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# Finding the Ways to Make Wayfinding Work

Accessing Higher Ground 2018

Kaela Parks and Michael Cantino, Portland Community College

Image: Accessible Map interface with search and feature boxes and building description showing.

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## What we have in place at PCC

Online Maps - Accessible Building Features

* Floor plan views with placemarks for features
* Both building features and services/resources
* Narrative descriptions and directions

Wayfinding Support

* Individualized swell paper maps
* 3D printed and Laser cut maps

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## PCC Online Maps – Floor View

Floor plan placemarks to describe features

Image: Screenshot of floorplan showing all accessibility features for Rock Creek Building 9 with placemark for All-user restroom in focus.

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## PCC Online Maps – Outside View

Outside view with links to walking directions

Image: Screenshot of all accessibility features for Sylvania campus outside view with placemark for Sylvania Campus Walking Directions in focus.

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## PCC Online Maps – Find Nearby

Filter by feature and get suggestions…

Image: Screenshot for Sylvania Campus CC Building with red circle around ALD feature and red circle around results indicating none available in this location with suggestion to check the PAC.

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## PCC Online Maps – Nearby Found

This feature is not perfect, but can help

Image: Screenshot of SY Campus PAC building with ALD feature selected and ALD shown.

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## The Key Ideas Behind Our Approach

Collaboration is vital (none of us can do it alone):

* ***Facilities*** (generates floor plans)
* ***Web Team*** (builds and improves web interface)
* ***Disability Services*** (identifies and updates accessible feature descriptions, creates tactile and 3D representations, & conducts end user testing )
* ***Academic areas*** (provide learning opportunities for students and lend expertise via faculty engagement)
* **Commission for the Blind** (feedback and dissemination)

This type of project requires ongoing attention

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## Explore the Maps

3D maps with QR codes to pull up the online maps in “outside view” [www.pcc.edu/AccessMaps](http://www.pcc.edu/AccessMaps)

* Site descriptions and wayfinding information
* Navigate by campus, building, and floor
* Different placemarks for different features

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## Online Maps - Initial Work

* Kickoff meeting in spring 2013
* Initial launch of campus maps in fall 2013
* What the process looked like:
  + Group discussion and decision making
  + Floor plans optimized and uploaded
  + Placemarks added through data gathering, description writing, and quality assurance review

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Interns from Architecture and Drafting worked with Facilities Maintenance Services to generate floor plans and export from Revit as a .png:

Image: Image of floor plan with construction areas shaded and white background.

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Webteam edits image to create transparency, rotate to match map, and optimize file size:

Image: Image of floor plan that has transparent background and slight rotation.

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Webteam finds latitude and longitude for image overlay:

Image: Image of google earth dialogue box with floor plan visible over satellite map view.

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Webteam uploads image to server and adds coordinates to data file:

Image: Image of wrodpress administrator interface where latitude and longitude are being inserted into the custom settings field within the Locations using JSON.

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Updated floorplan shows in web interface:

Image: Image of floor plan visible in live user interface with navigation on top and placemark text on right.

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## Online Maps - 2014 Update

* Review status meeting in winter 2014
* Launch of new features in spring 2014
* What the process looked like:
  + Centers added (not just campuses)
  + Building descriptions added
  + Icon set could now be turned on and off
  + Faster loading times
  + Better experience on mobile devices (2015)

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## Tactile Floor Plans

The floor plans that had been optimized for the web were used as a starting point for individualized tactile floor plan maps - 2014-15.

Interns did this work - challenge of limited expertise with proper Braille - having a transcriber on the team has improved them!

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## Click and Go Proof of Concept

Small scale installation in Fall 2016

* Beacons
* Low vision maps
* Narrative directions

Take-aways

* Multiple approaches are necessary
* Holistic strategy to maximize use of beacons

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## Online Maps - 2018 Update

* Rolling updates in 2017, 2018, 2019
* Big Push
  + Search and Filter (2017)
  + Links in class schedule to bldg and floor view (2018)
  + Enhanced outside view with narratives (2018)
  + 3D reference maps with QR code (2018)
  + Addition of Resources and Services (2018)
  + Classroom Data (TBD - estimate of 2019)

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## 3D Maps - Use

Maps are foldable, durable, and replaceable allowing for use on the go

QR code linking to online info provides easy access to additional information

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## 3D Maps – Examples

Laser cut maps and 3D printed prototypes

* 3D printing of draft ideas
* Etching to recess pathways
* Layering to raise buildings

Image: Photo of acrylic map in foreground with 3d printed swatches and campus map in background.

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## 3D Printed Maps - Tools

[Touch Mapper](https://touch-mapper.org/en/) - Generate the initial STL using data from OpenStreetMaps.org

OpenSCAD Braille Tool - Create braille labels [Tinkercad](https://www.tinkercad.com/) - Easy CAD tool for beginners

QR Code generator - There are a variety of tools available.

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3D Printed Maps - Design

Following [BANA Tactile Graphics Guidelines](http://www.brailleauthority.org/tg/) Usability testing

Challenges

* Selecting which features to include
* Creating easily discernible symbols
* Editing buildings and paths to allow for effective exploration of maps
* Room to place braille labels

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## 3D Maps - Other Options

Make Friends in your Maker Space! Laser Cutting

* Affordable
* Fast
* Uses AI files rather than STL files

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## Online Maps - Next Phase

* Classroom Level Detail
* Integration with Room Scheduling System
* Tied in with class schedule and registration

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## References

Portland Community College Access Maps [www.pcc.edu/AccessMaps](http://www.pcc.edu/AccessMaps)

Portland Community College Wayfinding Info

[www.pcc.edu/resources/disability/wayfinding](http://www.pcc.edu/resources/disability/wayfinding)

Placemarks Plugin Overview <http://gabriel.nagmay.com/2013/10/placemarks>

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## Contact Us

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We are happy to talk more with those interested in learning about this approach!