Civic Apps Submission: PDX Trees

Each year, the Portland City Council designates trees for Heritage Tree status, based on their age, size, type, historical association and/or horticultural value. There are currently 281 such trees, spread throughout the city: from Forest Park in the West Hills, to the Lan Su Chinese Garden in Old Town/Chinatown, out to Happy Valley and Powell Butte Nature Park in the east; from St. Johns and North Portland, to Sellwood and Reed College in the south. That's a lot of territory to cover.

PDX Trees is an app for iPhone and iPod Touch devices that makes it easy to find and and enjoy them. With this app, you can:

- Search for nearby trees and see them on a map.
- Tap a pin to see the name and view details for that particular tree.
- Take and upload a photo of a Heritage Tree you're visiting.
- View photos of the tree taken by other tree enthusiasts.
- Email a friend about the tree (includes tree name and location where available)
- Read more about a type of tree from Wikipedia, without leaving the app.

I've had working prototypes of this app on my phone for several weeks now, and as I've wandered around locating these trees, I realized I didn't want to build a simple reference app. Somehow, that didn't seem enough. I wanted this project to be more involved and engaging, to find ways for tree fans to participate and have a reason to visit these trees again and again.

Standing under a Japanese maple on a hot August day, I wondered what it looked like in October, or January. And that's when it hit me: Let's build a collection of images of Portland's Heritage Trees together!

With the first release of the PDX Trees iPhone app, I have two primary goals:

1. To make it easier for citizens and visitors alike to find and enjoy these trees.
2. To build a set of images as a community that shows how Portland’s Heritage Trees change over the seasons and over the years, and to see these trees through each others’ eyes — and cameras.

The app is currently waiting for review in the App Store, and will be available for free worldwide once approved.

Targeted demographic (who app is intended for):

Everyone who wants to learn more about Portland's trees -- citizens and visitors alike.

As a learning tool, I've designed it to be kid-friendly. All photos and captions are moderated before display, and there is a button to flag anything that anyone finds objectionable.

Specific need that is addressed by app:

- To make it easy for people to find and enjoy Portland's Heritage Trees, whether they've been in Portland for 20 years or 20 minutes.
- To increase Portland's appreciation of its own greenery, and convey that appreciation to tourists and visitors.
- To highlight destinations for walks, hikes and bike tours.
- To provide a learning resource about the different trees in our region.
- To foster participation in sharing and collecting images of our trees.

Anticipated usage (by whom, under what circumstances, etc):

The app will be used primarily outdoors, moving between and standing underneath the featured trees.

The intent of bundling the data into the phone is to take this information off the server, right past our desktops and laptops and out into the real world, so it is available for in situ browsing of our Heritage Trees.

Citizens can use the app to learn about trees down the street, along their favorite bike route or regular commute, or find another reason to step off the bus in a neighborhood new to them.

Children could use the app on field trips to learn about the trees in an area they are visiting.

Visitors to Portland will see these trees as new destinations as they explore popular tourist sites.

(Future enhancements to the website would broaden the audience of photos to beyond those with an iPhone or iPad, to anyone with a web connection anywhere in the world.)

Who and what will be impacted by the app, and how:

The app will:

- Inspire citizens to learn more about these Heritage Trees.
- Foster civic pride in our trees, increase appreciation of them, and build support for healthy urban forests in general.
- Assist in the planning of Heritage Tree walks and bike tours, which have happened several times in the past few years.
- Encourage citizens to nominate trees for designation as Heritage Trees.

- Convey Portland's appreciation of trees and forests to tourists and visitors.
- Help students find and learn about trees while on field trips.
- Motivate life-long learners of all ages to expand their knowledge of the trees around us.

How information is presented, that's not presented elsewhere; how it is unique:

Before I read about Heritage Trees on the Civic Apps site, I didn't even know they existed. Since then, I've noticed the tree markers on a few paper maps, but there isn't any way to get more information from these maps.

The City of Portland website has some information, mostly in list or PDF formats which don't necessarily lend themselves to mobile use. (They are great materials, and I'd love to integrate some of these materials and filtered lists into the app in the future.)

The goal of the app is to bring this information into the real world, into the context of the trees. The app shows exactly where you are in relation to the trees, makes address details and statistics accessible with a tap of the finger, and viewing more details about a species is just one more finger tap away.

The photo-sharing features allow us to share what we each see in these trees. Gathering images for 281 trees during all of Portland's micro-seasons would be an overwhelming project for a few people, but it's a perfect project for a crowd-sourcing approach.

The most important aspect of making this data mobile is getting people out under the trees looking up, rather than staring down at the data on their screens.

Strengths of the design:

Browsing Trees on Location. Putting the information in a handheld devices makes it a mobile navigation guide during walks, bike trips and visits to our area. Tree fans can see where they are in relation to nearby trees in real-time.

Simple and uncluttered design. I've already been through several design iterations, trying to remove as many distractions as possible, and keep the focus on the two primary goals.

Take photos within the app. While viewing details about a tree, the user can tap the camera icon to take or select a new photo, and the app transparently attaches it to that particular tree. (If no internet connection is available, the image is added to a draft email, which will be sent when connected again.)

Designed for speed. By storing most of the base information on the phone, searching for trees in an area happens quickly, rather than stalling out because of an unreliable cellular connection. The photos and captions will be changing over time, so those are

loaded over the cell network, but they are requested in the background, in advance of their display, when possible.

Photo gathering makes the app participatory. It's one kind of experience to stand and observe a tree. I wanted a way to get people involved and excited about the project, and to be able to contribute.

Bringing Wikipedia to the Tree. The link to Wikipedia means more info about each species is accessible within the app. (In the future, I'd like to replace this with more authoritative, locally-produced and locally-relevant information, such as the excellent material in *Trees of Greater Portland* by Phyllis C. Reynolds and Elizabeth F. Dimon.)

Offline mode. Since all the tree data is stored on the phone, you can still search for trees and view the basic information about them, even if you don't have an internet connection. This makes the app work on iPod Touch devices, even without a Wi-Fi connection. (A few catches: there is no access to photos or Wikipedia pages while offline, and you need to visit the region first with a network connection to get the underlying map imagery.)

RESTful API. Images are submitted, shared and flagged through an API that makes the data re-usable among and between sites and client apps. For example, the Heritage Tree Quest app that Simon Walter-Hansen created during the October 3 OpenGov hackathon could request images for a particular tree from my PDX Trees API and present them in the context of his project. He could also accept photos from users of his site and submit them through the API so that users of the iPhone App (and eventually the website and other platforms) could see them. (All submitted images are licensed under the Creative Commons Attribution-Share-Alike license, to make broad re-use possible.)

Planning-your-visit mode. If the app can not determine the current location of the phone, or it discovers that the device is outside of Portland, the location button automatically returns users to a view of downtown Portland. This facilitates browsing for tourists and those planning to visit Portland, and makes sure that there are always trees when someone opens the app. Once they arrive in Portland, they'll be able to see exactly where they are in relation to the trees around them.

Links:

Video of the app, will feature a link to the app store once it is approved:

http://pdxtrees.org

Repository: http://pdxtrees.org/source/

License: MIT License