Pittsburgh Parks Conservancy

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Community Partner: Lauryn Stalter

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Community Partner Background

About the Organization

The Pittsburgh Park Conservancy (PPC) was founded in 1996 by a group of citizens concerned with the deteriorating conditions of Pittsburgh's historic city parks. Since 1998, PPC has worked with the city of Pittsburgh under a public-private partnership agreement. They have raised over $76 million for park improvements, for Pittsburgh's four regional parks: Schenley, Frick, Highland and Riverview. Their mission is to:

Improving quality of life for the people of Pittsburgh by restoring the park system to excellence in partnership with government and the community. Projects and programs are conducted with respect for the environment, historic design, and the needs of our diverse region.

The PPC currently provides a mobile-app for the visitors of their four regional parks. This app helps individuals stay connected to events, trails and other points of interests within the parks. However, it lacks certain aspects that could further enhance visitors' experiences and help PPC fulfill their mission.

The existing mobile application has a variety of user experience deficiencies. Fixed navigation bars make it difficult to perceive where the user can navigate to at any given time, and certain pages have further nav bars that cannot be resized--all of which eliminate valuable spacial real estate in the app. Certain views provide little feedback on what images or layouts are interactive, creating an unnecessarily large gulf of execution for the user. In addition, the app's most important use case (navigation) is poorly implemented.

The current application does not help the client promote itself as an organization. It does not link to the client's various, successful social media outlets, and although there is a feature to donate to the organization it is not clearly placed. According to the client, PPC does not wish to promote the app because they believe it reflects poorly on the organization. As a result, the current app has less than 100 downloads on the iOS app store.

We believe that the solution we hope to provide our client with will offer the possibility to address all of the aforementioned issues: user experience, fundraising capacity and organizational and park promotion and exploration.

Community Partner Project Description

Project Opportunity

The Pittsburgh Parks Conservancy currently has a mobile app that is difficult to use. Because the app is difficult to use, they have not promoted or otherwise circulated the app , and it does not have many users (our client reports <100 downloads). They do not believe that the application in its current state reflects well on the organization.

Fundamentally, the PPC needs a mobile app in order to get more people into the parks. By providing information in a convenient, mobile format, they remove some of the barriers that keep people from going to a park. the PPC plans to publicize their mobile app, generating excitement about the parks, and getting more people involved with the parks. Finally, an app provides a convenient way for users to report issues with the park and donate to the PPC.

Rather than build this app from scratch, we plan to use the current app as a framework, mainly rewriting the UI, as the backend and app models appear to be fully functional. We are currently investigating the viability of building off of either the existing iOS or the Android code base that the PPC has retained from their contract with Deep Local, and we plan to discuss options with the client at this week's upcoming meeting on Thursday, 2/19.

Project Vision

We propose a mobile application that will encourage residents of Pittsburgh to visit the parks and interact with the PPC. The app will primarily be informational, providing a detailed trail map marked with points of interest and a way to view the PPC's events calendar. The app will also provide a way to report issues with the parks (such as downed trees), donate to the PPC, and interact with the PPC on social media.

The app will be maintained by the PPC staff. The information will be updated through the CRM that currently exists for the app. We will attempt to create the app in such a way that it will not require frequent updates, however we will recommend that the PPC hire contractors in the event that the app needs to be debugged or updated.

Project Outcomes

Initially, our project team was debating developing a native mobile app or a web application. After much research and creating a decision matrix to come to a conclusion (see Appendix B), we chose to develop a native iOS and Android mobile app for PGH Parks Conservancy.

The application that was originally deployed had a very convoluted code base and did not provide the necessary features that were desired by the client. It also contained many user experience deficiencies. The use of Apple Maps did not provide enough trail information to properly guide park goers through parks. We felt it necessary to start both applications from scratch while still utilizing the existing CMS.

The essential and non-essential requirements were gathered and documented into a user story chart (see appendix C). These include requirements that were outlined in our project proposal, as well as requirements that were unable to be delivered.

Our mobile applications consist of 5 tabs (see Appendix A for screenshots)

Places
- Schenley, Frick, Highland, and Riverview Park
- Points of interest within each park

Events
- A link to the PPC's current website

Maps
- The user's current location and points of interest nearby
- A button to open the google maps application on a user's phone for navigation purposes

Donate
- The PPC's mobile donations page

Contact
- Information about PPC and UPMC
- Links to the PPC's social media accounts

Our team was able to meet most all the essential requirements outlined in our initial project proposal. However, we were unable to create an administrator password for the backend. The CMS application is currently being run on the previous developer's server (Deep Local) and managed by Lauryn Stalter. PPC did

not receive a response from them about making changes to the backend, and for this reason we were unable to make changes.

An additional non-essential requirement we were unable to meet was issue reporting. Currently, the issue-reporting model in the CMS throws errors when trying to access any information regarding park issues. These non-essential requirements could be reached through further development on the backend and communication with Deep Local. Resolving any issues with Deep Local and hiring outside contractors to fix issues with the backend will allow these non-essential requirements to be fulfilled.

We were able to conduct user-testing with PPC's park education team and are waiting on final approval and will deploy both applications as soon as possible. Overall, we believe our new mobile application has helped enhance PPC's mission and improve the quality of life for Pittsburgh park visitors. Our app not only provides points of interests, information on events and individual parks but also successfully guides visitors within the parks through an adept user design. For example, the use of Google Maps provides more trail data than the previously used Apple Maps. The prior solution showed the user in a green blob without any trails. Now, trails and points of interests are displayed directly on the map, thus, making it easier for users to get from point A to point B within the park. If need be, they can directly connect to Google maps and navigate through the trails and park. The user design decreased the number of clicks and screens the user must go through to access desired information about each park.

Additionally, Lauryn is still able to sustain the information available on the app via the CMS, she is able to change information on parks, points of interests and events as she did prior to this project.

We were also able to work with Lauryn and the PPC to track the donations made to the PPC through the app. The PPC seems interested in continuing development on the app, and we believe that putting a number on the amount of money raised by the app will help justify further investment.

Final Project Deliverables

As mentioned above, we developed two applications with two different code bases, one for Android and another for iOS. Each code base is separately managed by a Git source version control repository and hosted on GitHub for development within our teams.

We provided our client with source code repositories in two zip folders for each platform. The wireframes for each application is also available within these folders. This will allow PPC to easily hand-off our code to future contractors who will be able to maintain the source code and fulfill future requirements.

Recommendations

In order for our client to sustain our solution, it is imperative they hire the most qualified developers who understand their mission. Without knowledgeable developers, it will be impossible for PPC to maintain the app and further development to make it self-sustaining. If they continue to hire developers who are unable to meet their expectations, like their previous developer, it will be impossible for PPC to reach their mission of improving the quality of life of Pittsburgh's parks' visitors.

As mentioned in project outcomes, we enabled PPC to monitor which donations come from their mobile donation page. This will allow PPC to discern how beneficial future investment would be to the application. Therefore, they will be able to hire developers to reach requirements that we were unable to implement in their two mobile applications. We have provided our client with job descriptions for the different developers they would need to hire. Below we have outlined requirements for future developers.

iOS/Android developer

- Experienced iOS/Android developer
- Knowledge in Swift and Storyboard interface builder
- Android development in API 16
- Integration of Google Maps within mobile apps
- Prior work that includes strong client relationships, well-documented code, and good UI design work

Mobile App Designer

- Both iOS and Android design experience preferred, but not necessary
- Skills in stock Android and iOS design and Illustrator preferred
- Ideal candidate would have a lot of experience with mobile design

Ruby on Rails Developer

- Ruby on Rails developer with experience making CMSs, APIs, and web applications
- Client management experience

There were a number of requirements that the client desired, which were out of our current scope (see Appendix C). Most of these requirements could only be met if changes were made to the backend, first. In order for these changes to be implemented by future developers or IS students they must possess knowledge of Ruby on Rails web applications and the Model-View-Controller design pattern. In addition, they should be able to make the future changes to the mobile apps as well. These students must also understand how to maintain a successful client relationship and communicate requirements, deadlines, and scope creep with the client

About the Team

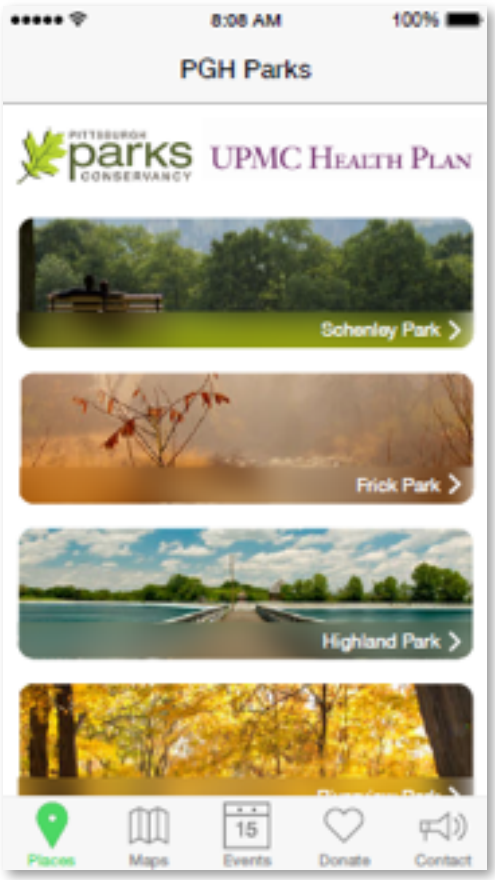
Taylor Poulos
Taylor is a Junior in Information Systems, Human Computer Interaction, and Creative Writing. Over the summer, he is working at Expii, a crowdsourced textbook project based in Pittsburgh. He worked with Evan Wineland on the iOS version of the PPC app, and served as the liaison with our project adviser Joseph Mertz as well as the overall project manager.

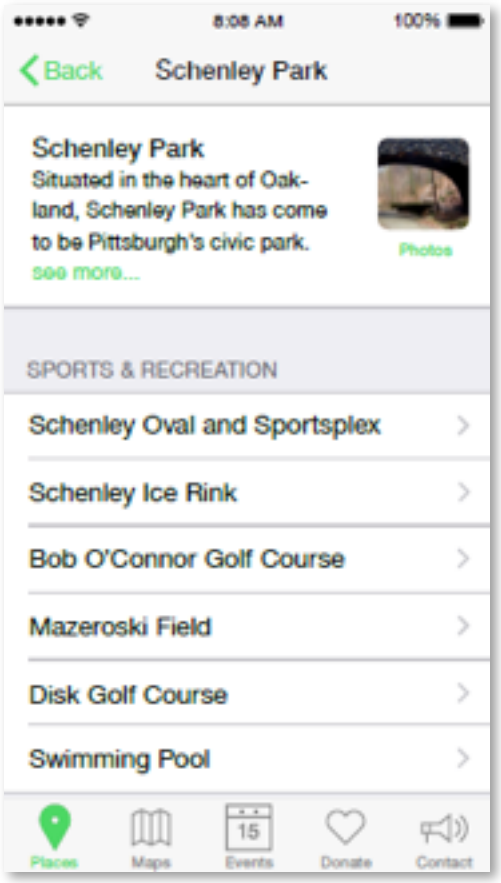
Evan Wineland
Evan is an Information Systems major, and has experience with general app development from previous and current classes (67272, 67328, 67390, Independent Study in iOS Development in Swift). He worked with Taylor Poulos on the iOS version of the PPC app, which required familiarizing himself with Swift. He also served as the general point of contact with Lauryn, our liaison from the PPC--sending agendas, coordinating meeting times, etc.

Weikun Liang
Weikun is a junior double majoring in Information Systems and Human Computer Interaction. For the project, she worked with Taylor to create the wireframes for the Android and iOS app. In addition, she was responsible for implementing the Android application together with Sanum.

Sanum Sheikh
Sanum has a double major in International Relations & Politics. On team Parks, she conducted quality assurance for the Android app, maintained the project plans, as well as produced sprint reports every week to keep track of project progress.

APPENDIX A iOS Screen Shots

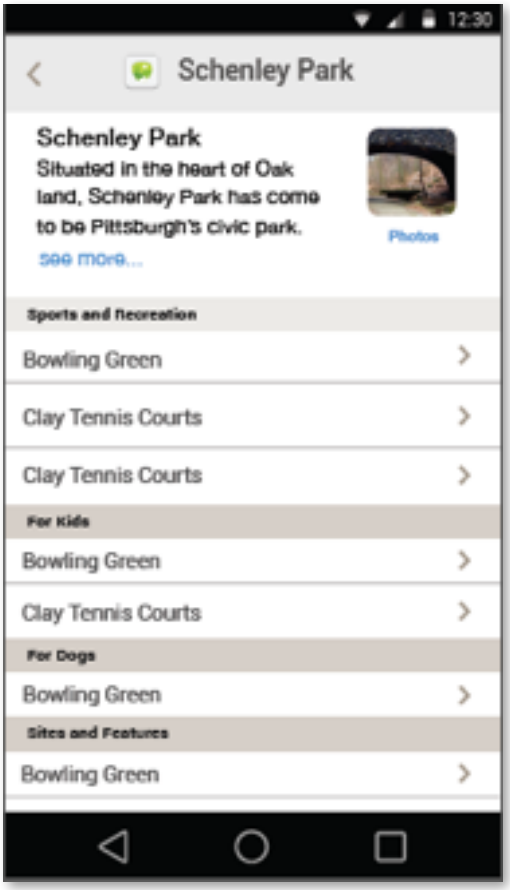

8:08 AM
100%
PGH Parks
parks
CONSERVANCY
UPMC Health Plan
Schenley Park
Frick Park
Highland Park
Places
Maps
15
Events
Donate
Contact


8:08 AM
100%
Back
Schenley Park
Schenley Park
Situated in the heart of Oak-land, Schenley Park has come to be Pittsburgh's civic park.
see more...
Photos
SPORTS & RECRATION
Schenley Oval and Sportsplex
Schenley Ice Rink
Bob O'Connor Golf Course
Mazeroski Field
Disk Golf Course
Swimming Pool
Places
Maps
Events
Donate
Contact


8:08 AM
100%
Back
Schenley Park
Mary Schenley Memorial Fountain
Created to honor Mary Schenley's gift of land in 1889 to create Schenley Park, the sculpture and fountain called A Song to Nature depicts the figures of Pan the earth god and a nymph, Sweet Harmony, who serenades him. The bronze and granite memorial was dedicated in 1918.
See on the map
parks
UPMC Health Plan
Places
Maps
Events
Donate
Contact


Verizon
10:24 AM
Fifth Ave
Forbes Ave
Carnegie Museum
of Natural History
Carnegie Mellon
University
Phipps Conservatory
and Botanical Gardens
Panther Hollow Rd
Google
Places
Map
Events
Contact
Donate

Android Screenshots


12:30
Schenley Park
Schenley Park
Situated in the heart of Oak land, Schenley Park has come to be Pittsburgh's civic park.
see more...
Photos
Sports and Recreation
Bowling Green
Clay Tennis Courts
Clay Tennis Courts
For Kids
Bowling Green
Clay Tennis Courts
For Dogs
Bowling Green
Sites and Features
Bowling Green


12:30
Pittsburgh Parks
Bowling Green
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque urna urna, suscipit non interdum consectetur, elit ante rhoncus sapien, id scelerisque eros lectus ac odio. maximus massa luctus nec. Nulla eget porttitor nisl. onsectetur, elit ante rhoncus sapien, id scelerisque eros lectus ac odio. maximus massa luctus nec. Nulla eget porttitor nisl.
VIEW IN MAPS
UPMC Health Plan
Pittsburgh Parks Conservancy


12:30
Pittsburgh Parks
MAP
PLACES
EVENTS
DONATE
CONTACT
Carnegie Library
Best Buy - San Francisco
Locanda
Randall Museum
Mission Dolores Park
16th St
18th St
20th St
22nd St
24th St
San Francisco Public Library Mission Branch
Dolores St
Church St
Sanchez St
Folsom St
Central Fwy
EHS Plates

APPENDIX B

Decision Matrix

	Native Application	Web Application
Quality	**High** Native built applications are the gold standard for mobile applications, as they can make use of system widgets and interactors. The application will similarly load faster, because there is little or no overhead associated with running native code.	**Low** There are a variety of toolkits that exist for making web applications more usable on mobile devices, however current toolkits do not perfectly emulate native widgets, and the difference can be noticeable to the user. There is overhead involved in running a Web Application, so apps will be necessarily slower and less responsive.
Ease of Development	No one on our team has experience developing iOS applications. However, two members are experienced in developing for the Android operating system, and one member is currently learning iOS development. We also believe that parts of the codebase could be written in Swift, a new language that is significantly higher level than Objective C (the language the current codebase is written in).	Our team has worked extensively with web technologies, and one member has taken a class in developing mobile web applications.
Preexisting code	There is a codebase written in Objective C that we could build off of. However, we are unsure of its quality.	All code for a mobile web application would have to be written from scratch.

Maintenance	A search on SimplyHired.com shows 51 iOS developers and 63 Android developers in the Pittsburgh area at time of writing.	A similar search on SimplyHired.com shows 38 Ruby on Rails developers and 42 developers that listed "jQuery Mobile" as one of their skills in the Pittsburgh area.
Cost of Ownership	It will cost $99/year to enroll in the iOS developers program, which allows distribution of the application on the App Store. Distribution in the Google Play Store is free.	The cost of ownership for a web application varies wildly depending on the number of users and the type of hosting. It would cost approximately $60 a year to host the application on the service Digital Ocean. It is worth noting that if the application were to be packaged as a native app and distributed on the app store, the client would need to pay for the iOS developer's license as well, and distribution in the Play Store would be free.

APPENDIX C

Requirements fulfilled

As a park visitor I want to see a map of the park so that I can navigate and discover new park features based on my location (essential)

We delivered a Google Map within the apps marked with trails and points of interest that are currently in the app database maintained by PPC.

As a park visitor I want to discover new points of interest (such as fountains, parking lots, or bathrooms) so that I can more easily navigate the park (essential)

We delivered a Google Map with points of interests marked around the current location of the user. We also have a tab button that takes the user to a screen with a list of park POIs grouped into categories. The POIs would then be viewable on the map.

As a park visitor I want to see park events so that I can attend events that interest me (essential)

We delivered a tab button within the app that links a user to the events page maintained on PPC's website.

As a park visitor I want to donate to PPC so that I can support their work (non-essential)

We delivered a tab button that links to the current PPC donate web page, which is mobile optimized.

As a park visitor I want to keep in touch with the PPC on social media so that I can receive news about the parks (non-essential)

We delivered a native page with links to the park's social media accounts

Requirements that were not fulfilled

As a PPC employee I want the administrator panel to have a changeable password so that the app's information is secure (essential)

We propose adding a password to the admin panel, which would be kept by PPC staff.

As a PPC employee I want to be able to enter a park event once so that I can spend less time entering information into the system (non-essential)

We propose basing the app calendar off of the website calendar, so that events only need to be entered once.

As a park visitor I want to report park issues directly to the city (non-essential)

We propose a native screen with instructions on how to report issues to park staff.

With extra time, we would integrate a form that allows users to upload pictures and descriptions of issues directly to park staff.