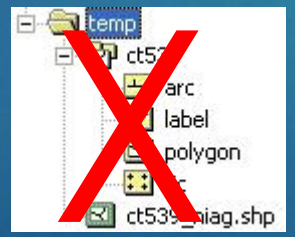
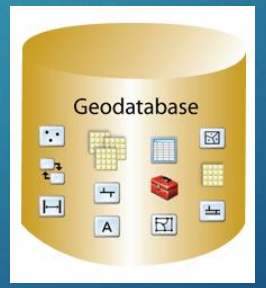
Portal to Success?

BURLINGTON COUNTY'S EXPERIENCE WITH PORTAL FOR ARCGIS

Burlington County's backstory

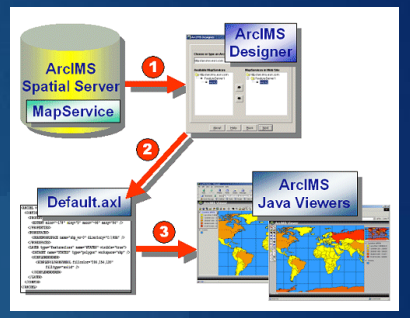
- GIS was 'born' at Burlington County in 1995 in IT Department
- First 3 years only had 1-2 staff
- 1998 started expanding with paid interns and slowly adding full time staff
- In 2003, we migrated from coverages (Yes! – Coverages!) & shapefiles to Enterprise Geodatabase



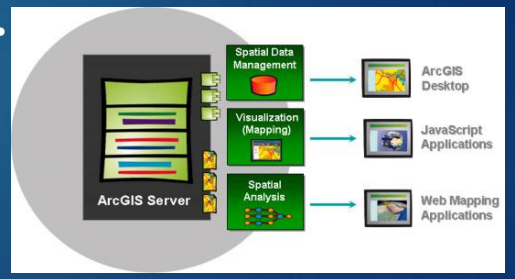


Late getting involved with web mapping

- By 2003, had ArcIMS but never got it off the ground
  - No staff members had strong programming or development experience
  - Had not been trained
  - Staff didn't have time to develop skills on own



- 2007- ArcGIS Server installed
  - Attended training & had offer of some support from web master ***but…***
  - Didn't have time to dedicate due to staff turnover and periodic staff shortages
  - Administration didn't have much interest in web mapping
  - Under these circumstances, couldn't justify dedicating limited resources to building something which no one thought they needed (yet)



We needed a Champion!

- We needed a high-priority project that required or would greatly benefit from web mapping
- Usually a 'GIS Champion' is thought of as a person or department who sees the value of GIS and loudly advocates for it
- We needed an important **project** that **required** web mapping and would be a high priority for the administration
- Proving success in such a project would 'champion' the cause and pave the way for us to move forward

POL forces our hand

- In 2009, the County acquired POL (Pictometry Online)
  - POL was a web-based, self-hosted app which could make our GIS data accessible to many County and municipal employees
  - GIS data had to be supplied as a **WFS** and a **WMS** – these became our **first web services**
  - POL became the Champion!
- After this success, we were eager to do more
  - Administration was interested in making GIS data accessible to more ***County departments rather than the public***
  - We wanted to empower departments to answer their own questions which would ***free GIS staff to concentrate on data and projects requiring GIS expertise***
  - Made several failed attempts at having a former web master work with Visual Studio & Silverlight

First internal web mapping applications (on County ***Intranet***)

- Started exploring using ArcGIS Server Manager 9.3's capabilities
- Built web apps using the web app designer interface in ArcGIS Server Manger 9.3
- We started publishing services with content that was important to specific departments
- Used custom basemap built for POL
- No programming! All point and click!
- Apps only accessible by computers connected to County ***Intranet***
  - For a few apps, this was a disappointment
  - For most, this was exactly what the departments wanted

1. Engineering mapping*

- Bridges
- Culverts
- Pipes

Signs

- Inlets
- Manholes
- Outfalls

Guide Rail

Guide Rail Compliance
- (no data)
- Compliant
- Non-Compliant

Guide Rail Alignment
- (no data)
- Aligned
- < 6" Out of Alignment
- 6" - 12" Out of Alignment
- > 12" Out of Alignment

Rail Element Condition
- (no data)
- Intact
- Separated
- Torn

FHWA Non-Compliant Guide Rail Segment Priority
- (no data)
- -1
- 3
- 2
- 1

Non-FHWA Guide Rail Segment Evaluation
- (no data)
- 3
- 2
- 1

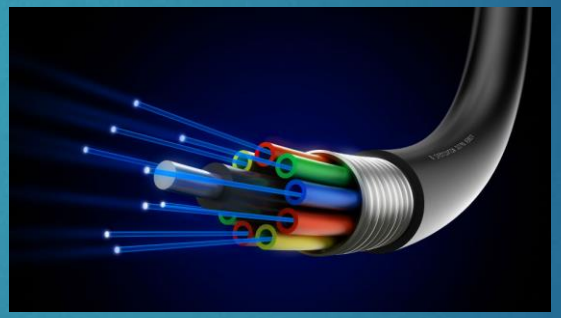
Warranted
- Warranted Guide Rail Points
- Warranting Obstruction Type
  - Bridge Parapet
  - Bridge Substructure
  - Headwall
  - Retaining Wall
  - Steep Slope
  - Stream or Ditch

Guide_Rail_Warranted_Locations
- Warranted_Annotation (from DGN)
  - STORM PIPE and CULVERT ANNOTATION
  - GUIDE RAIL and TERMINAL ANNOTATION
  - GUIDE RAIL and TERMINALS
- Warranted_Point (from DGN)
  - GUIDE RAIL and TERMINALS
  - STORM MANHOLES and INLETS and ENDWALLS and FESs
- Warranted_Polyline (from DGN)
  - GUIDE RAIL and TERMINAL ANNOTATION
  - GUIDE RAIL and TERMINALS
  - STORM MANHOLES and INLETS and ENDWALLS and FESs
  - STORM PIPE and CULVERT ANNOTATION
  - STORM PIPES and CULVERTS
- Warranted_Polygon (from DGN)

2. Engineering Traffic

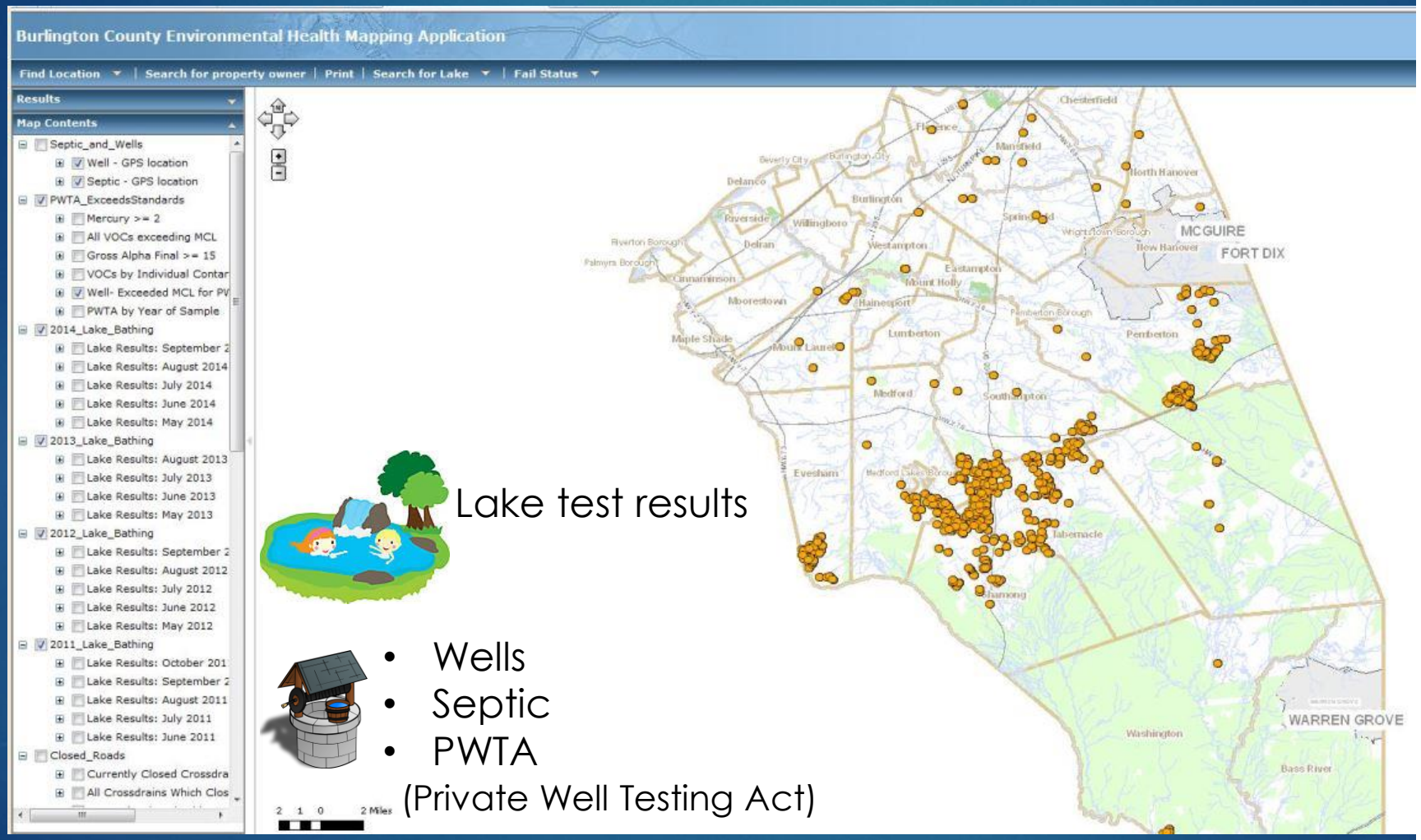
Signs (detailed)

Fiber markers and cables (existing & planned)



Traffic Cameras

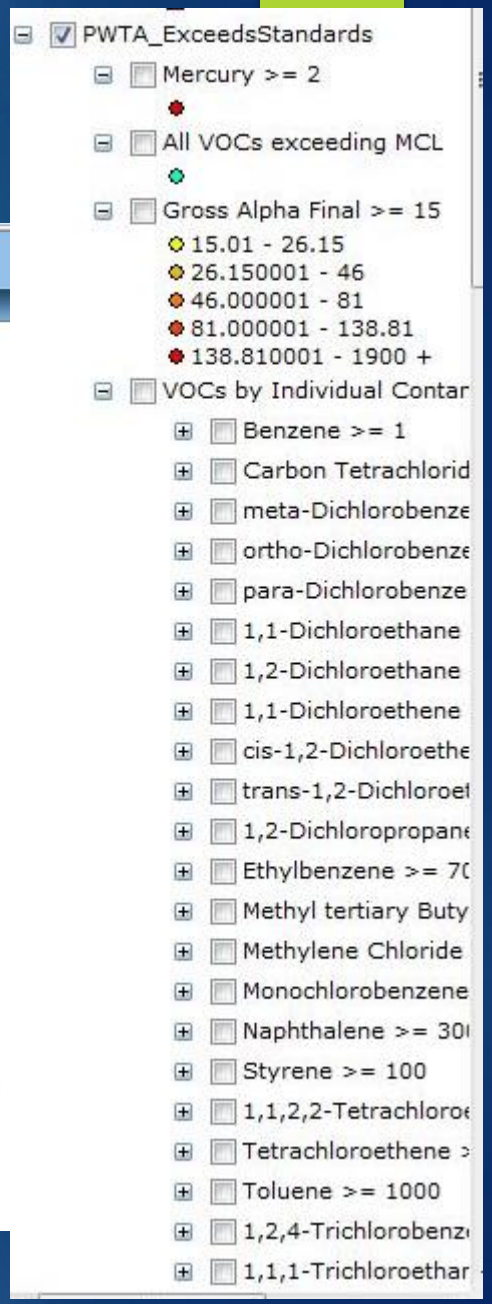
3. Environmental Health*



Lake test results

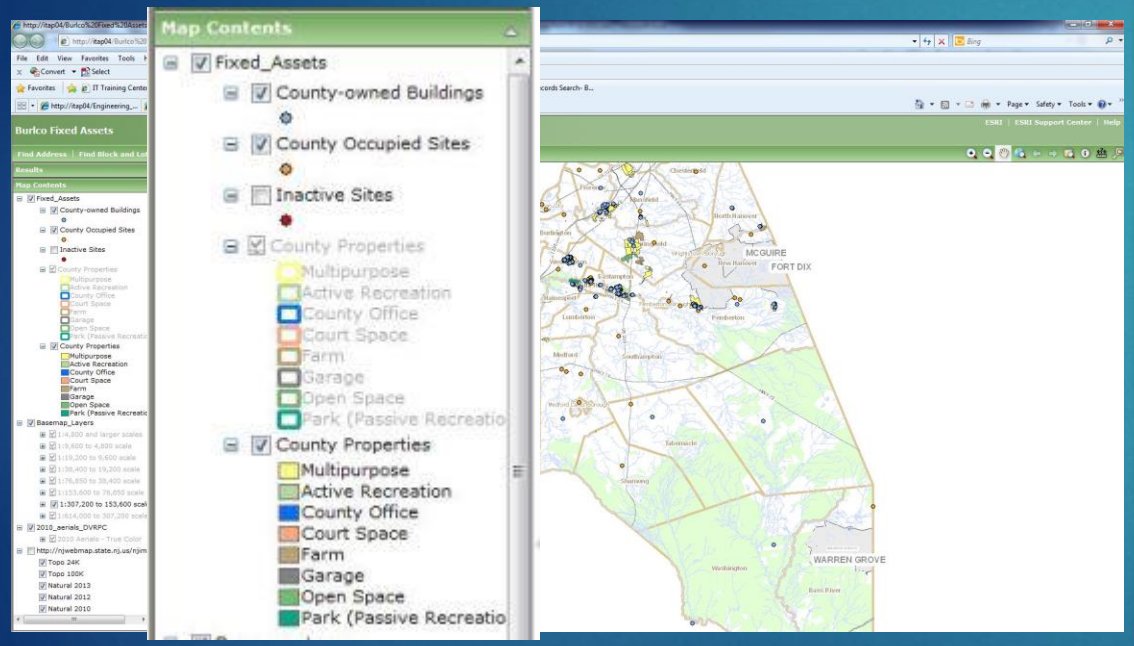
- Wells
- Septic
- PWTA

(Private Well Testing Act)



4. Fixed Assets*

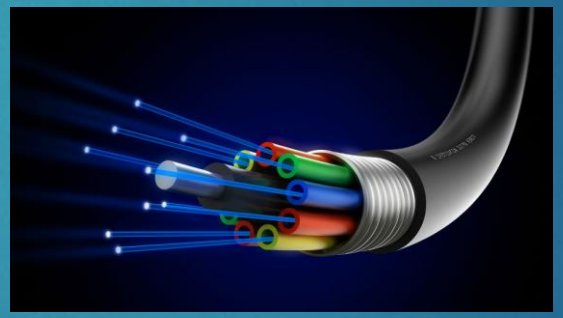
- County Buildings
- County properties
- Locations of County equipment



5. Fiber mapping*

(for offices other than Engineering)

Fiber markers and cables
(existing & planned)



6. Mosquito Commission*

Beekeepers

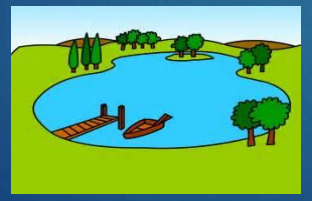
Chemically sensitive people

7. County Farm Fair

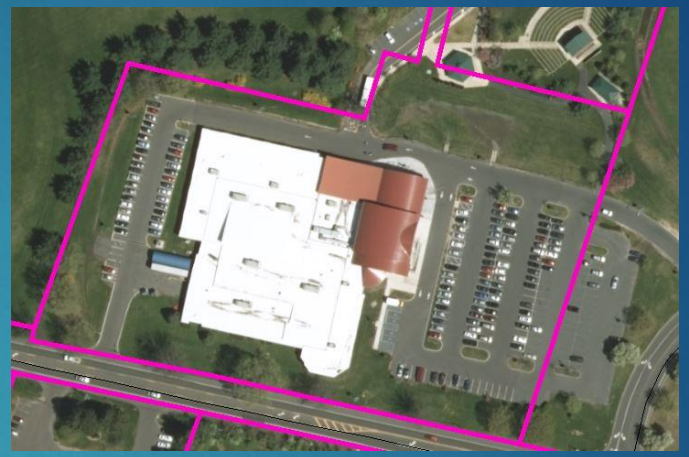
- Signs
- Parking
- Restrooms
- Tents
- Water
- Vendors
- Rides
- Retention ponds
- Fences
- Barns
- Hydrants

8. Contours

9. Watersheds & Hydrologic units



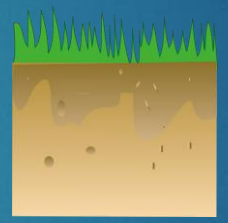
10. Parcel viewer



- Parcels
- Contours
- Wetlands
- Floodplain
- Soils

Most web maps also contained:

- Custom basemap (repurposed from POL)
- Parcels
- Wetlands
- Floodplain
- Soils
- Current & historic aerials
- Custom queries
- Parcel searches for Block & lot, address, owner



By 2014…

- Aforementioned 10 internal web mapping applications were running
  - Had a lot invested in these
- ArcGIS Online (AGO) Organization with 43 named users
- Serving web maps and apps to the public through ArcGIS Online
- Provided Esri Maps for Office training to interested County employees (encumbered many of our AGO named users)
- Life was good!

Technology changes…

- Still running ArcGIS Server 9.3
- Esri had released ArcGIS Server 10.2.2
- ArcGIS Server Manger 9.3's web ADF had been deprecated
  - If we upgraded, **internal** web maps wouldn't be supported
- ArcGIS Online stopped supporting pop-ups for ArcGIS Server 9.3 services
- We needed to upgrade!
  - **Big question was how would we replace the internal web apps?**

Web App Builder to the rescue?

- Everyone recommended Web App Builder which had recently been released.
- Contracted with Esri to migrate us to a new GIS server, new database server, upgrade the GIS software and migrate from SQL 2005 to 2012.
- Also would provide some training on WAB
  - After install we realized providing apps with WAB had limitations:
    - Maps and apps either had to be Public

    Or

    - Be accessed through private Groups **by named users in the AGO account**
  - Didn't want County employees to be limited by this

Explored options

- Re-build the apps in ArcGIS Viewer for Silverlight
  - Silverlight was phasing out
- Purchase additional named users for AGO
  - Would increase our annual operating budget
- Install Portal for ArcGIS
  - Described as 'ArcGIS Online running on your Intranet'
  - Covered by our licensing (ArcGIS Server Standard) so no increase in annual operating budget
  - Contracted for Esri to do the install and knowledge transfer on Portal and WAB

Portal was the answer

- Portal install was fairly smooth since it was performed by Esri
- Portal required a Security Certificate
  - biggest difficulty was in waiting for our IT people to obtain security certificate
- Knowledge transfer from Esri on Portal and WAB was great
  - Lots of great tips and tricks and best practice advice
- 7 of the original 10 ArcGIS Server 9.3 web apps were re-built using Portal
  - the rest became Public through AGO
- Portal offered increased functionality beyond the ArcGIS Server 9.3 web apps which please the users

New workflow

- Set up a new workflow for publishing Services and building web maps/apps to support both Internal & Public maps
  - Services which could be Public were published as usual but accessed using our new domain
  - Services with sensitive information (for **Internal apps**) were **published to a secure folder**
    - When these Services are added as Items in Portal, a **password is saved with them**
      - Avoids the need for County employees to enter a username and password
      - For very sensitive information, have the option of requiring user name and password

Transition to Portal

- Web App Builder was used for some apps but the Basic Viewer configurable app worked for others with some tweaking
- Since Portal is so similar to ArcGIS Online, rebuilding the maps and apps was more time consuming than difficult
- Web App Builder was pretty intuitive and documentation was helpful
- Created Bitly URLs for internal apps and put links on the targeted Department's "Personnel Only" Intranet page for easy access
- Some Intranet apps became Public & are also used by County employees

Thoughts on Portal

- Pros of Portal:
  - Portal for ArcGIS was the best choice for Burlington County
    - Provides secure web maps and apps to be used on the County's Intranet
    - Enabled us to replace the original ArcGIS Server Manager 9.3 web apps with better products
    - Similarity to AGO meant low learning curve
- Cons of Portal (as compared to AGO):
  - Requires manual software upgrade
    - Can be frustrating to see all the new bells and whistles rolled out to AGO because you won't see anything new in Portal until you do the manual upgrade

Portal versus AGO

- Many fewer configurable apps to choose from
- Fewer WAB widgets & themes available
- Licensing:
  - Based on our Server and Desktop licensing plus a 5 user subscription to AGO, we have 43 named users in AGO
  - In Portal, licensing for 10.3.1 only provides 5 named users
  - Will licensing be affected with ArcGIS Enterprise 10.5?

Moving on with Portal

- Departments expressed interest in additional Portal apps
  - Lead for Health Department
  - Animal Shelter intakes
  - Drug zone enforcement
- Currently running 10.3.1
  - Need to upgrade ***again!***
  - Need to understand changes the capabilities of the new ArcGIS Enterprise 10.5 and how it will affect us

Questions?

Merrilee Torres

GIS Specialist 1

County of Burlington

mtorres@co.burlington.nj.us

609-702-7067