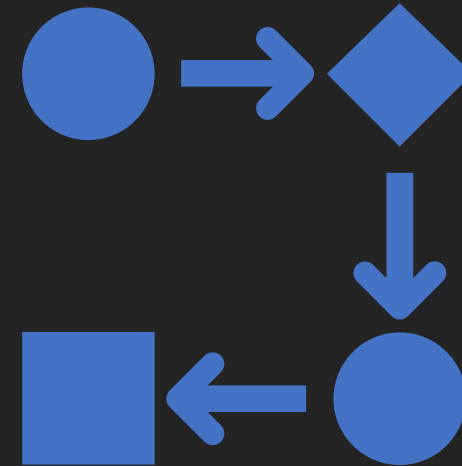


Best Bang for Your Buck Technology

National Capital Region Fire & Emergency Response Analysts Symposium
Fairfax, VA | May 3, 2024

Outline

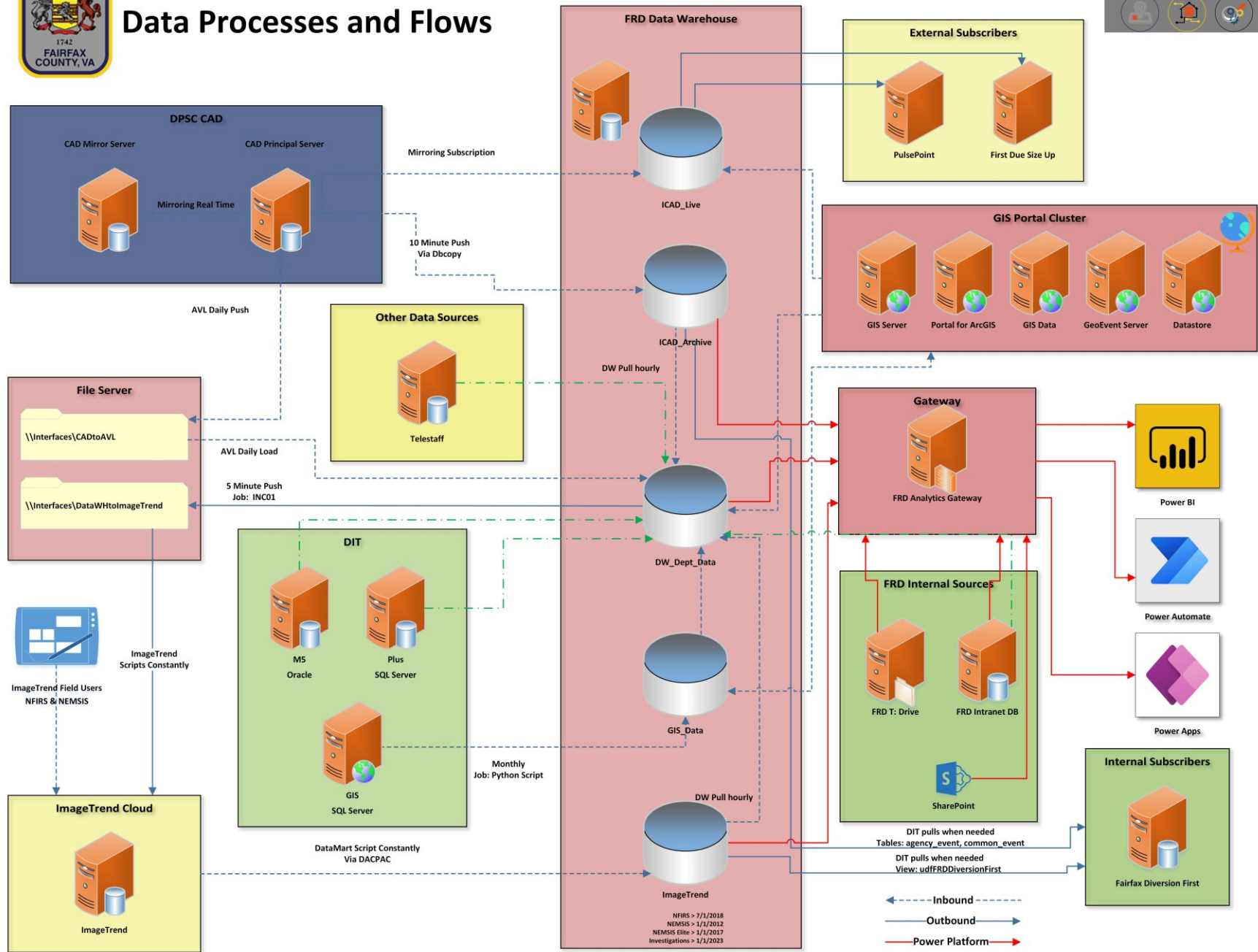
- Data Collection
- Data Processing
- Data Storage
- Data Visualization
- Project Management
- Your Recommendations





Fairfax County Fire & Rescue Department

Data Processes and Flows





Data Collection



RMS

Microsoft Forms

Survey123 & QuickCapture

Power Apps

RMS

- NFIRS shifting to NERIS
- NEMSIS
- Supplemental Questions

The screenshot shows a web-based form titled "Vehicle Extrication" with a toolbar at the top containing buttons for Save, Print, PDF, CAD, Messages (0), and Close. The form fields are as follows:

- Type of Extrication Activities Required:** Three buttons: "Stabilization Only", "Entrapped", and "Pinned".
- Number of Vehicles with Occupants Requiring Extrication:** A text input field.
- Unit(s) Performing Extrication:** A text input field with the placeholder "Find a Value...", a list icon, and a search icon.
- Time Extrication Completed:** Two text input fields and a clock icon.
- Vehicle Type:** A text input field with the placeholder "Find a Value...", a list icon, and a search icon.
- Vehicle Type - Other:** A text input field.
- Alternative Fuel System?:** A text input field with a dropdown arrow and a list icon.
- Stabilization Equipment Utilized:** A text input field with the placeholder "Find a Value...", a list icon, and a search icon.
- Stabilization Equipment Utilized - Other:** A text input field.
- Vehicle Position (when found):** A grid of buttons: "On Wheels", "On Side", "Overturned", and "Unstable Position Over Embodied".

Microsoft Forms

- In your personal account
- Within a Microsoft Team
- Can be integrated with Power Automate



Fairfax County Fire and Rescue Department
Data Analytics
Strategy Management
Division

Data, Analysis and GIS Request
Form Fairfax County Fire and Rescue
Department

This form is utilized by members of the FCFRD to request data, analysis or mapping products from the FCFRD Data Analytics Strategy Management Division.

Hi, John. When you submit this form, the owner will see your name and email address.

* Required

1. What are you requesting? *

☒ Incident or Response Data

☐ Patient Care or Clinical Data

☐ GIS or Mapping

☐ Other

2. Please describe the details of your request. *

Survey123 & QuickCapture

- ▶ ArcGIS Online
- ▶ ArcGIS Enterprise
- ▶ Survey123 – Form Information
- ▶ QuickCapture – Button Press

The screenshot shows a mobile application interface for a "Smoke Alarm Installation Form". The form is divided into two main sections: "Installation Details" and "Location Details".

Installation Details:

- Logged On As: fire.gis@fairfaxcounty.gov
- How many smoke alarms were installed? * (Text input field)
- How many batteries were provided? * (Text input field)
- Is this a hearing impaired detector? * (Dropdown menu with "No" selected)
- Approximate year of replaced alarms (if known) (Text input field)

Location Details:

- Pinned Location * (Map view with a location pin and a "Position source access error" message)
- Matched Location Address * (Text input field)
- Address Note: If the address below is wrong, click on the map and search for the correct address or move the icon to the correct location.
- Apartment or Suite # (Text input field)

Resident Details:

- Name (Text input field)
- Phone (Text input field)
- Signature (Text input field with a signature icon)

The screenshot shows a mobile application interface for "ICMS 3.0 TLM Brazil". The interface is designed for data collection and is organized into several sections.

Team Name: (Text input field)

Manuals (PDF): (Dropdown menu)

Tutorials (Video): (Dropdown menu)

Forms: (Dropdown menu)

Blitz: (Section header)

- Blitz Rescue (Blue button)

Triage: (Section header)

- A (Live Victim < 12 Hours) (Green button)
- B (Live Victim > 12 Hours) (Yellow button)
- C (Possible Live Victims) (Orange button)
- D (Deceased Only) (Red button)

Victim Extrication: (Section header)

- Live (Green button)
- Deceased (White button)

GPS accuracy 30m (Status bar at the bottom)

PowerApps

- Low-code solution
- Licensing costs
- Model-driven vs Canvas

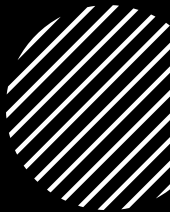
The screenshot displays a mobile application interface for the FCFRD Fire QA Incident Checklist. The app features a red header bar with a hamburger menu icon on the left, the FCFRD logo in the center, and the title "FCFRD Fire QA Incident Checklist" on the right. Below the header, a red bar contains the incident address: "E241231316 - FHO - Box 42702 - 8517 DURHAM CT". A navigation bar with a grey background contains tabs for "Comms", "Water Supply", "Actions", "Hoses", "Ladders", and "Photos", with "Comms" currently selected. The main content area is white and contains the following fields:

- Dispatch Date Time:** 05/02/2024 11:38:11
- Water Supply Report:** A text input field with a dropdown arrow on the right.
- On Scene Report:** A text input field with a dropdown arrow on the right.
- Situation Report:** A text input field with a dropdown arrow on the right.
- First Lap Complete:** A text input field with a dropdown arrow on the right.

At the bottom of the screen, there is a red bar with the text "On Fire" and a dropdown arrow on the right.



Data Processing



Power Automate

R

Python

ETL / SSIS

Power Automate

- Cloud automation platform
- If this thing happens, then do this, and then do this other thing
- Unites the Microsoft world for you
- Over 1,000 API connectors
- Prebuilt templates for rapid deployment
- Range from simple to very, very complex



Python and R

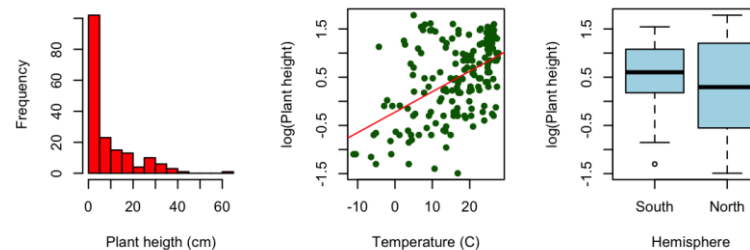
Python

- General-purpose programming language
- Python is the 2nd best language for any use case
- Fairly easy to learn with a simple syntax
- Libraries for graphics and data visualizations



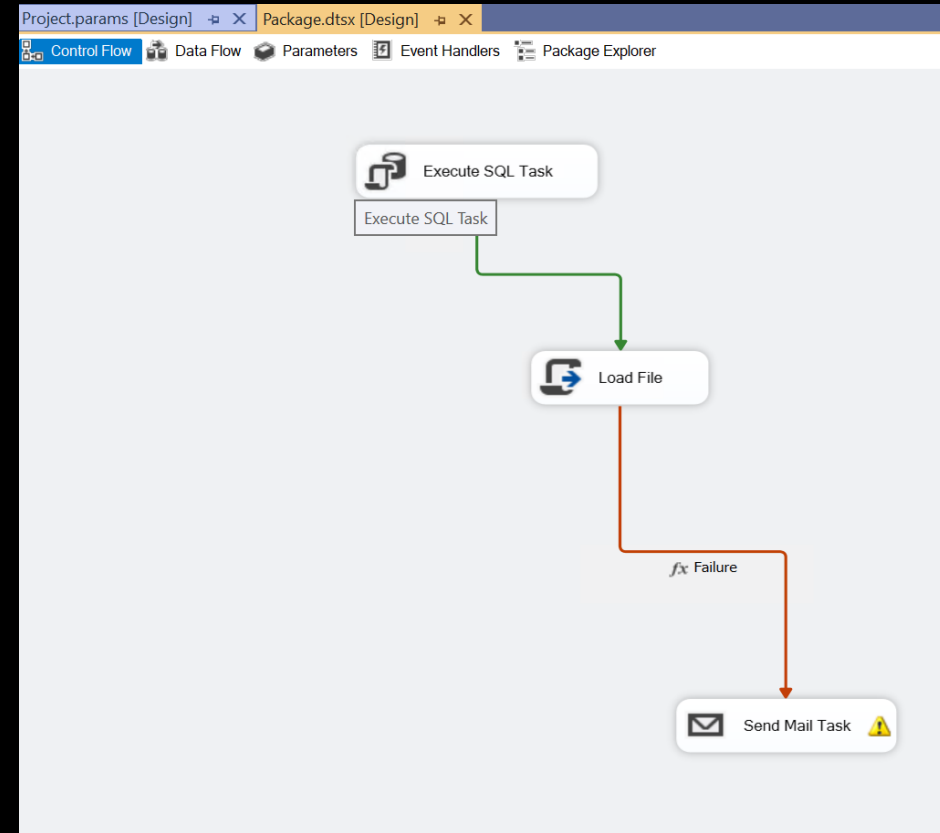
R

- Statistical programming language
- Very sophisticated
- Everything from data manipulation to visualization



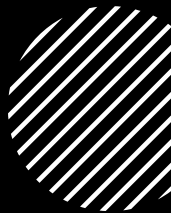
ETL / SSIS

- Requires a Microsoft SQL Server
- Uses Visual Studio
- Allows for processing of information for storage in a database
- Can create and read files





Data Storage



Microsoft Excel

Microsoft Lists

Databases

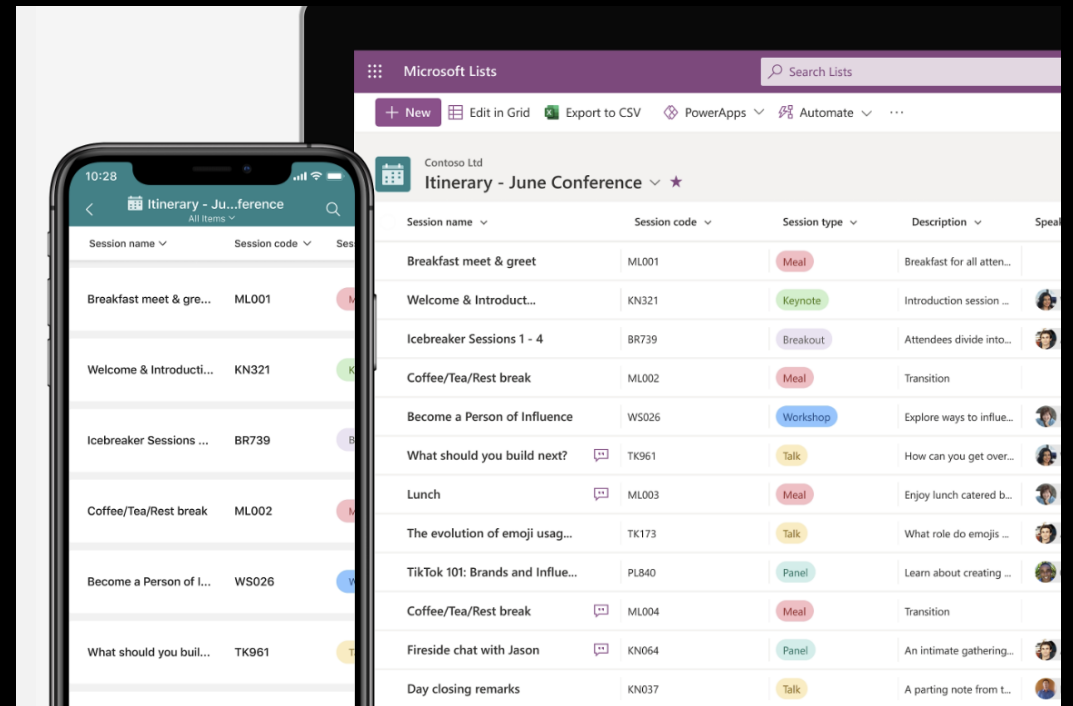
Microsoft Excel

- Unfortunately, where data storage often starts
- Not scalable
- Two-dimensional



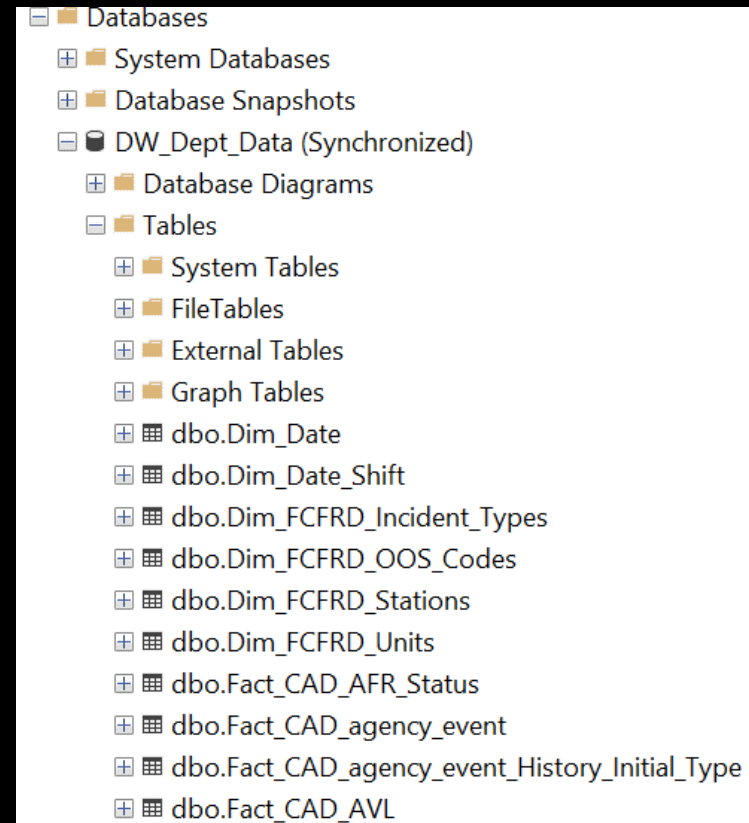
Microsoft Lists

- Resides within SharePoint
- Simple and flexible
- Both app and web-based
- Easily integrated with Power Automate



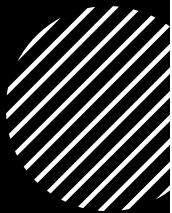
Databases

- May require staff to maintain
- Very robust and scalable
- Can be cloud or on-premise
- Infinitely configurable





Data Visualization

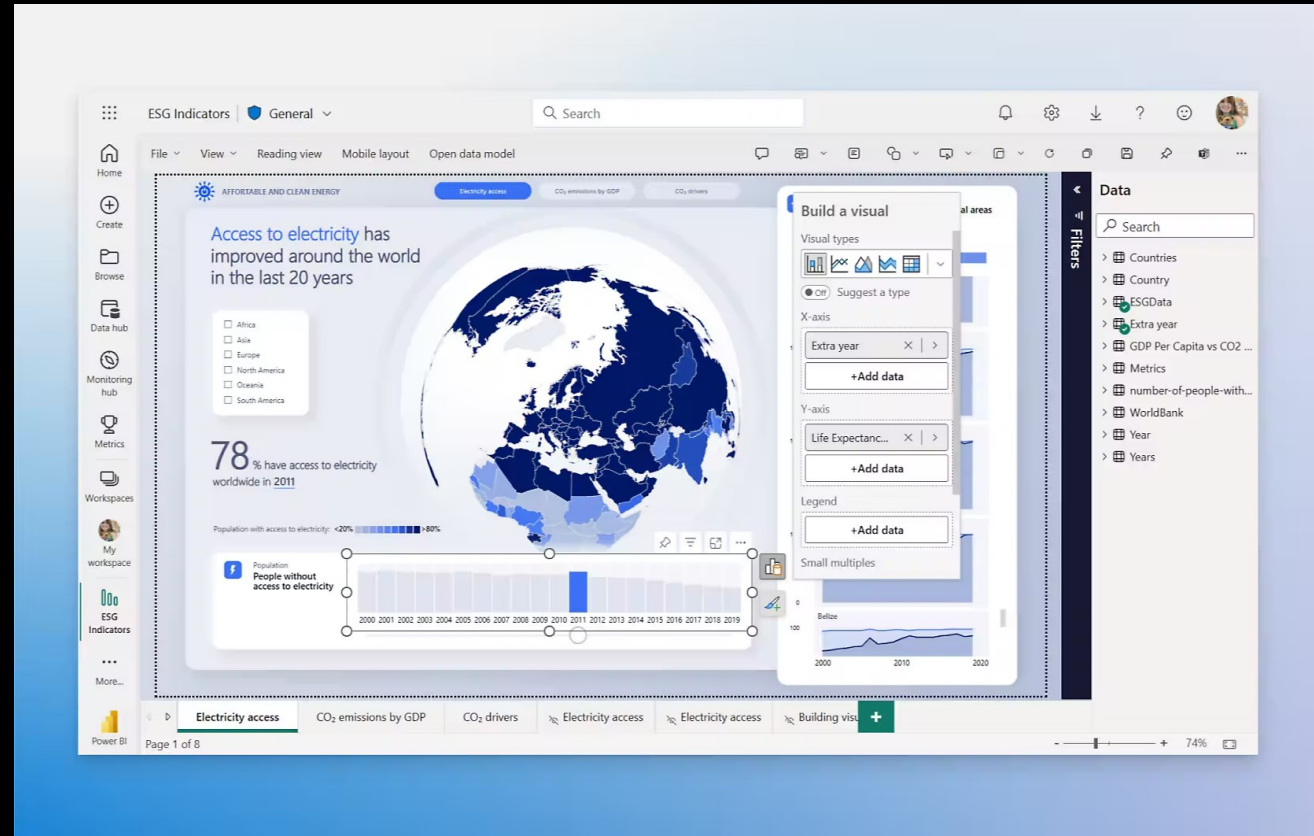


Microsoft Power BI

ArcGIS

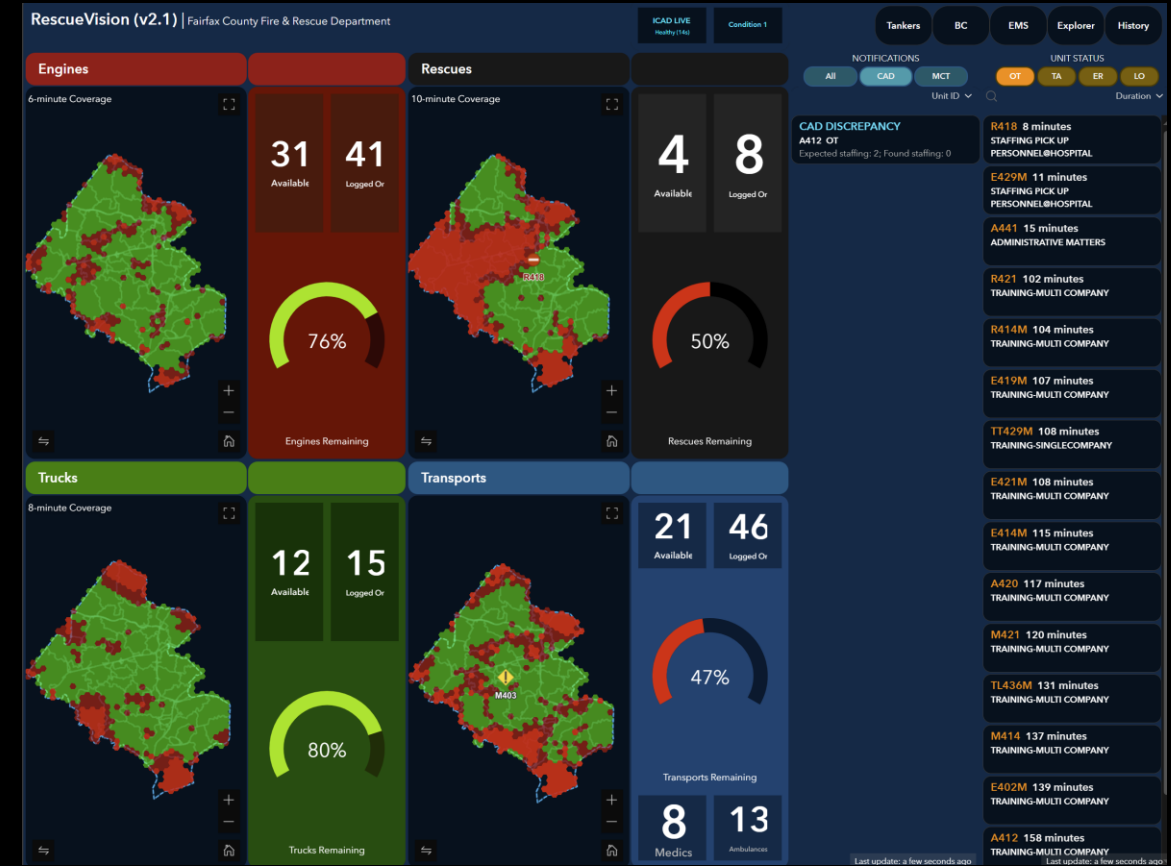
Microsoft Power BI

- Data visualization product
- Integrate and transform disparate data sources



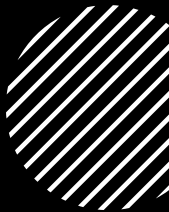
ArcGIS Tools

- Range from simple to complex
- ArcGIS Online vs ArcGIS Enterprise
- May require staff to develop and maintain
- Great for visualizing geospatial information





Project Management

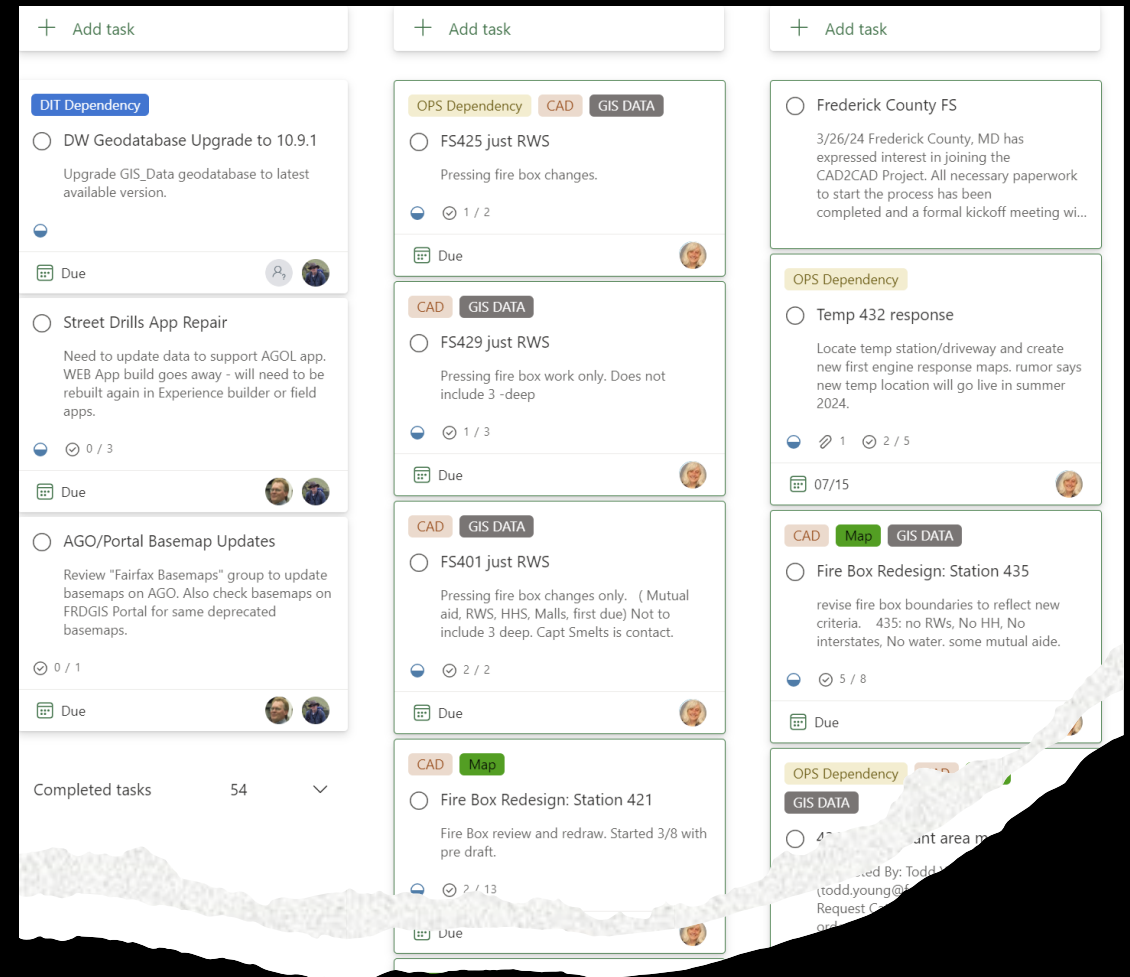


Microsoft Planner

Microsoft Lists

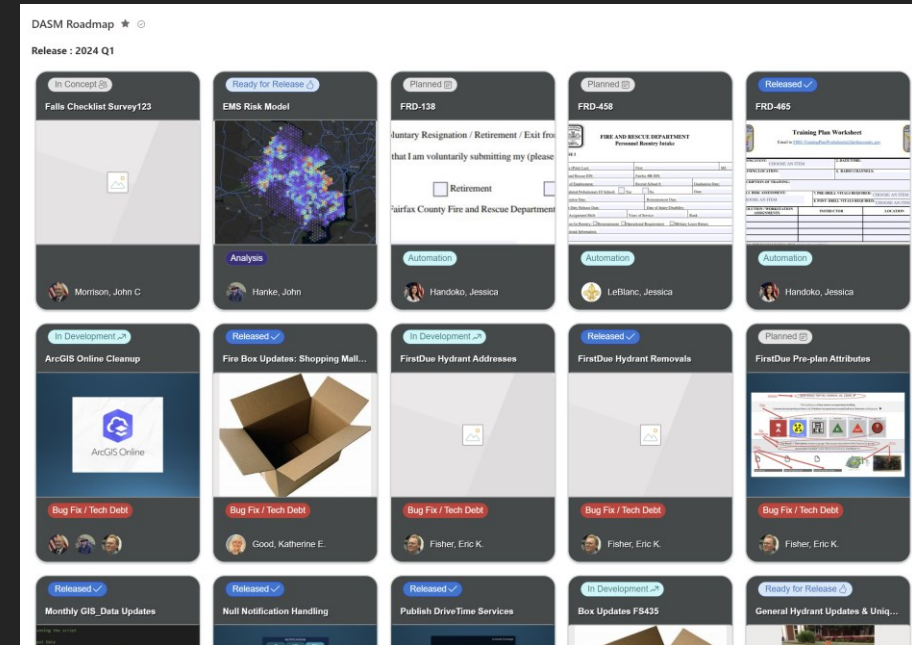
Microsoft Planner

- Can be within a team
- Create buckets of work which contain tasks
- Assign tasks to team members
- Tasks can be tracked as New, In Progress or Completed



Microsoft Lists

- Expandable list of items
- Customizable columns and options
- Views based on pre-selected filters



What Did I Miss?

Questions?

John Morrison



GitHub Resource
Repository



Analysts LinkedIn
Group

