DeKalb County GA Update 2024

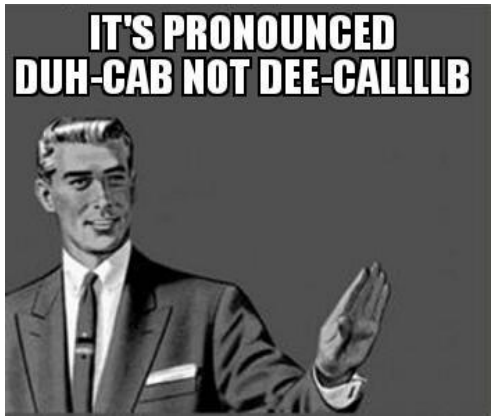
Leo Ladefian

DeKalb County
GEORGIA

Agenda

- GIS Department Overview
- Open Data
- Elections
- ArcGIS Urban
- Drone Program
- Machine Learning
- Building, Planning, Code Permit Tracker

DeKalb County GA



- Population – 764,382 (4th largest county in GA)
- Current CEO Michael Thurmond
  - Author of “James Oglethorpe, Father of Georgia: A Founder’s Journey from Slave Trader to Abolitionist”
- 59 miles of multi-use paths / trails
- 1 state park - Panola Mountain State Park
- 26 fire stations

DeKalb Cities

Avondale Estates

Stone Mountain

Clarkston

Brookhaven

Doraville

Lithonia

Tucker

Pine Lake

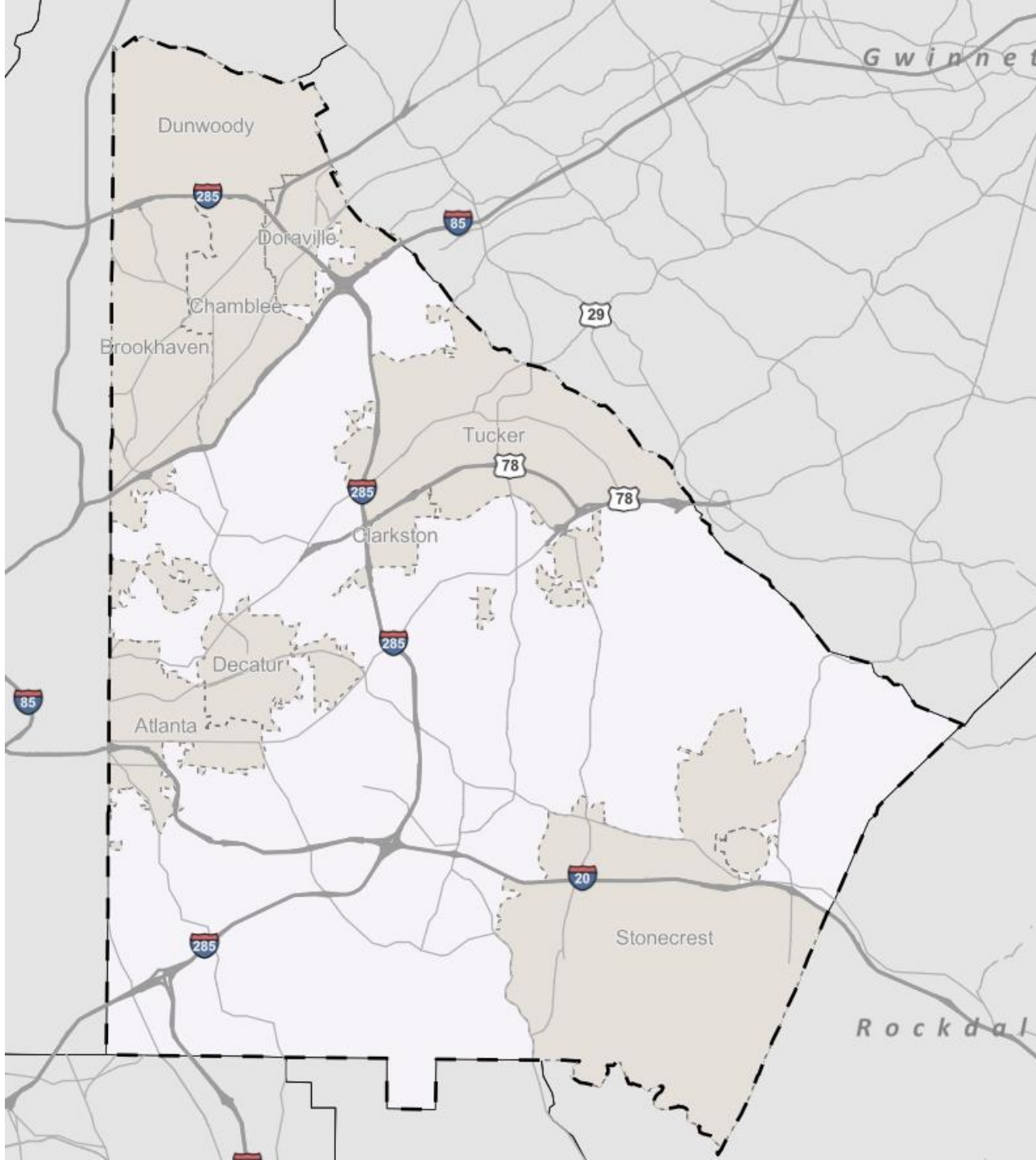
Stonecrest

Chamblee

Atlanta

Dunwoody

Decatur

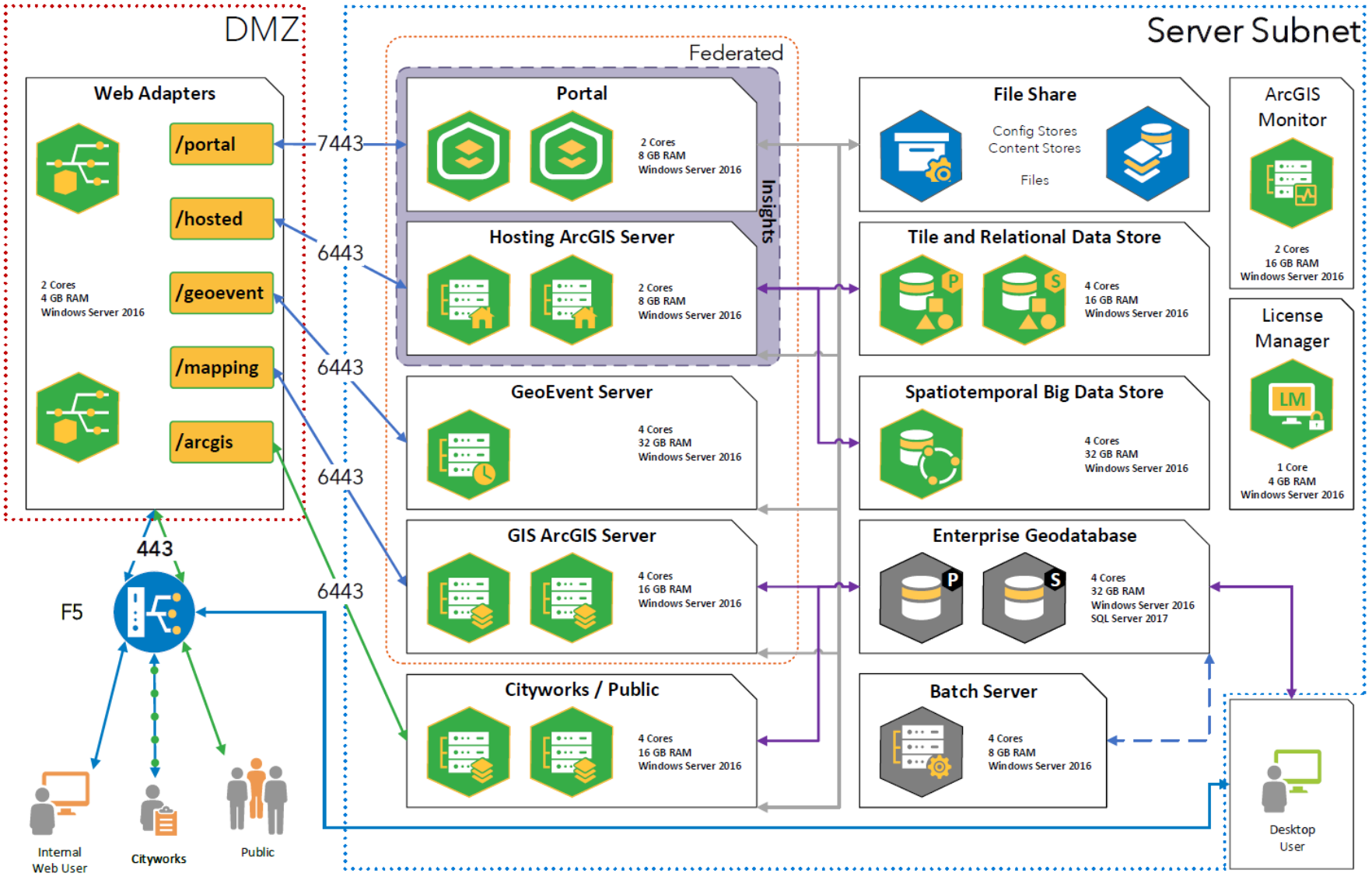


DeKalb GIS

- Enterprise License Agreement (EAP)
- Advantage Program – https://www.esri.com/en-us/c/services/advantage-program
  - 638 AGOL members
    - 121 Creators
    - 12 ArcGIS Pro Extensions
    - 7 Applications
      - Business Analyst, Drone2Map, Insights, Navigator, GeoPlanner, Urban
- Enterprise 11.2
  - Geoevent, Geoanalytics, Monitor
  - 6 ArcGIS Servers, 2 hosted, 2 federated, 2 unfederated (cityworks, other apps)
  - Highly Available

Servers!

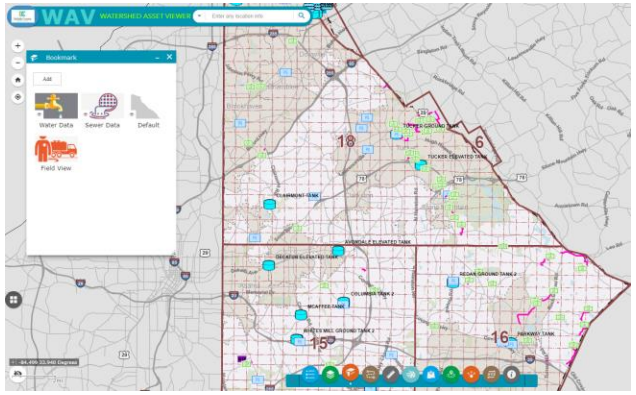
MY JOB HAS THIS COOL THING
WHERE IF YOU DO YOUR JOB VERY WELL, YOU GET TO DO OTHER PEOPLES JOB TOO

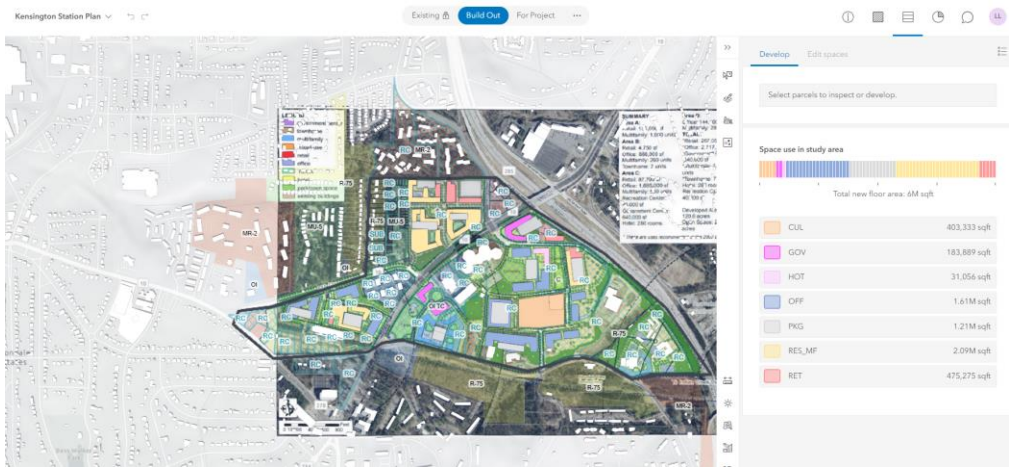

DMZ
Server Subnet
Federated
Web Adapters
/portal
/hosted
/geoevent
/mapping
/arcgis
2 Cores
4 GB RAM
Windows Server 2016
7443
6443
6443
6443
6443
443
F5
Internal Web User
Cityworks
Public
Portal
2 Cores
8 GB RAM
Windows Server 2016
Insights
Hosting ArcGIS Server
2 Cores
8 GB RAM
Windows Server 2016
GeoEvent Server
4 Cores
32 GB RAM
Windows Server 2016
GIS ArcGIS Server
4 Cores
16 GB RAM
Windows Server 2016
Cityworks / Public
4 Cores
16 GB RAM
Windows Server 2016
File Share
Config Stores
Content Stores
Files
Tile and Relational Data Store
4 Cores
16 GB RAM
Windows Server 2016
Spatiotemporal Big Data Store
4 Cores
32 GB RAM
Windows Server 2016
Enterprise Geodatabase
4 Cores
32 GB RAM
Windows Server 2016
SQL Server 2017
Batch Server
4 Cores
8 GB RAM
Windows Server 2016
ArcGIS Monitor
2 Cores
16 GB RAM
Windows Server 2016
License Manager
LM
1 Core
4 GB RAM
Windows Server 2016
Desktop User

Departments

- **Watershed (largest footprint)**
  - Water delivery
  - Sewer
- **Property Mapping**
  - Parcel Fabric
  - Addressing - (Address Data Management Solution)
- **Sanitation**
  - Bulky Item Pickup using Geoevent,

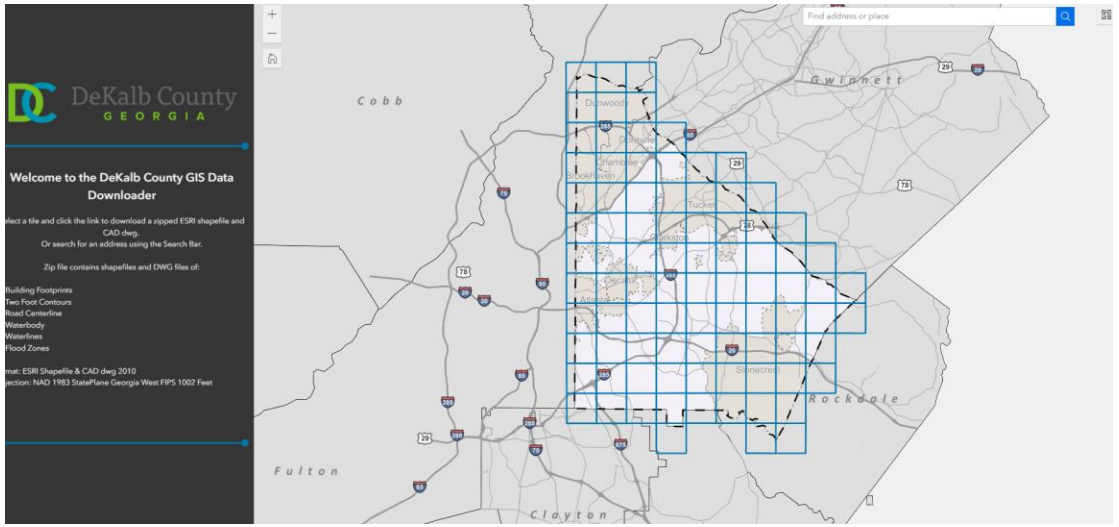
  Survey123, workforce and navigator
- **Fire**
  - 911 routing using network analyst in portal, (StreetmapPremium)
    - adding private roads
    - Building Heights from Lidar / Drone
- **Planning and Development**
  - ArcGIS Urban
  - Community Analyst, BA
  - Editing zoning and landuse layers



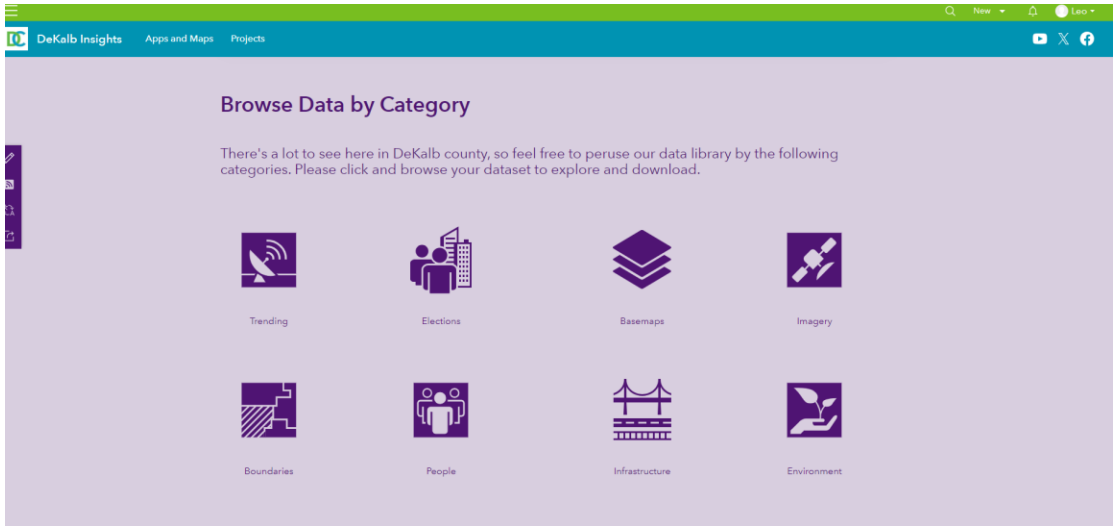


The Data is Open!

- https://dekalbgis.maps.arcgis.com/home/index.html
- Data Downloader



- Open Data Page

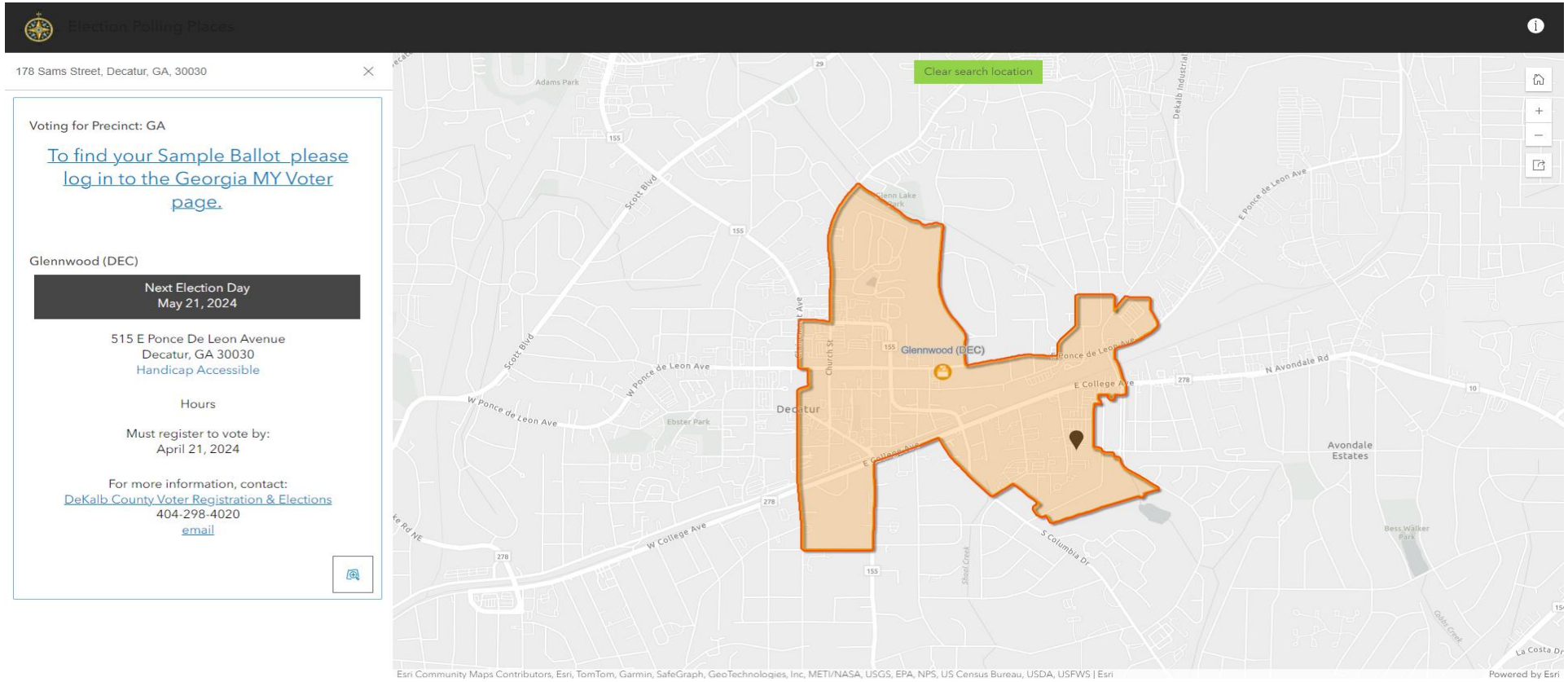


Elections

- Real time problem reporter
- State required wait time reporting
- Needed a solution quickly
- Publicly accessible information

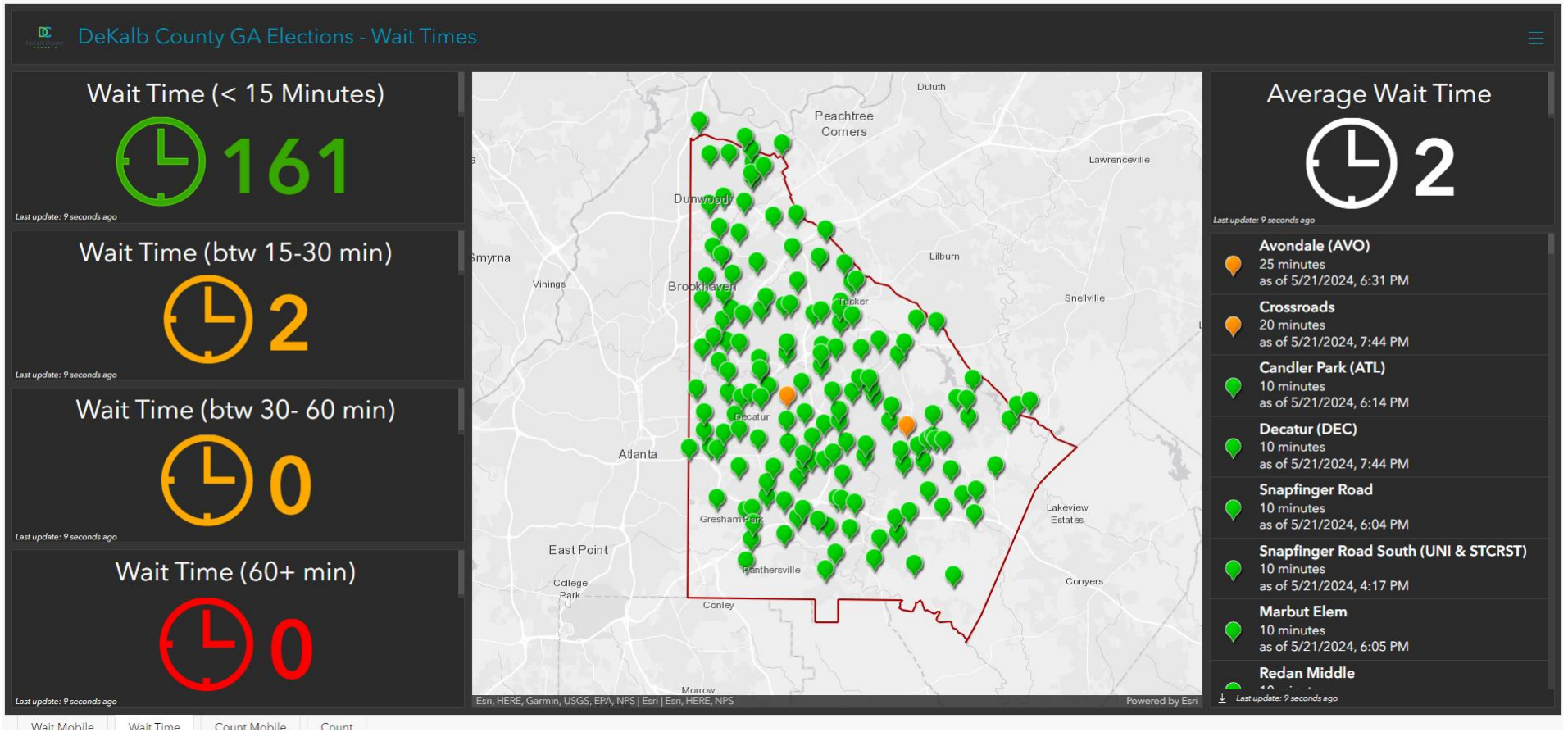
- DeKalb Voter Page
- Wait Times Dashboard
- Voter Satisfaction Survey **(not open until election)**

Find My Precinct



Wait Time Dashboard Public

Reported through Polling Asst App

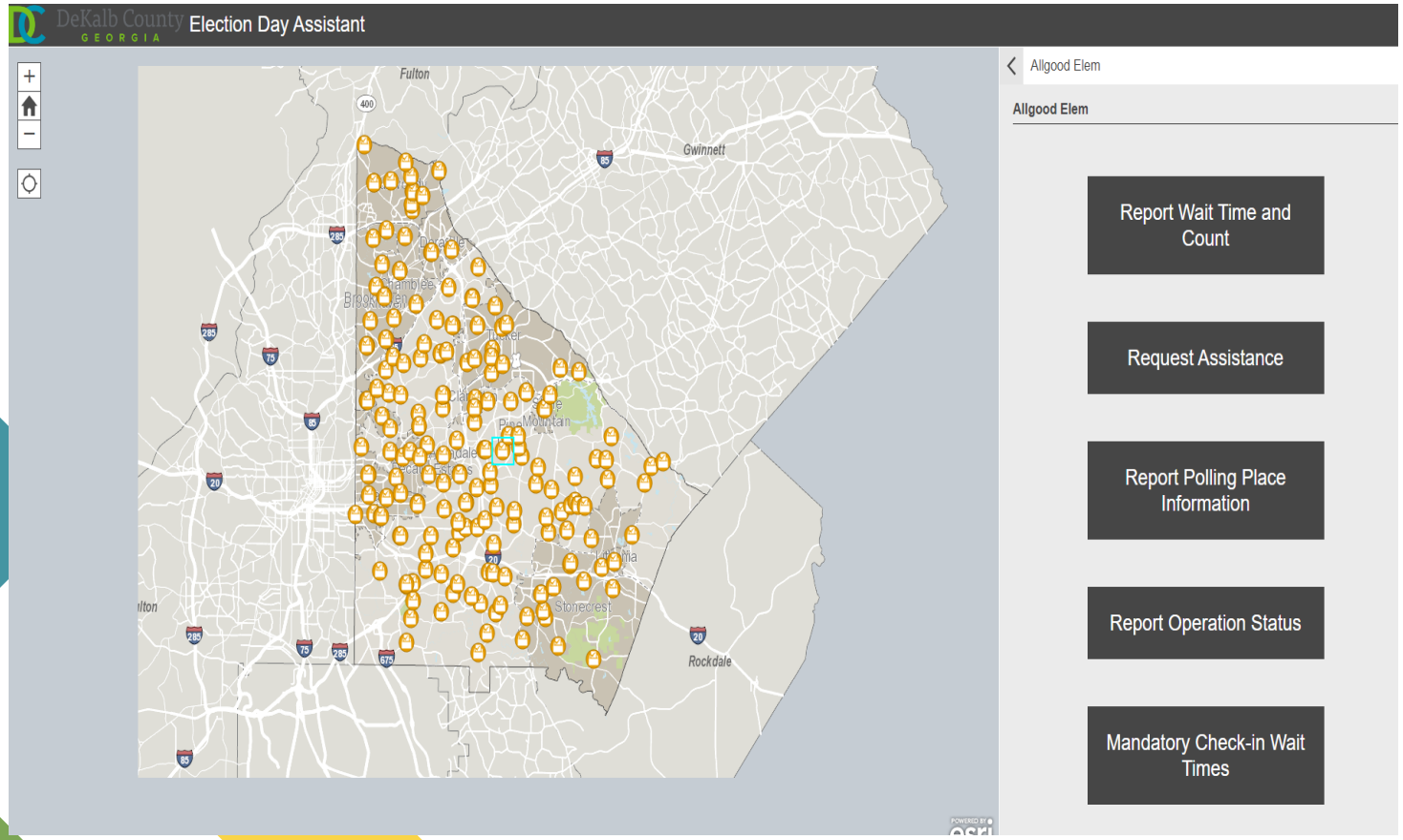


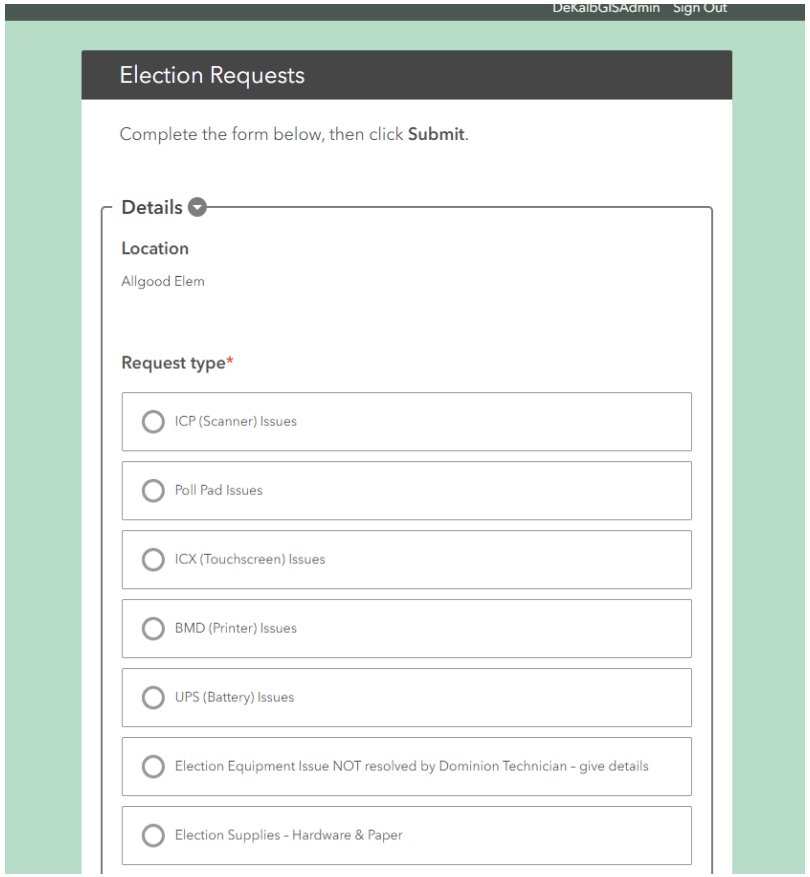
Voting Manager

- Polling Place Assistant
  - Kicks off a survery 123 and feeds to Workforce Project where workorders can be managed
- Workforce
  - Used to manage requests and assign tasks to poll workers

Polling Assistant

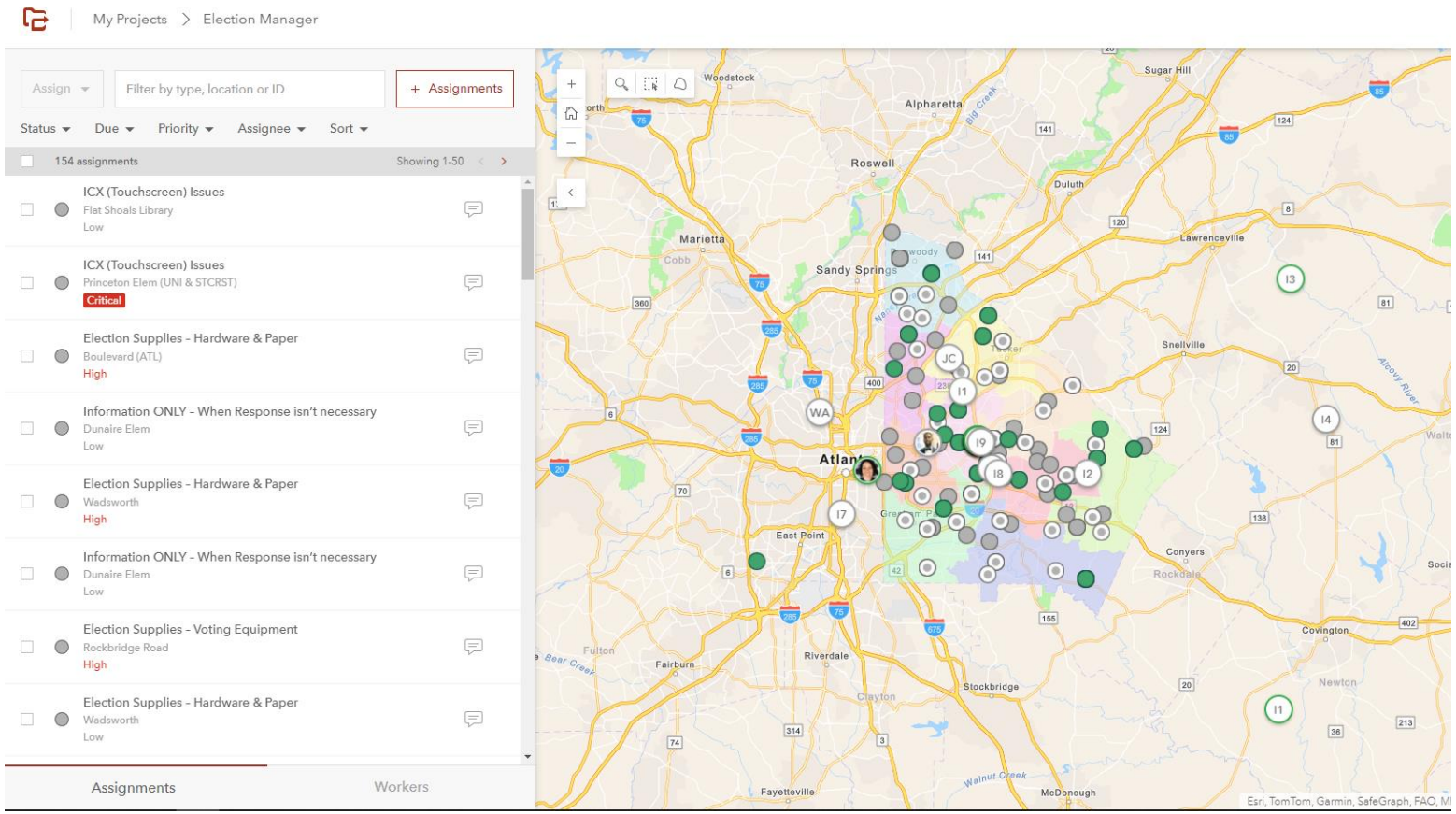
The app allows workers at the polling locations to check in in the morning of the election (staff arrived and ready to go), report polling place info and ballot counts, to enter wait times and counts during the election day, and to enter in request tickets for hardware, supplies, issues etc which will then be seen and assigned by the Voter Registration office.





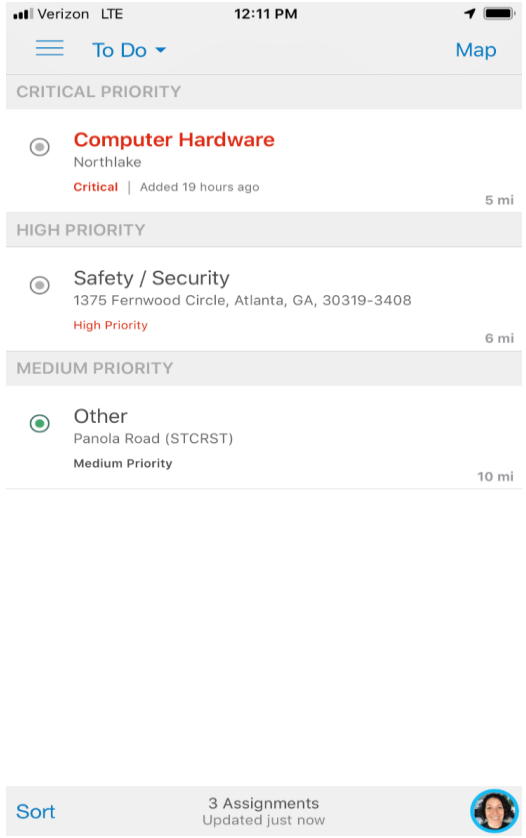
Workforce to assign tasks

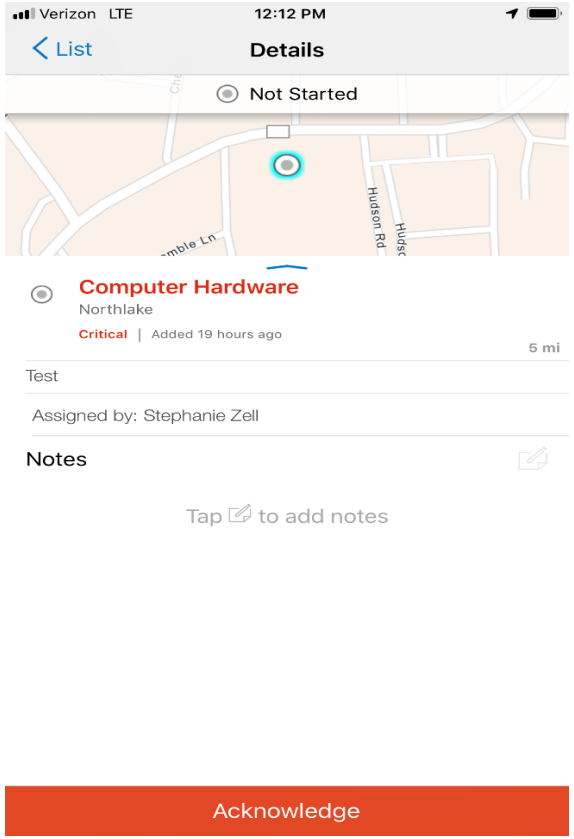
Dispatcher View



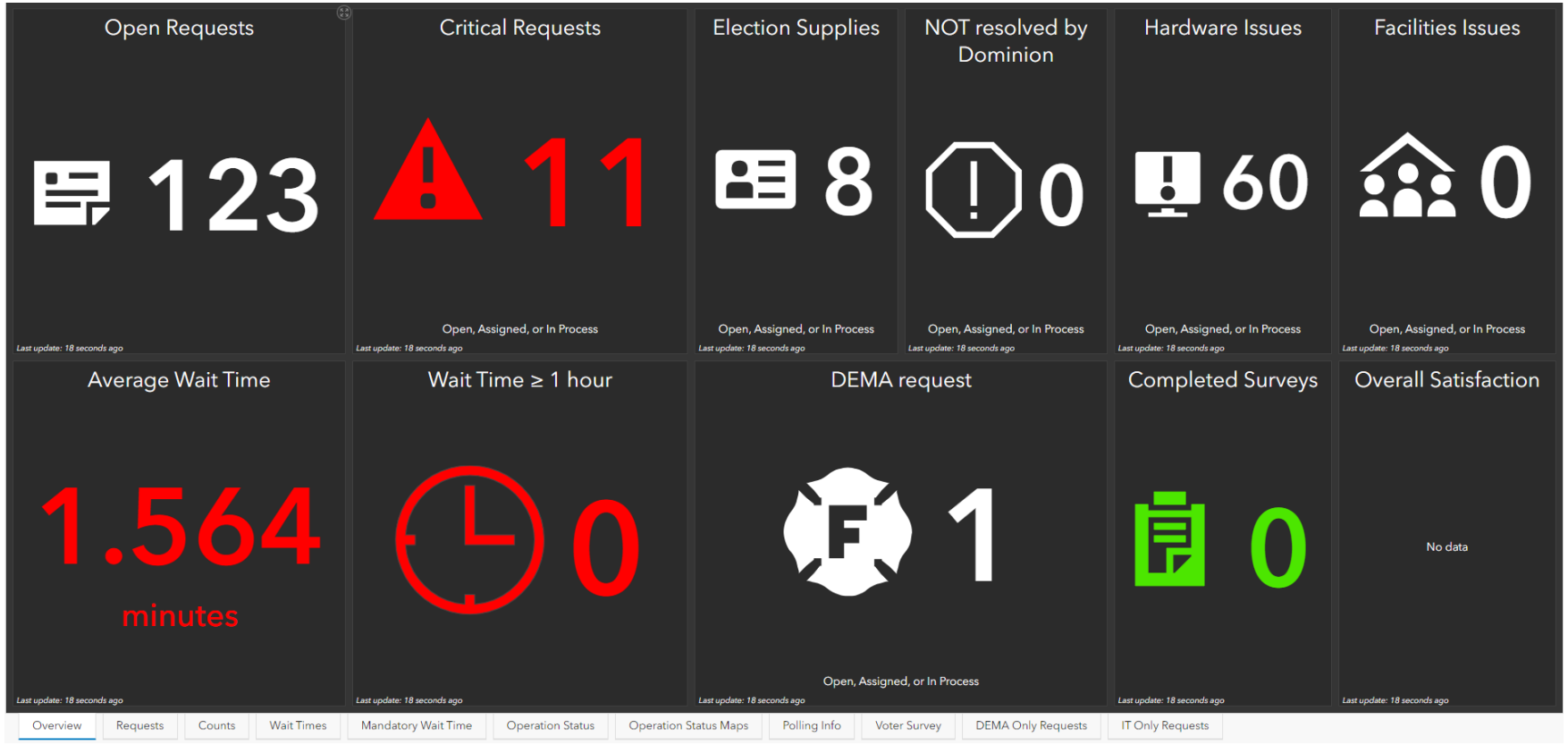
Mobile View for Election Workers

Worker View



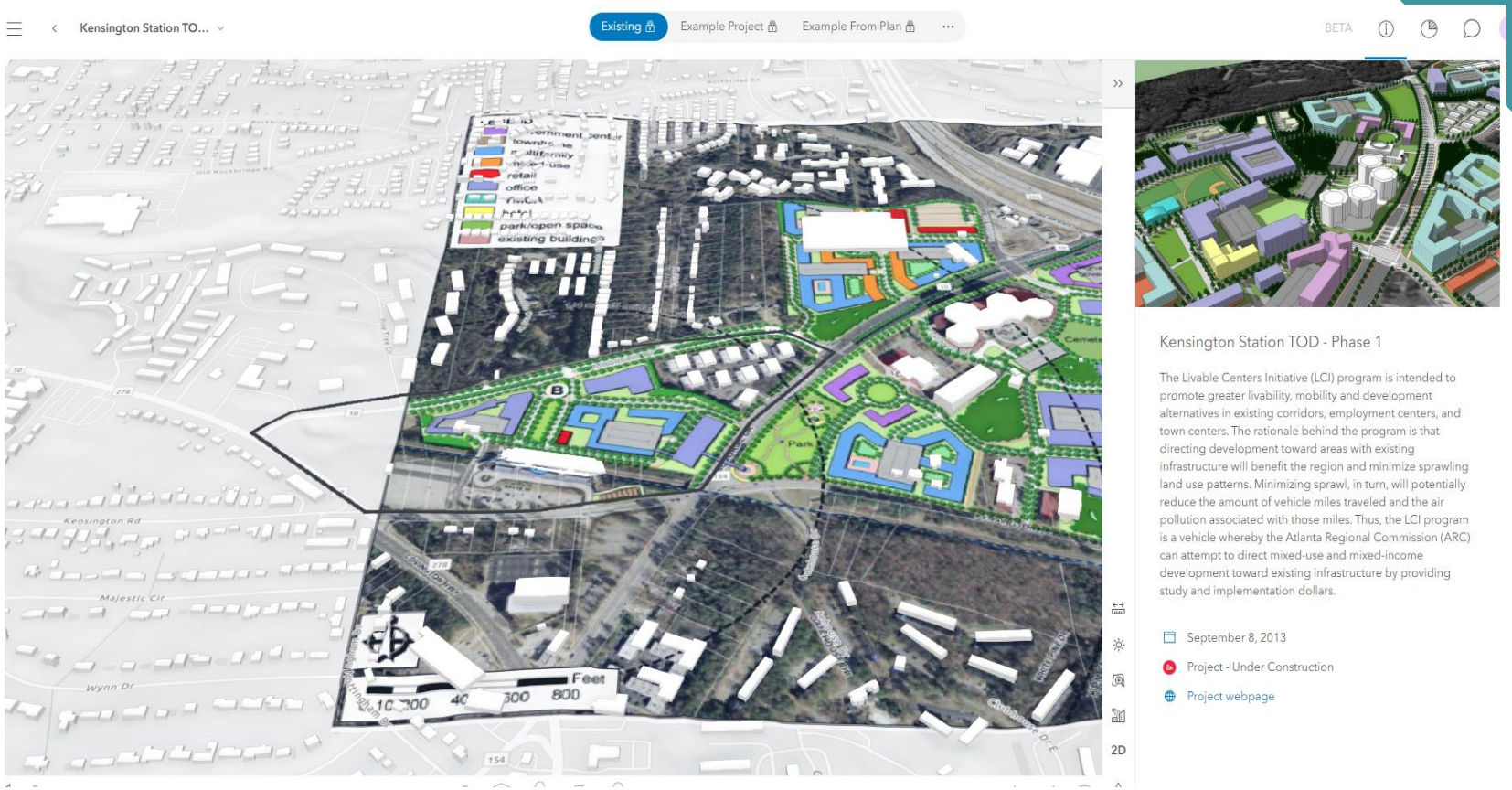


Dashboards!


Open Requests
123
Last update: 18 seconds ago
Critical Requests
11
Open, Assigned, or In Process
Last update: 18 seconds ago
Election Supplies
8
Open, Assigned, or In Process
Last update: 18 seconds ago
NOT resolved by Dominion
0
Open, Assigned, or In Process
Last update: 18 seconds ago
Hardware Issues
60
Open, Assigned, or In Process
Last update: 18 seconds ago
Facilities Issues
0
Open, Assigned, or In Process
Last update: 18 seconds ago
Average Wait Time
1.564
minutes
Last update: 18 seconds ago
Wait Time ≥ 1 hour
0
Last update: 18 seconds ago
DEMA request
1
Open, Assigned, or In Process
Last update: 18 seconds ago
Completed Surveys
0
Last update: 18 seconds ago
Overall Satisfaction
No data
Last update: 18 seconds ago
Overview
Requests
Counts
Wait Times
Mandatory Wait Time
Operation Status
Operation Status Maps
Polling Info
Voter Survey
DEMA Only Requests
IT Only Requests

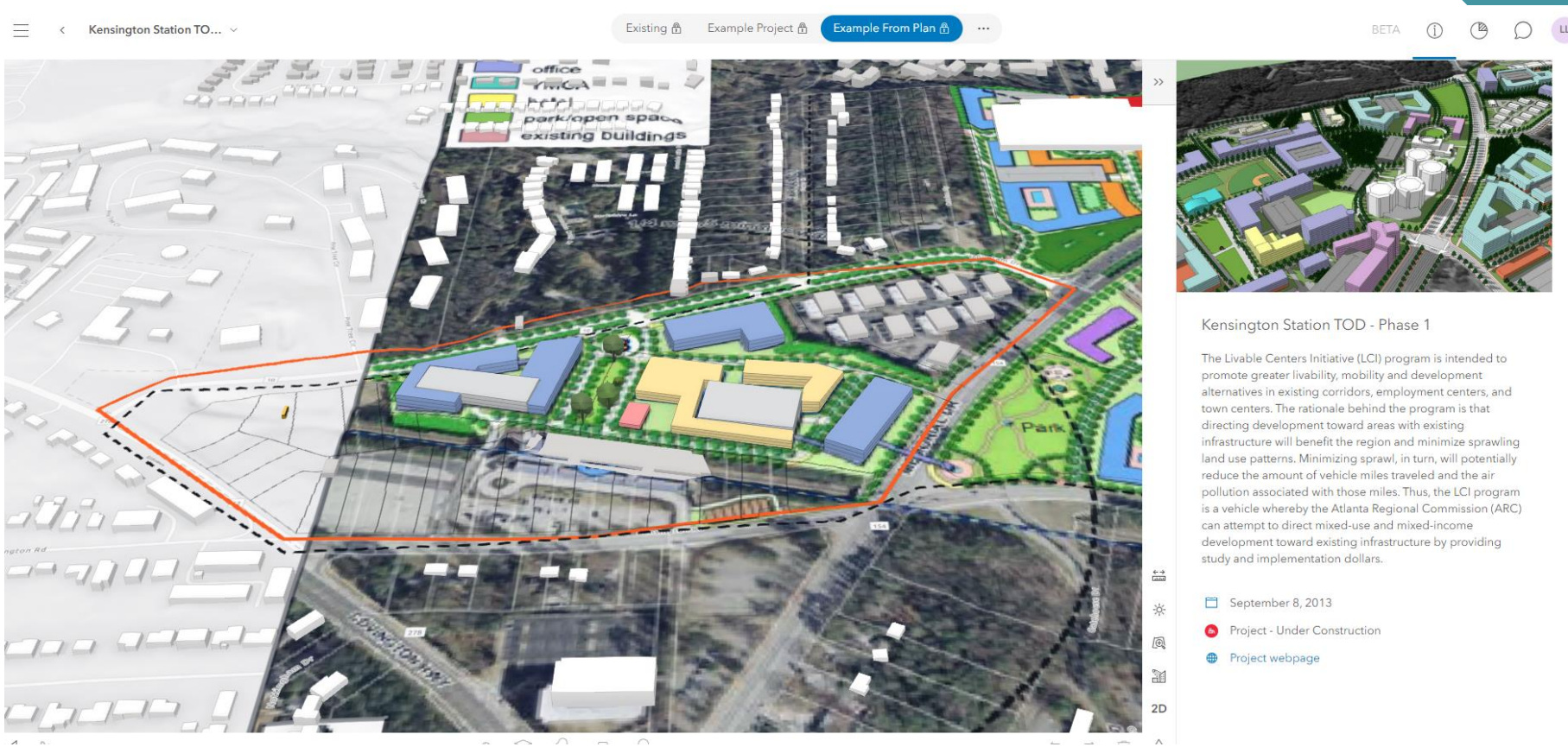
ArcGIS Urban

- Development Scenarios
- Existing Plans
- Example Developments
- Visualize in 3d
- Public Engagement



ArcGIS Urban

- Kensington TOD
- Example From Plan



Drone Program

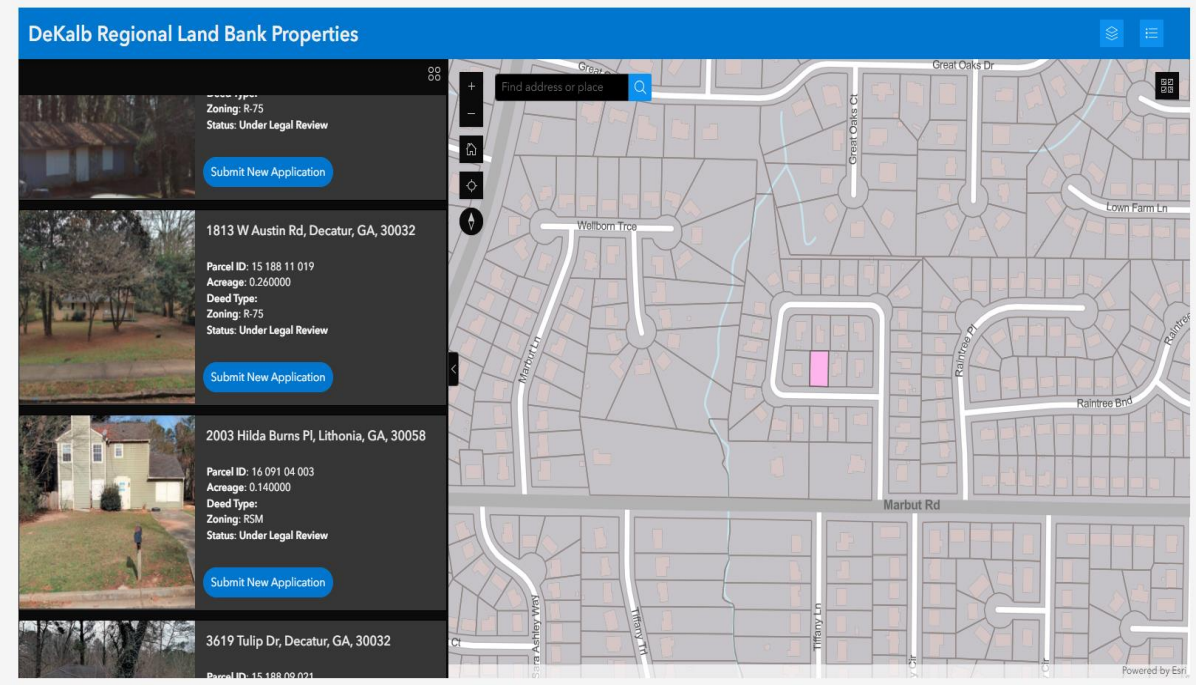
- ArcGIS SiteScan
- Quick imagery / 3d meshes
- Highlight Projects
  - before and after with Urban
- DJI Ban?
- Remote ID

- DeKalb County Landbank
- Decide DeKalb Film Database
- Parks and Recreation Projects
- Public Works Projects

ArcGIS SiteScan

- Cloud based imagery processing
- Licensed through ArcGIS Online
- Point cloud, ortho imagery, 3d mesh
- Manage drone fleet and pilots
    - Useful for FAA reporting

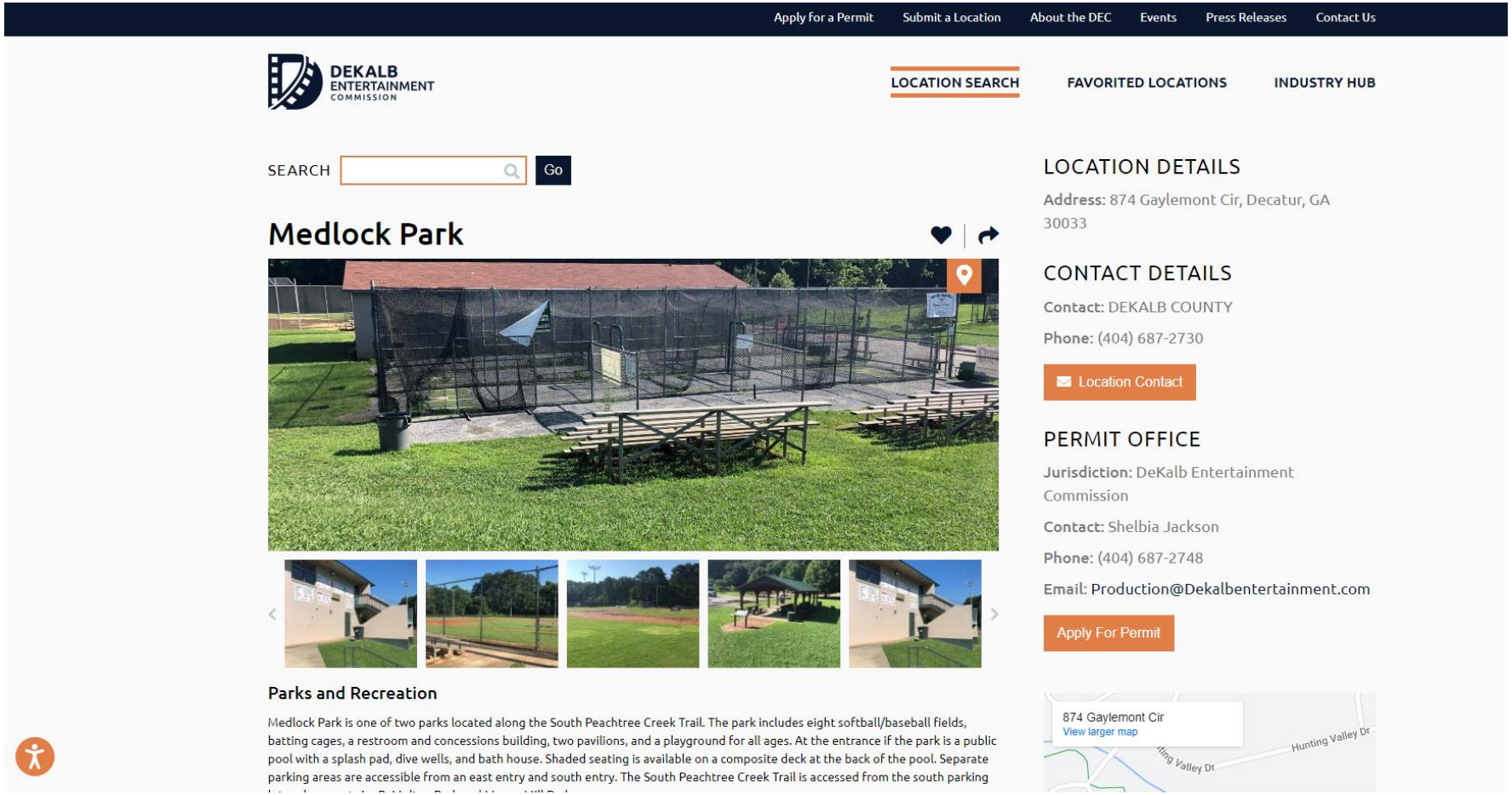
Landbank Properties



DeKalb County Landbank - 339 7th Avenue Scottdale, GA 30079

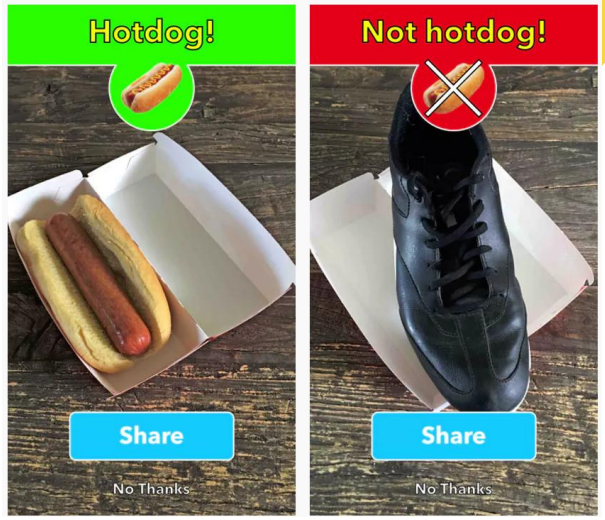
DeKalb County GIS Deparment
2 subscribers
Subscribe
0
Share
Save

DeKalb Entertainment Commission

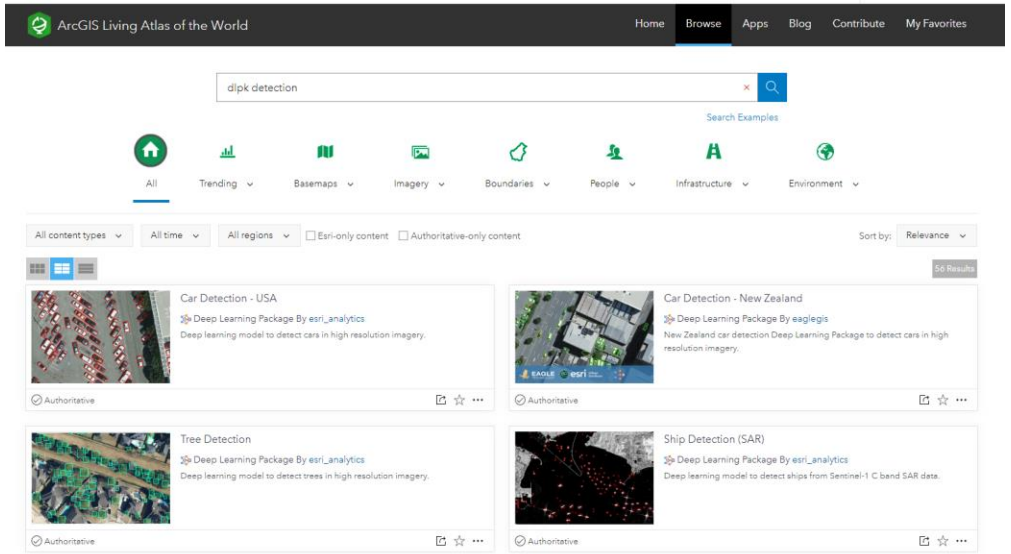


3d Mesh of popular filming location

Machine Learning (Deep Learning Models)



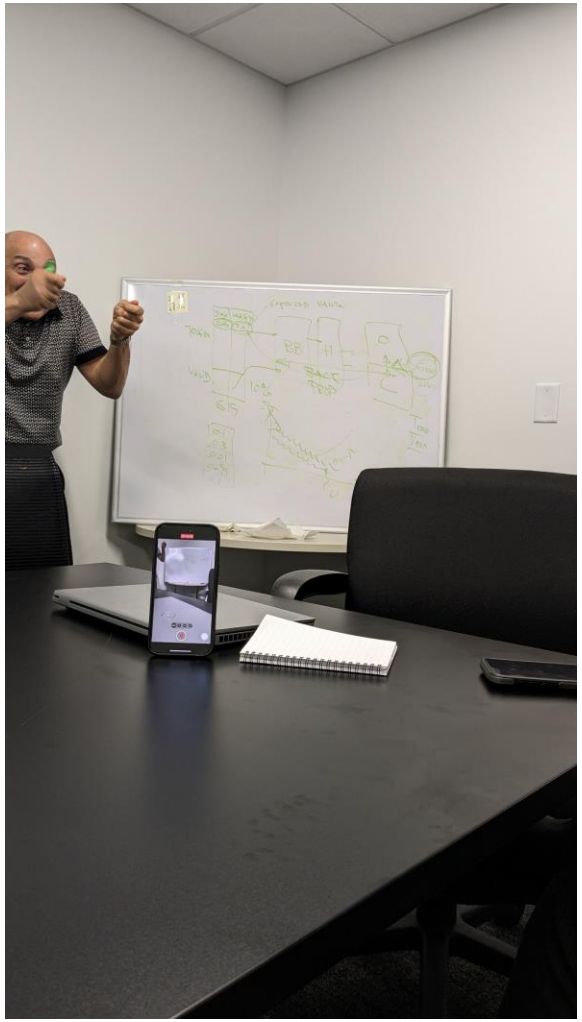
- Why?
  - Be the source of your own data
- Do you have the Power?
  - NVDA
- Data must be clean
- More data the better
- Pretrained models
  - Read the fine print
- Extract features from imagery
  - Sidewalks



ESRI Training

Mansour Raad

With over 30 years of experience in the IT/GIS field, Mansour Raad is Esri's lead big data subject matter expert. In this role, he often assists commercial and government customers in implementing big data geospatial solutions. He has performed as team lead in architecting and implementing product solutions for ArcGIS. Mansour holds a master's degree in aerospace engineering from Boston University and frequently blogs on big data topics and examples of geospatial implementations at thunderheadxpler.blogspot.com. He is an adjunct faculty member of Johns Hopkins University, where he teaches an online advanced placement course on "Big Data Analysis Tools and Techniques."



First Round

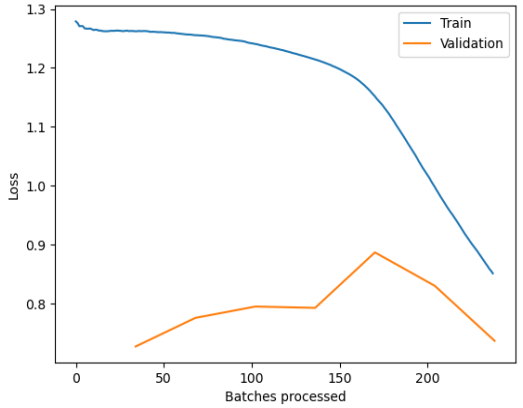
- Where to go from here?
- Clean up data
- Twist the knobs
- Get more power

DeepLab

Backbone: resnet50

Learning Rate: 1.0000e-05

Training and Validation loss

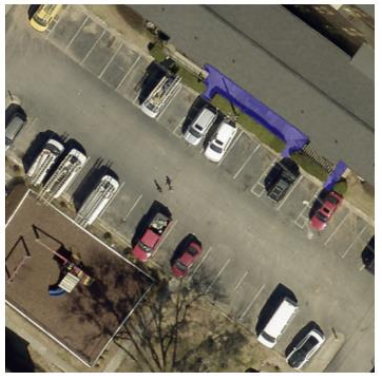


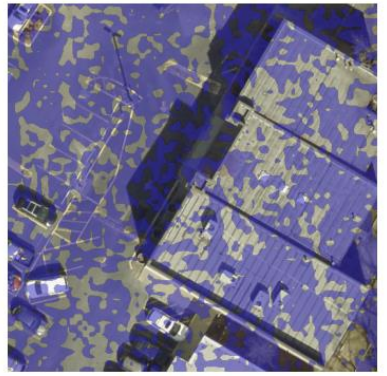
Analysis of the model

Per class metrics:

	NoData	Sidewalk
precision	0.964174	0.033677
recall	0.324670	0.661123
f1	0.485766	0.064089

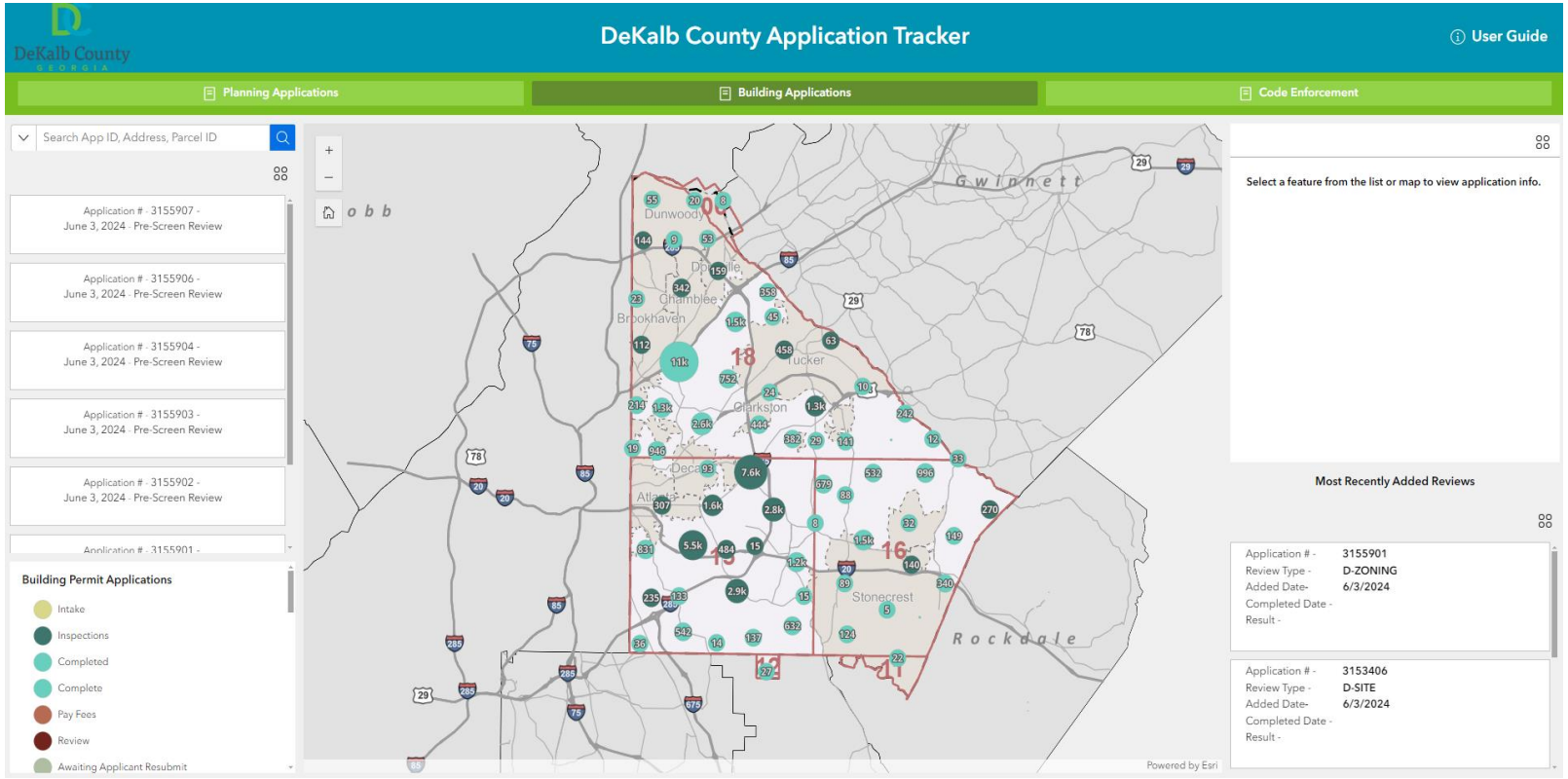
Sample Results





Building and Permit Tracker

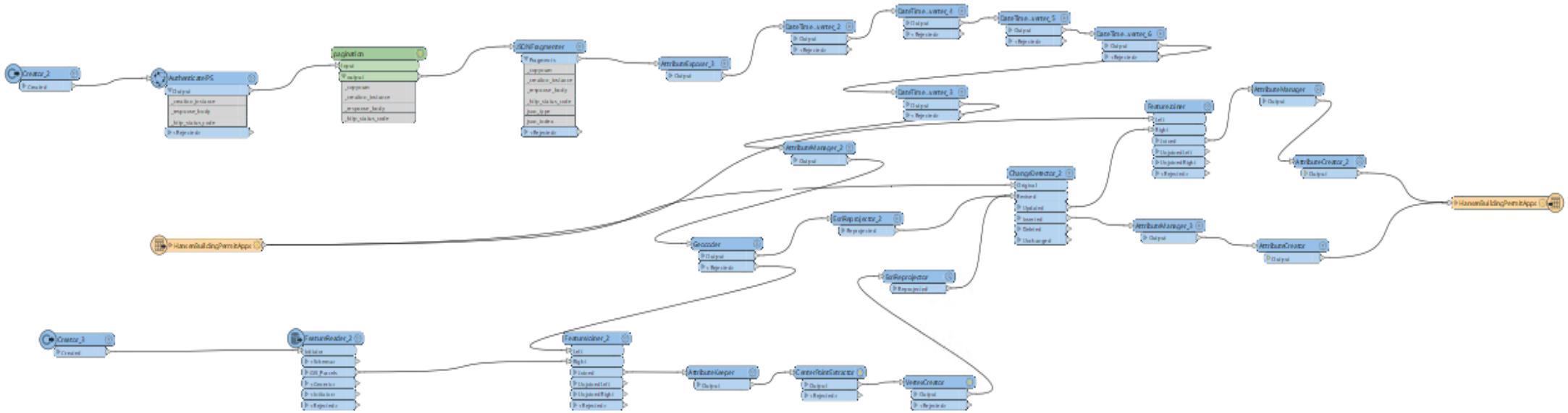
- ArcGIS Experience Builder
- FME (Data Interop)
- Infor (Permit Application)
- Batch Server / Scheduled Tasks
  - Runs every 30 minutes or so



FME (Data Interop)

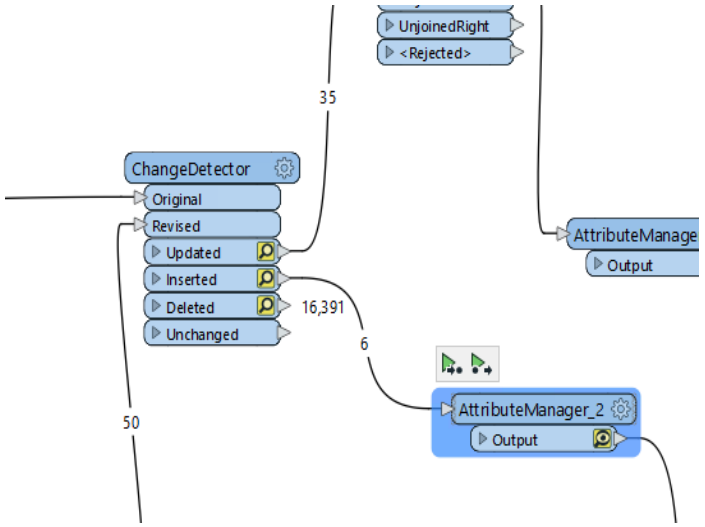
- Queries the Infor API
  - https://**********.cloud.infor.com/IPSRestServices/api/cdr/reviews/Planning/?Filter={Property:lastModifiedDateTime,operator:GreaterThan,value:{Date:{Day:{Add:-1}}}}
  - Paginates through the results if more than 500
  - Joins address field to address field in spatial data
  - Appends to permit layer
  - Change Detector (where the magic happens)

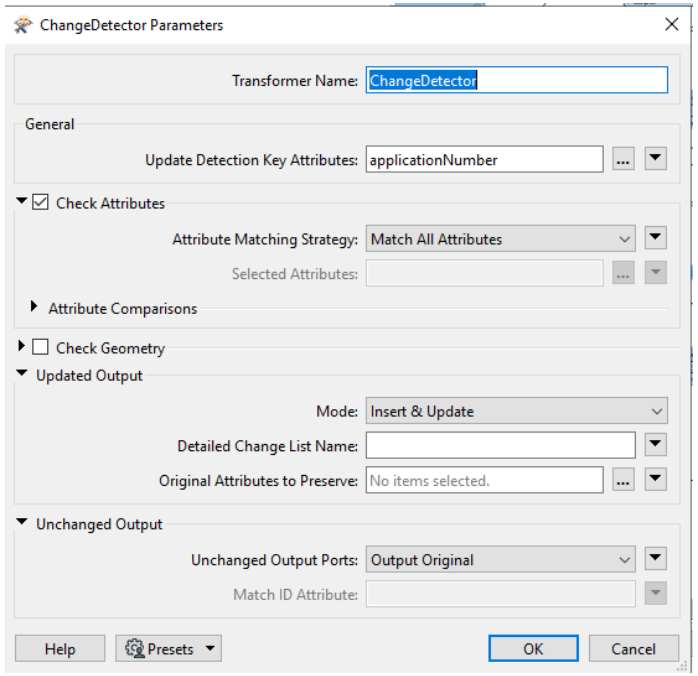
Building Permit Updates

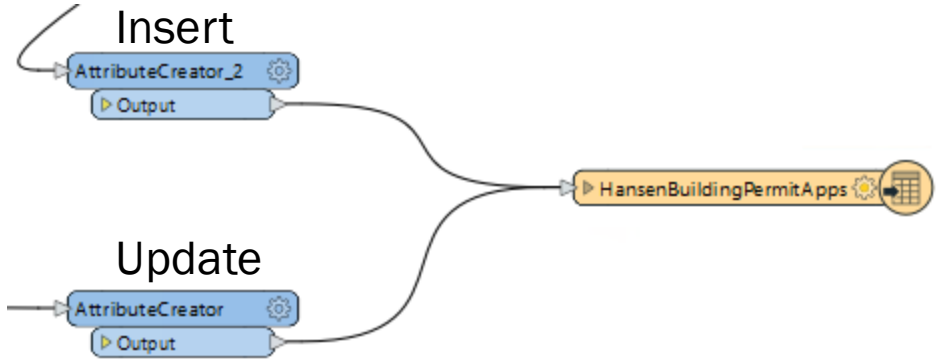


Change Detector!

- Checks features based on common id
- You tell it which fields to check
- Is it new or an update?
  - Insert or update

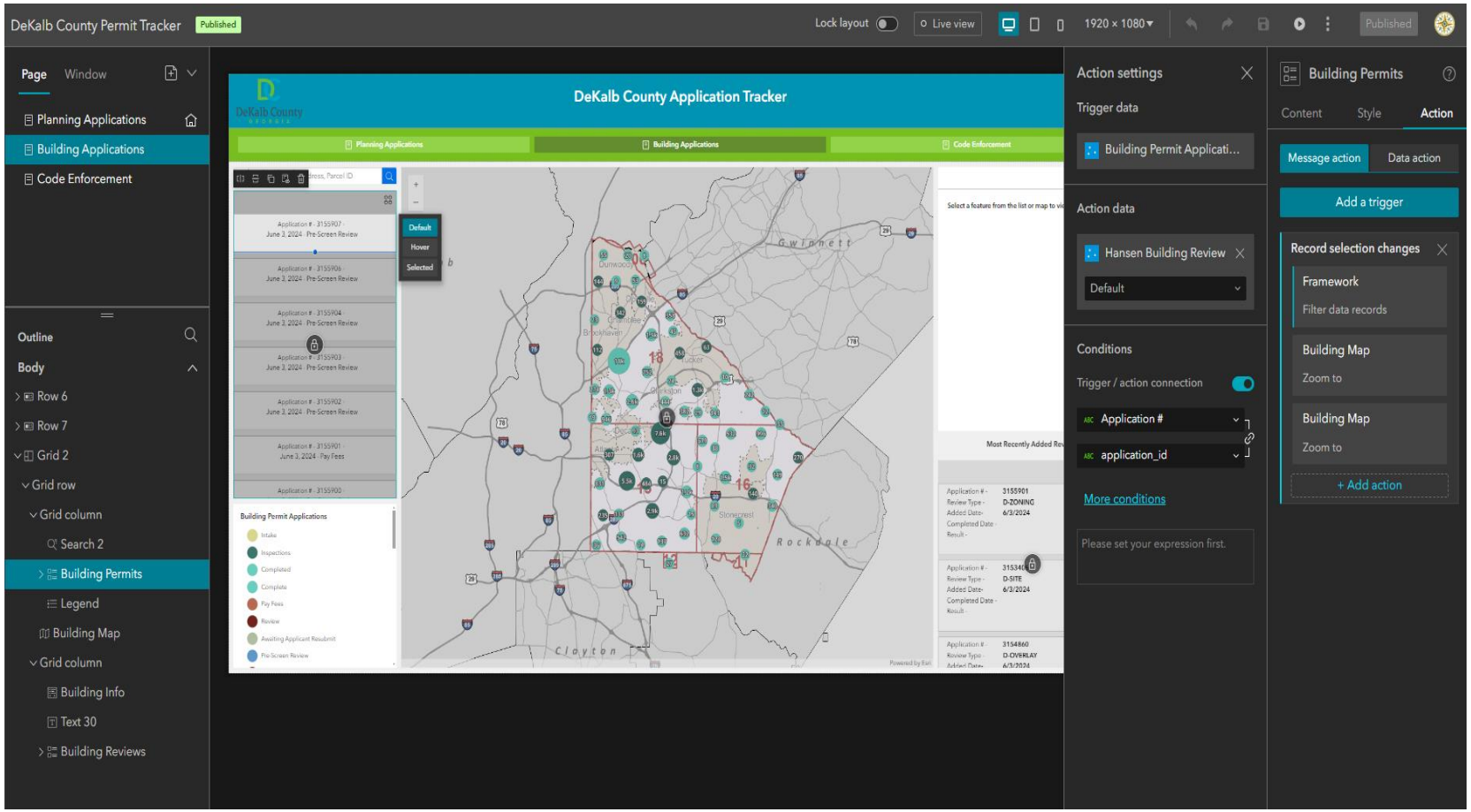






Experience Builder - Message Action

- Create Action from Permits to Review
  - One-to-many
- Click on application and get the reviews.



DEMO

- App

Thank you

Leo Ladefian

laladefian@dekalbcountyga.gov