GeoEnabled Elections FME Canvas

⚙

Precinct Splits Status Dashboard

Voting Precinct Splits Status D...   Montana Geo-Enabled Elections - Supported by the Montana Spatial ...

84.5%
Precinct Splits Sent to SOS

Counties Sent to SOS

56

10

Precinct Splits Web App

Montana Precinct Splits To Date

PCT 11N - PHILLIPS - 33/17 - 2-N - 01

County Name	Phillips
County Code	36
County FIPS	30071
Precinct Name	PCT 11N - PHILLIPS - 33/17
Split Code	2-N - 01
PPartName	PCT 11N - PHILLIPS - 33/17 - 2-N - 01
Ambulance District	
Cemetery District	
City District	
Community Council District	

9

▽ Workflow

The main purpose of this FME Form Canvas is to create statewide precinct split data layers that update a statewide geo-enabled elections file geodatabase, feature services, maps, and dashboard.

Below are descriptions of the individual bookmarks on the canvas:

1. **County Inputs (FME Readers):** Four layers from each county file geodatabase. There are 56 counties, so that's 224 distinct layers!
   - Address points per precinct split polygon area
   - Precinct split polygon areas
   - Voter address points based on election management system
   - Missing precinct splits based on election management system

2. **Outputs (Main FME Writers):** Generates four statewide layers that are a merge of all 56 counties' four input layers based on the readers (see #1).

3. **User:** Detects which user is running the canvas. If the owner of the AGOL feature services is not the person running the workflow, then the feature services cannot be updated.

4. **MTCountySplits (a) → MTCountySplits – AGOL (b) →Total Splits AGOL Stats (c):** Generates county based precinct split statistics that are appended to a county polygon layer. This data is then compared to past data on AGOL, and prepped for appending to the matching feature service in AGOL.

5. **Total Splits (a) → Total Splits – AGOL (b) → Total Splits AGOL stats (c):** Merges all the precinct splits by county together to create a statewide precinct split dataset. This data is then compared to the current feature service on AGOL, creates precinct split statistics, and preps the data to be appended to the matching feature service.

6. **Address Point Match (a) → Address Stats (b) → Statewide Address Match Stats (c):** Merges all the voter address points per county and generates address point statistics such as the number of voter addresses in a defined precinct split, the number of voters in an undefined precinct split, total number of address points, and if the voter point doesn't fall in any polygon at all.

7. **Emailer:** Sends email after canvas is done running and file geodatabase (writer) has been updated along with general precinct splits statistics to the appropriate parties.

8. **Python Script:** Runs once the canvas is done processing.
   - Appends feature class data from file geodatabase to AGOL feature services. These feature services provide the data for the Precinct Splits map and Pre-Redistricting Precinct Splits Status Dashboard on AGOL.
   - Posts precinct splits data to MSL ftp site

9. **Precinct Splits Web App:** Provides an interactive map for users to see all the precinct splits in Montana and see what election districts fall within each precinct split.

10. **Precinct Splits Status Dashboard:** Shows precinct splits status at a statewide and county level along with progress levels, maps, and access to precinct splits data.

▽ Python Script

```python
##Import, overwrite, and append MTCountySplits feature class
gdb2Path = os.path.join(folder2,gdb2)
print(gdb2)
env.workspace = gdb2Path
env.overwriteOutput = True

#stop geoprocessing from metadata
if arcpy.GetLogMetadata():
    arcpy.SetLogMetadata(False)

arcpy.FeatureClassToFeatureClass_conversion(original1,gdb2Path,fc2)
print("MTCountySplits has been imported to MTCountySplitsGDB.")

outfile = gdb2Path + '.zip'
zipFileGeodatabase(gdb2Path,outfile)

county_properties = {'title':'CountySplitInfo',
                     'tags':'geoenabled elections, montana',
                     'type':'File Geodatabase',
                     'overwrite':'True'}

county_item = gis.content.add(county_properties,gdb2Path+'.zip')
county_item = county_item.get(item_ID2)
countyLayer = county_item.layers[0]
print(countyLayer.properties.name)

countyLayer.append(item_id=county_gdb.id,
                   upload_format='filegdb',
                   source_table_name='MTCountySplits',
                   upsert=True,
                   skip_inserts=True,
                   upsert_matching_field='NAME',
                   update_geometry=False)
county_gdb.delete()

#Export, overwrite and append SOSPrecinctSplitsToDate
shp1 = 'SOSPrecinctSplitsToDate.shp'
shpPath1 = os.path.join(folder1, shp1)
env.workspace = shpPath1
env.overwriteOutput = True

#stop geoprocessing from metadata
if arcpy.GetLogMetadata():
    arcpy.SetLogMetadata(False)

arcpy.FeatureClassToShapefile_conversion(original1, folder1)

#Zip up shapefiles
zip1 = zipfile.ZipFile(os.path.join(folder1,"SplitsToDate.zip"), "w", zipfile.ZIP_DEFLATED)
shp_zip_list1 = []

for f in glob.glob(shpPath1.replace(".shp","")):
    shp_zip_list1.append(f)

for f in shp_zip_list1:
    zip1.write(f, os.path.basename(f))
zip1.close()

#Add zip to AGOL
state_properties = {'title':'All Montana Splits',
                    'tags':'geoenabled elections, montana, elections, precinct splits',
                    'type':'Shapefile',
                    'overwrite':'True'}

splits_shp = gis.content.add(state_properties,os.path.join(folder1, "SplitsToDate.zip"))
splits_item = splits_shp.get(item_ID1)
splitsLayer = splits_item.layers[0]
```
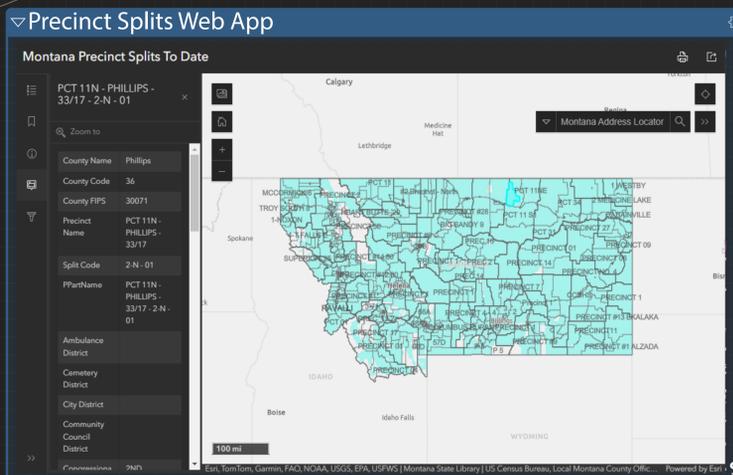8

2a 3 4a 4b 4c 5a 5b 5c 6a 6b 6c 7 1