AGENDA

CONSIDERATIONS
- Usability
- Responsive & Adaptive Design
- Simplification
- Mobile First

WHAT WE DID AND WHY
- Challenges
- Goals
- Design & Build
- Difficulties & Successes

WHAT'S NEXT
- SEO
- The gw.js Framework

MOBILE
- The New Reality

QUESTIONS
- Crickets?
The DISTRICT of NORTH VANCOUVER

- Around 85,000 Residents
- GIS Section = 3 Analysts + 1 Coordinator + 1 Manager (Biz Systems & GIS)
- Dev Team = 2 Application Developers + 1 Manager
CONCLUSION

• Very interesting, educational, project
• Very successful development process
• Very successful beta application
  ß Fast & Lightweight
  ß Mobile friendly
  ß Single code base
• Confidence for future development
• The desktop is dead. Long live the desktop!
USABILITY - Devices
USABILITY - Devices

THE THUMB ZONE
USABILITY - Devices

Google Fit
on phone, tablet, web & Wear
USABILITY - Devices
USABILITY - Devices

I'll be at the #EsriCanadaUC in Calgary May 27. Stop by our booth to see smart glass integration with @Esri #GIS
USABILITY - Devices

42mm 18-Carat Yellow Gold Case with Midnight Blue Classic Buckle
$19,000.00
USABILITY - Devices
USABILITY - Devices
USABILITY - Design

OUTCOME
- What will the thing you’re designing make better?
- Clearly define your intended outcome

STRUCTURE
- Design the system
- What components are required to meet the intended outcome

INTERACTION
- How will users interact with the system?
- In what sequence?
- What UI elements are appropriate

VISUAL
- Make it look and feel beautiful and enjoyable
- Alignment, colours, typography, iconography
USABILITY - Design

SCROLLING vs CLICKING
USABILITY - Design

SCROLLING vs CLICKING
USABILITY - Design

RESPONSIVE & ADAPTIVE

- Monitor the user’s environment
- Enhance or simplify an interface
- Encourage ideal, efficient interaction
- Optimize usability for each visitor
USABILITY - Design

RESPONSIVE & ADAPTIVE

- Adaptive Design
  - Adapt to the user’s capabilities
  - Both form and function
USABILITY - Design

RESPONSIVE & ADAPTIVE

- Responsive Design
  - Fluid grids
  - Flexible images
  - Media queries
USABILITY - Simplification

Conway’s Law

“Organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations.”

— M. Conway, 1968
USABILITY - Simplification

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“Simple things should be simple, complex things should be possible.”

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USABILITY - Mobile First

• Get mobile right, first
  – Loading times
  – Library sizes
  – File sizes
  – Performance

• Consider devices, design, making things simple

• Desktop becomes easier
WHAT WE DID & WHY

2001 ArcIMS
- GIS launches GEOweb (geoweb.dnv.org)
- P.I.E., Plans & Drawings

2009 Flex/Flash
- New web mapping paradigm
- GEOweb rebuild, launch of five specialized apps
- Open Data

2011 Flex/Flash v2
- Dedicated GIS Application Developers
- Backend updates
- Launch of GEOtools (internal)

2014 HTML5
- GIS awareness is ubiquitous
- Need for mobile support, a better experience
- Mature technology

2015 Org Catches Up
- New Corporate website
- Mobile-first
- Simplicity, Innovation, Engagement, Efficiency, …
CHALLENGES

- Evolving user needs
- Flash
- Better integration needed with DNV web
- Dated
- Needed a plan for future development
CHALLENGES

- Evolving user needs
- Flash
- Better integration needed with DNV web
- Dated
- Needed a plan for future development

“Why doesn’t this work on my phone?”

The Adobe Flash plugin has crashed.
Send crash report
GOALS

- Device Agnostic
- Fast
- Better maps
- Clear and Concise
- More property-related info
- Easy to maintain, scalable, future proof
GOAL

USABLE

It just works
DESIGN & BUILD
PHASE ONE – CONTENT

IF IT DOESN'T
MATTER, GET RID OF IT.

IF YOU CAN'T
GET RID OF IT, IT MATTERS.
DESIGN & BUILD

PHASE ONE – CONTENT

• Not starting from scratch
• 5+ years of user metrics
  – Basemaps
  – Layers
  – Tools
  – Search Methods
DESIGN & BUILD

PHASE ONE – CONTENT

Flash Properties App: times layers were added in 2013
DESIGN & BUILD

PHASE ONE – CONTENT

Flash Properties App: times layers were added in 2013

Popular!
Keep these!

Ditch these.
DESIGN & BUILD

PHASE ONE – CONTENT

Flash Properties App: times layers were added in 2013

Popular!
Keep these!

Basemap

Ditch these.
DESIGN & BUILD

PHASE TWO - MAPS

• Improve the content & look of our maps
• Clear symbology
• Clear typography, better labelling
DESIGN & BUILD

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DESIGN & BUILD
PHASE TWO - MAPS
DESIGN & BUILD

PHASE THREE – TECH RESEARCH

• One Developer, three months
• Client-side only; Server is all good
  – Maps
  – Map APIs
  – Frameworks
DESIGN & BUILD

PHASE THREE – TECH RESEARCH

Many well supported libraries:

Map Engines
- Esri Javascript API
- Leaflet
- OpenLayers
DESIGN & BUILD
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PHASE THREE – TECH RESEARCH

Many well supported libraries:

- HTML5 Frameworks
  - Bootstrap
  - Foundation
  - Boilerplate
DESIGN & BUILD

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DESIGN & BUILD

PHASE THREE – TECH RESEARCH

Many well supported libraries:

- Javascript Architecture
- Ember
- Backbone
- Angular JS
DESIGN & BUILD

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PHASE FOUR – ALL TOGETHER NOW

Map Engine

Leaflet

HTML5

Bootstrap

Javascript

Angular JS
DESIGN & BUILD

PHASE FOUR – ALL TOGETHER NOW

Map Engine

Leaflet

HTML5

Bootstrap

Javascript

Map Server

ArcGIS for Server
DESIGN & BUILD
PHASE FOUR – ALL TOGETHER NOW

Map Engine
Leaflet
Esri Leaflet on GitHub

HTML5
Bootstrap

Javascript
Angular JS

Map Server
esri
ArcGIS for Server
Mapbox
MapServer
GOALS

• Device Agnostic
• Fast
• Clear and Concise
• Better maps
• More property-related info
• Easy to maintain, scalable, future proof
DESIGN & BUILD

SIX WEEKS IN A SCRUM BLENDER
WHERE WE WERE AT

- App was launched in beta in July 2014
- Promoted feedback!
  - Online survey
  - Twitter
  - Emails
  - Phone calls
USER FEEDBACK

- Very positive; always includes helpful criticism

11. Which maps do you find most useful?
   - Buildings
   - Zoning
   - OCP

12. Do you have any additional comments or suggestions?

6. Which devices will you use to access GEOweb?
   - Tablet
   - Computer

12. Do you have any additional comments or suggestions?

- Make features easier to find, such as printing; keep it in a single place for consistency.
- I need to be able to save or print maps. Thanks.
- Could not find the pan option in the new map. Other tools like measuring (distance and area), it would be nice to have a measurement tool.
- I miss the tools – there is no tool to measure an area or length, no drawing tool, there is no print option and no contour layer to add. In addition, I
USER FEEDBACK

• Very positive; always includes helpful criticism

Make features easier to find, such as printing; keep it in a single place for consistency.

I need to be able to save or print maps. Thanks.

Could not find the pan option in the new map. Other tools like measuring (distance and area),

it would be nice to have a measurement tool.

Try add some tools to it such as measuring length, size etc.

I miss the tools – there is no tool to measure an area or length, no drawing tool, there is no print option and no contour layer to add. In addition, I
## USER FEEDBACK

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Was the map easy to navigate?</td>
<td>No, please explain...</td>
</tr>
<tr>
<td>10. Was the map easy to navigate? [other]</td>
<td>THIS IS RIDICULOUS!! WHAT A COLOSSAL WASTE OF TIME TRYING TO PRINT EVEN BASIC IMAGES</td>
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<td>11. Which maps do you find most useful?</td>
<td>• I'm not sure</td>
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<td>YOU NEED TO COMPLETELY REVAMP THIS – THIS IS DECADE OLD USEABILITY. COMPLETELY UNACCEPTABLE</td>
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USER FEEDBACK

10. Was the map easy to navigate? [other]
- THIS IS RIDICULOUS!! WHAT A COLOSSAL WASTE OF TIME TRYING TO PRINT EVEN BASIC IMAGES

11. Which maps do you find most useful?
- I'm not sure

12. Do you have any additional comments or suggestions?
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YEAH PRINTING KINDA SUCKS USING HTML5!!!
DIFFICULTIES

- Browser compatibility
- Consistency on all form factors
- Printing
- Dealing with Open Source projects
  - Things change quickly
  - Bugs
SUCCESES

• Single code base
• Confidence in development plan
• Happy users
  – Realtors
  – Roofers
  – Assessors
  – DNV Utilities
  – DNV Construction
KEYS

- Test Test Test
- Learn how to measure your application
- Understand what the code is doing
- Write the code yourself
- Don’t copy and paste! Not too much, anyway…
WHAT’S NEXT

SEO

- Dynamic sitemap
- Crawlable dynamic pages

```xml
<url>
  <loc>http://geoweb.dnv.org/properties/#!?address=1818+GREENOCK+PL</loc>
  <changefreq>weekly</changefreq>
  <priority>1.0</priority>
</url>
```
WHAT'S NEXT

SEO
WHAT’S NEXT

gw.js

• Common, extensible framework
• Easy configuration
• Easy integration

http://devtools/dev/mapembed/debug/
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WHAT'S NEXT

• More powerful CMS integration
• GEOtools → HTML5
• GEOtools for the public
• Additional focused apps
DESIGNING FOR SIMPLICITY

THE NEW REALITY
THE NEW REALITY
THE NEW REALITY

Google says it's now bigger on mobile than desktop in 10 countries

Including the US and Japan
THE NEW REALITY

80% of internet users own a smartphone

% of internet users who personally own the following:

- **PC/laptop**: 91%
- **Smartphone**: 80%
- **Tablet**: 47%
- **Games console**: 37%

- **Smart TV** (a TV that can connect to the internet): 34%
- **Smart watch** (e.g., Fitbit, Sony Smartwatch, Samsung Galaxy Gear): 9%
- **Smart wristband** (e.g., Nike Fuelband, Jawbone Up, Adidas miCoach): 7%
- **None of the above**: 2%

*Source: GlobalWebIndex 2014*
THE NEW REALITY
GEOweb PROPERTY VIEWER

QUESTIONS?

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