



GEOweb PROPERTY VIEWER

DESIGNING FOR SIMPLICITY



www.geoweb.dnv.org/properties



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

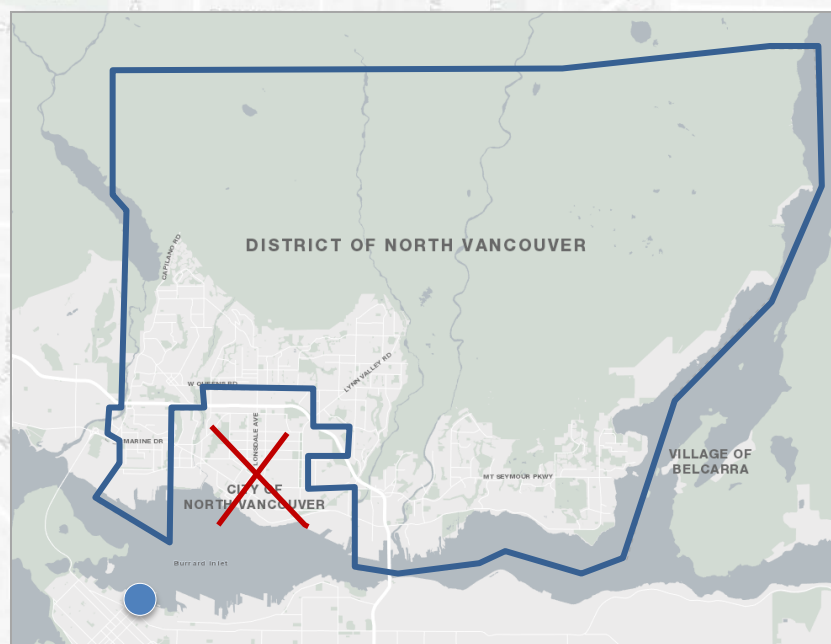
- THE NEW REALITY

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

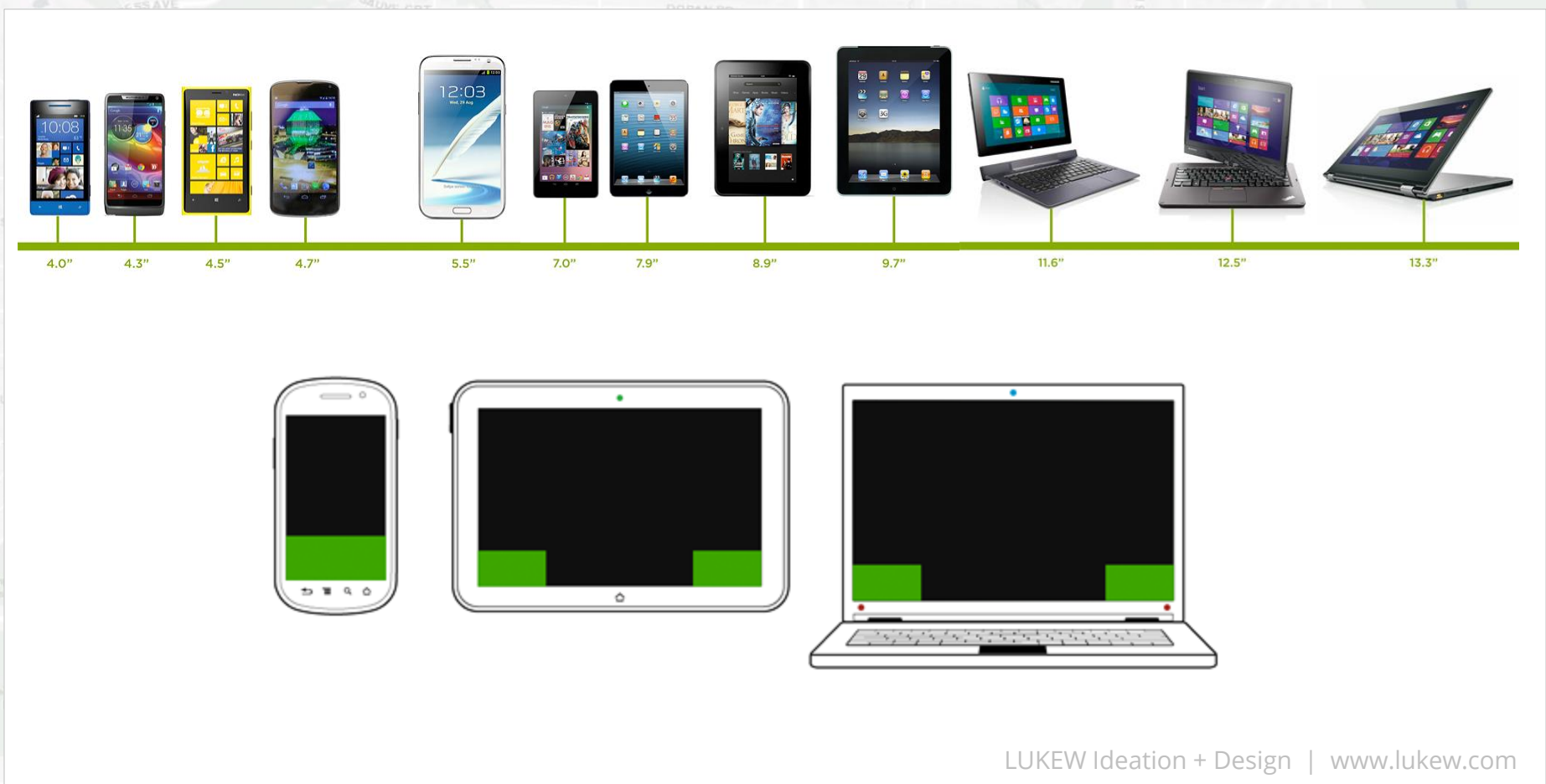




CONCLUSION

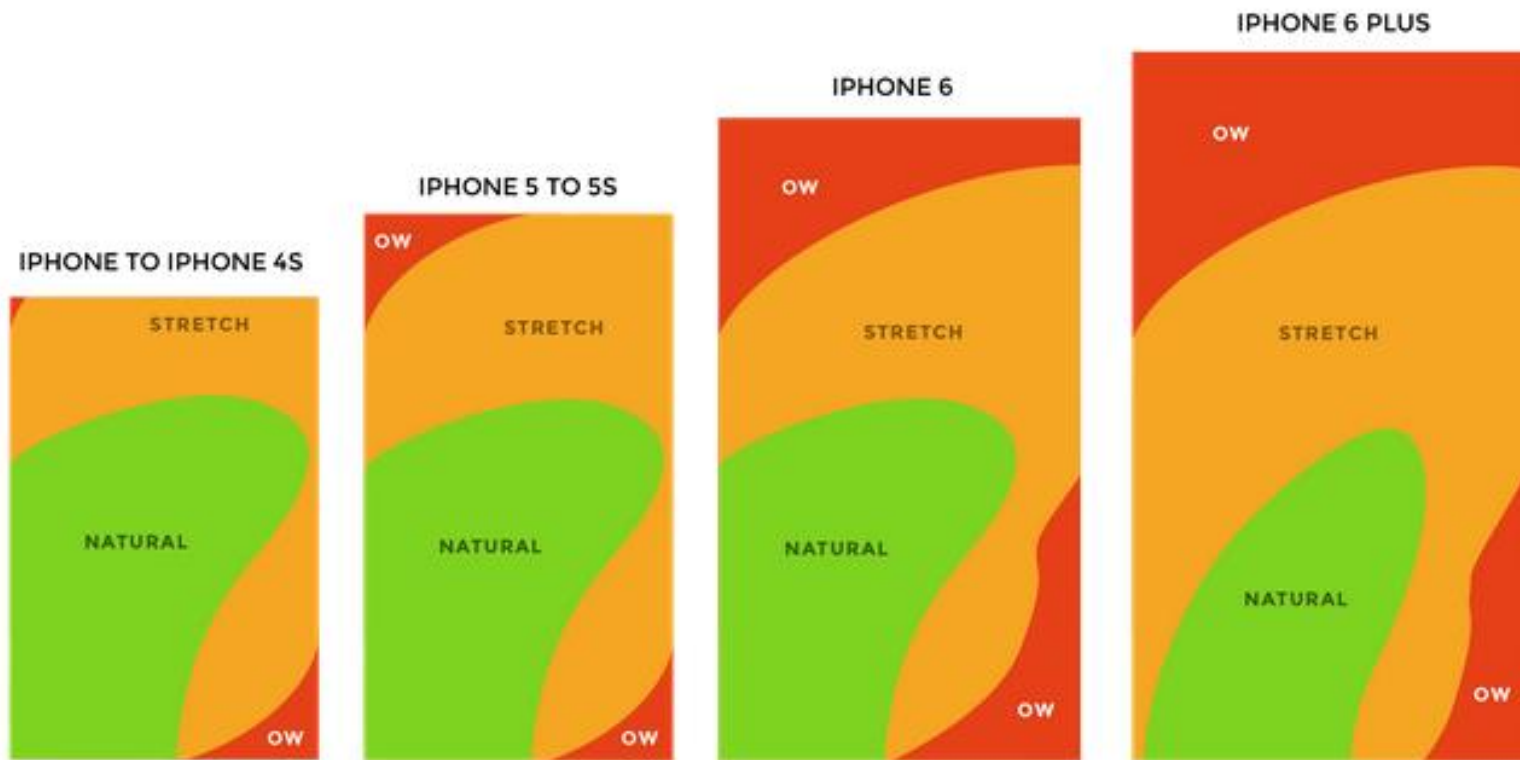
- Very interesting, educational, project
- Very successful development process
- Very successful ~~beta~~ application
 - Fast & Lightweight
 - Mobile friendly
 - Single code base
- Confidence for future development
- The desktop is dead. Long live the desktop!

USABILITY - Devices



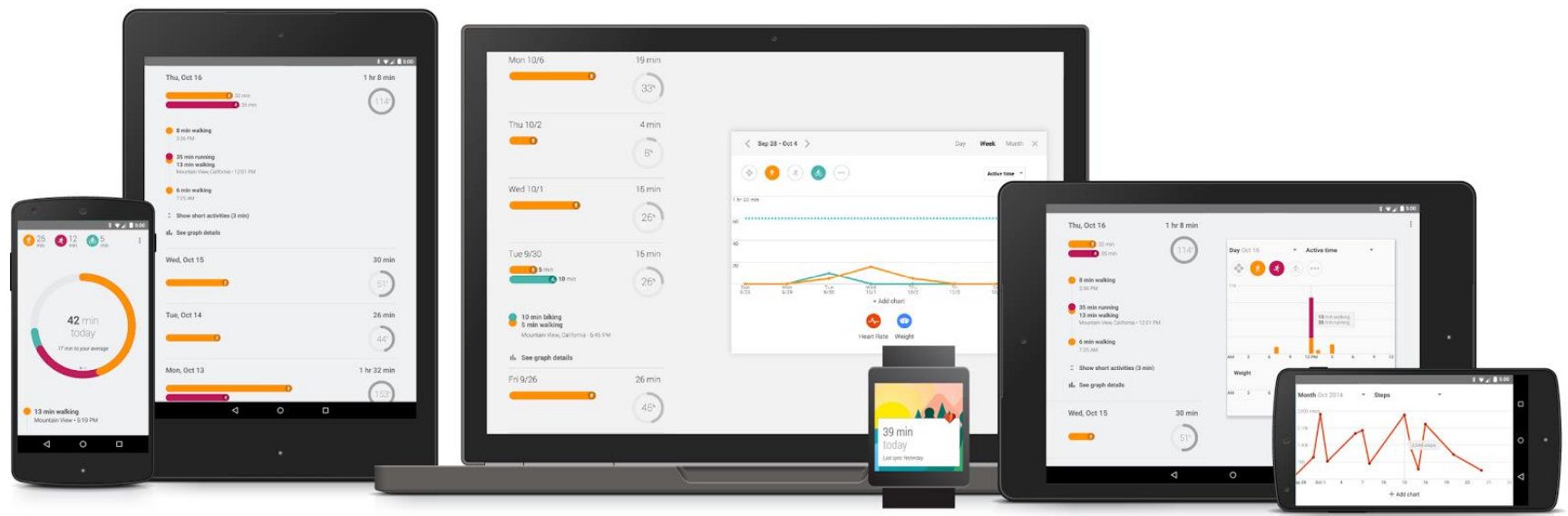
USABILITY - Devices

THE THUMB ZONE



USABILITY - Devices

Google Fit
on phone, tablet, web & Wear



USABILITY - Devices



USABILITY - Devices



David Enns
@DavidAEnns



I'll be at the [#EsriCanadaUC](#) in Calgary May 27. Stop by our booth to see smart glass integration with [@Esri](#) [#GIS](#)



10:32 AM - 25 May 2015



Reply to [@DavidAEnns](#) [@Esri](#)

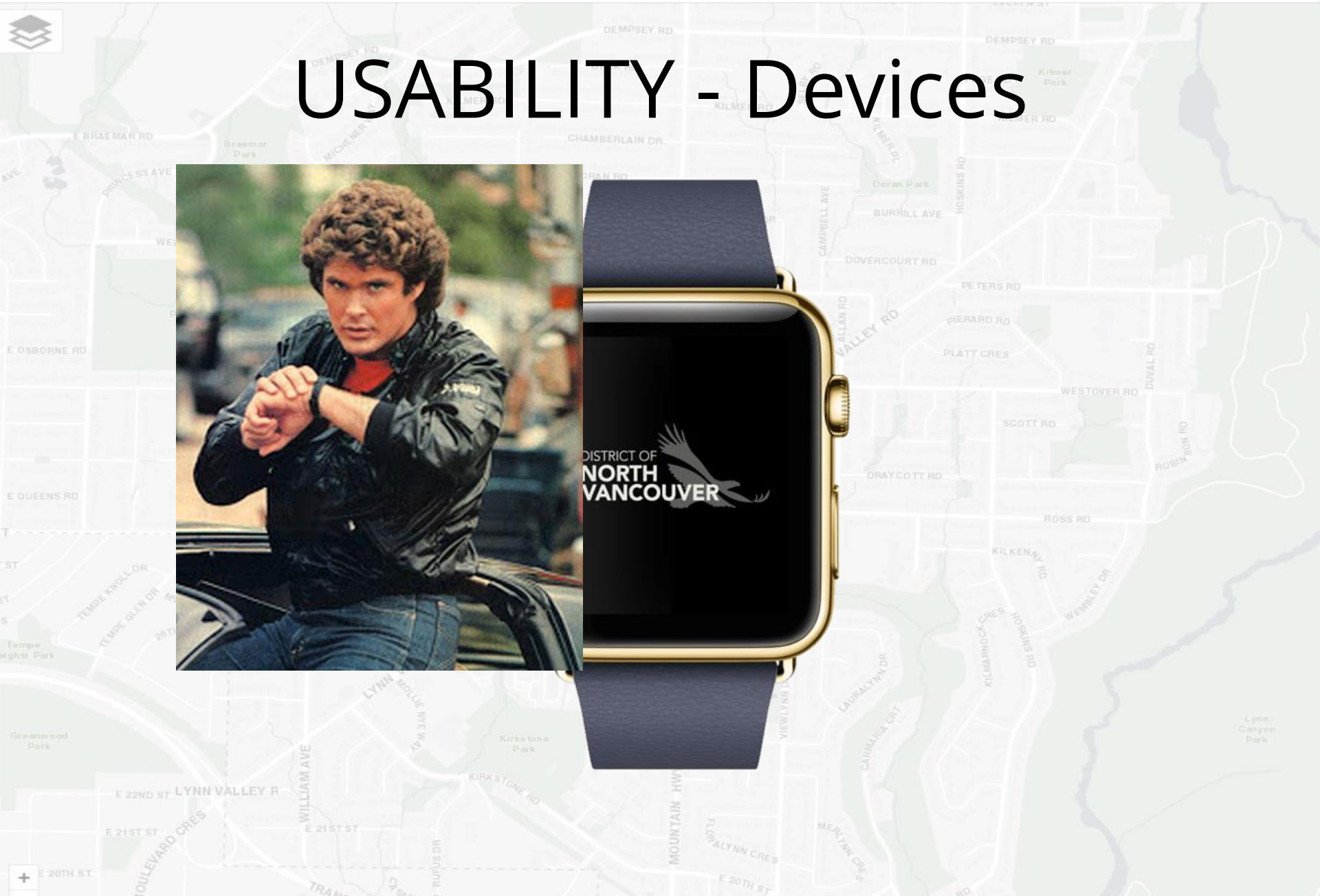
USABILITY - Devices



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

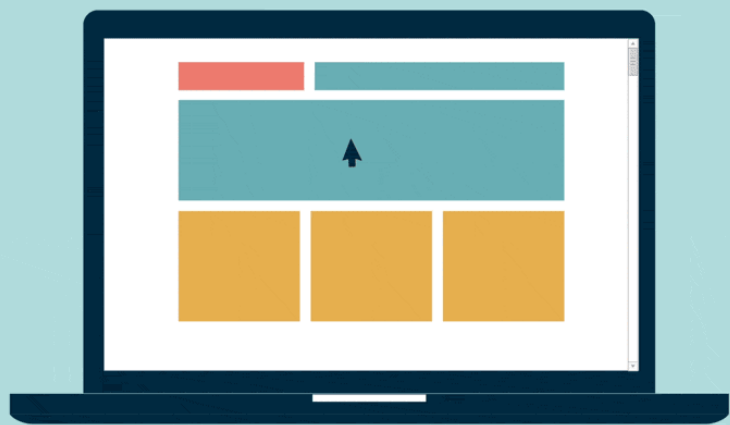
- How will users interact with the system?
- In what sequence?
- What UI elements are appropriate

VISUAL

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

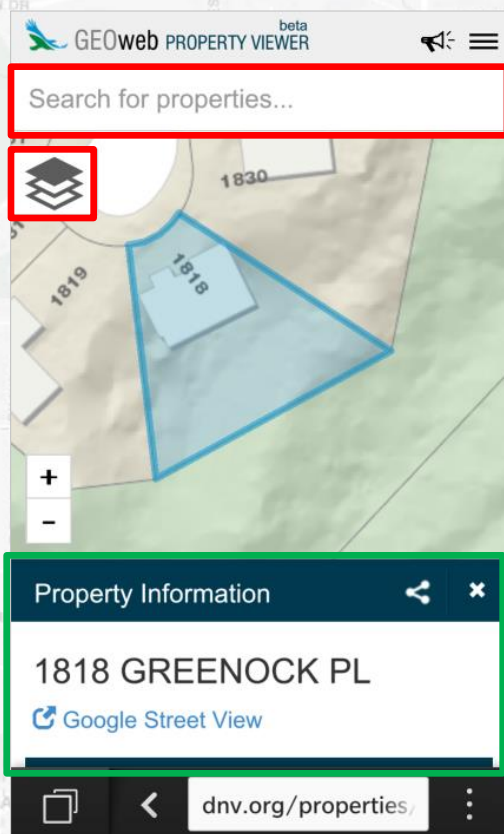
USABILITY - Design

SCROLLING vs CLICKING

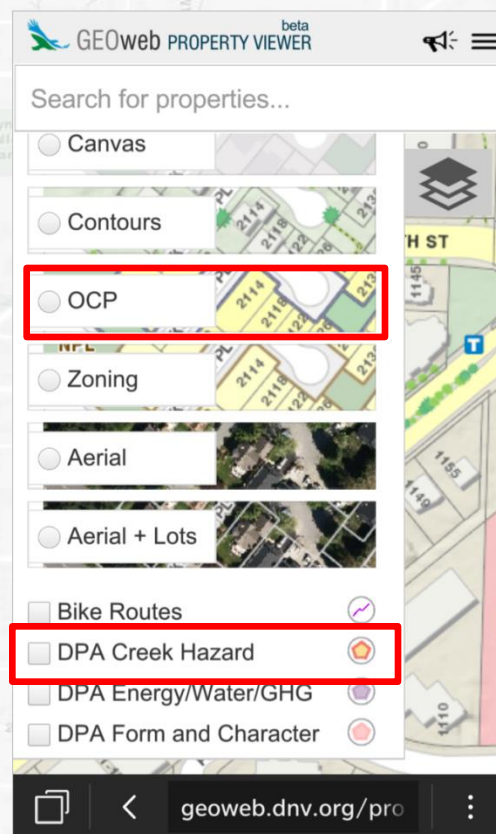


USABILITY - Design

SCROLLING vs CLICKING



This screenshot shows the GEOweb PROPERTY VIEWER interface. A red box highlights the search bar containing the text "Search for properties...". Below the search bar, a red box highlights the layer selection icon (a stack of three squares). At the bottom, a green box highlights the "Property Information" panel, which displays "1818 GREENOCK PL" and a "Google Street View" link. The URL bar at the bottom shows "dnv.org/properties/".



This screenshot shows the GEOweb PROPERTY VIEWER interface with a detailed layer selection menu. A red box highlights the "OCP" layer option. Another red box highlights the "DPA Creek Hazard" layer option. The URL bar at the bottom shows "geoweb.dnv.org/pro".

A light green map of a residential area in North Vancouver, British Columbia, Canada. The map shows a grid of streets, including Dempsey Rd, Chamberlain Dr, Wellington Dr, and Lynn Valley Rd. Several parks are visible, such as Braemar Park, Kilmor Park, and Lynn Canyon Park. The map is overlaid with a semi-transparent white box containing text.

USABILITY - Design

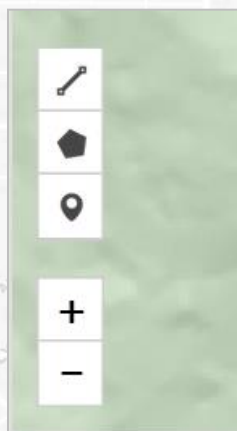
RESPONSIVE & ADAPTIVE

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

USABILITY - Design

RESPONSIVE & ADAPTIVE

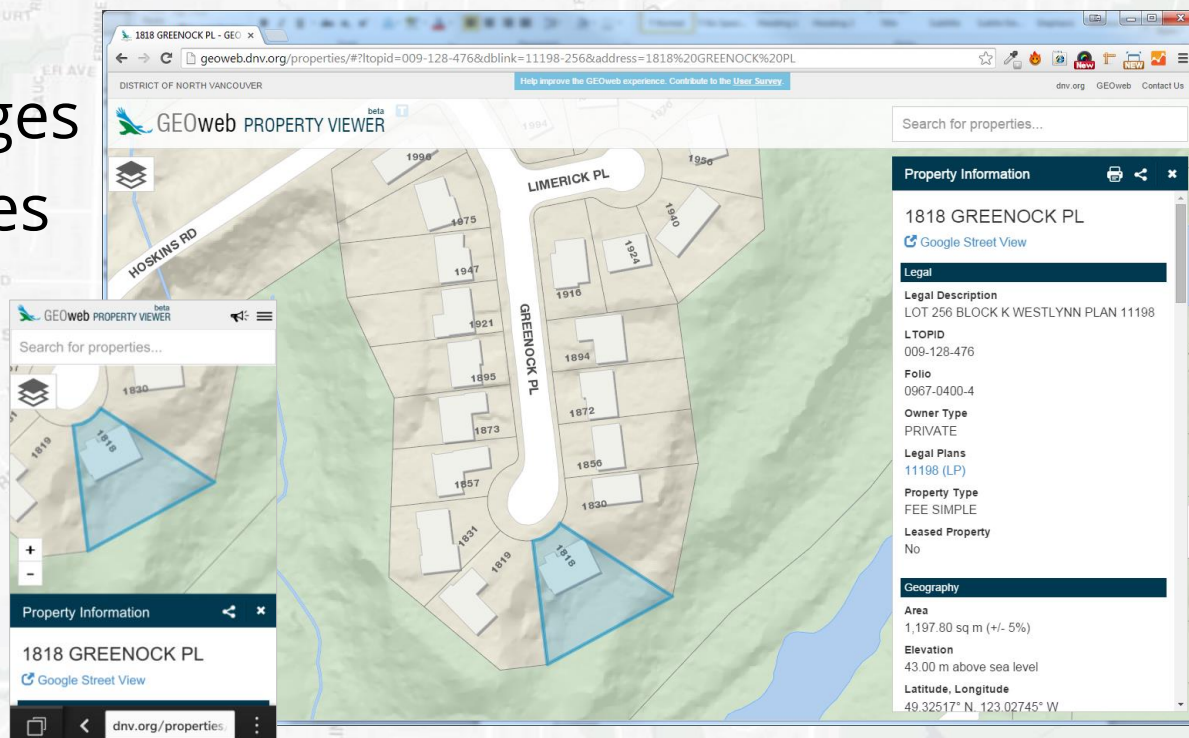
- Adaptive Design
 - Adapt to the user's capabilities
 - Both form and function



USABILITY - Design

RESPONSIVE & ADAPTIVE

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

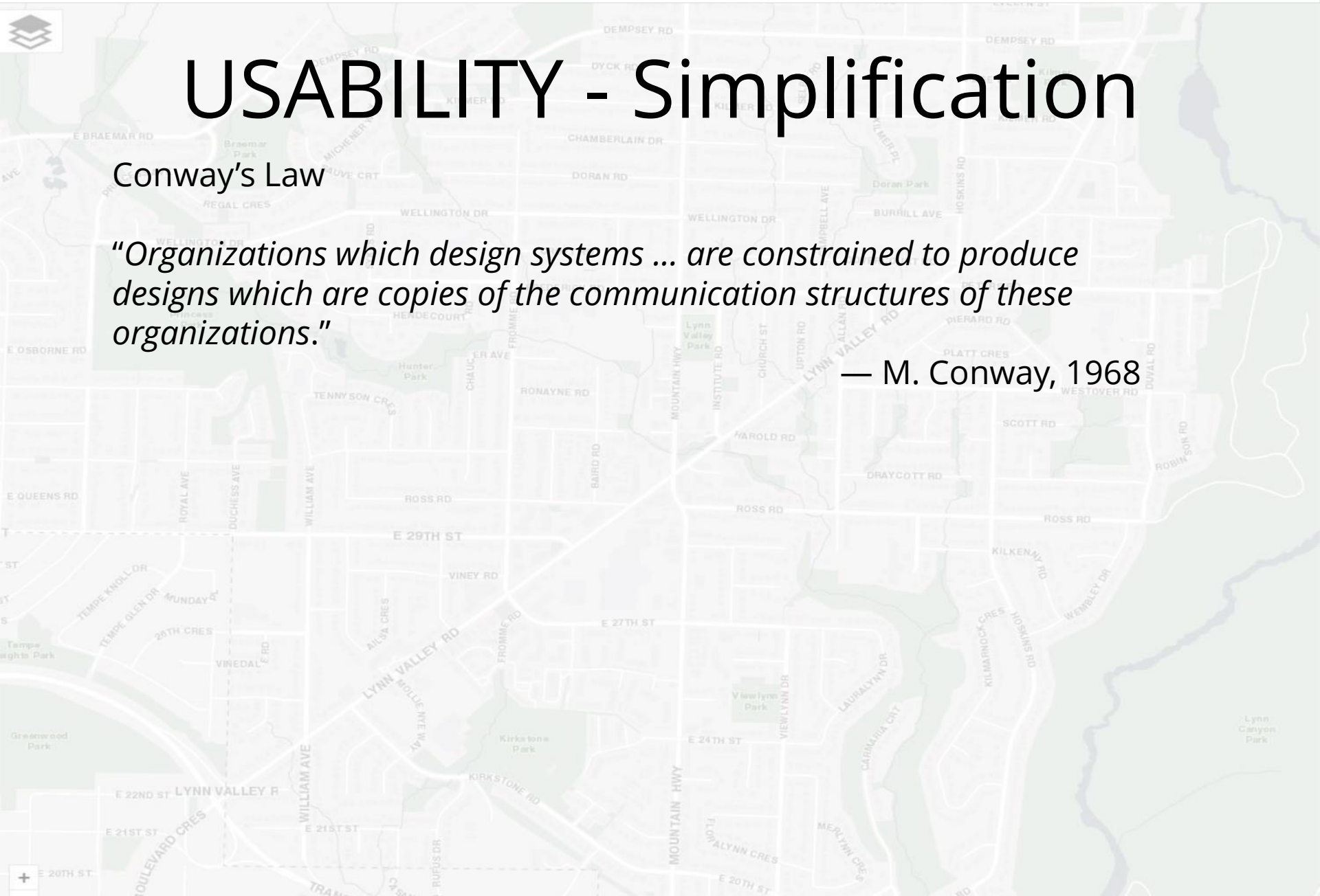


USABILITY - Simplification

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



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Layers

- final_1-2
 - CITYYP
 - TINTP (label)
 - (reference)
 - (reference)
 - Hotel TV screen
 - Rest TV screen
 - FOISP (general)
 - FOISP (POI)
 - TTRNL (other)
 - TAAAL
 - TNAVL
 - TTRNL (wall)

Map Layers

- North America
 - BC Title
 - Boundary Lines
 - Provinces and States
- British Columbia
 - Features
 - Contours
 - Contours
 - Integrated Cadastre
 - ICF - Cro
 - ICF - Fir
 - ICF - Priv
 - ICF - Unk
 - Integrated C
 - Cultural Feat
 - Elevation Poi
 - Land Cover
 - Land Forms
 - Man-Made
 - Miscellaneous
 - Populated Pla

Navigation toolbar:

-  ZOOM IN
-  ZOOM OUT
-  FULL
-  ZOOM PREV
-  PAN

Luke Wroblewski @lukew Following

The quantity of navigation options in your app is a reflection of your organization's decision making abilities.

RETWEETS 275 FAVORITES 238

12:05 PM - 26 Oct 2014

Reply to @lukew

USABILITY - Simplification

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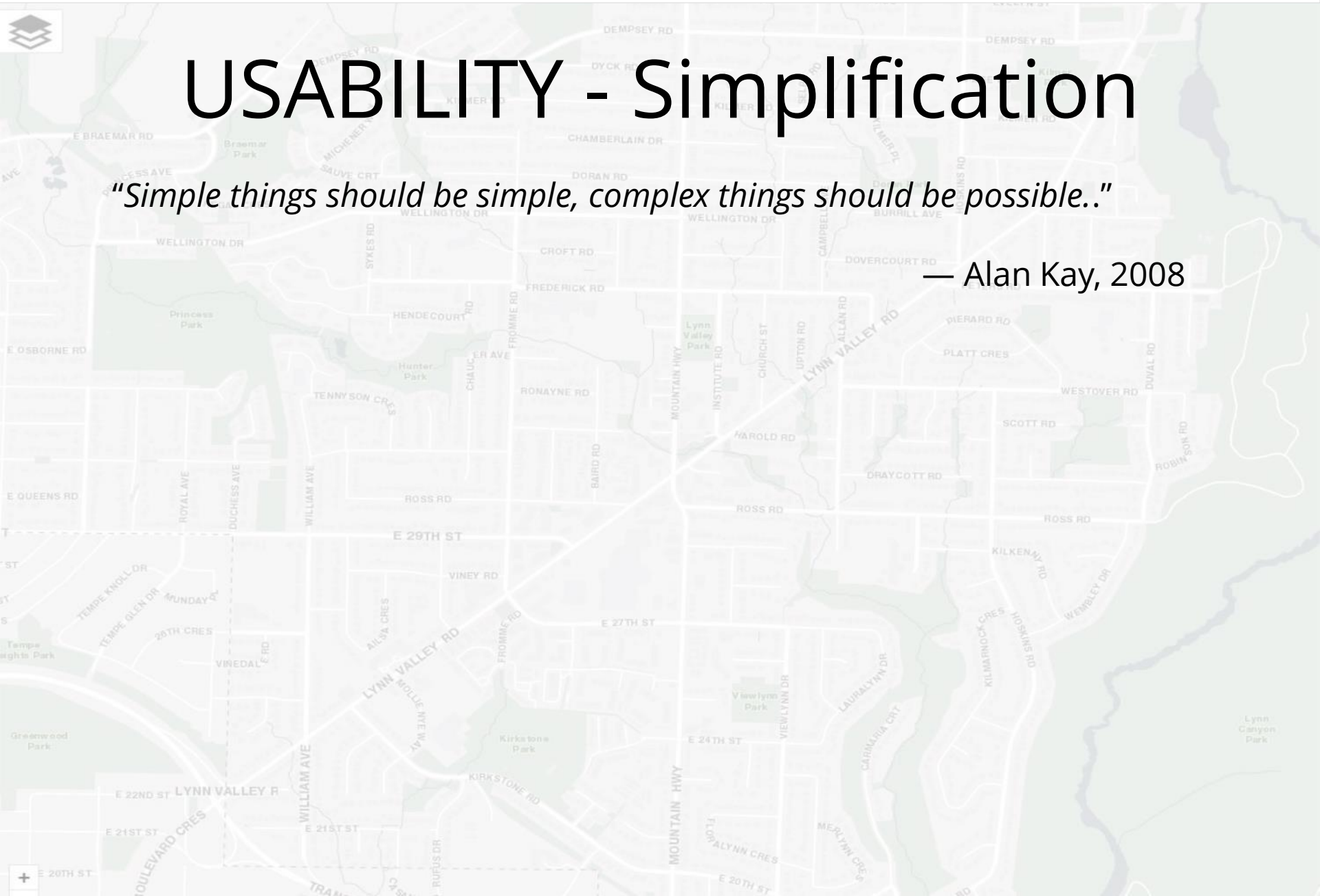
Inset map navigation:

- 
- 

USABILITY - Simplification

"Simple things should be simple, complex things should be possible.."

— Alan Kay, 2008



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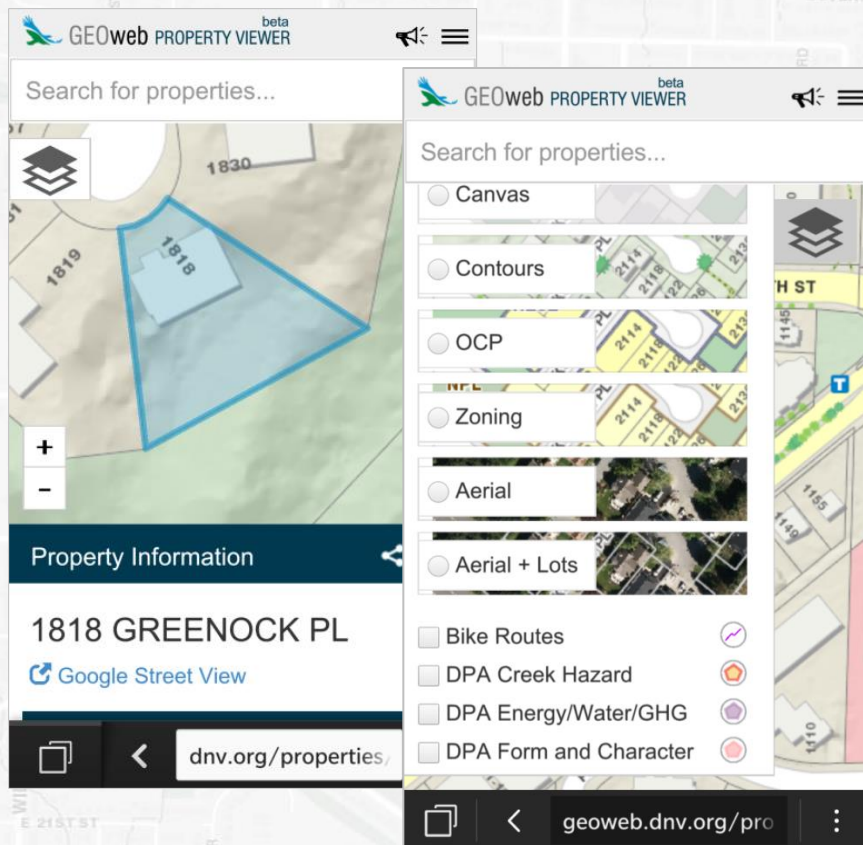


The screenshot shows the GEOweb PROPERTY VIEWER interface. At the top, there is a search bar with the text "Search for properties...". Below the search bar is a map showing a property highlighted in blue. The property address is "1818 GREENOCK PL". Below the map is a "Property Information" panel with the address "1818 GREENOCK PL" and a "Google Street View" link. At the bottom, there is a navigation bar with a search icon, a back arrow, and the URL "dnv.org/properties/".

USABILITY - Simplification

"Simple things should be simple, complex things should be possible.."

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The image displays two side-by-side screenshots of the GEOweb PROPERTY VIEWER application interface, overlaid on a map background. Both screenshots show a search bar at the top with the text "Search for properties...".

The left screenshot shows a map with a property highlighted in blue. Below the map is a sidebar with the following elements:

- A search bar with the text "Search for properties..."
- A zoom control with "+" and "-" buttons.
- A dark blue header for "Property Information".
- The address "1818 GREENOCK PL" in white text.
- A "Google Street View" icon and text.
- A dark bottom bar with a copy icon, a back arrow, and the URL "dnv.org/properties/".

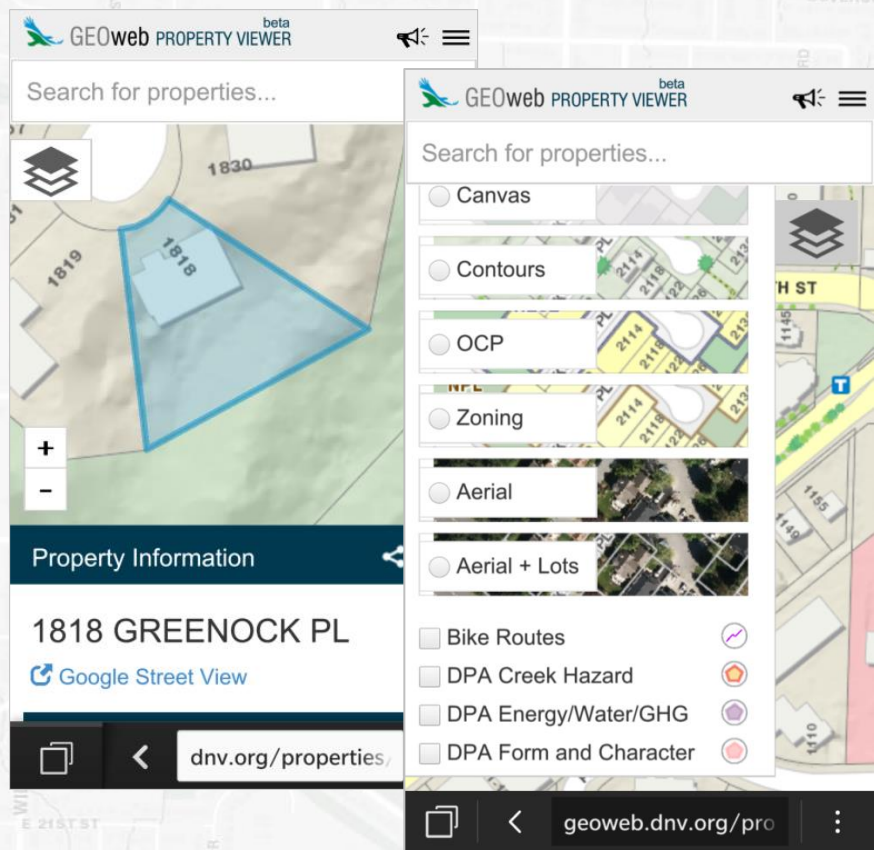
The right screenshot shows the same map but with a different sidebar configuration:

- A search bar with the text "Search for properties..."
- A list of map layers with radio buttons:
 - Canvas
 - Contours
 - OCP
 - Zoning
 - Aerial
 - Aerial + Lots
- A list of additional map features with checkboxes and icons:
 - Bike Routes (with a purple icon)
 - DPA Creek Hazard (with an orange icon)
 - DPA Energy/Water/GHG (with a purple icon)
 - DPA Form and Character (with a red icon)
- A dark bottom bar with a copy icon, a back arrow, and the URL "geoweb.dnv.org/pro".

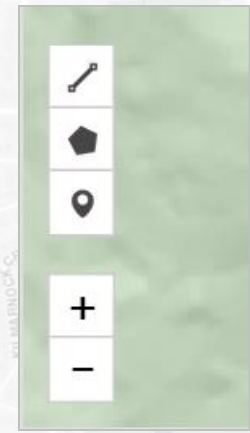
USABILITY - Simplification

"Simple things should be simple, complex things should be possible.."

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The image displays two overlapping screenshots of the GEOweb PROPERTY VIEWER application. The left screenshot shows a map view with a property at 1818 Greenock Pl highlighted in blue. A sidebar on the left contains a search bar, a map layer icon, zoom controls, and a 'Property Information' section for 1818 GREENOCK PL, including a Google Street View link. The right screenshot shows the same application with a sidebar menu open, listing various map layers: Canvas, Contours, OCP, Zoning, Aerial, and Aerial + Lots. Below these are checkboxes for Bike Routes, DPA Creek Hazard, DPA Energy/Water/GHG, and DPA Form and Character. The bottom of the screenshots shows a mobile browser address bar with the URL 'dnv.org/properties/' and 'geoweb.dnv.org/pro'.



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

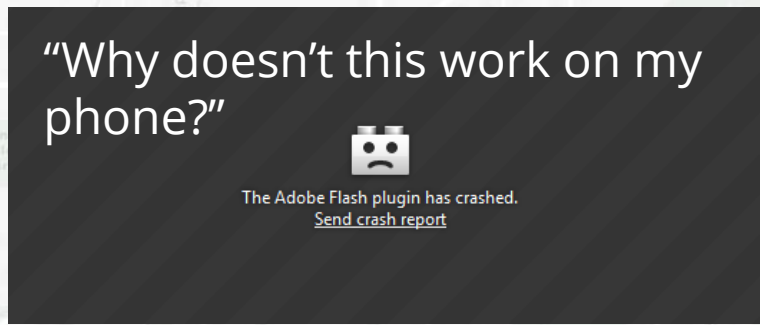
PROPERTIES HAZARDS PROJECTS SOLAR HISTORY

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

CHALLENGES

PROPERTIES HAZARDS PROJECTS SOLAR HISTORY

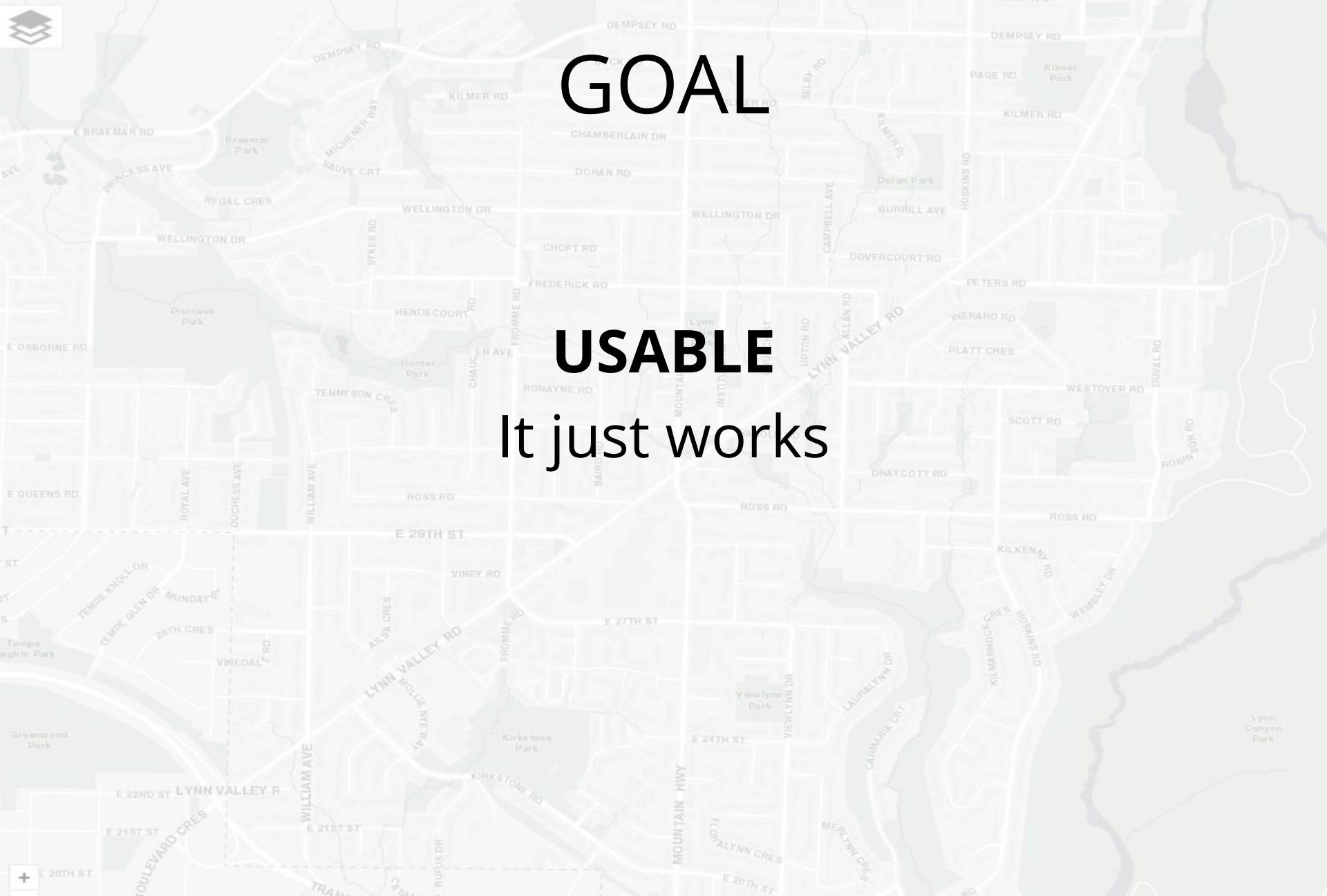
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GOALS

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



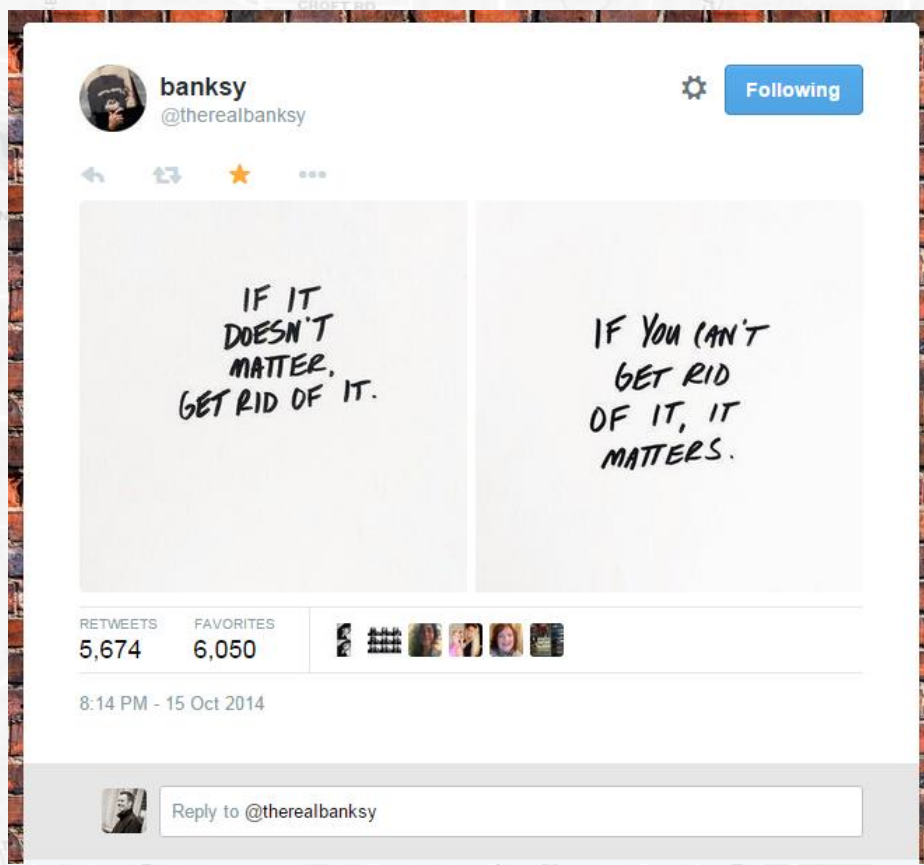


GOAL

USABLE

It just works

DESIGN & BUILD PHASE ONE - CONTENT



banksy @therealbanksy Following

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

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

RETWEETS 5,674 FAVORITES 6,050

8:14 PM - 15 Oct 2014

Reply to @therealbanksy



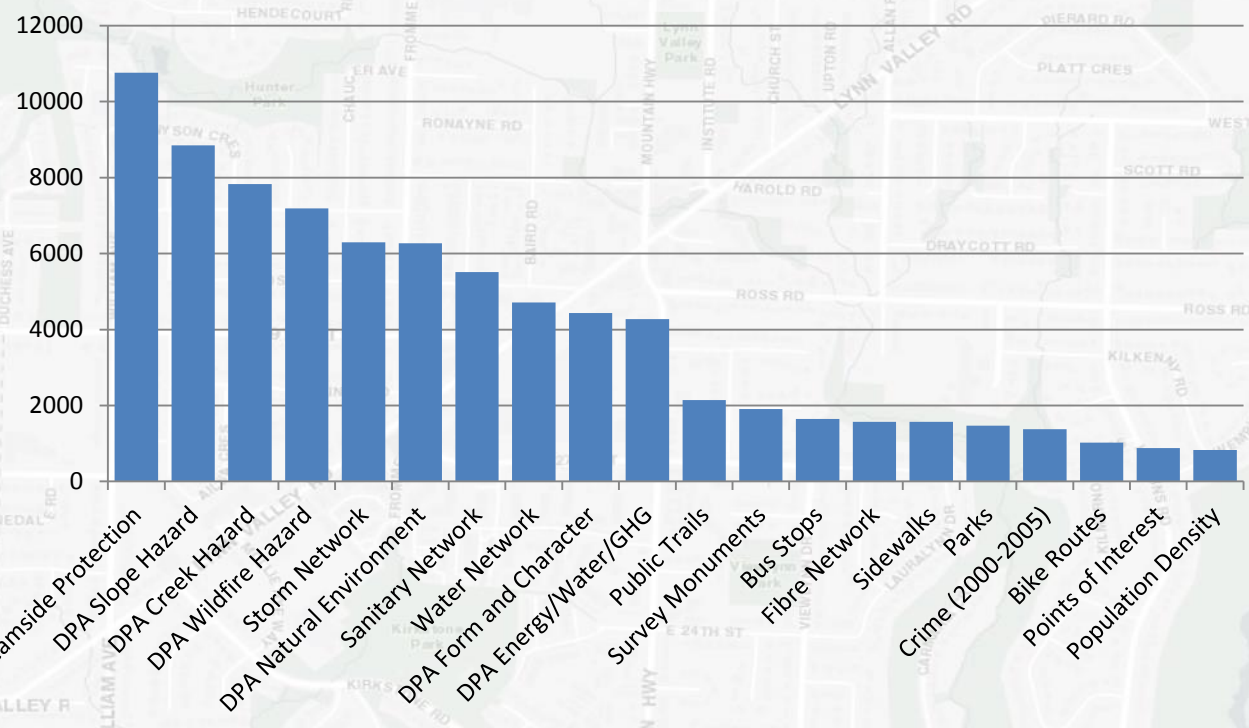
DESIGN & BUILD

PHASE ONE - CONTENT

- Not starting from scratch
- 5+ years of user metrics
 - Basemaps
 - Layers
 - Tools
 - Search Methods

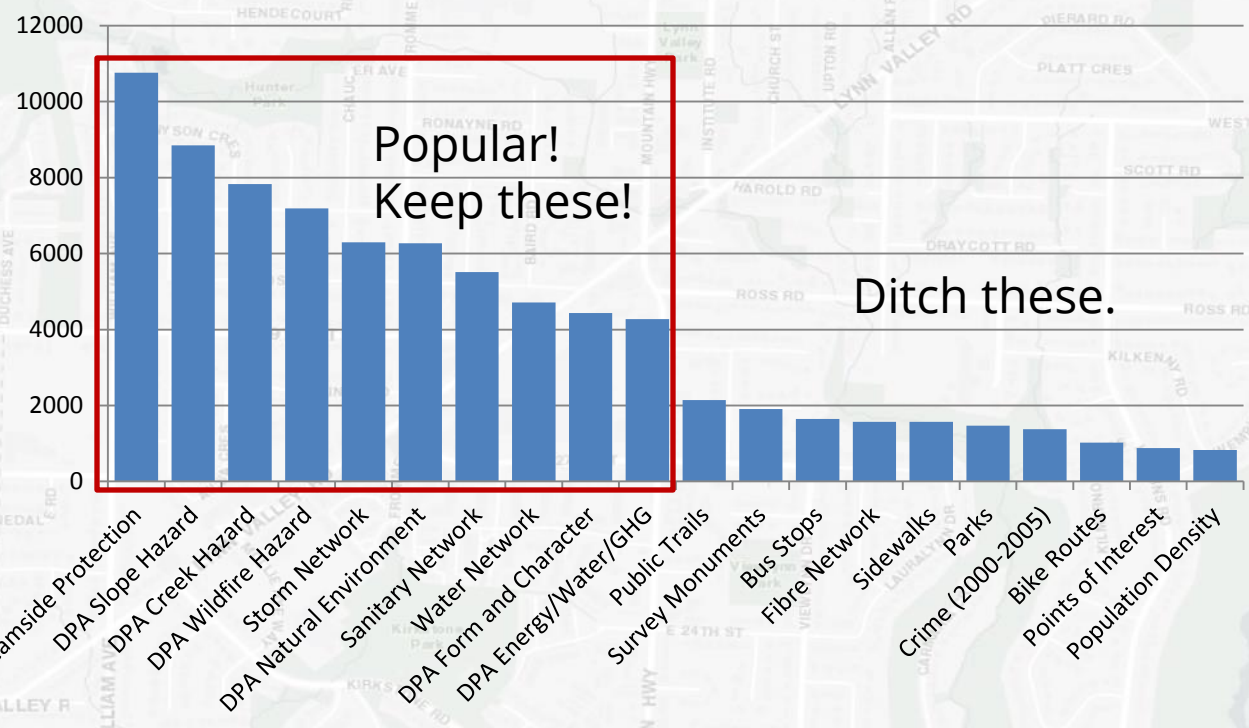
DESIGN & BUILD PHASE ONE - CONTENT

Flash Properties App: times layers were added in 2013



DESIGN & BUILD PHASE ONE - CONTENT

Flash Properties App: times layers were added in 2013

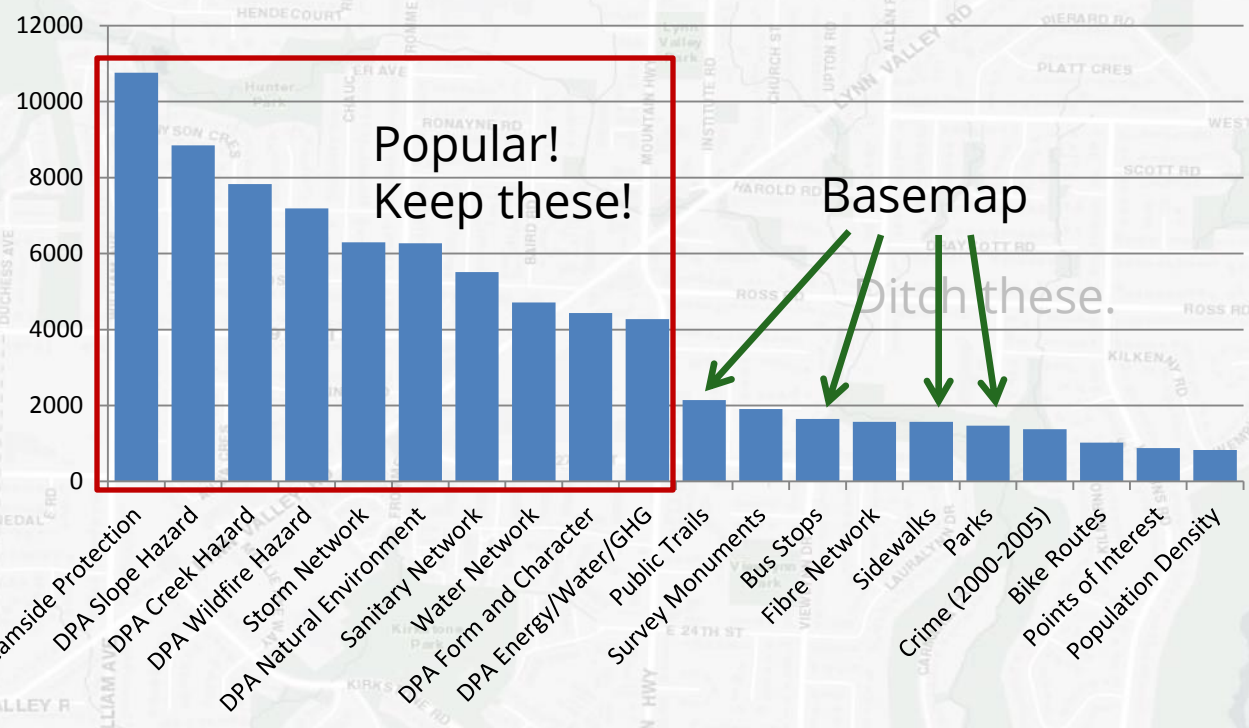


Popular!
Keep these!

Ditch these.

DESIGN & BUILD PHASE ONE - CONTENT

Flash Properties App: times layers were added in 2013



DESIGN & BUILD PHASE TWO - MAPS

- Improve the content & look of our maps
- Clear symbology
- Clear typography, better labelling

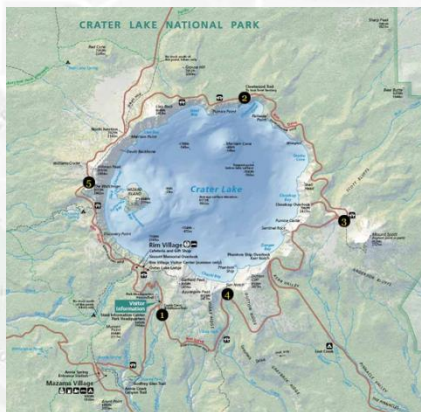
DESIGN & BUILD PHASE TWO - MAPS

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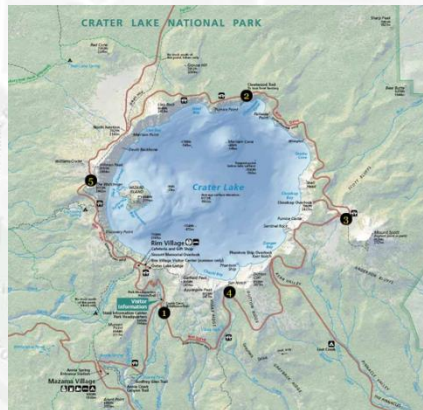
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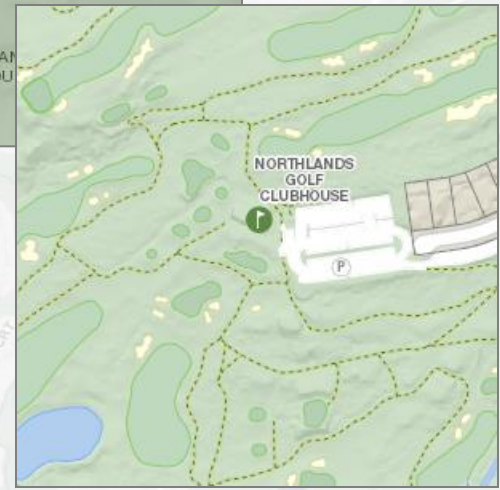
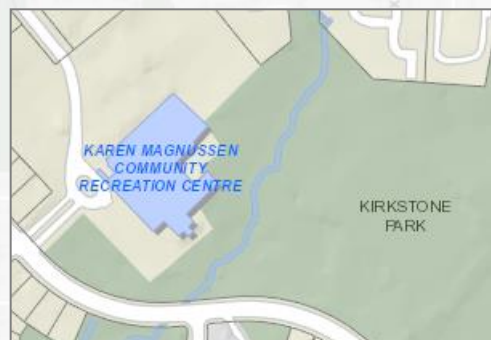


DESIGN & BUILD PHASE TWO - MAPS

- Improve the content & look of our maps
- Clear symbology
- Clear typography, better labelling



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

PHASE THREE - TECH RESEARCH

Many well supported libraries:

Map Engines



Esri Javascript API



Leaflet



OpenLayers



DESIGN & BUILD

PHASE THREE - TECH RESEARCH

Many well supported libraries:

HTML5 Frameworks

 Bootstrap

 ZURB Foundation

 Boilerplate



DESIGN & BUILD

PHASE THREE - TECH RESEARCH

Many well supported libraries:

HTML5 Frameworks

 Bootstrap

 ZURB Foundation

 Boilerplate





DESIGN & BUILD

PHASE THREE - TECH RESEARCH

Many well supported libraries:

Javascript Architecture



Ember



Backbone



Angular JS

DESIGN & BUILD

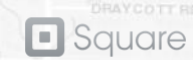
PHASE THREE - TECH RESEARCH

Many well supported libraries:

Javascript Architecture



Ember



Backbone



Angular JS





DESIGN & BUILD

PHASE THREE - TECH RESEARCH

Many well supported libraries:

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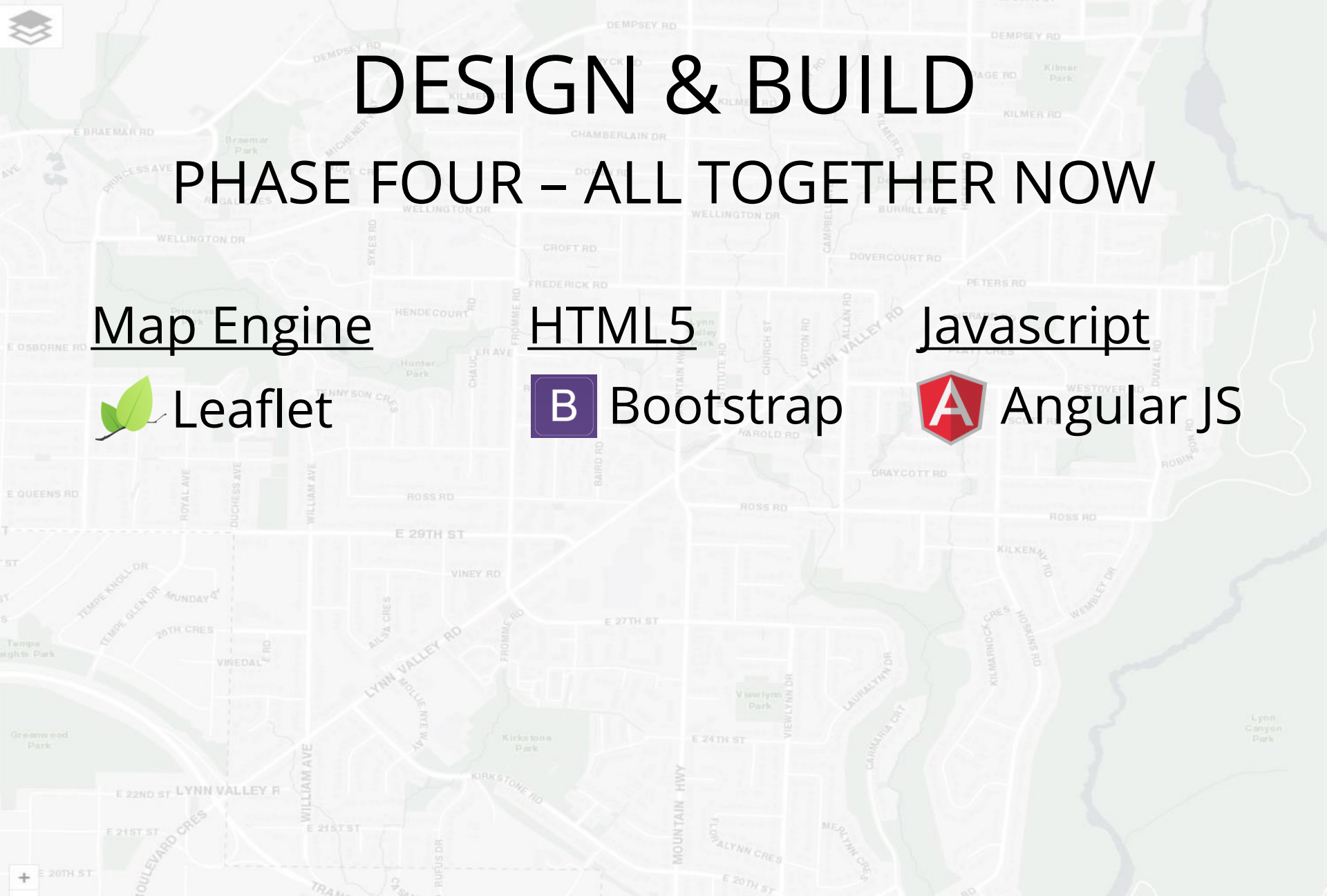
Ember



Backbone



Angular JS



DESIGN & BUILD PHASE FOUR – ALL TOGETHER NOW

Map Engine

 Leaflet

HTML5

 Bootstrap

Javascript

 Angular JS



DESIGN & BUILD PHASE FOUR – ALL TOGETHER NOW

Map Engine



HTML5



Javascript



Map Server





DESIGN & BUILD PHASE FOUR – ALL TOGETHER NOW

Map Engine



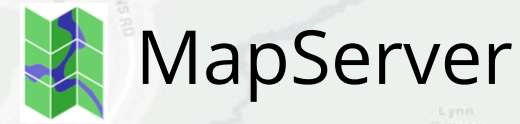
HTML5



Javascript



Map Server





DESIGN & BUILD PHASE FOUR – ALL TOGETHER NOW

Map Engine

 Leaflet

HTML5

 Bootstrap

Javascript

 AngularJS

Esri Leaflet on **GitHub**

Map Server





 **esri**

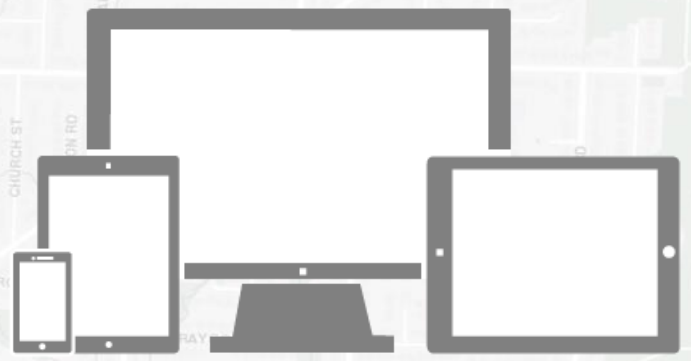
 ArcGIS for Server

 Mapbox

 MapServer

GOALS

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

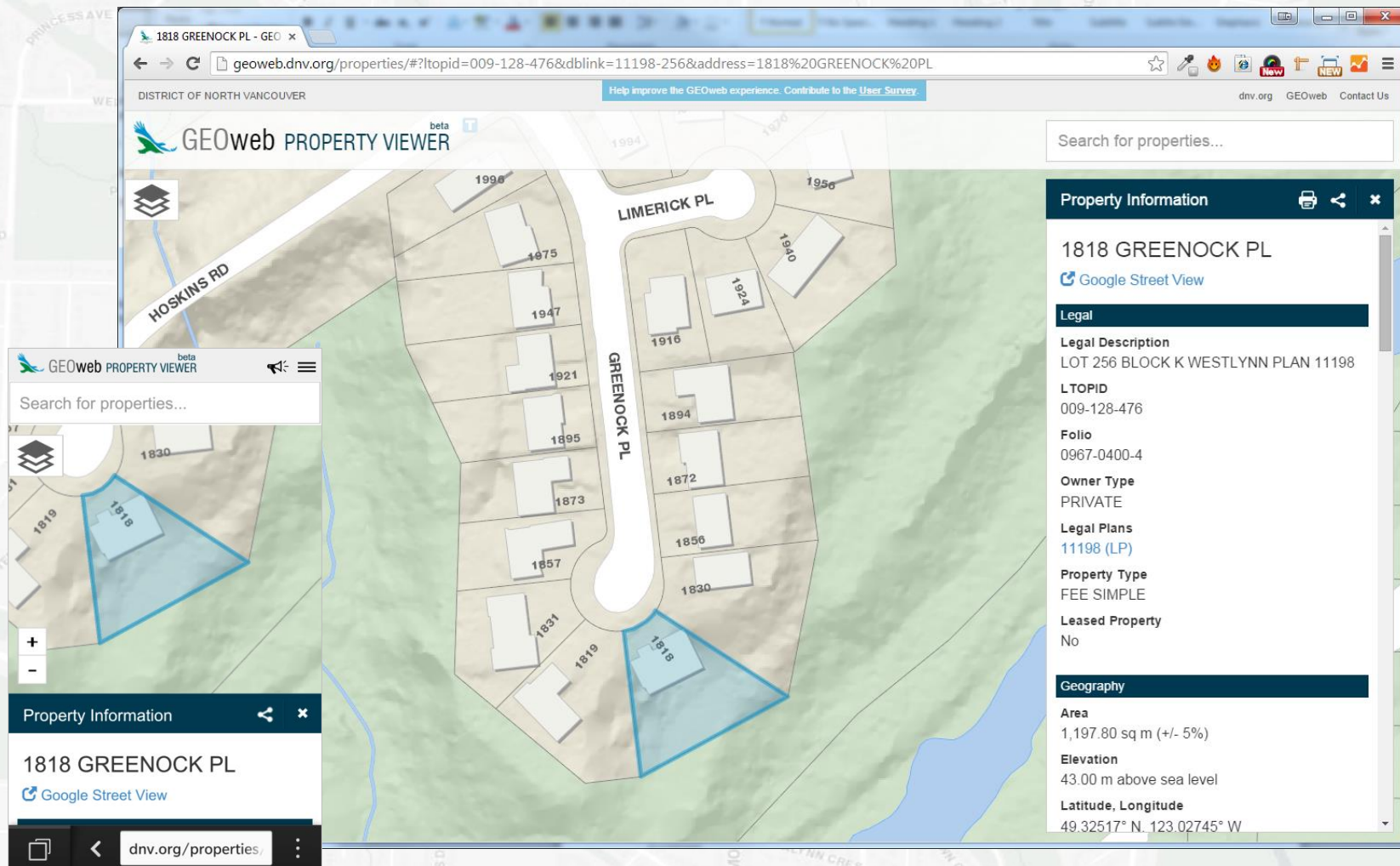


DESIGN & BUILD



SIX WEEKS IN A SCRUM BLENDER

PROPERTY VIEWER



The screenshot displays the GEOweb Property Viewer interface. The main map shows a residential street, Greenock Pl, with several lots. Lot 1818 is highlighted in blue. A search bar at the top right of the interface contains the text "Search for properties...". The property information panel on the right provides the following details:

- Property Information:** 1818 GREENOCK PL, [Google Street View](#)
- Legal:**
 - Legal Description:** LOT 256 BLOCK K WESTLYNN PLAN 11198
 - LTOPID:** 009-128-476
 - Folio:** 0967-0400-4
 - Owner Type:** PRIVATE
 - Legal Plans:** 11198 (LP)
 - Property Type:** FEE SIMPLE
 - Leased Property:** No
- Geography:**
 - Area:** 1,197.80 sq m (+/- 5%)
 - Elevation:** 43.00 m above sea level
 - Latitude, Longitude:** 49.32517° N, 123.02745° W

A smaller version of the property information panel is also visible in the bottom left corner of the screenshot, showing the same details for 1818 Greenock Pl.

A background map of the Lynn Valley area in North Vancouver, showing streets, parks, and topography. The map is overlaid with text and a list of activities.

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?

Please could you make the search and logo bar smaller so they don't take up so much of my laptop's screen? Otherwise, this is a great improvement over the old application!

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.

6. Which devices will you use to access GEOweb?

- Tablet
- Computer

12. Do you have any additional comments or suggestions?

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

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USER FEEDBACK

10. Was the map easy to navigate?

No, please explain...

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?

YOU NEED TO COMPLETELY REVAMP THIS - THIS IS DECADE OLD USEABILITY. COMPLETELY UNACCEPTABLE

USER FEEDBACK

To: Andrew Durnin

YEAH PRINTING KINDA SUCKS USING HTML5!!!

10. Was the map easy to use?

10. Was the map easy to navigate? [other]

THIS IS RIDICULOUS!! WHAT A COLOSSAL WASTE OF TIME TRYING TO PRINT EVEN BASIC IMAGES

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YOU NEED TO COMPLETELY REVAMP THIS - THIS IS DECADE OLD USEABILITY. COMPLETELY UNACCEPTABLE

A background map of the Lynn Valley area in North Vancouver, showing streets like Dempsey Rd, Wellington Dr, and Lynn Valley Rd. The map is overlaid with a semi-transparent white box containing text.

DIFFICULTIES

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

A background map of the Lynn Valley area in North Vancouver, showing streets like Dempsey Rd, Ross Rd, and Lynn Valley Rd. The map is overlaid with a semi-transparent white box containing text.

SUCCESSSES

- Single code base
- Confidence in development plan
- Happy users
 - Realtors
 - Roofers
 - Assessors
 - DNV Utilities
 - DNV Construction

A light green map of a residential area in North Vancouver, British Columbia, Canada. The map shows a grid of streets, including Dempsey Rd, Kilmer Rd, Chamberlain Dr, Doran Rd, Wellington Dr, and Lynn Valley Rd. Several parks are visible, such as Braemar Park, Doran Park, and Kirkstone Park. The word "KEYS" is overlaid in large, bold, black letters in the upper center of the map.

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

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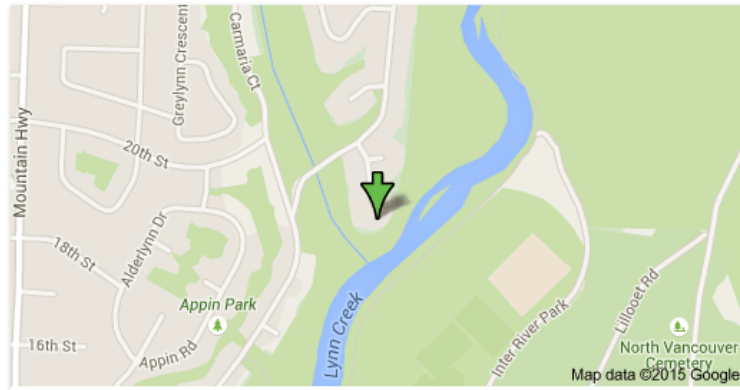
WHAT'S NEXT

SEO

 1818 greenock pl  

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About 302,000 results (0.70 seconds)



1818 Greenock Pl North Vancouver, BC V7J 2Z7 [Get directions](#)

1818 GREENOCK PL - GEOweb - District of North Vancouver
geoweb.dnv.org/properties/#!?address=1818+GREENOCK+PL ▾
 Access detailed information about 1818 GREENOCK PL from your computer, tablet or mobile device.



WHAT'S NEXT

gw.js

- Common, extensible framework
- Easy configuration
- Easy integration

<http://devtools/dev/mapembed/debug/>



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<http://devtools/dev/mapembed/debug/?zoom=5&lat=49.33717060674193&lng=-123.10166804996803>



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A light green map of North Vancouver, British Columbia, showing a grid of streets and parks. The map is semi-transparent, allowing the text to be clearly visible. Street names include Dempsey Rd, Braemar Rd, Princess Ave, Wellington Dr, Doran Rd, Burrill Ave, Peters Rd, Platt Cres, Westover Rd, Scott Rd, Ross Rd, Kilkenay Rd, Wembley Dr, Lynn Valley Rd, Fromme Rd, Kirkstone Rd, Mountain Hwy, and E 20th St to E 29th St. Parks shown include Braemar Park, Hunter Park, Kirkstone Park, View Lynn Park, and Lynn Canyon Park.

WHAT'S NEXT

- More powerful CMS integration
- GEOtools → HTML5
- GEOtools for the public
- Additional focused apps

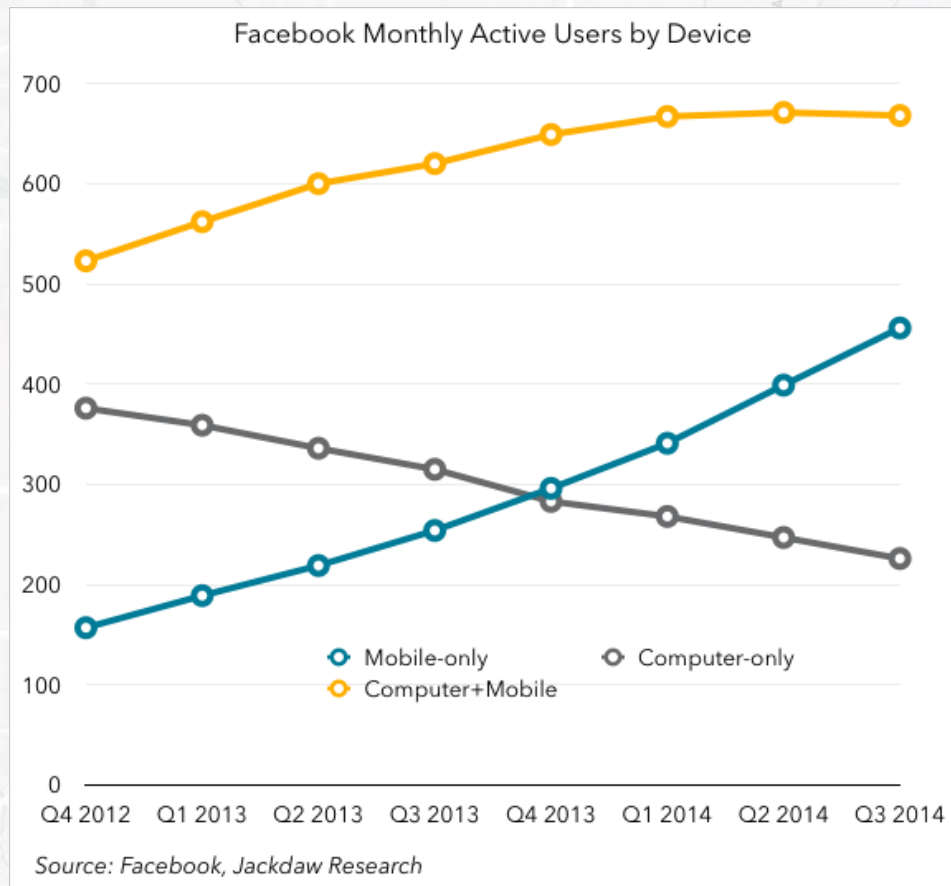
THE NEW REALITY



Microsoft®
Silverlight™



THE NEW REALITY



THE NEW REALITY

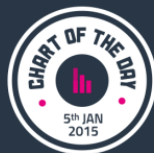
THE VERGE

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

By James Vincent on May 6, 2015 05:04 am [@jjvincent](#)

Including the US and Japan

THE NEW REALITY

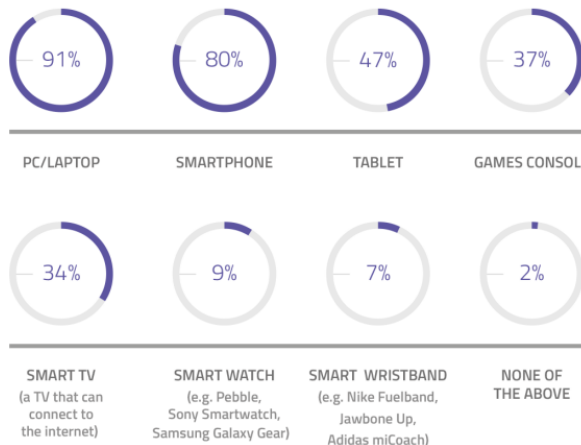


80% of internet users own a smartphone

GlobalWebIndex - Know Your Audience™



% INTERNET USERS WHO PERSONALLY OWN THE FOLLOWING



globalwebindex.net /// Question: Which of the following devices do you personally own? /// Source: GlobalWebIndex Q3 2014 /// Base: Internet Users Aged 16-64



Want to explore this data on the PRO Platform? Enter "Device Ownership" in the free search box, or click [Internet Landscape > Access Points > Device Ownership](#)

THE NEW REALITY



Cordelia McGee-Tubb via Jesse Hausler | www.medium.com



GEOweb PROPERTY VIEWER

QUESTIONS?

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@nvandistrict

