM on Wednesday) (\$12.00)</div>	<p>Location Vehicle Length Payment Confirm</p> <p>Please select the Green P Account below to continue. This session will deduct from the following balance:</p> <div>VISA Green P Account ****4242 Current Balance: \$12.70</div>	<p>Location Vehicle Length Payment Confirm</p> <p>Please select the Green P Account below to continue. This session will deduct from the following balance:</p> <div>VISA Green P Account ****4242 Current Balance: \$12.70</div> <div>Please Confirm Location ID: 854 Address: Exhibition Place License Plate: ABCD 123 Start: Tue, May 08, 10:14 PM End: Wed, May 09, 06:00 AM Total Fee: \$12.00 Payment: Green P Account Press Yes to pay for the parking above. No Yes</div>

UI Library

Headers

Main Page Header



Height: 70pt
Width: 414pt, Full-Width
Background color: #17B851
Font: Open Sans
Font Size: 20pt
Font Weight: Regular
Text Alignment: Center
Text Padding Bottom: 12pt
Character Spacing: 0
Icon Padding Left: 16pt

Sub Page Header



Height: 70pt
Width: 414pt, Full-Width
Background color: #17B851
Font: Open Sans
Font Size: 20pt
Font Weight: Regular
Text Alignment: Center
Text Padding Bottom: 12pt
Character Spacing: 0
Icon Padding Left: 14pt

Sub Page Header



Height: 36pt
Width: 414pt, Full-Width
Background color: #006746
Font: Open Sans
Font Size: 15pt
Font Weight: Regular
Text Alignment: Vertical, Left
Text Padding Bottom: 12pt
Character Spacing: 0.2
Icon Padding Left: 22pt

Buttons

Location ID Button



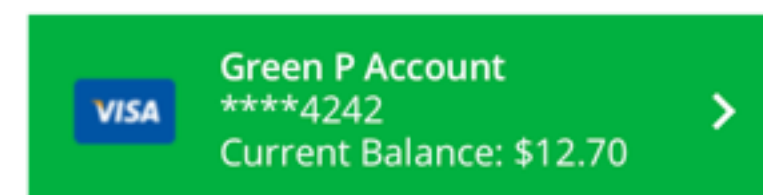
Height: 56pt
Width: 372pt
Background color: #00B140
Font: Open Sans
Font Weight: Regular
Font Size: 20pt
Text Alignment: Center
Text Vertical Alignment: Center
Character Spacing: 0.09
Arrow Padding Top: 20pt
Arrow Padding Right: 24pt

Vehicle Selection Button



Height: 56pt
Width: 372pt
Background color: #00B140
Font: Open Sans
Font Weight: Regular
Font Size: 16pt
Text Alignment: Left
Text Vertical Alignment: Center
Text Padding Left: 15pt
Character Spacing: 0.3
Arrow Padding Top: 20pt
Arrow Padding Right: 24pt
Car Padding Top: 18pt

Payment Method Button



Height: 96pt
Width: 372pt
Background color: #00B140
Font: Open Sans
Font Size: 18pt
Text Alignment: Left
Heading Font Weight: Medium
Heading Character Spacing: -0.2
Body Font Weight: Regular
Body Character Spacing: 0
Arrow Padding Top: 40pt
Arrow Padding Right: 24pt
Credit Card Padding Top: 32pt

Recent Location Button



Height: 56pt
Width: 414pt, Full-Width
Background color: #33C066
Font: Open Sans
Font Weight: Regular
Font Size: 28pt
Text Alignment: Left
Text Padding Bottom: 16pt
Text Padding Left: 20pt
Character Spacing: 0.16
Arrow Padding Top: 22pt

Add Vehicle Button



Height: 56pt
Width: 414pt, Full-Width
Background color: #00B140
Font: Open Sans
Font Weight: Regular
Font Size: 16pt
Text Alignment: Center
Text Vertical Alignment: Center
Character Spacing: 0.2
Plus Padding Top: 20pt
Arrow Padding Right: 22pt

Location Info Button



Height: 59pt
Width: 56pt
Background color: #17B851
Glyph Alignment: Horizontal Center
Glyph Top Padding: 13px

Text Entry

Enter Location ID

Height: 57pt
Width: 291pt
Background color: #FFFFFF
Text Color: #C7C7CD
Font: Open Sans
Font Weight: Regular
Font Size: 28pt
Text Alignment: Left
Text Vertical Alignment: Center
Text Padding Left: 18pt
Character Spacing: 0.1

Instructional Text

Please choose the vehicle you would like to park in location 854 (Exhibition Place).

Container Width: 366pt
Background color: #FFFFFF
Text Color: #636363
Font: Open Sans
Font Weight: Regular
Font Size: 16pt
Text Alignment: Left
Character Spacing: -0.2pt
Margin Left: 20pt
Margin Top: 20pt
Margin Bottom: 10pt

Legal Disclaimer

Entering the wrong location ID could result in a citation.
[Read Terms & Conditions.](#)

Container Width: 414pt, Full-Width
Background color: #FFFFFF
Font: Open Sans
Font Size: 14pt
Text Alignment: Center
Character Spacing: 0pt
Heading Font Weight: Semibold
Heading Text Color: #000
T&C Font Weight: Regular
T&C Text Color: #17B851
Margin Bottom: 24pt

Checkout Flow



Line Color: #17B851
Line Width: 4pt
Circle Height/Width: 15pt
Circle Padding: 65pt
Font: Open Sans
Font Weight: Regular
Font Size: 12pt
Font Color: #006747
Text Alignment: Center
Circle Border Width: 2pt

Circle, Past

Circle Border Color: #17B851
Circle Fill Color: #17B851

Circle, Current

Circle Border Color: #006747
Circle Fill Color: #006747

Circle, Next

Circle Border Color: #17B851
Circle Fill Color: #FFF

Alert Box

Is this correct?

Location ID: 854
Address: Exhibition Place
License Plate: ABCD 123
Start: Tue, May 08, 10:14 PM
End: Wed, May 09, 06:00 AM
Total Fee: \$12.00
Payment Info: GreenP Account

Press Yes to pay for the parking above.

NoYes

Height: 254pt
Width: 270pt
Background color: #FFFFFF
Font: Open Sans
Text Alignment: Center
Heading Font Weight: Semibold
Heading Font Size: 17pt
Heading Character Spacing: -0.4pt
Body Font Weight: Regular
Body Font Size: 13pt
Body Character Spacing: -0.08pt
Bottom CTA Font Weight: Semibold
Bottom CTA Font Size: 13pt
Buttons Width: 135pt
Button Font Size: 17pt
Button Font Weight: Semibold
Button Text Alignment: Center
Left Button Background Color: #FFFFFF
Left Button Text Color: #00B140
Right Button Background Color: #00B140
Right Button Text Color: #FFFFFF
Border Color: #00B140

Design Constraints

Below is a list of design constraints that informed what components from the original design had to be retained.

Style

Since Green P is owned by the City of Toronto, the brand was very important. We consciously decided not to deviate from the colours, fonts, or layout included in the original app as to remain on brand. Instead, we focused our time and energy on making the app more usable for everyone.

Non-Functional Requirements

Availability of information, appearance, reliability, speed/program feedback, usability, visibility, security:

The inclusion of a progress bar elevates this feedback and gives the user a more reliable and reassured experience.

As a security feature, payment info is saved yet not visible to all. This allows the user to choose their payment method, and have it be secure, yet not needing it to be entered in each time, providing availability of information.

Functional Requirements

We needed to maintain all the features of the task at hand, and were encouraged not to change the way things operated. This was a case to increase the usability of the current app with the least amount of resources possible - a feat we are confident that we achieved.

Time and Budget

We were only given one week for this project, and no budget to hire additional User Experience designers; therefore, the project was limited to increasing the usability of the primary task flow of obtaining a parking pass.

Legal Compliance

We kept the app as legally compliant as possible while maximizing aesthetics. The Terms & Conditions are already accepted by the user when they sign up for an account, and then was added to most screens of the task flow. This redundant information was reducing usability and creating confusion for the user, so we decided to only display the most important information, and put all the other legal compliance in another screen.

Usability

The current app is functional, and easily learnable. It performs well under all tested situations, and has a high error tolerance. What we improved on is the user friendliness.

Integration

We were limited in our proposal as we could not suggest changes to the physical operation or implementation of the parking meters (if so, we would have suggested an easier method of recognition and recall other than numbers, like a GPS system or better address naming.)

Because the app supplements a physical machine and process, the appearance, flow and connection to the real-world within the app had to be strong. The app displayed an example of a parking lot sign, but was missing examples of street parking machines and signage. This was added into the revised app to reflect real-world signage.

Conclusion

We're confident that these changes to the Green P app will greatly enhance the user experience with the smallest investment necessary towards development. We encourage any questions or comments, and look forward to hearing from you soon.

Thank you for your consideration.






Exported Presentation Slides:



GREEN P APP

PROCESS

TASK FLOW

Enter Location ID	Select Vehicle	Length of Stay	Green P Account	Green P Account
<p>Enter the Location ID posted at this location:</p> <div><input type="text" value="Enter Location ID"/></div> <div>Continue ></div> <div><p>Most Recent Location</p><div>4814 ></div><div>668 ></div><div>854 ></div></div> <div><div><p>MOBILE PAY Visit greenp.com 000 Location ID</p></div><p>Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,</p></div>	<p>Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))</p> <div> BRBY957 (ON) - Nissan Coupe</div> <div>Add Vehicle +</div> <div><p>Location Information</p><p>Toronto Parking Authority - (416) 393-7275</p></div>	<p>Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.</p> <div>Flat Rate (until 6:00 AM on Wednesday) (\$12.00) ></div> <p>Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing, you agree that you are abiding to all signage regarding restrictions and rules, including all posted signage where your vehicle is parked. All fees stated include HST.</p>	<p>Please select the Green P Account below to continue. This session will deduct from the following balance:</p> <div> GreenP Account *2870 Current Balance: \$12.70</div>	<p>Please select the Green P Account below to continue. This session will deduct from the following balance:</p> <div> GreenP Account *2870 Current Balance: \$12.70</div> <div><p>Please Confirm</p><p>Is the following correct?</p><p>Location: 854 Location: Ex-Place (Lot 854) License Plate: ON BRBY957 Start: Tue, May 08, 10:14 PM End: Wed, May 09, 06:00 AM Parking Fee: \$12.00 Total Fee: \$12.00 Payment Info: GreenP Account</p><div>NoYes</div></div>

PERSONA



DIANNE

- 26 years old
- Lives just north of Toronto
- Uses Green P parking app when she comes to visit her friends downtown on the weekends

I. Aesthetic & Minimalist Design



Enter Location ID

Enter the Location ID posted at this location:



Continue



Most Recent Location

4814



668



854



Entering the wrong location ID could result in a citation.
Your purchased time is non-transferable between other
carparks or on-street parking or other vehicles and good
until expiration at the location ID entered. By continuing,



Enter Location ID

Enter the Location ID posted at this location:



Continue



Most Recent Location

Queen St. & Bath... (4814) >

York Civic Centre (668) >

Exhibition Place (854) >



Entering the wrong location ID could result in a citation.
[Read Terms & Conditions.](#)



Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.

Flat Rate (until 6:00 AM on
Wednesday) (\$12.00) >

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing, you agree that you are abiding to all signage regarding restrictions and rules, including all posted signage where your vehicle is parked. All fees stated include HST.



Length of Stay



Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON ABCD123.

Flat Rate (until 6:00 AM on
Wednesday) (\$12.00)



Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

GreenP Account

70

Please Confirm

Is the following correct?

Location: 854

Location: Ex-Place (Lot 854)

License Plate: ON BRBY957

Start: Tue, May 08, 10:14 PM

End: Wed, May 09, 06:00 AM

Parking Fee: \$12.00

Total Fee: \$12.00

Payment Info: GreenP Account

No

Yes



Green P Account



Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

Please Confirm

Location ID: 854

Address: Exhibition Place

License Plate: ABCD 123

Start: Tue, May 08, 10:14 PM

End: Wed, May 09, 06:00 AM

Total Fee: \$12.00

Payment: Green P Account

Press Yes to pay for the parking above.

No

Yes

Rating

2/5

II. Visibility of System Status

Enter Location ID

Enter the Location ID posted at this location:

Enter Location ID

i

Continue

>

Most Recent Location

4814

>

668

>

854

>

MOBILE PAY

Visit greenp.com

000

Location ID

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,

Enter Location ID

Enter the Location ID posted at this location:

Enter Location ID

i

Continue

>

Most Recent Location

4814

>

668

Verifying location...

>

854

>

MOBILE PAY

Visit greenp.com

000

Location ID

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,

Select Vehicle

Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))

BRBY957 (ON) - Nissan Coupe

Add Vehicle

+

Location Information

Toronto Parking Authority - (416) 393-7275

Select Vehicle

Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))

BRBY957 (ON) - Nissan Coupe

Add Vehicle

+

Location Information

Toronto Parking Authority - (416) 393-7275

Loading...

Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

>

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing, you agree that you are abiding to all signage regarding restrictions and rules, including all posted signage where your vehicle is parked. All fees stated include HST.

Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

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Select Vehicle

Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))

BRBY957 (ON) - Nissan Coupe

Add Vehicle

+

Location Information

Toronto Parking Authority - (416) 393-7275

Loading...

Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

>

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing, you agree that you are abiding to all signage regarding restrictions and rules, including all posted signage where your vehicle is parked. All fees stated include HST.

Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

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Loading...

Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

GreenP Account

*2870 Current Balance: \$12.70

Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

GreenP Account

*2870 Current Balance: \$12.70

Calculating Fee...

Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

GreenP Account

*2870 Current Balance: \$12.70

Please Confirm

Is the following correct?

Location: 854

Location: Ex-Place (Lot 854)

License Plate: ON BRBY957

Start: Tue, May 08, 10:14 PM

End: Wed, May 09, 06:00 AM

Parking Fee: \$12.00

Total Fee: \$12.00

Payment Info: GreenP Account

No

Yes

Rating

4/5

III. Match Between System and the Real World



Enter Location ID

Enter the Location ID posted at this location:



Continue



Most Recent Location

4814



668



854



Entering the wrong location ID could result in a citation.
Your purchased time is non-transferable between other
carparks or on-street parking or other vehicles and good
until expiration at the location ID entered. By continuing,



Enter Location ID

Enter the Location ID posted at this location:



Continue



Most Recent Location

Queen St. & Bath... (4814) >

York Civic Centre (668) >

Exhibition Place (854) >



Entering the wrong location ID could result in a citation.
[Read Terms & Conditions.](#)



Enter Location ID

Enter the Location ID posted at this location:



Continue



Most Recent Location

4814



668



854



Entering the wrong location ID could result in a citation.
Your purchased time is non-transferable between other
carparks or on-street parking or other vehicles and good
until expiration at the location ID entered. By continuing,



Enter Location ID

Enter the Location ID posted at this location:



Continue



Most Recent Location

Queen St. & Bath... (4814) >

York Civic Centre (668) >

Exhibition Place (854) >



Entering the wrong location ID could result in a citation.
[Read Terms & Conditions.](#)

Rating

4/5

IV. Consistency and Standards

☰

Enter Location ID

Enter the Location ID posted at this location:

Enter Location ID

i

Continue

>

Most Recent Location

4814

>

668

>

854

>

MOBILE PAY

Visit

greenp.com

000

Location ID

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,

<

Select Vehicle

Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))

🚗

BRBY957 (ON) - Nissan Coupe

Add Vehicle

+

Location Information

Toronto Parking Authority - (416) 393-7275

<

Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing, you agree that you are abiding to all signage regarding restrictions and rules, including all posted signage where your vehicle is parked. All fees stated include HST.

<

Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

*2870 Current Balance: \$12.70

<

Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

*2870 Current Balance: \$12.70

Please Confirm

Is the following correct?

Location: 854

Location: Ex-Place (Lot 854)

License Plate: ON BRBY957

Start: Tue, May 08, 10:14 PM

End: Wed, May 09, 06:00 AM

Parking Fee: \$12.00

Total Fee: \$12.00

Payment Info: GreenP Account

No

Yes



Select Vehicle

Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))



BRBY957 (ON) - Nissan Coupe

Add Vehicle



Location Information

Toronto Parking Authority - (416) 393-7275



Select Vehicle



Location



Vehicle



Length



Payment



Confirm

Please choose the vehicle you would like to park in location 854 (Exhibition Place).



ABCD123 (ON) - Nissan Altima



Add Vehicle



Call us for help:

Toronto Parking Authority - (416) 393-7375

Rating

3.5/5

IV. Recognition Rather than Recall



Enter Location ID

Enter the Location ID posted at this location:



Continue



Most Recent Location

4814



668



854



Entering the wrong location ID could result in a citation.
Your purchased time is non-transferable between other
carparks or on-street parking or other vehicles and good
until expiration at the location ID entered. By continuing,



Enter Location ID

Enter the Location ID posted at this location:



Continue



Most Recent Location

Queen St. & Bath... (4814) >

York Civic Centre (668) >

Exhibition Place (854) >



Entering the wrong location ID could result in a citation.
[Read Terms & Conditions.](#)

Enter Location ID

Enter the Location ID posted at this location:

Enter Location ID

Continue

Most Recent Location

4814

668

854

MOBILE PAY

Visit greenp.com

000

Location ID

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,

Select Vehicle

Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))

BRBY957 (ON) - Nissan Coupe

Add Vehicle

Location Information

Toronto Parking Authority - (416) 393-7275

Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

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Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

GreenP Account

*2870 Current Balance: \$12.70

Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

GreenP Account

*2870 Current Balance: \$12.70

Please Confirm

Is the following correct?

Location: 854

Location: Ex-Place (Lot 854)

License Plate: ON BRBY957

Start: Tue, May 08, 10:14 PM

End: Wed, May 09, 06:00 AM

Parking Fee: \$12.00

Total Fee: \$12.00

Payment Info: GreenP Account

No

Yes

Enter Location ID

Enter the Location ID posted at this location:

Enter Location ID

Continue

Most Recent Location

Queen St. & Bath... (4814)

York Civic Centre (668)

Exhibition Place (854)

MOBILE PAY

Visit greenp.com

000

Location ID

Entering the wrong location ID could result in a citation. [Read Terms & Conditions.](#)

Select Vehicle

Please choose the vehicle you would like to park in location 854 (Exhibition Place).

ABCD123 (ON) - Nissan Altima

Add Vehicle

Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON ABCD123.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

Green P Account

Please select the Green P Account below to continue. This session will deduct from the

VISA

Green P Account

****4242

Current Balance: \$12.70

Green P Account

Please select the Green P Account below to continue. This session will deduct from the

VISA

Green P Account

****4242

Current Balance: \$12.70

Please Confirm

Location ID: 854

Address: Exhibition Place

License Plate: ABCD 123

Start: Tue, May 08, 10:14 PM

End: Wed, May 09, 06:00 AM

Total Fee: \$12.00

Payment: Green P Account

Press Yes to pay for the parking above.

No

Yes

Call us for help:

Toronto Parking Authority - (416) 393-7375

Rating

2.5/5

Enter Location ID

Enter the Location ID posted at this location:

Enter Location ID

Continue

Most Recent Location

4814

668

854

MOBILE PAY

Visit greenp.com

000

Location ID

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing,

Select Vehicle

Please choose the vehicle you would like to park in location 854 (Ex-Place (Lot 854))

BRBY957 (ON) - Nissan Coupe

Add Vehicle

Location Information

Toronto Parking Authority - (416) 393-7275

Length of Stay

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON BRBY957.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

Entering the wrong location ID could result in a citation. Your purchased time is non-transferable between other carparks or on-street parking or other vehicles and good until expiration at the location ID entered. By continuing, you agree that you are abiding to all signage regarding restrictions and rules, including all posted signage where your vehicle is parked. All fees stated include HST.

Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

GreenP Account

*2870 Current Balance: \$12.70

Green P Account

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

GreenP Account

*2870 Current Balance: \$12.70

Please Confirm

Is the following correct?

Location: 854

Location: Ex-Place (Lot 854)

License Plate: ON BRBY957

Start: Tue, May 08, 10:14 PM

End: Wed, May 09, 06:00 AM

Parking Fee: \$12.00

Total Fee: \$12.00

Payment Info: GreenP Account

NoYes

Enter Location ID

Enter the Location ID posted at this location:

Enter Location ID

Continue

Most Recent Location

Queen St. & Bath... (4814)

York Civic Centre (668)

Exhibition Place (854)

MOBILE PAY

Visit greenp.com

000

Location ID

Entering the wrong location ID could result in a citation. [Read Terms & Conditions.](#)

Select Vehicle

Location

Vehicle

Length

Payment

Confirm

Please choose the vehicle you would like to park in location 854 (Exhibition Place).

ABCD123 (ON) - Nissan Altima

Add Vehicle

Length of Stay

Location

Vehicle

Length

Payment

Confirm

Please select the length of stay in location 854, Ex-Place (Lot 854). License Plate ON ABCD123.

Flat Rate (until 6:00 AM on Wednesday) (\$12.00)

Green P Account

Location

Vehicle

Length

Payment

Confirm

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

Green P Account

****4242

Current Balance: \$12.70

Green P Account

Location

Vehicle

Length

Payment

Confirm

Please select the Green P Account below to continue. This session will deduct from the following balance:

VISA

Green P Account

****4242

Current Balance: \$12.70

Please Confirm

Location ID: 854

Address: Exhibition Place

License Plate: ABCD 123

Start: Tue, May 08, 10:14 PM

End: Wed, May 09, 06:00 AM

Total Fee: \$12.00

Payment: Green P Account

Press Yes to pay for the parking above.

NoYes

Overall Rating

15/25

Thank You!

Any Questions?