# Goodhue County Well and Septic Field Apps

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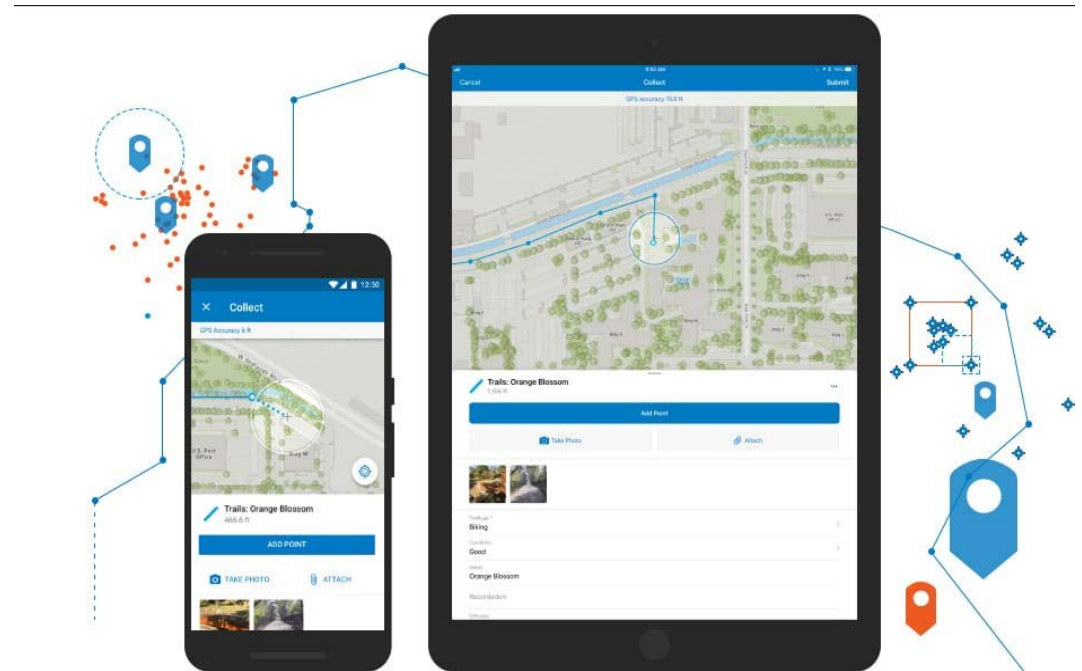
What is Collector and Survey 123

▶ These are ArcGIS apps used to collect data in in the field

    ▶ Collector: Geared more toward quick information in the field with a location

    ▶ Survey 123: Better for tabular data but can collect spatial as well

Why these apps

- Accessibility
  - Some issues with older devices
    - Can use the classic app to work around most of this
  - Most people already have some sort of device
- Simplicity
  - Don't need to train on high end GPS units
- Easy Maintenance
  - Leveraging SDE, ArcPro, Portal or AGOL

Why these apps

- Need to quickly and accurately collect data in the field
  - While GPS location is not entirely accurate, its more accurate then dropping a point on a map
- Can Collect or adjust information when they see it
  - Can complete 2 tasks at once with app availability
- Eliminates Paperwork in the field

Wells and Septic Points Collector Pros and Cons

- Pros
  - Can download the data so that you can collect with out data connection
  - Can connect directly to SDE data
  - Does work well on most new devices
  - Can link to GPS receiver units for greater accuracy
  - Easy to use and adjust

- Cons
  - Data needs to be in the correct format to be downloadable
    - Size also becomes a huge issue
  - Apps look different on different android devices making training a bit more difficult
  - Accuracy is wanting if only using Cellular or Wifi Connection

Septic Survey 123 Pros and Cons

► Pros

   ► Can collect with out an internet connection

   ► Does work well on most new devices, if not, there is a classic app which should expand the user base

   ► Can link to GPS receiver units for greater accuracy

   ► Can be customized to the users needs quickly

► Cons

   ► Accuracy is wanting if only using Cellular or Wifi Connection

   ► Have had issues with getting Survey 123 onto a Leica unit

   ► Do need to redownload the survey any time changes are made

   ► Can be cumbersome to use if the survey is not set up correctly

Individual Apps

- Goodhue County
  - Wells and Septic Points Collector
  - Septic Survey 123

Wells and Septic Points Collector

▶ Purpose:

   ▶ Collect Well, Abandoned Well and Septic points out in the field

      ▶ Replace the manual placement using drawings

   ▶ Be available to all Goodhue County Environmental Employees

   ▶ Obtain Northern and Easting

   ▶ Maintain up to date SDE information
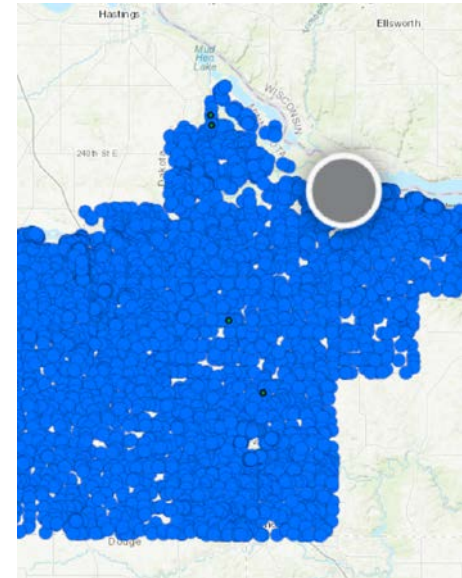
Wells and Septic Points Collector

▶ Background Scripting

  ▶ 4 Scripts that move information

  ▶ Script 1

    ▶ Deletes tables out of the working folder, copies over new tables from the collector data then exports these tables as Excel files with the date attached

```python
print "Archiving the old tables"

source_dir = 'O:\GCPermits\GCWellSeptic\IncomingFieldInspections' #Current table location
dst = 'O:\GCPermits\GCWellSeptic\IncomingFieldInspections\Archive' #Location archived files
files = glob.iglob(os.path.join(source_dir, "*.xls")) #arguement to copy all files with the extension .xls to the archived location
for file in files:
    if os.path.isfile(file):
        shutil.copy2(file, dst)
from os import listdir

print "Deleting the now archived tables"
folder_path='O:\\GCPermits\\GCWellSeptic\\IncomingFieldInspections\\' #argument to say, delete all files with .xls endings in this folder
for file_name in listdir(folder_path):
    if file_name.endswith('.xls'):
        os.remove(folder_path + file_name)
```

Wells and Septic Points Collector

- ▶ Script 2
  - ▶ Bat file built into the first script, which runs a macro in Excel
  - ▶ Takes files from one location and moves them into SQL
  - ▶ Tables are then exported from SQL
- ▶ Script 3
  - ▶ Using the Panda module, the exported tables in script 2 are converted to a CSV

```
import os
data_xls = pd.read_excel('O:\EH\Wells_and_Septic_for_AGOL\EHExports\PermitSeptic.xlsx', 'qry_PermitSeptic_Export', index_col=None)
data_xls.to_csv('O:\EH\Wells_and_Septic_for_AGOL\EHExports\Permit_Septic.csv', encoding='utf-8')

data_xls = pd.read_excel('O:\EH\Wells_and_Septic_for_AGOL\EHExports\PermitWell.xlsx', 'qry_PermitWell_Export', index_col=None)
data_xls.to_csv('O:\EH\Wells_and_Septic_for_AGOL\EHExports\Permit_Well.csv', encoding='utf-8')

data_xls = pd.read_excel('O:\EH\Wells_and_Septic_for_AGOL\EHExports\PermitWellAbandon.xlsx', 'qry_PermitWellAbandon_Export', index_col=None)
data_xls.to_csv('O:\EH\Wells_and_Septic_for_AGOL\EHExports\Permit_Well_Abandon.csv', encoding='utf-8')
print "Done"
```

Wells and Septic Points Collector

- ▶ Script 4
  - ▶ Remaps the new CSV files and maps them on XY to then be delete appended onto the SDE, replacing the 3 septic and wells layers

```
# Process: Copy Rows
arcpy.CopyRows_management(Permit_Septic_csv, Septic_Table, "")

# Process: Make XY Event Layer
arcpy.MakeXYEventLayer_management(Septic_Table, "GPSCoordX", "GPSCoordY", Septic_Table_Layer, "PROJCS['NAD_1983_HARN_Adj_MN_Goodhue_Feet',GEOGCS['GCS_NAD_1983_HARN_Ad

# Process: Copy Features
arcpy.CopyFeatures_management(Septic_Table_Layer, Septic_Features, "", "0", "0", "0")

# Process: Delete Features
arcpy.DeleteFeatures_management(VectorGIS_SDE_Permited_Septic)

# Process: Append
arcpy.Append_management("O:\\EH\\Wells_and_Septic_for_AGOL\\EHExports\\Septic_Wells.gdb\\Septic_Features", VectorGIS_SDE_Permited_Septic__2_, "NO_TEST",
```

Septic Survey 123

- ▶ Purpose
  - ▶ Most inspectors don't want to bring paper in the field
  - ▶ This Survey replaces the paper work
    - ▶ Uses variable inputs to show what needs to be shown
  - ▶ All gathered information will be exported to an Excel spreadsheet in the septic "off season"
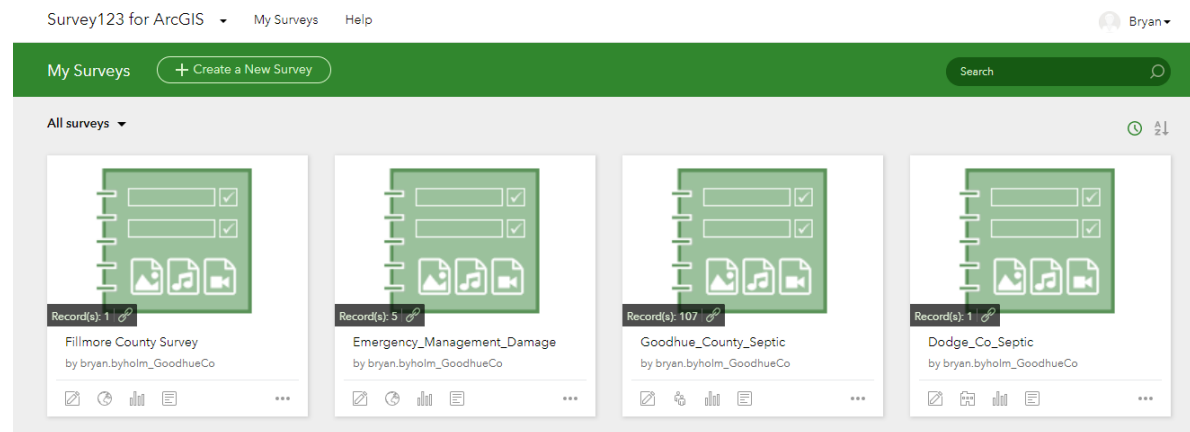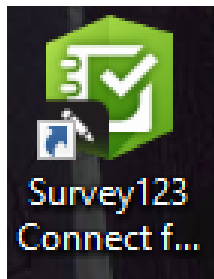 - ▶ Indexed most answers for inspection data integrity

Septic Survey 123

▶ Used the Survey 123 Connect for ArcGIS software to create the survey

   ▶ You can review the outputs on online at https://survey123.arcgis.com/surveys

▶ In this software an Excel spread sheet is used to build the survey

   ▶ Many variables are controlled in this manner

   ▶ Fairly easy to learn, there are many tutorials on YouTube showing to adjust the Excel table

Septic Survey 123
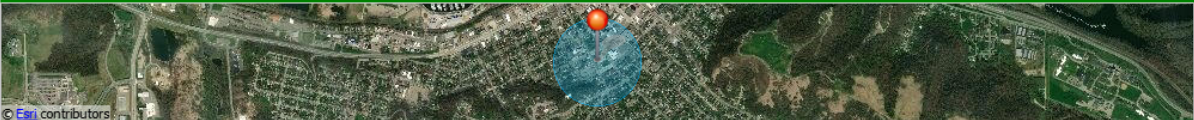
Looking forward

- Collector
  - Have the live layers for Septic, Wells and Abandoned Wells in the field
  - Look into vector tiling to increase speed and shrink the download size
  - Get updated collector units
    - Ipads

- Survey 123
  - Have the ability to back feed a PDF print out
    - Have this ability already and its being used but apply it to this survey
  - Have the ability to push this product onto the Leica unit we have
    - Currently being discussed

Wrap Up

▶ Both Collector and Survey 123 are well put together and well established apps created by ESRI

▶ Most limitations can be worked around

▶ These apps are so universal almost every agency could find a use for either Collector or Survey 123

Contact Info and Questions?

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