Architecting Government Websites
Migrating Portland.gov to Drupal 8

Josh Mitchell with special guests from the City of Portland

Josh Mitchell

Consulting Product Manager for Portland.gov

Background:

- Enterprise Applications Manager, Multnomah County
- CTO, Drupal Association
- Director of Engineering, Phase 2

Why am I doing this?

Government websites are the most important sites we can build.

The complexity and breadth of data make them an ideal site for Drupal.

Artwork by Mishya Mitchell

Meet the team

Ida Salazar

Business Solutions Division Manager, Bureau of Technology Services

Rick Nixon

eGovernment Program Manager, Bureau of Technology Services

Jen Clodius

Strategic Communications Manager, Office of Management and Finance

Project Team

Brittany, Casey, Greg, Julie, Kevin, Mark, Mike, Richard, Ronnie, Tracey

A case study in 3 parts

1. Where are we coming from?

2. What are we trying to get to?

3. How we are doing it?

    a) the technology
    b) the strategy

Photo by Zack Spear on Unsplash

Where we are coming from?

Part 1

![Portland.gov logo]
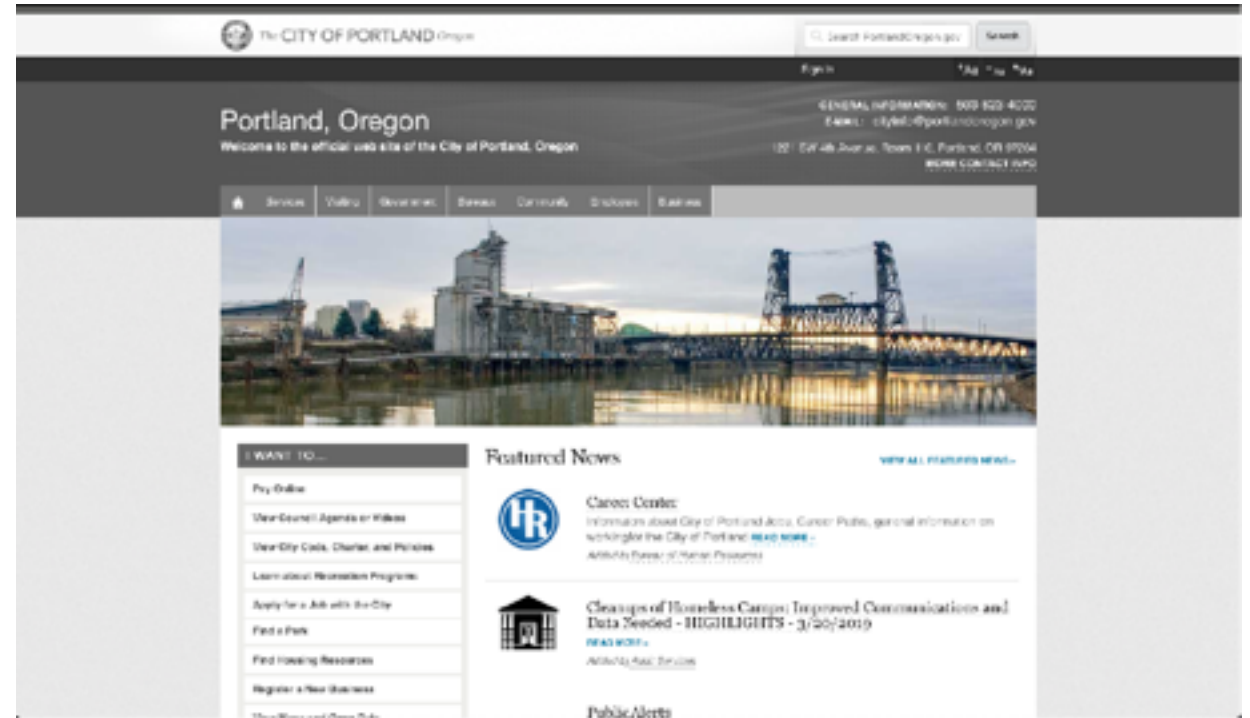
Existing platform

16-year old Coldfusion platform

Public site and intranet combined
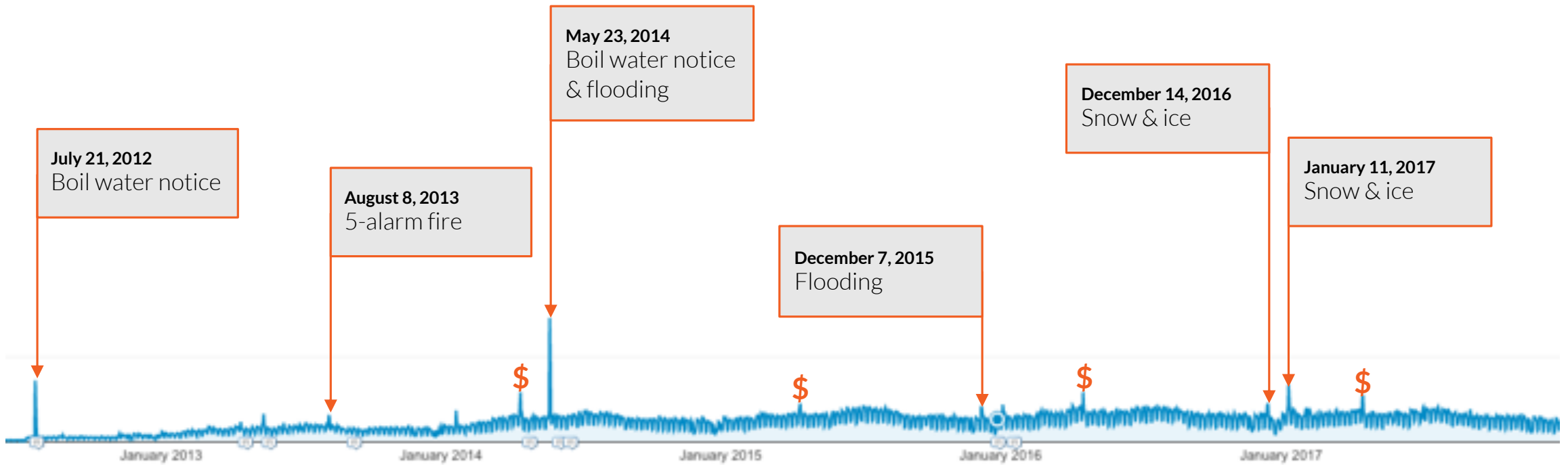
350,000+ content objects (mostly PDF and DOC)

Most community members want very little

- Obtain a permit or service

- Find a job

- Pay a bill

- View emergency information

- Find parks or recreation activities

Emergencies and taxes

July 21, 2012
Boil water notice

August 8, 2013
5-alarm fire

May 23, 2014
Boil water notice
& flooding

December 7, 2015
Flooding

December 14, 2016
Snow & ice

January 11, 2017
Snow & ice

January 2013   January 2014   January 2015   January 2016   January 2017
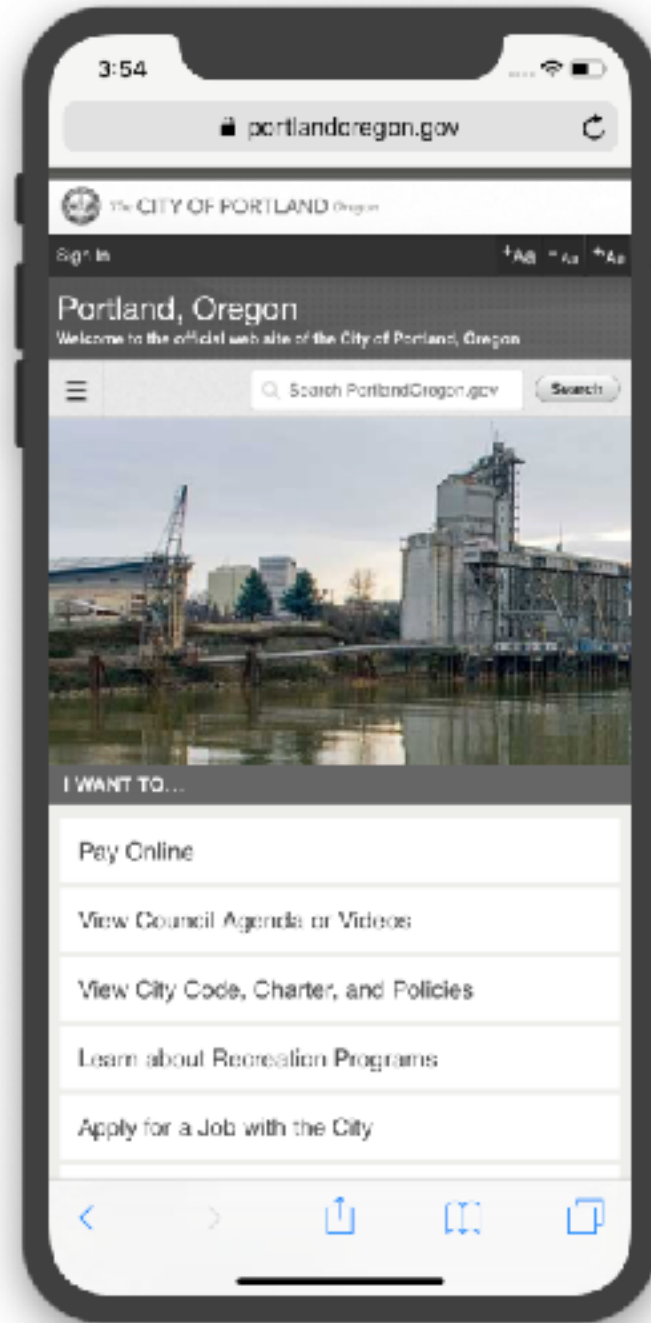
Mobile

300%

increase in mobile traffic

since 2013

Portland.gov

Search

61%

of traffic to
PortlandOregon.gov
arrives via organic search

90%

of organic search is Google

What are we trying to get to?

Part 2

Services and **information** that are easy to **find**, easy to **access**, and easy to **understand**.

Portland.gov

Easy to **find**

Search should be awesome.

> What can we help you find? 🔍

Word choice is important.
Use words the community will use.

Portland.gov

Easy to **access**

Community needs equity and accessibility above all else.

📞 503-823-4000

Five zero three (pause) eight two three (pause) four zero zero zero

Easy to **understand**

Content written at a 5th to 8th-grade reading level.

Translation will be built into the platform in an upcoming phase.

Hemingway _Editor_

Readability

Grade 5

Good

Words: 116

Show More ▾
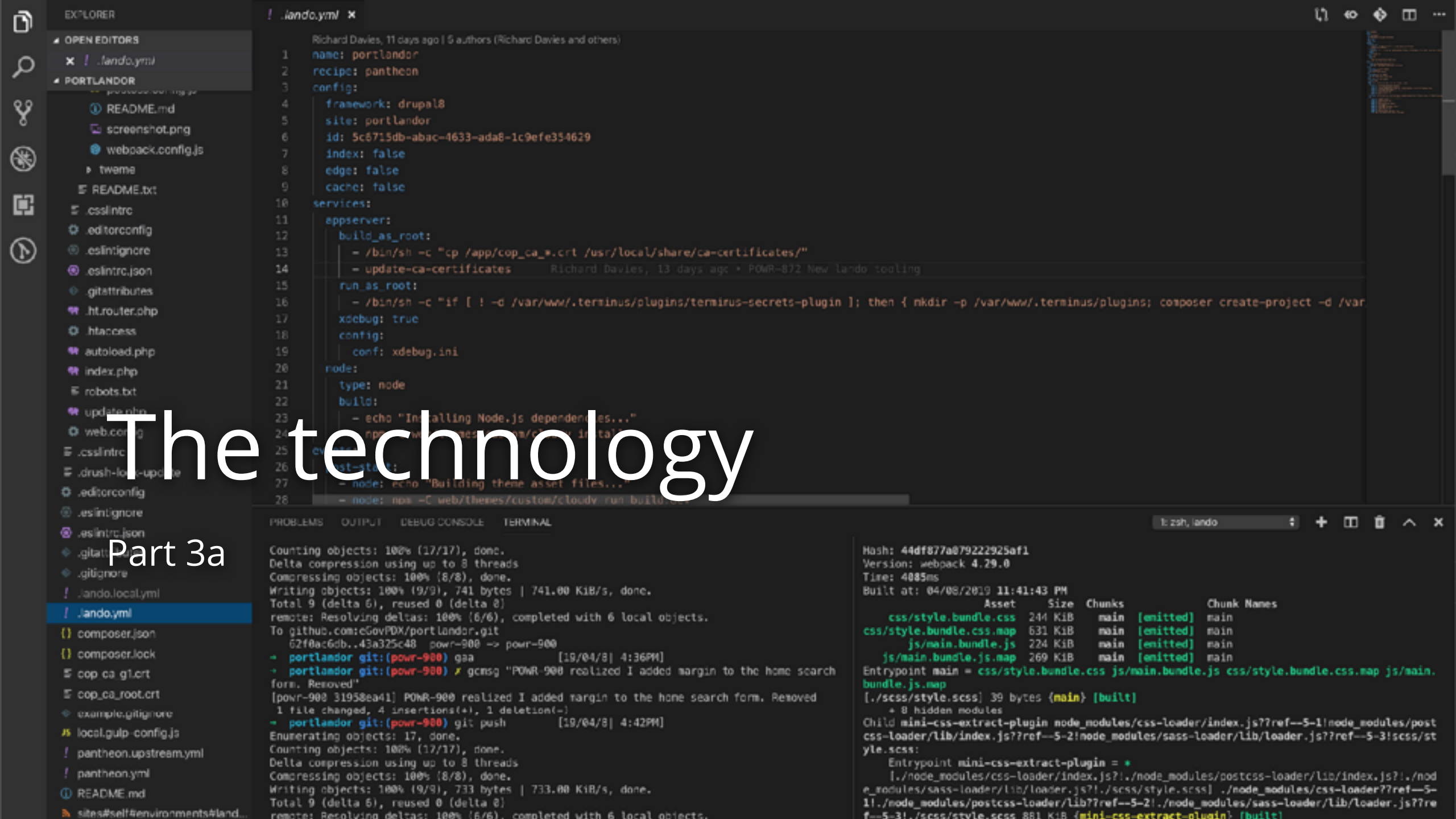
0 adverbs. Well done.

1 use of passive voice, meeting the goal of 3 or fewer.

0 phrases have simpler alternatives.

1 of 14 sentences is hard to read.

0 of 14 sentences are very hard to read.

The technology

Part 3a

Jira

3-week sprints

Measure our progress

Incremental improvements
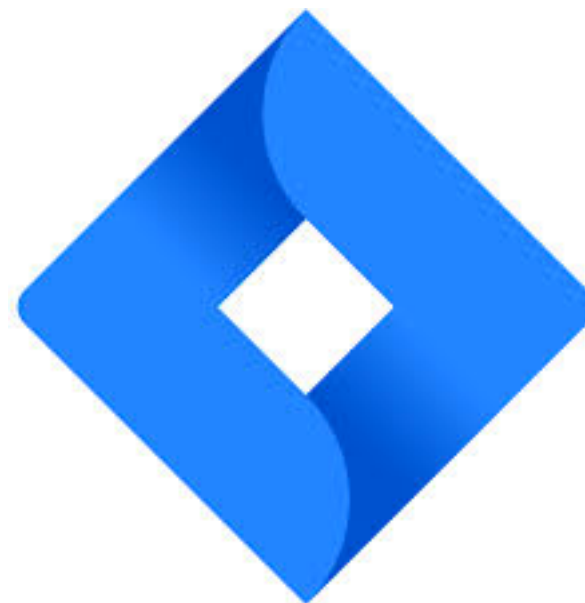
Cumulative Flow Diagram
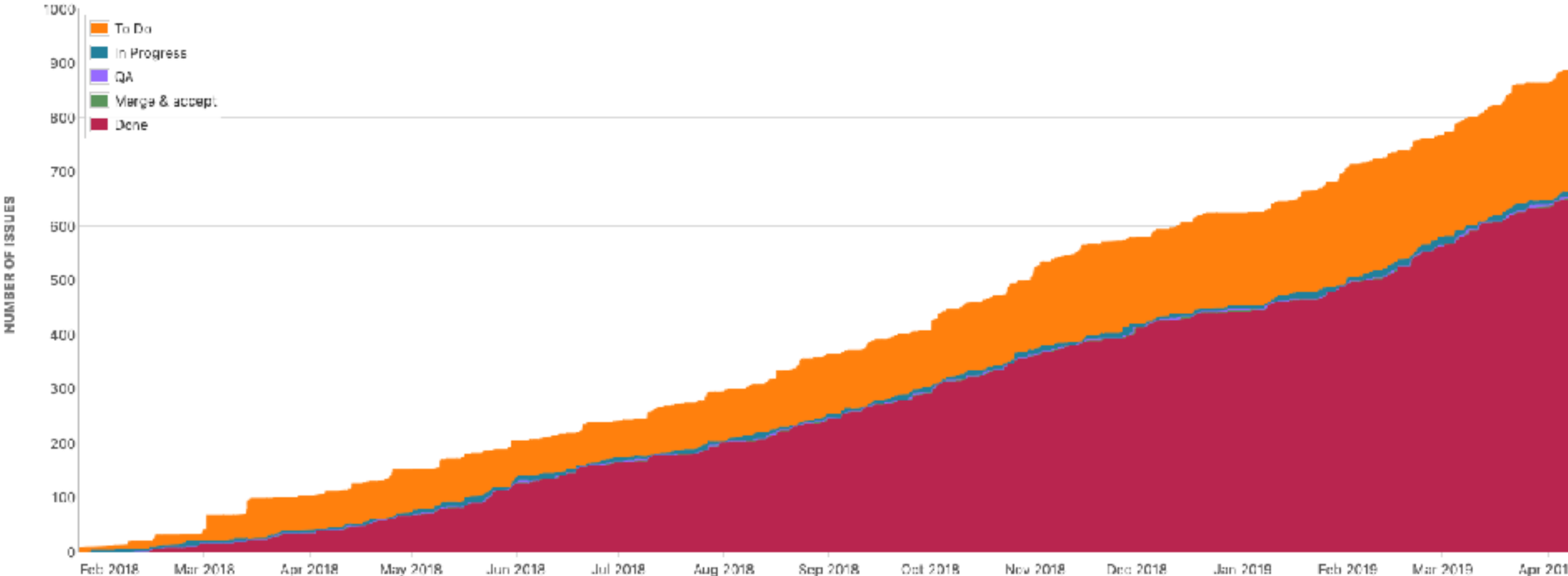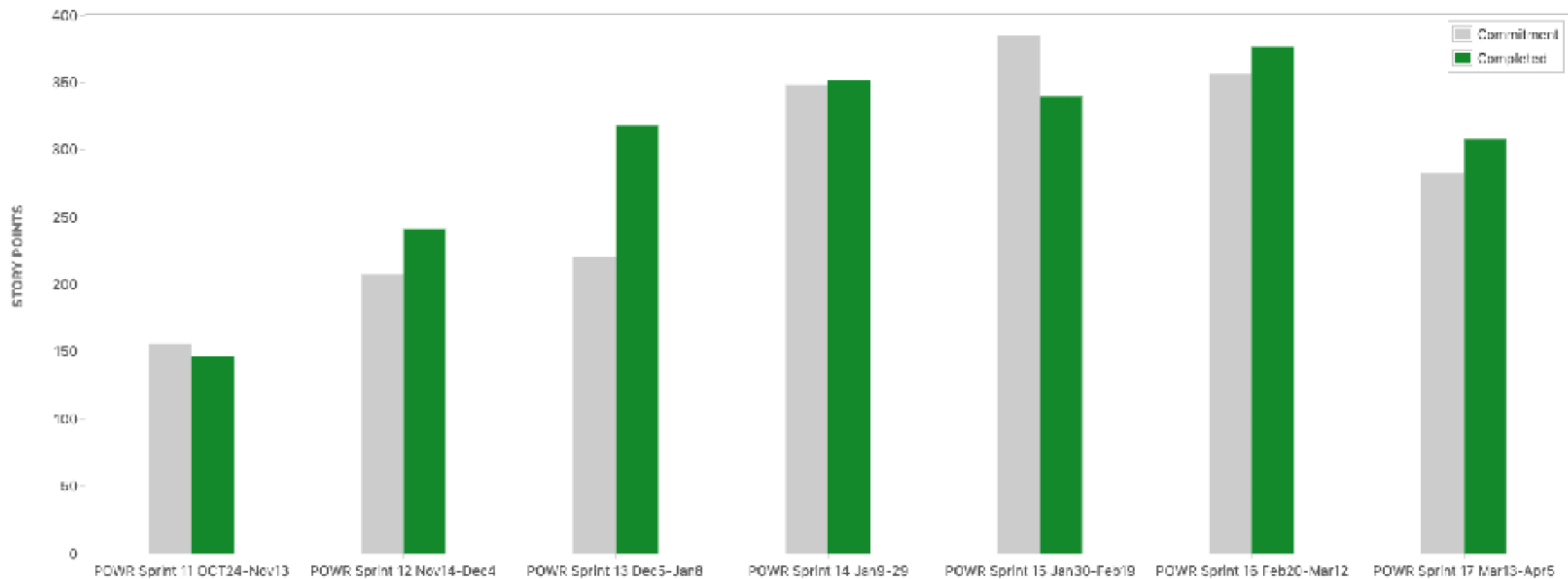
Sprint	Commitment	Completed
POWR Sprint 11 OCT24-Nov13	156	146
POWR Sprint 12 Nov14-Dec4	207	241
POWR Sprint 13 Dec5-Jan8	220	318
POWR Sprint 14 Jan9-29	348	352
POWR Sprint 15 Jan30-Feb19	384	339
POWR Sprint 16 Feb20-Mar12	356	378
POWR Sprint 17 Mar13-Apr5	282	308

Local development

Containers reduce developer time to onboard

Tradeoff of slower localhost and issues with Windows-based team members

4: zsh

→ **portlandor** git:(**master**) █

Github

Default to open

Show your work

Feature branches

Protect secrets

CircleCI and Pantheon

Github feature branch = multidev on Pantheon

Continuous integration to master branch

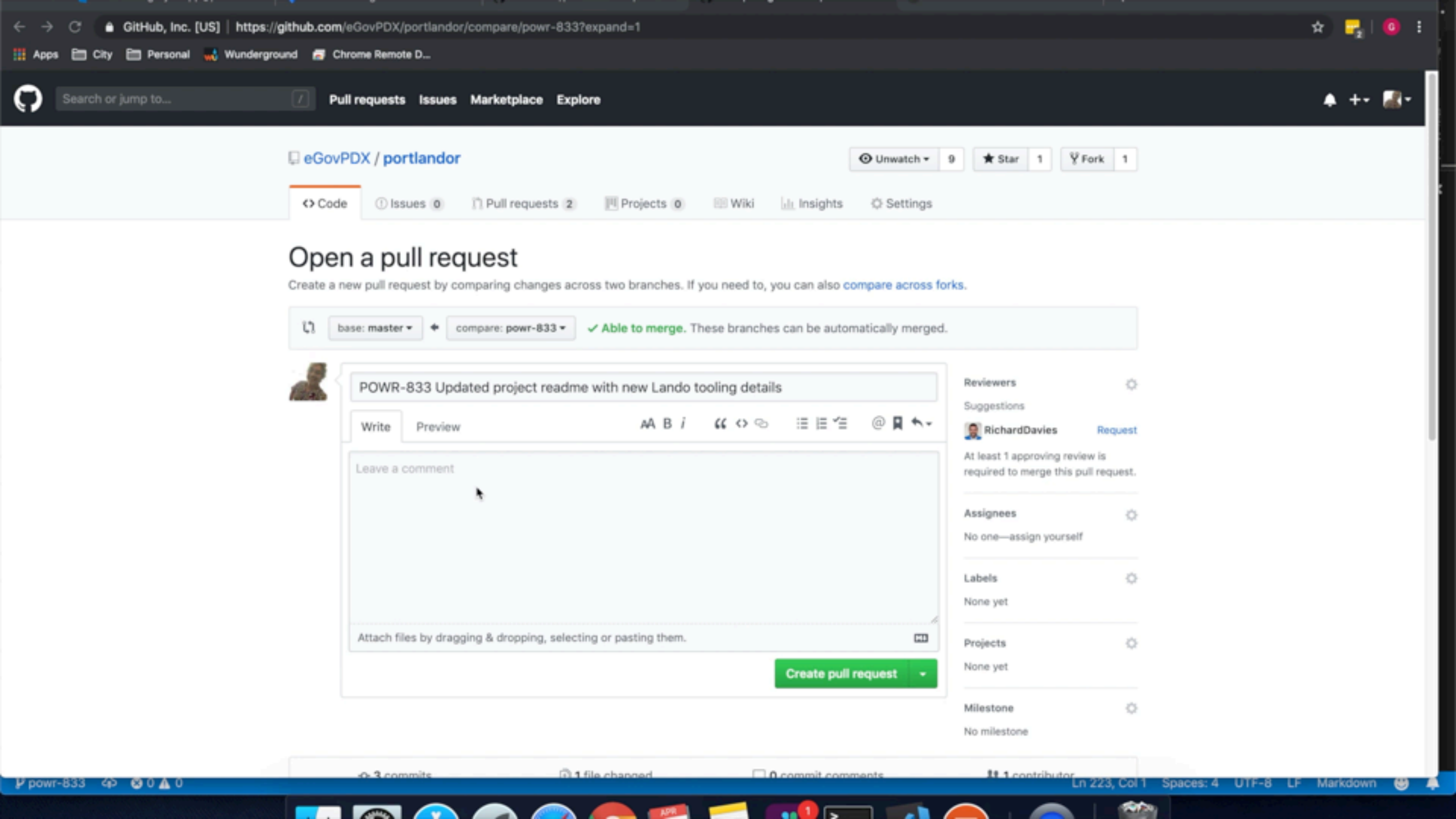Continuous deployment of the master branch

Integrate on Pantheon, deploy test, deploy live

Apps City Personal Wunderground Chrome Remote D...

Search or jump to...   /   Pull requests Issues Marketplace Explore

eGovPDX / portlandor

Unwatch ▼ 9   ★ Star 1   ⑂ Fork 1

<> Code   ⓘ Issues 0   ⬡ Pull requests 2   ▥ Projects 0   ▦ Wiki   � Insights   ⚙ Settings

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also **compare across forks**.

⇅   base: master ▼   ←   compare: powr-833 ▼   ✓ **Able to merge.** These branches can be automatically merged.

POWR-833 Updated project readme with new Lando tooling details

Write   Preview   AA B *i*   ᏩᏩ <> 🔗   ☰ ☷ ☑   @ 🔖 ↩▼

Leave a comment

Attach files by dragging & dropping, selecting or pasting them.   MD

Create pull request ▼

Reviewers   ⚙
Suggestions
👤 RichardDavies   Request
At least 1 approving review is required to merge this pull request.

Assignees   ⚙
No one—assign yourself

Labels   ⚙
None yet

Projects   ⚙
None yet

Milestone   ⚙
No milestone

⑂ powr-833   ⚙ 0 ⚠ 0   ⟲ 3 commits   ▣ 1 file changed   ⬡ 0 commit comments   ⬗ 1 contributor   Ln 223, Col 1   Spaces: 4   UTF-8   LF   Markdown

Portland.gov

How to train your search engine

1. Teach it your language with synonyms.
   Governments like acronyms.

2. Understand stemming.
   Parks and parking are the same search query.

3. Know when to elevate.
   Sometimes you have to game the system.

Solr

Layout in Drupal 8

Paragraphs

Media embed

Page manager

Block layout

Layout Builder

Portland.gov

Accessible design components

Phone numbers

Tabbed interfaces

Structured content

Media

2 approaches to responsive images

Focal point crop

drupal.org/project/focal_point

Allows you to set your crop based on a focal point.

Every image gets a focal point upon upload to the media library.

Images preview

Click an image to see a larger preview. You may need to scroll horizontally for more image styles.

Banner 1024x300

Banner 1366x300

Banner 1600x300

Original image

This preview image above may have been scaled to fit on the page.

Banner and featured image styles

Style name	Operations
Banner 640x200	Edit ▾
Banner 768x200	Edit ▾
Banner 1024x300	Edit ▾
Banner 1366x300	Edit ▾
Banner 1600x300	Edit ▾
Banner 1920x300	Edit ▾

Featured 320x350	Edit ▾
Featured 384x350	Edit ▾
Featured 512x350	Edit ▾
Featured 683x350	Edit ▾
Featured 800x350	Edit ▾
Featured 960x350	Edit ▾

Responsive image styles

A responsive image style associates an image style with each breakpoint defined by your theme.

Add responsive image style

Label		Machine name	Operations
Banner	▼	banner	Edit ▼
Featured	▼	featured	Edit ▼
Image 50	▼	image_50	Edit ▼
Image 100	▼	image_100	Edit ▼

Label *

Banner   Machine name: banner

Example: 'Hero image' or 'Author image'.

Breakpoint group *

Cloudy   ▼

Select a breakpoint group from the installed themes and modules. Below you can select which breakpoints to use from this group. You can also select which image style or styles to use for each breakpoint you use. Warning: if you change the breakpoint group you lose all your image style selections for each breakpoint.

▼ **1X MEDIA-BREAKPOINT-UP(XL) [ALL AND (MIN-WIDTH: 1200PX)]**

Type

◉ Select multiple image styles and use the sizes attribute.

◯ Select a single image style.

◯ Do not use this breakpoint.

See the Responsive Image help page for information on the sizes attribute.

Sizes *

(min-width: 1200px) 1140px, 100vw

Enter the value for the sizes attribute, for example: *(min-width:700px) 700px, 100vw.*

Image styles

☑ Banner 1024x300

☑ Banner 1366x300

☑ Banner 1600x300

☑ Banner 1920x300

```html
<picture>
  <!--[if IE 9]><video style="display: none;"><![endif]-->
  <source srcset="/sites/default/files/styles/banner_max_1024w/public/2019-04/img_1255.jpg?h=558dda52&itok=9CYFdn_A 1024w, /sites/default/files/styles/banner_max_1366w/public/2019-04/img_1255.jpg?h=558dda52&itok=N4i9Mn_O 1366w, /sites/default/files/styles/banner_max_1600w/public/2019-04/img_1255.jpg?h=558dda52&itok=tXw9U8Vu 1600w, /sites/default/files/styles/banner_max_1920w/public/2019-04/img_1255.jpg?h=558dda52&itok=2r8pxSr0 1920w" media="all and (min-width: 1200px)" type="image/jpeg" sizes="(min-width: 1200px) 1140px, 100vw">
  <source srcset="/sites/default/files/styles/banner_max_1024w/public/2019-04/img_1255.jpg?h=558dda52&itok=9CYFdn_A 1024w, /sites/default/files/styles/banner_max_1366w/public/2019-04/img_1255.jpg?h=558dda52&itok=N4i9Mn_O 1366w, /sites/default/files/styles/banner_max_1600w/public/2019-04/img_1255.jpg?h=558dda52&itok=tXw9U8Vu 1600w, /sites/default/files/styles/banner_max_1920w/public/2019-04/img_1255.jpg?h=558dda52&itok=2r8pxSr0 1920w" media="all and (min-width: 992px)" type="image/jpeg" sizes="100vw">
  <source srcset="/sites/default/files/styles/banner_max_768w/public/2019-04/img_1255.jpg?h=558dda52&itok=iIYM7fCV 768w, /sites/default/files/styles/banner_max_1024w/public/2019-04/img_1255.jpg?h=558dda52&itok=9CYFdn_A 1024w, /sites/default/files/styles/banner_max_1366w/public/2019-04/img_1255.jpg?h=558dda52&itok=N4i9Mn_O 1366w, /sites/default/files/styles/banner_max_1600w/public/2019-04/img_1255.jpg?h=558dda52&itok=tXw9U8Vu 1600w" media="all and (min-width: 576px)" type="image/jpeg" sizes="100vw">
  <!--[if IE 9]></video><![endif]-->
  <!-- THEME DEBUG -->
  <!-- THEME HOOK: 'image' -->
  <!-- BEGIN OUTPUT from 'themes/custom/cloudy/templates/field/image.html.twig' -->
  <img src="/sites/default/files/styles/banner_max_640w/public/2019-04/img_1255.jpg?h=558dda52&itok=Krseak4W" alt="Mountain shot" typeof="foaf:Image" class="img-fluid">
  <!-- END OUTPUT from 'themes/custom/cloudy/templates/field/image.html.twig' -->
</picture>
```

News and notices

Exciting news with a nice photo of Mount Washington

Sed tortor turpis, interdum sed vehicula et, commodo in nunc. Duis ac mollis risus. Aenean id nunc lobortis, consequat erat nec, viverra nulla. Aliquam mattis commodo interdum. Curabitur a eros eget diam vestibulum rutrum in ac lorem. Nam molestie ultrices nulla, nec cursus nibh egestas non.

Related

Exciting news with a nice photo of Mount Washington

Exciting news with a nice photo of Mount Washington

Sed tortor turpis, interdum sed vehicula et, commodo in nunc. Duis ac mollis risus. Aenean id nunc lobortis, consequat erat nec, viverra nulla. Aliquam mattis commodo interdum. Curabitur a eros eget diam vestibulum rutrum in ac lorem. Nam molestie ultrices nulla, nec cursus nibh egestas non.

Max width

Used for **media embed** with breakpoints based on 50% and 100% wide images.

Max 320w — Edit ▾

Max 384w — Edit ▾

Max 512w — Edit ▾

Max 540w — Edit ▾

Max 640w — Edit ▾

Max 683w — Edit ▾

Max 768w — Edit ▾

Max 800w — Edit ▾

Max 960w — Edit ▾

Max 1024w — Edit ▾

Max 1366w — Edit ▾

Max 1600w — Edit ▾

Max 1920w — Edit ▾

Photo of Mount Washington by Josh Mitchell

Sed tortor turpis. Interdum sed vehicula et, commodo in nunc. Duis ac mollis risus. Consequat in in lobortis, consequat et amet, viverra nulla. Aliquam mattis commodo interdum. Curabitur elementum eu vestibulum rutrum in ac lorem. Nam molestie ultrices nulla, nec cursus nibh egestas non. Interdum et malesuada fames ac ante ipsum primis in faucibus. Morbi et ante venenatis, gravida magna vel, ullamcorper urna. In a metus nec ipsum scelerisque rutrum ac id sem. Praesent porttitor bibendum eros, et sollicitudin nibh id quam ac. Aenean orci sem, ultrices sed ligula eget, pharetra dapibus est. Nullam ut placerat lorem, ut tristique dui. Cras massa magna, luctus et ullamcorper, cursus tempus massa. Mauris bibendum diam nulla, sed molestie ante feugiat in.

Mauris non luctus ante. Nunc sollicitudin, sapien eget fermentum tincidunt, ligula nibh convallis nunc, et varius metus tortor vel augue. Suspendisse potenti. Praesent pretium odio id leo id consequat. In dignissim ut tortor id dignissim. Aliquam condimentum vehicula nisl, sed dictum urna pulvinar quis. Nam finibus, arcu gravida consectetur efficitur, sollicitudin fringilla ante placerat, eu nisl eget tortor. Donec condimentum est ac cursus dapibus, nec rutrum purus tempus. Aliquam tincidunt ipsum vel mi placerat, eget consectetur ante faucibus. Donec pretium diam mi, ut elementum velit ullamcorper sed. Pellentesque auctor mauris a urna feugiat condimentum.

Phasellus rhoncus eget, nulla at maximus. Sed sem luctus, fringilla nec eu posuere efficitur, odio dui et sapien. Integer volutpat euismod hendrerit. Sed posuere consequat bibendum. Vestibulum eu varius nunc. In viverra mi. Aenean

Mount Jefferson at sunset by Josh Mitchell

- ☑ Max 1024w
- ☑ Max 1366w
- ☑ Max 1600w
- ☑ Max 1920w
- ☐ Max 320w
- ☐ Max 384w
- ☐ Max 512w
- ☐ Max 540w
- ☑ Max 640w
- ☐ Max 683w
- ☑ Max 768w

```html
<img srcset="/sites/default/files/styles/max_640w/public/2019-04/img_1255.jpg?itok=53ZfIaip 640w, /sites/default/files/
styles/max_768w/public/2019-04/img_1255.jpg?itok=-c0g33UM 768w, /sites/default/files/styles/max_1024w/public/2019-04/
img_1255.jpg?itok=gdpjhzwF 1024w, /sites/default/files/styles/max_1366w/public/2019-04/img_1255.jpg?itok=_E35EB57 1366w,
/sites/default/files/styles/max_1600w/public/2019-04/img_1255.jpg?itok=5KabBAw7 1600w, /sites/default/files/styles/
max_1920w/public/2019-04/img_1255.jpg?itok=d6Us6uO9 1920w" sizes="100vw" src="/sites/default/files/styles/max_640w/
public/2019-04/img_1255.jpg?itok=53ZfIaip" alt="Mountain shot" typeof="foaf:Image" class="img-fluid">
```

The strategy

Part 3b

User journey

Photo by Vlad Bagacian on Unsplash

Portland.gov

Where did they start?

Portland.gov

What's the destination?

Services and permits

Pay a tax or fee

Apply for a license, permit, or financial assistance

File a claim or a request for public records

Report a problem

~ 300 services
(not counting the numerous permit types)

Information

Construction projects, policy projects, parks, jobs, maps, charts, neighborhoods, charter, code, policies, notices, hearings, meetings

Service delivery

Preferred

Online

In person

By phone

Chat

Unstructured

By email

By mail

By fax

Text

Services

Accessed via a mode

Some modes cost more than others

Some modes are more convenient than others

Simple, clear, concise is more effective

Revenue / Services, guides, and information
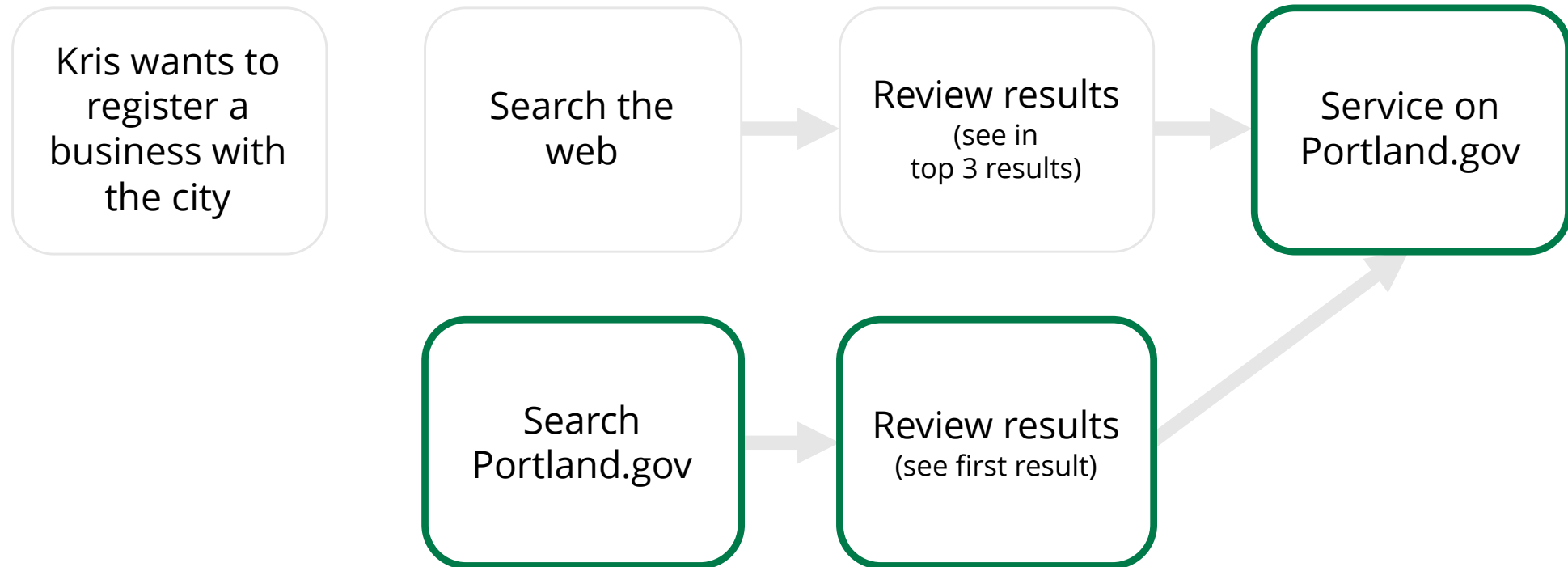
Register your business

New businesses that operate in Portland or Multnomah County are required to register their business with the Revenue Division within the first 60 days of operation.

🕐 Registering your business should take 15 minutes to complete.

| Online | By mail | By fax | In person |

Register a new business

To register your business, you will need the following:

- Tax ID number (Social Security number or employer identification number)
- Business tax entity type (sole proprietor, partnership, S-corporation, C-corporation, trust or estate)
- Your business locations and owners

New business registration ☑

You will need a PortlandOregon.gov account to register. You will be asked to log in or create an account.

Related

Pay business tax

Portland.gov

Shift the way we think about content

- Content instead of layout

- Be ready for voice and AI

- Simple and concise
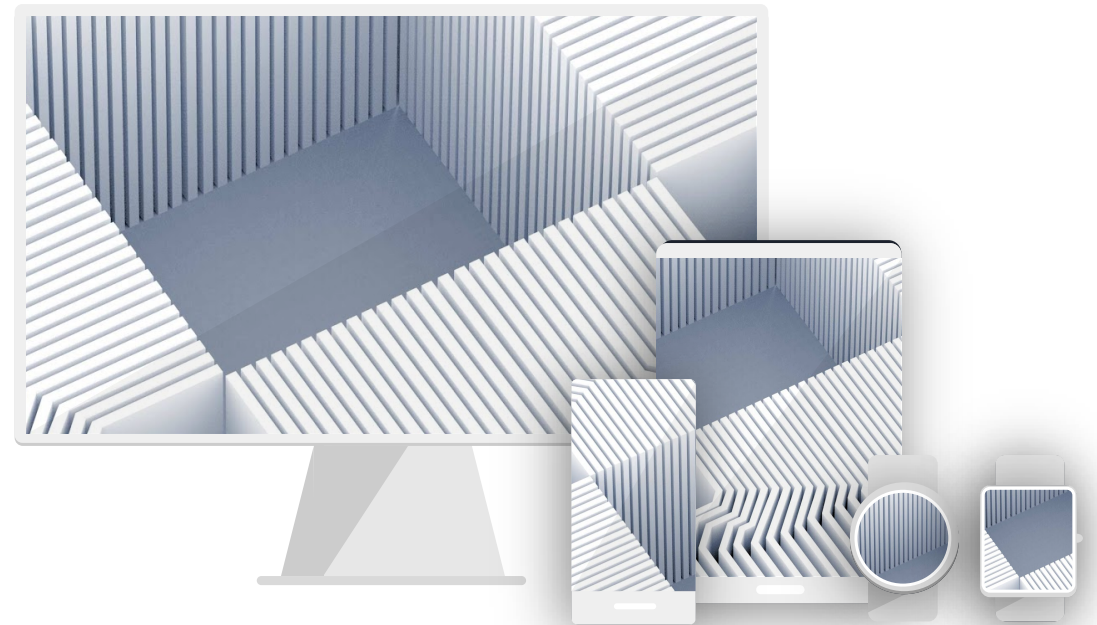
Old content model

Category

 - Category (subcategory)

  - Article

  - Event

  - Link

  - File

Categories can have a template applied:

homepage, blog, calendar, outline, outline with table of contents, project/program, sitemap, subpage, TrackIT (webforms)

New content model

Groups

Content

Media

Taxonomy

Views

Groups

Used to both provide site structure (path auto patterns) and roles and permissions

Bureau/office

Program

Elected official

Project

Advisory board or committee

Group module

drupal.org/project/group

Group versus Organic Groups

Group create a special group entity. Approach assumes that all relationships are a special entity. No explicit field is on the content to tie to group. Expensive queries make Group well suited to anonymous traffic.

Organic Groups was much more widely used in D7. Entity model puts a field on every entity that can belong to a group. Groups are a node, which means they have publication workflow.

Content

Static

Service

Permit

Page

Chronological

News

Events

Alert

Notification

Location

Service location

Park location

(saved) Location

Media

Mostly using the media approach in Lightning with some modifications

Images

Videos

Audio

Documents

① Choose the appropriate permit application

Remove or install tanks, cylinders and equipment

📄 300.15 FA - facilities program application to install or remove tanks, cylinders and equipment (142.74 KB)

Install or alter a sprinkler system

📄 300.24 FA - facilities program application for sprinkler system (166.01 KB)

Install or alter a fixed system

📄 300.27 FA - fire facilities permit application to install fixed systems (134.66 KB)

Install or alter a fire alarm system

📄 300.28 FA - fire facilities permit application for fire alarm systems (126.14 KB)

Taxonomy

Community Actions

Topics

Page types

News types

Event types

Document types

Project types

Permit types

Search Portland.gov

What can we help you find?   🔍

Apply
jobs, permits, licenses, financial assistance

File
request public records, claims, treebate

Pay
bills, taxes, fees

Report
noise, water concerns, pollution, other complaints

Find services and information by topic

Access and ADA accommodations

Biking

City projects

Community education and outreach

Construction and development

Economic development

Environment

Fire and life safety

Garbage, recycling, and composting

Housing

Parking

Parks, recreation, and activities

Police and safety

Public records

Sidewalks and trees

Transportation and roads

Water, stormwater, and sewer

Views

Database and search API views

Future syndication of content via web services

City services

112 services found

Search city services   Sort by

[   ]   [Popular ⇕]   [Search]

Popular Service

Calculate your Clean Rivers Rewards stormwater discount

Use a discount calculator to see how your savings will increase with each step you take to let stormwater runoff from your roof, driveway, or parking lot safely soak into the ground on your property.

Popular Service

Facilities permit program - fire applications

The Facility Permit Program (FPP) is designed to serve customers with on-going interior tenant improvements where facility maintenance, upgrade and renovations are frequent.

Popular Service

File and pay your arts tax

File your arts tax return online. Pay your tax due with Visa, MasterCard, Discover Card, ACH payment or mail a check or money order. Make a donation to the arts education and access fund.

Popular Service

Online alarm payment

Alarm payments are now offered online.

Planning what needs to be rewritten

Status	Name/title	Type	Subtype	Legacy Path(s)	Beta Path
Created	Development Services	Bureau/office		/bds	/bds
System	- News and notices	List view			
	– [news items]	News	News, public notice, press release, etc.		
System	- Events and hearings	List view			
	– Design commission hearing	event	Hearing		
	– Historic landmarks hearing	event	Hearing		
	– City Council - land use appeals	event	Land use appeal hearing		
	– Adjustment committee hearing	event	Adjustment committee hearing		
	– Land use hearing notice	event	Land use hearing		
	– Land use invitation for comment	event	Public comment		
	– Land use decisions and invitation for appeal	event	Land use appeal		
	– Pre-application conferences	event	Pre-application conference		
TBD	- Permits	List view			
To be created	– Commercial building alteration	Permit	Commercial building permit		
	– Commercial building new construction	Permit	Commercial building permit		
	– Commercial building addition	Permit	Commercial building permit		
	– Commercial building accessory building	Permit	Commercial building permit		
	– Tenant improvement	Permit	Commercial building permit		
	– Change of occupancy	Permit	Commercial building permit		
	– Cannabis	Permit	Commercial building permit		

Legacy path identification

Editors add "legacy path" to each new content they create.

On save a redirect is added if no redirect exists.

When portlandoregon.gov 404 is directed to portland.gov, all identified legacy paths will be in the redirect table.

Less dead links.

Participant 7

Portland, Oregon, United States of America

115 sec   Chrome (Mac OSX)   Task result: Fail   Pages : 5

Notes

A note is timestamped based on the participant's time within the study. Notes can be edited, deleted and reviewed within reports. Within reports video clips can be generated and shared based on a note. Notes can only be seen by the moderator and notetakers.
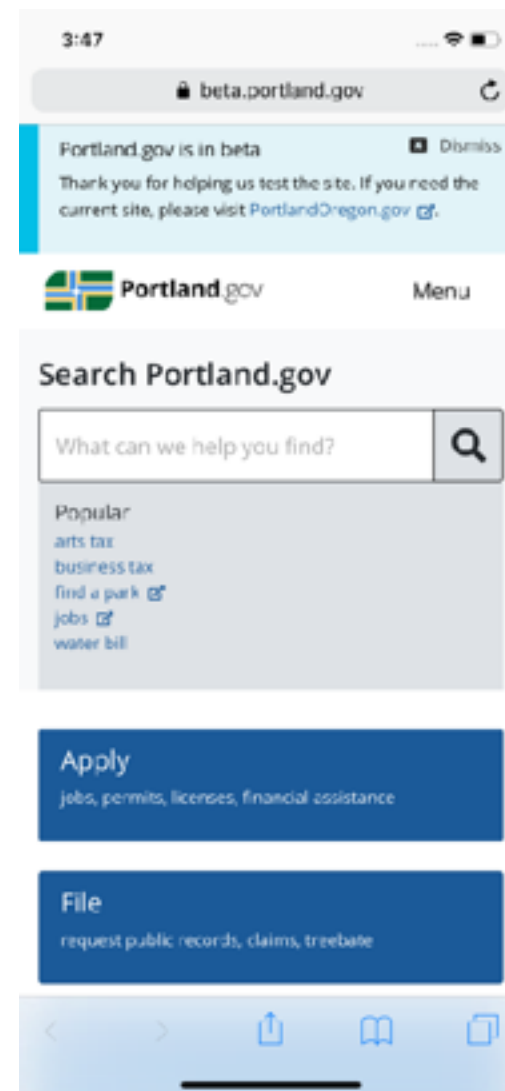
Write a note...

1:38

Enter

Alpha, Beta, Live

- Services directory

- Soft launch

- Load testing

- Critical mass of content

Demo

What's next

- Charter, code, polices

- Council meetings

- Locations

- Intranet

- Webforms

- Customer service management

What did you think?

Locate this session at the DrupalCon Seattle website:

https://events.drupal.org/seattle2019/sessions/content-structures-government-websites-build-plan-portlandgov

Take the Survey!

https://www.surveymonkey.com/r/DrupalConSeattle