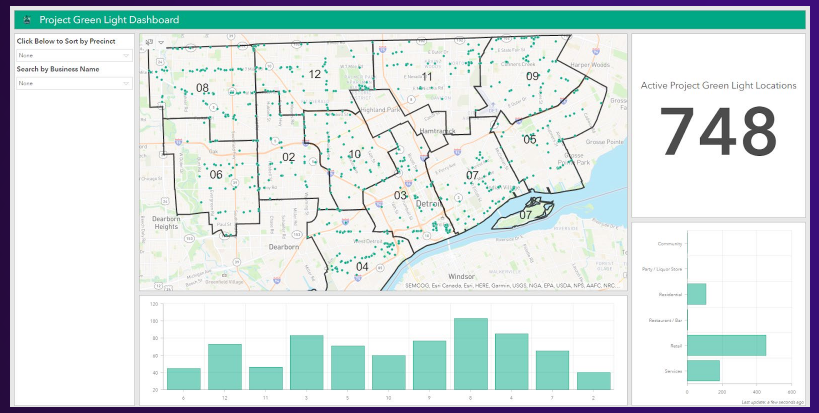
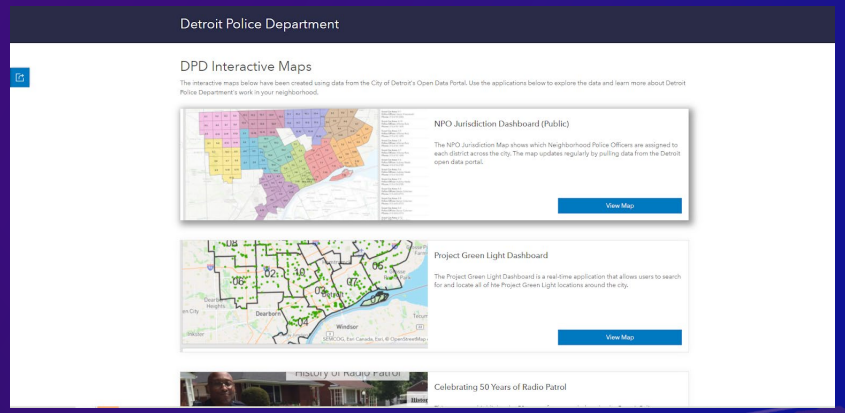
Reviving Public Safety Infrastructure: Building Detroit's Public Safety Hub

Frank Romo – GIS Tech Project Manager

Introduction

- Frank Romo is the main Public Safety GIS Tech for the City of Detroit.
  - His role is to help manage data, train employees, and develop solutions to improve public safety operations for the City of Detroit.
  - Responsibilities include supporting tech for multiple agencies and creating a coordinated GIS effort for future success.





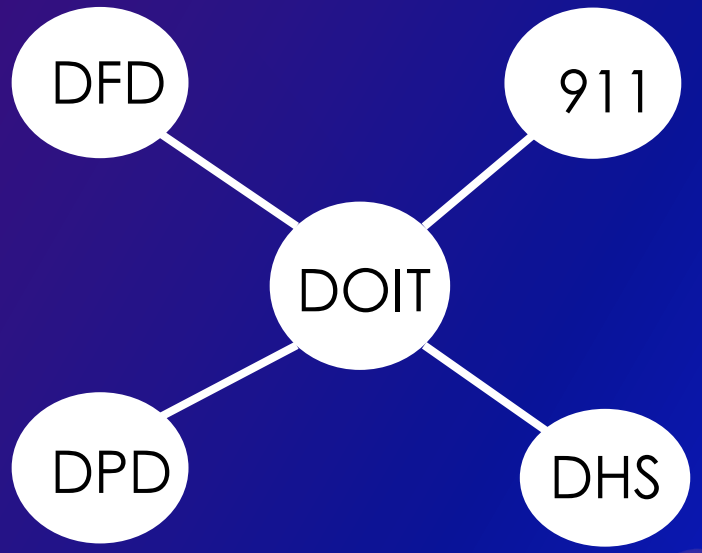
Department of Innovation and Technology (DOIT)

- DOIT's goal is to develop solutions and provide technical support for all public safety agencies.

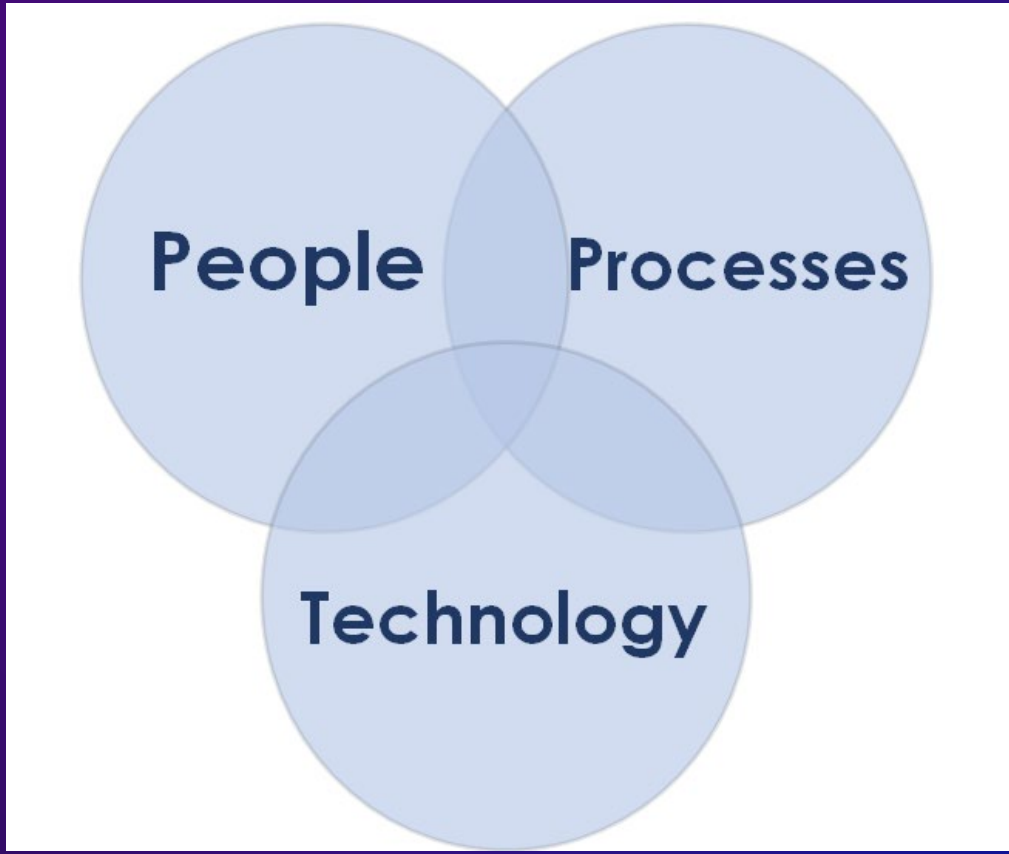
- By working with the various agencies, DOIT has built a GIS and technical infrastructure to support all public safety related activities from 911 dispatch to crime intelligence, fire prevention and neighborhood policing.

Providing GIS Services and Tech Support

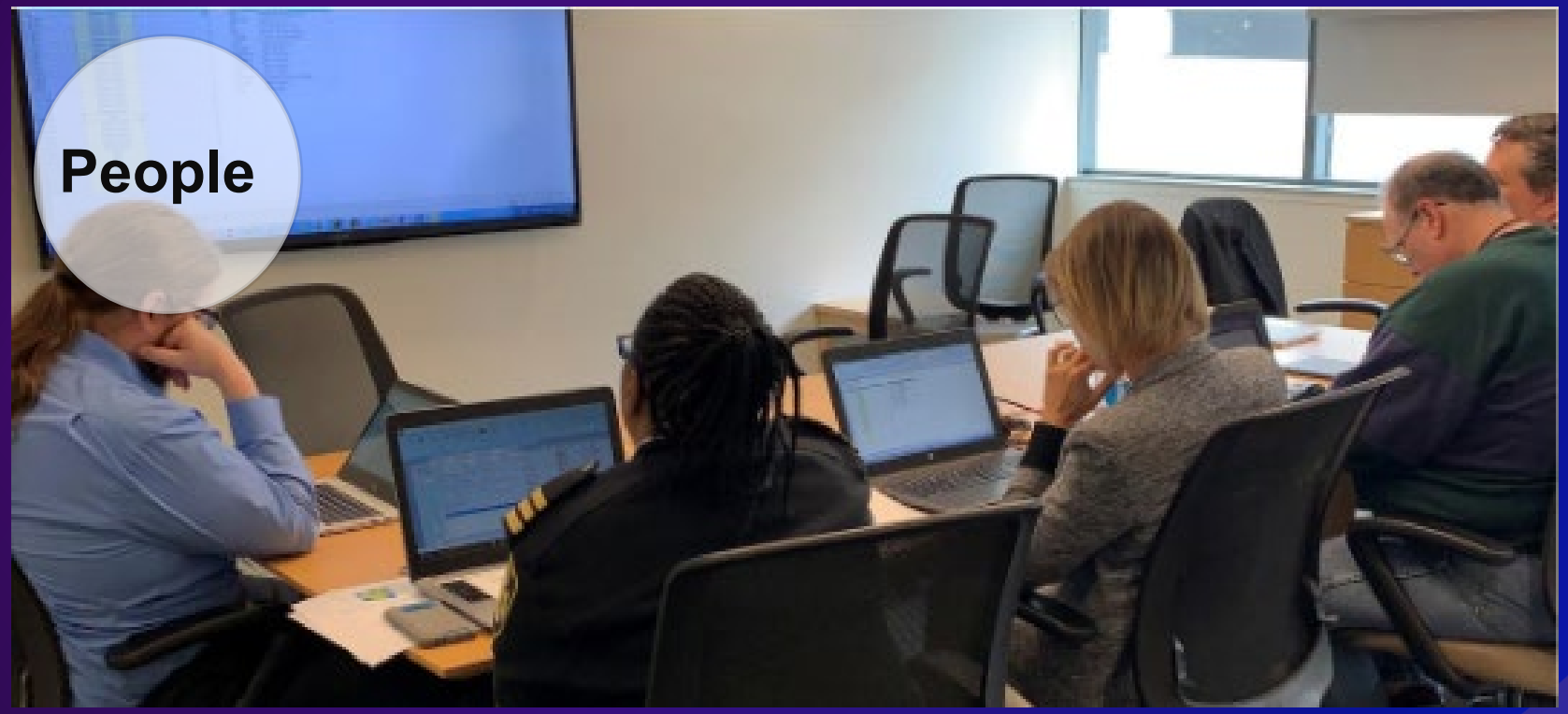
- DOIT – Dept. of Innovation and Technology
- DPD – Detroit Police Dept.
- DFD – Detroit Fire and EMS
- DHS – Dept. of Homeland Security



What Does the Process of Building a New GIS Infrastructure Look Like?



Coordinating All Appropriate Technical and Executive Staff



Listening to Stakeholder Concerns and Providing Tools for Engagement

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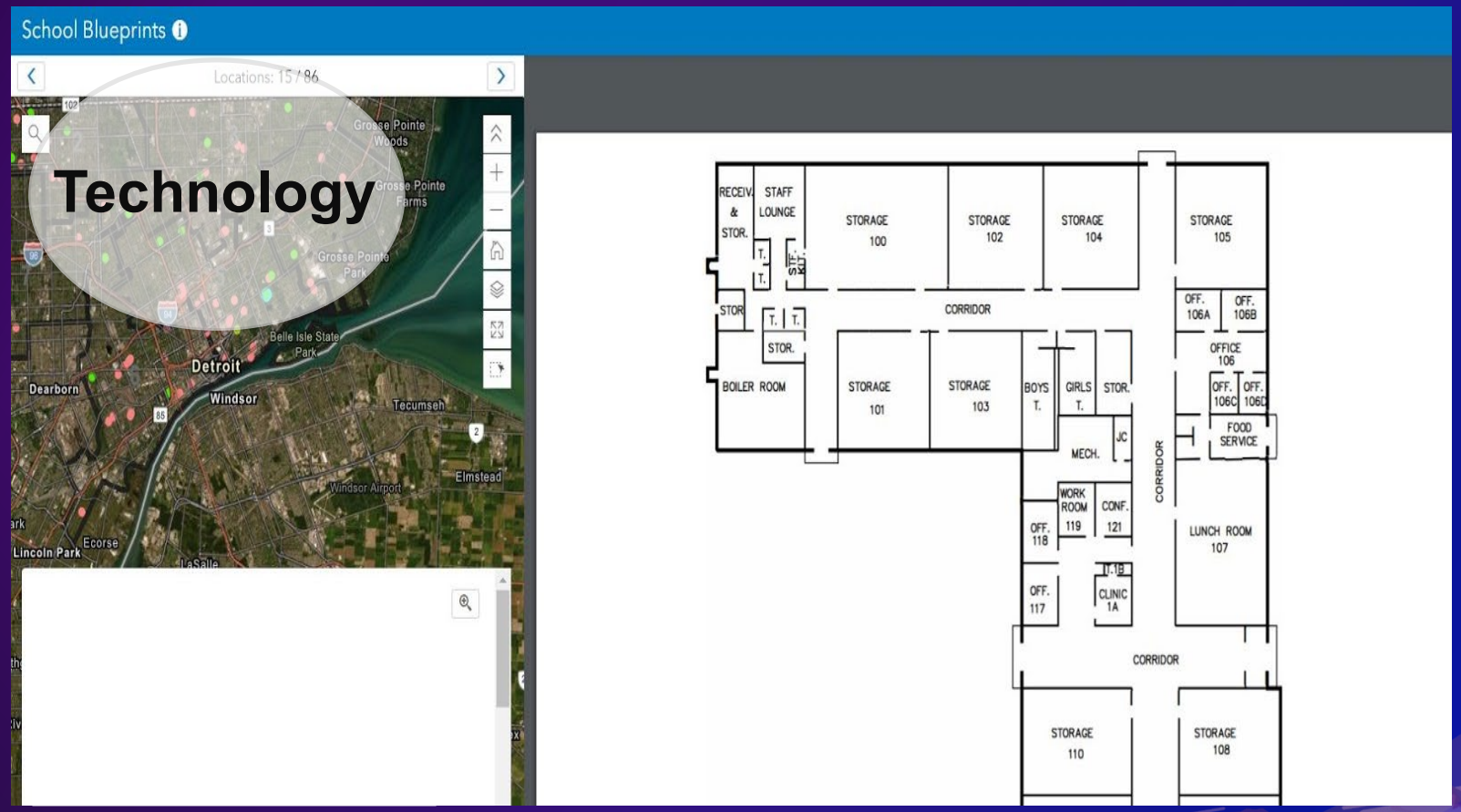

Steps to Creating Long-Term GIS Infrastructure

I. ***Recognizing the political and financial landscape***

II. Identifying technical issues and training end users

III. Creating core GIS infrastructure and building leadership/expertise

IV. Building apps and tools for everyday use

Challenge 1:
Recognizing the political and financial landscape

I. Recognizing the political and financial landscape

Technical

- Inconsistent source data
- Outdated technical systems
- Lack of updates for multiple years
- No enterprise GIS Infrastructure

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- 2013 city bankruptcy
- Reduction in size of technical personnel
- Reduction in size of police, fire and emergency responders

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Political

- Negative national news media regarding public safety response times
- Lack of investment in technical infrastructure and personnel

I. Recognizing the political and financial landscape

Solutions

Technical

- Increased technical capacity
- ArcGIS enterprise solution
- Long-term vision for tech infrastructure

Financial

- Investment in tech, staff, and software
- Utilizing new technology and pilot programs to earn grant money
- Developing additional support for emergency responders

Political

- Great support from CTO and all public safety agency leadership
- Creation of internal champions/allies for supporting the technical overhaul

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Challenge 2:
Identifying technical Issues and Training End Users

II. Identifying key technical issues and data workflows

- Inconsistent Source Data
  - *Solution:* Identify existing datasets and create new canonical source data to establish greater buy-in for the creation of enterprise solutions.

- Training and Development:
  - *Solution*: Create training tools/manuals and Standard Operating Procedures for data usage, documentation and manipulation.

- Implementation & Maintenance:
  - *Solution*: Establish routine meetings and consistent scheduling for implementing new software and maintaining source data for future use.

Establishing Authoritative Data Sources

Primary data sources for public safety include the following layers:

- Address points
- Street Centerline data
- EMS, Fire, Police boundaries/battalions/precincts
- Critical Infrastructure

Establishing Authoritative Data Sources

Creating Centralized, Sharable, Editable Databases

- Agencies must have centralized database for maintaining and updating datasets.

- Create multiple access points for users to edit data but limit editing privileges to select individuals as to not produce the same bad data practices

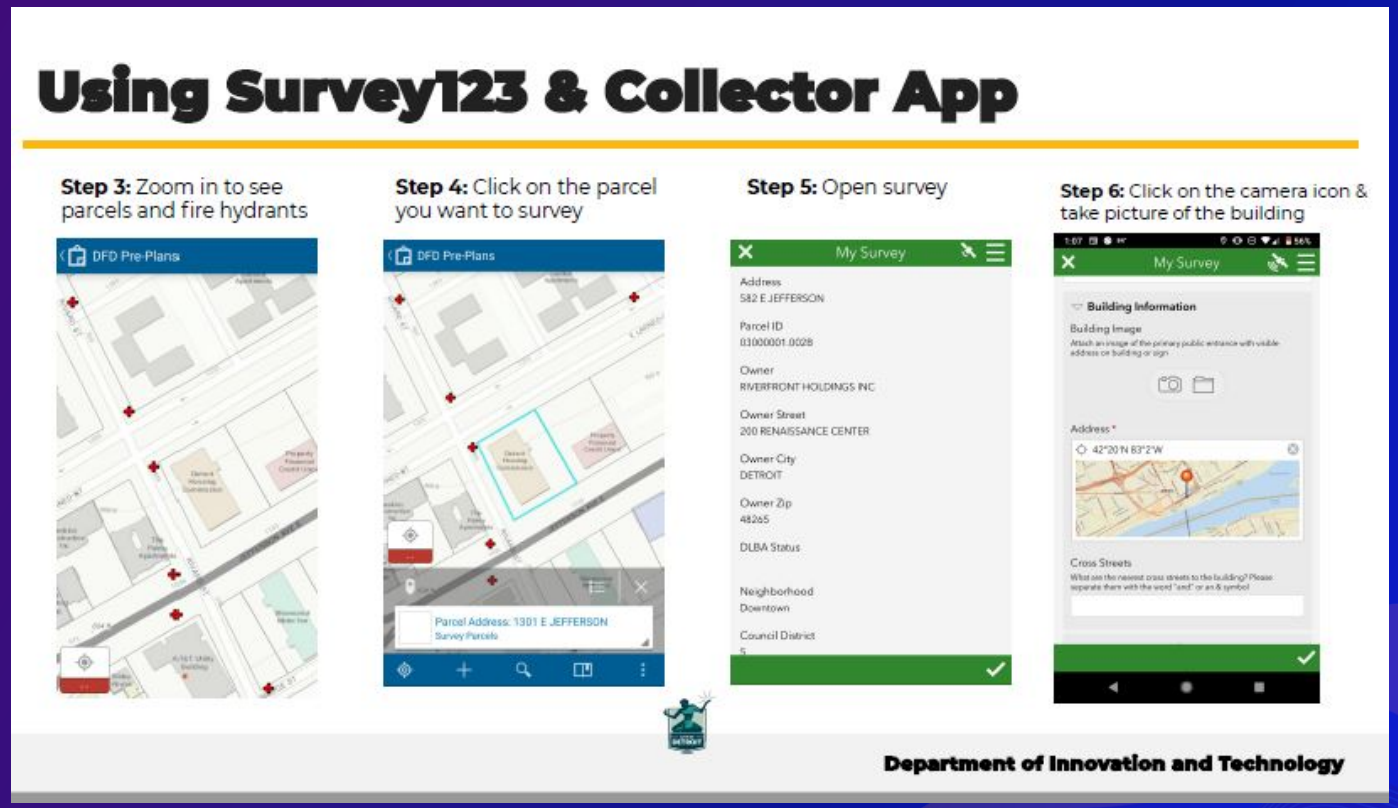
Training End Users with Various Skillsets

- End users may not be GIS professionals or heavy data users. This means that we must create SOPs, training guides, and user permissions to ensure that all data is properly handled.

- Since we are trying to implement GIS solutions across multiple departments it is important to create department specific training materials that respond to different user needs.

Training End Users with Various Skillsets

- Examples Include:
  - *Step by Step Tutorials*



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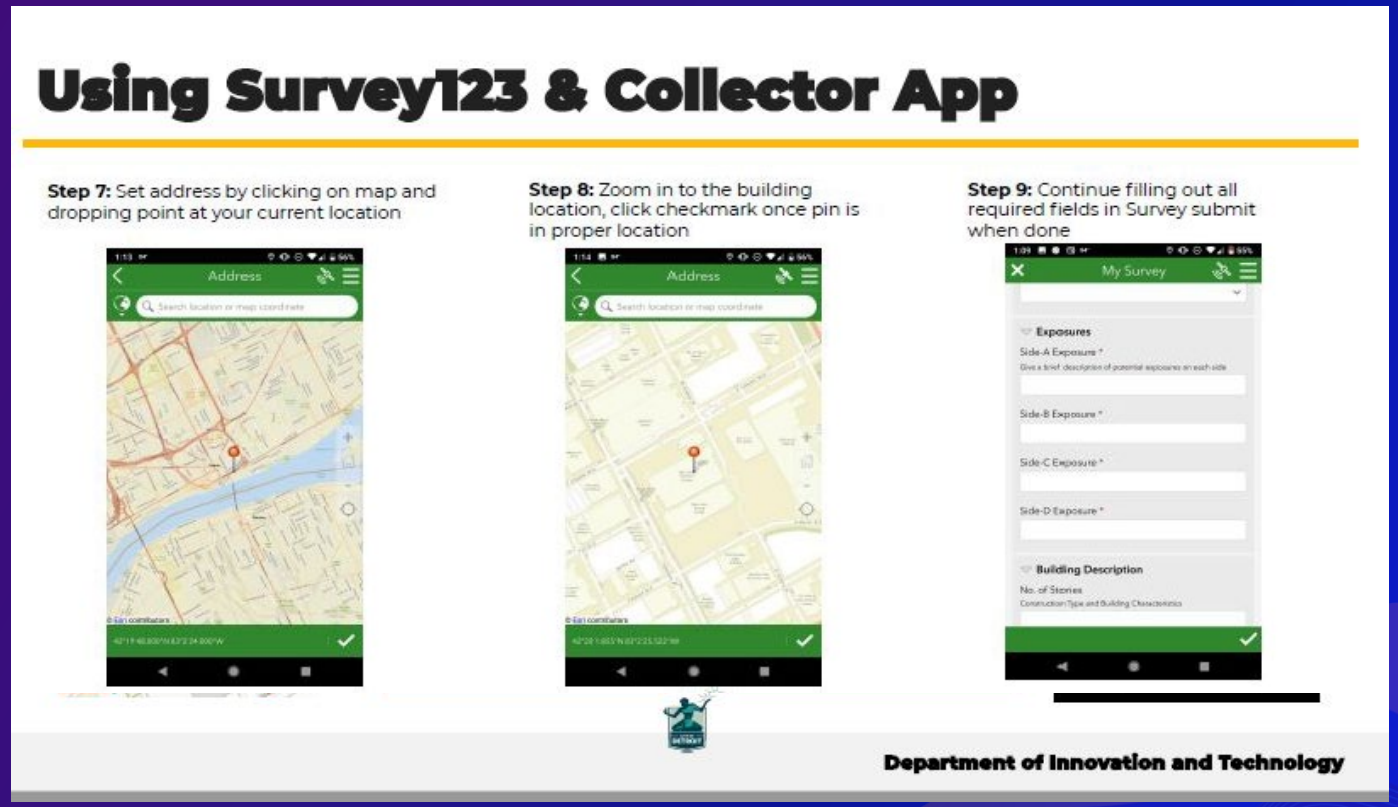

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Example Addresses

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Street Addresses Without Prefix

Street Number	Street Prefix	Street Name	Street Type
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5400		BRUSH	STREET

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Freeways

All major freeways are entered into the CAD system using a letter-number combination: N M 10, S I 75, W I 94.

Searching for Freeways in the CAD system is a 3-Part Formula:

Direction + Freeway Letter Abbreviation + Freeway Number

For Example:

Michigan Freeways		*Interstate Freeways*	
N M 10	*W M 8*	*W I 94*	*N I 75*
S M 10	*E M 8*	*E I 94*	*S I 75*
N M 39		*W I 96*	
S M 39		*E I 96*	

DO NOT search for freeways by common names like "The Lodge" or "Fisher Freeway". This WILL NOT locate the proper freeway.

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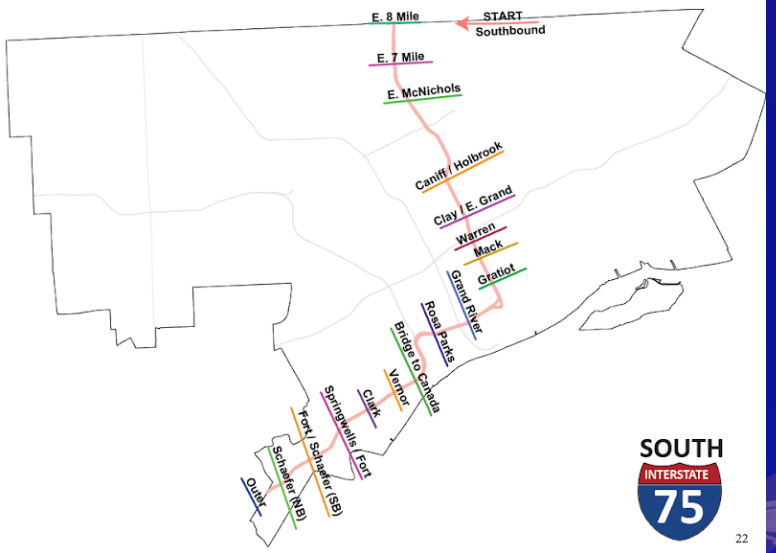

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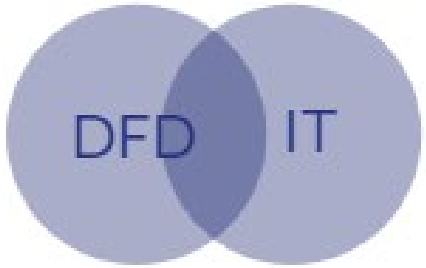
Implementation & Maintenance

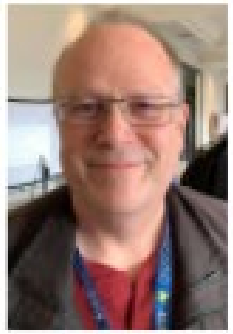
Collaboration is Key to Success

Fire Commissioner

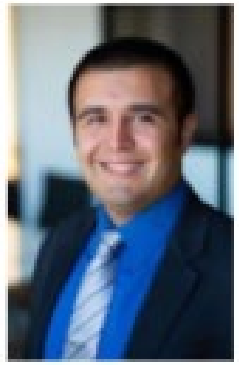
Communications Chief

EMS Lieutenant





Database Administrator



GIS Tech
Project Manager

Implementation & Maintenance

- **Build, Iterate, Rebuild, Repeat**
  - Create Internal benchmark meetings
  - Establish short and long term goals
  - Listen to stakeholder concerns and subject area expertise
  - Keep all apps, training manuals and resources up-to-date

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- Connections to DB
- Authoritative Datasets
- Software Updates
- Additional Server Space
- Training Manuals
- User Accounts
- Permissions and Restrictions
- On-going technical support

What Does the End Result Look Like?

Public Safety | Detroit Police | Detroit Fire | Resources | Login

This platform allows first responders, concerned citizens, and GIS users to access public safety data and learn more about Public Safety operations in the City of Detroit.

Interactive Maps

The apps below provide easy access to Detroit Public Safety information and tools. These public-facing apps help users find information about public safety initiatives in their community and get a better understanding of their communities.

NPO Finder

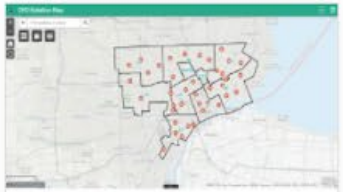
Search the map to find your local neighborhood police officer.

Crime Viewer

The Crime Viewer App visualizes crime in your neighborhood or district.

Project Greenlight

Find a Project Green Light location in you neighborhoodor district.

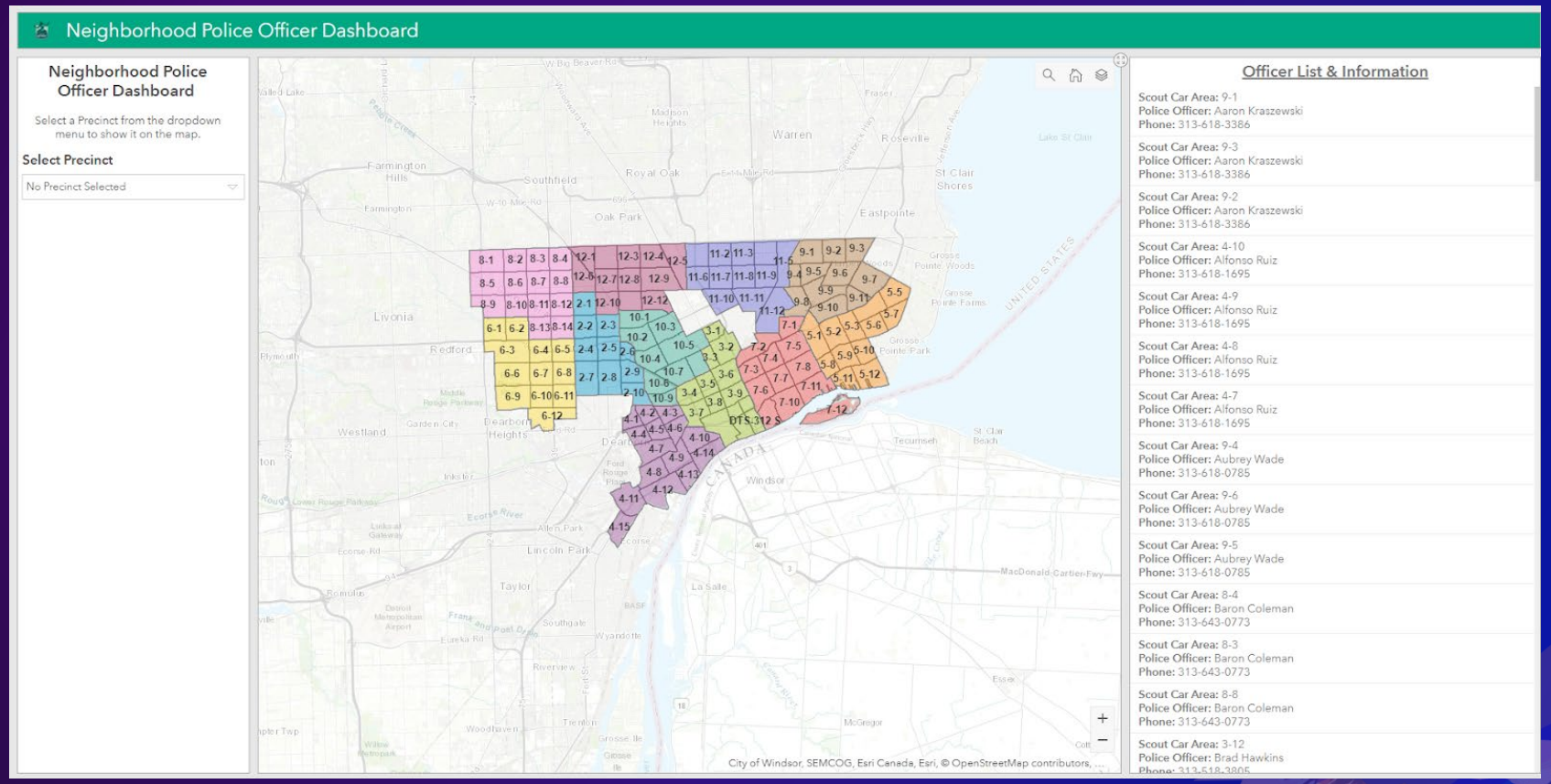


DFD Battalion Map

The DFD Battalion map shows the updated battalions and fire house locations.

Interactive Maps

- The interactive maps found on the homepage of the hub site provide easy access to Detroit Public Safety information and tools.



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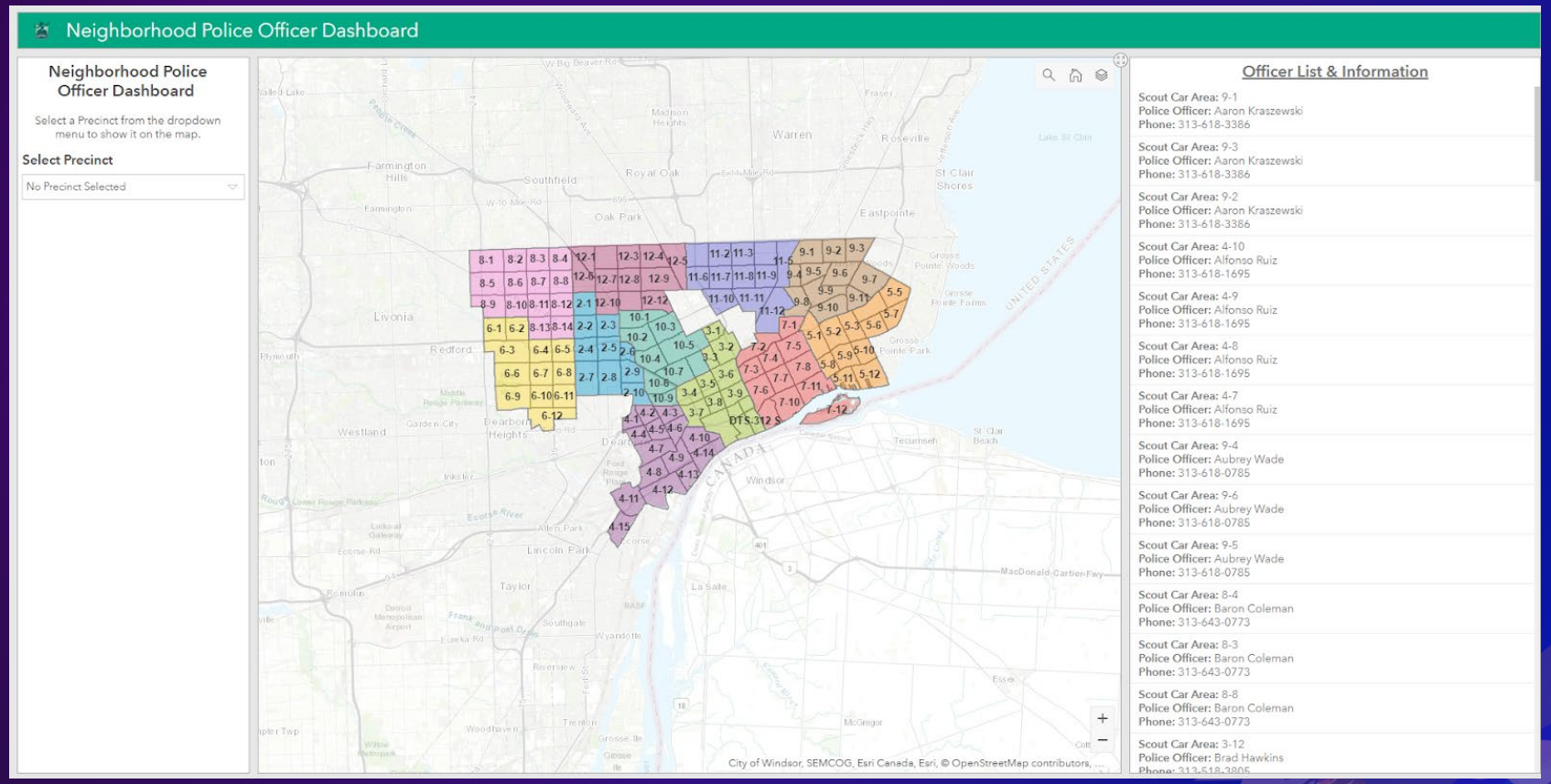
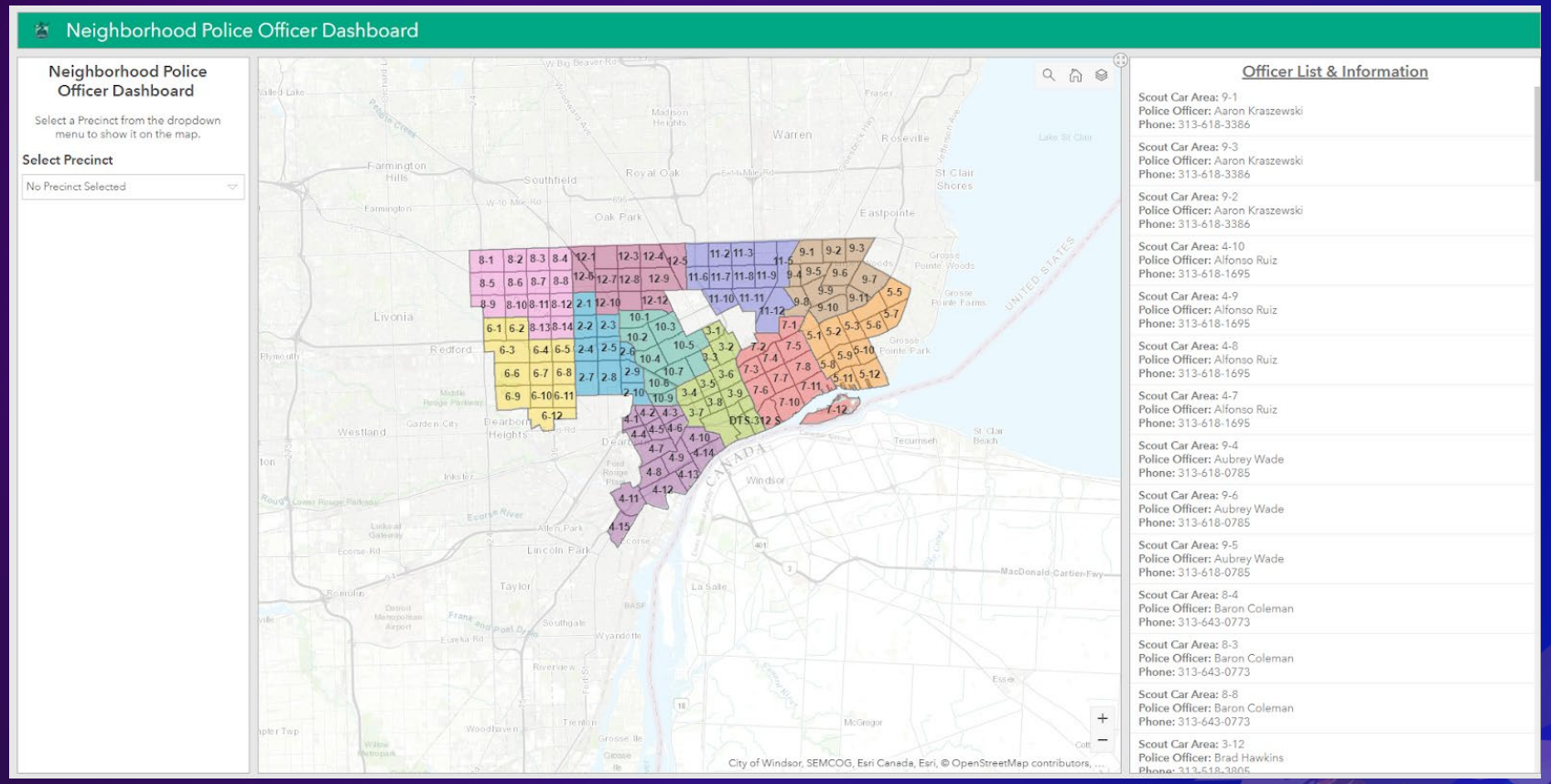


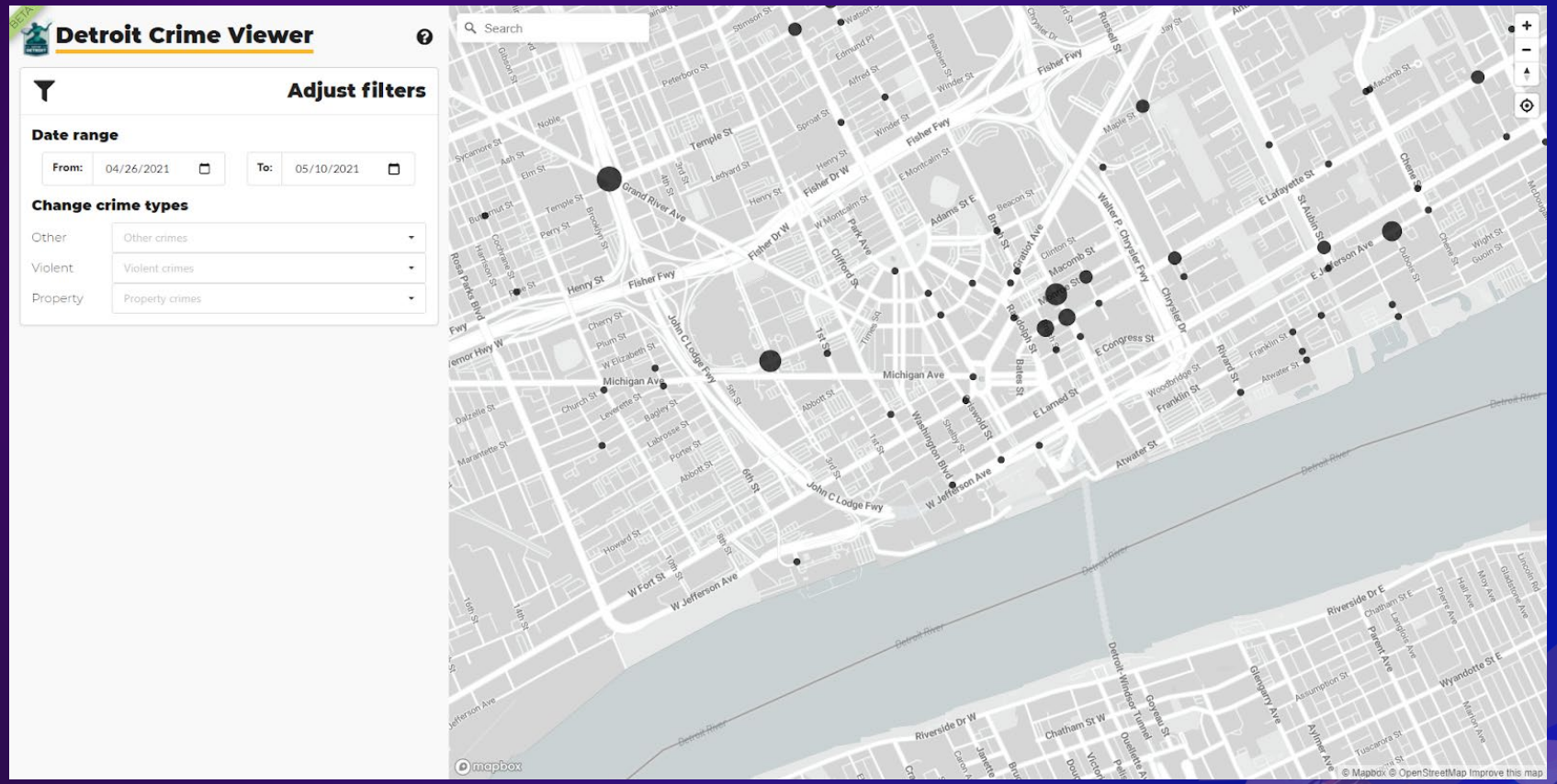
Neighborhood Police Officer Dashboard

- This app helps leadership track the distribution/deployment of neighborhood police officers across the city.



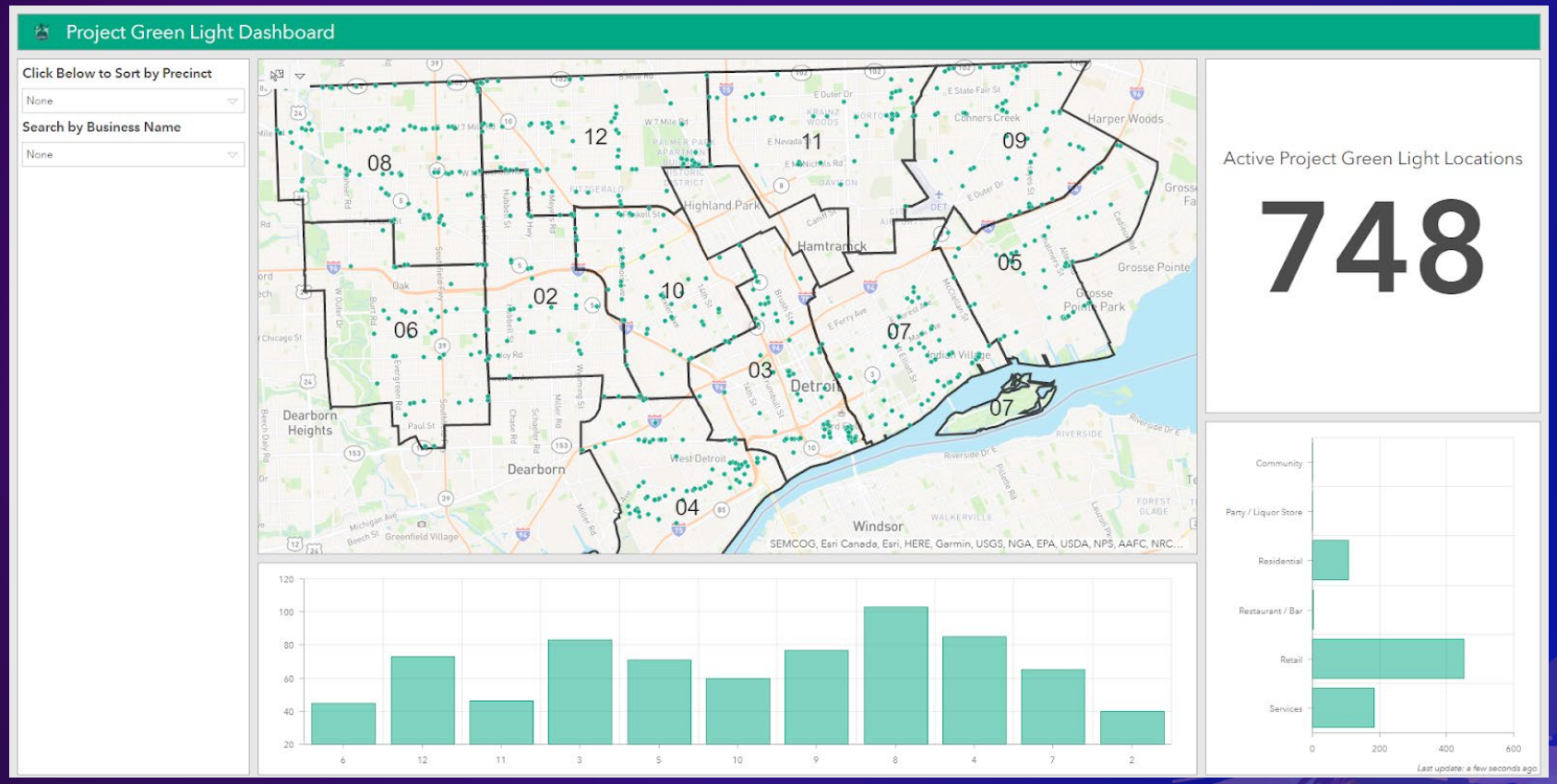
Detroit Crime Viewer

- This custom app developed by our DOIT team helps users track crime and research crime data across the city.



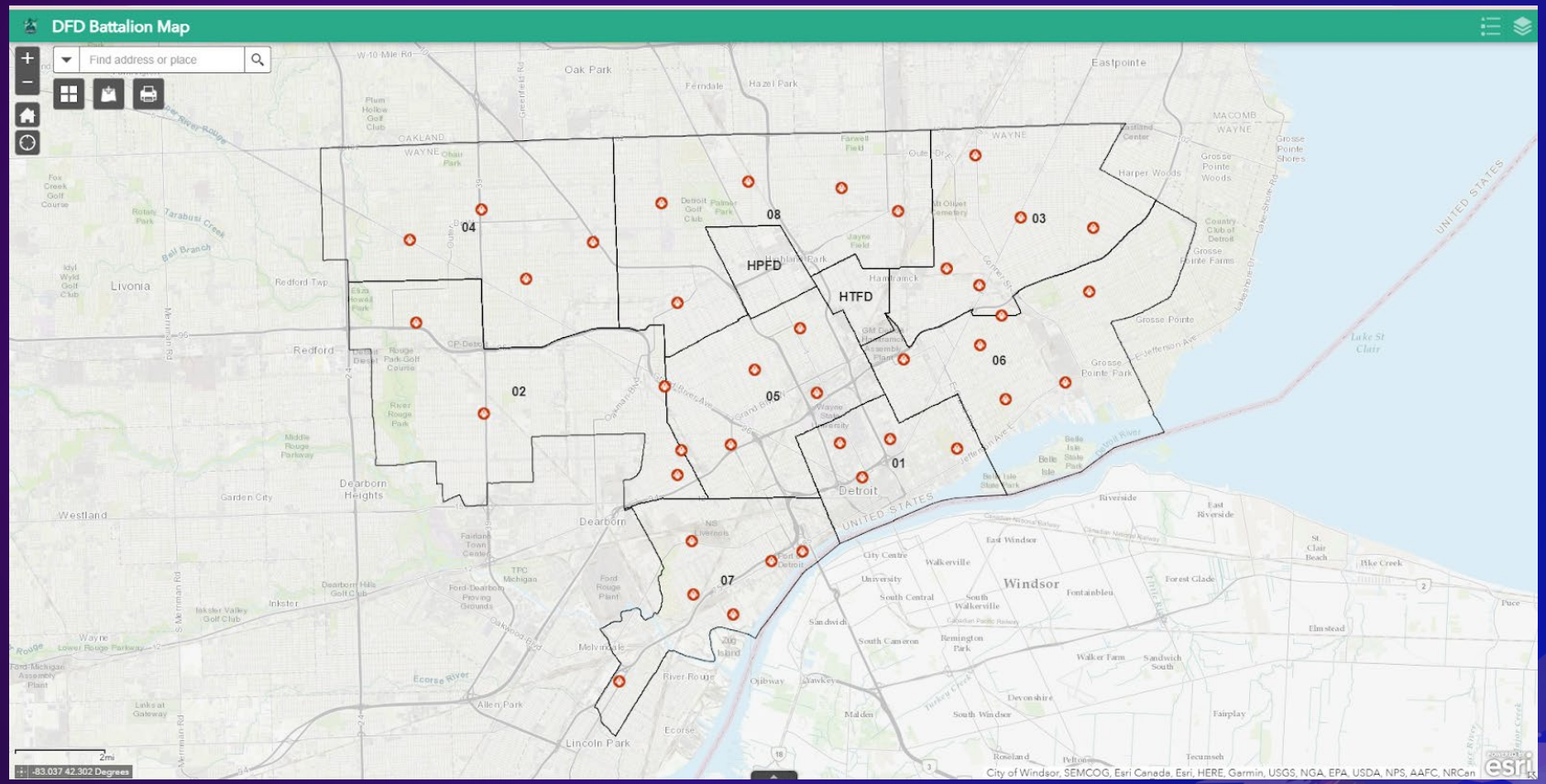
Project Green Light (PGL) Dashboard

- This application tracks the growth of the PGL Program to inform residents about which businesses are participating in this community safety program.



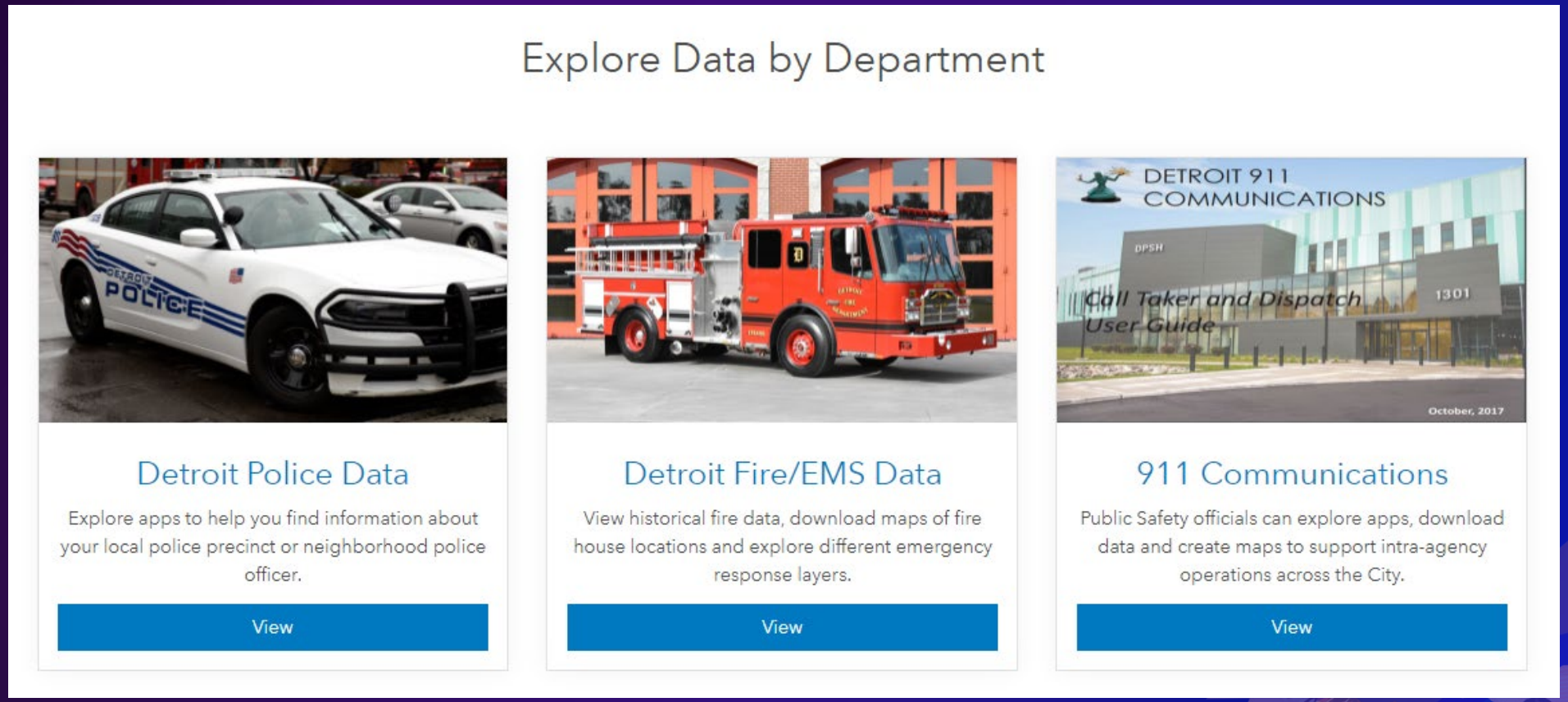
Detroit Fire Battalion Map

- This application helps users locate firehouse locations and inspect specific attributes about fire hydrants, damaged buildings and other fire resources.

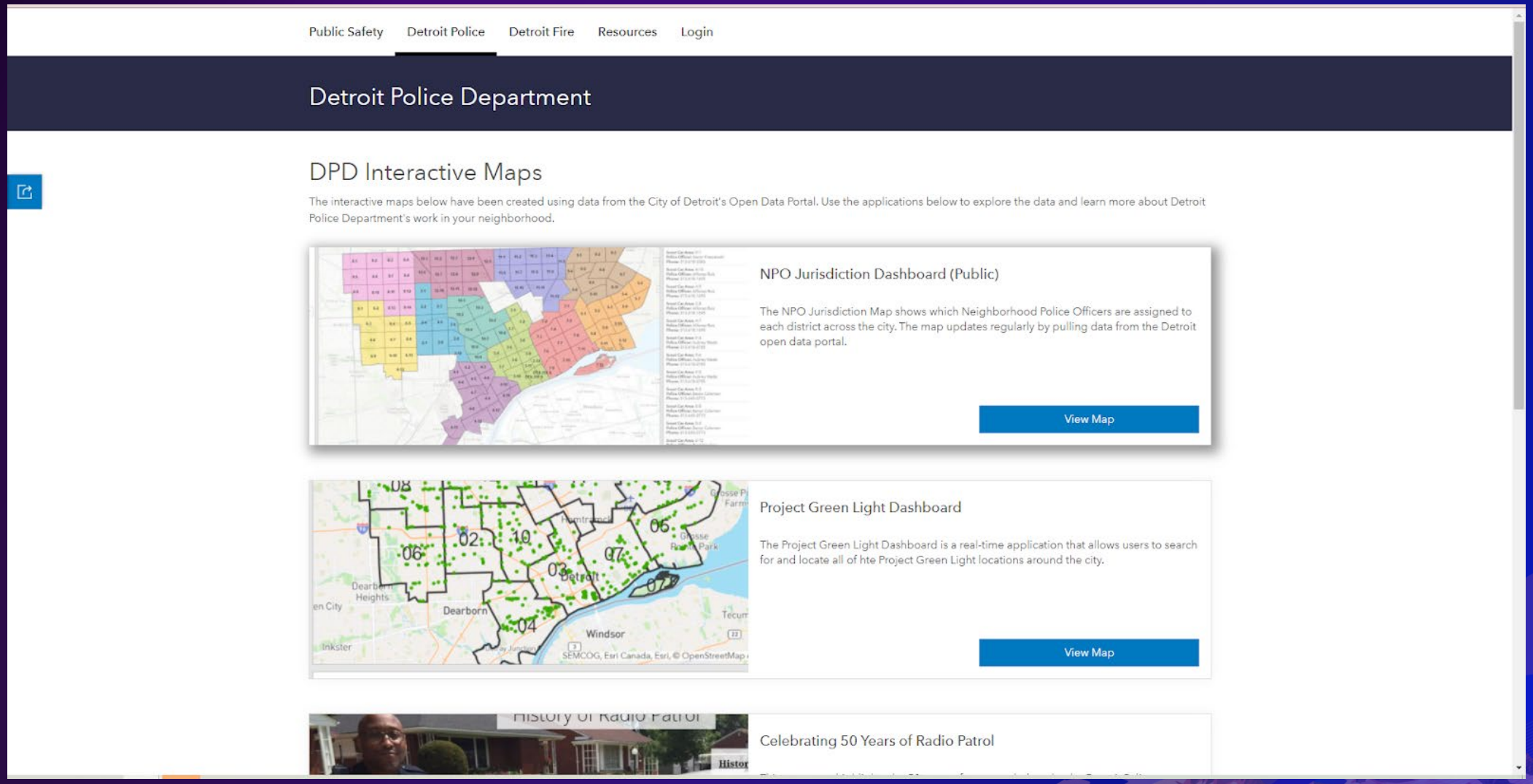


Department Specific Data & Pages

- The Detroit Public Safety Hub has individual site tabs that hold all of the appropriate data and apps for each agency.



Detroit Police Department Tab



Detroit Fire Department Tab

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Detroit Fire Department

DFD Interactive Maps

The interactive maps below have been created using data from the City of Detroit's Open Data Portal. Use the applications below to explore the data and learn more about Detroit Fire Department's work in your neighborhood.

DFD Battalion Map

This map showcases the DFD Battalions and firehouse locations.

View Map

DFD Datasets

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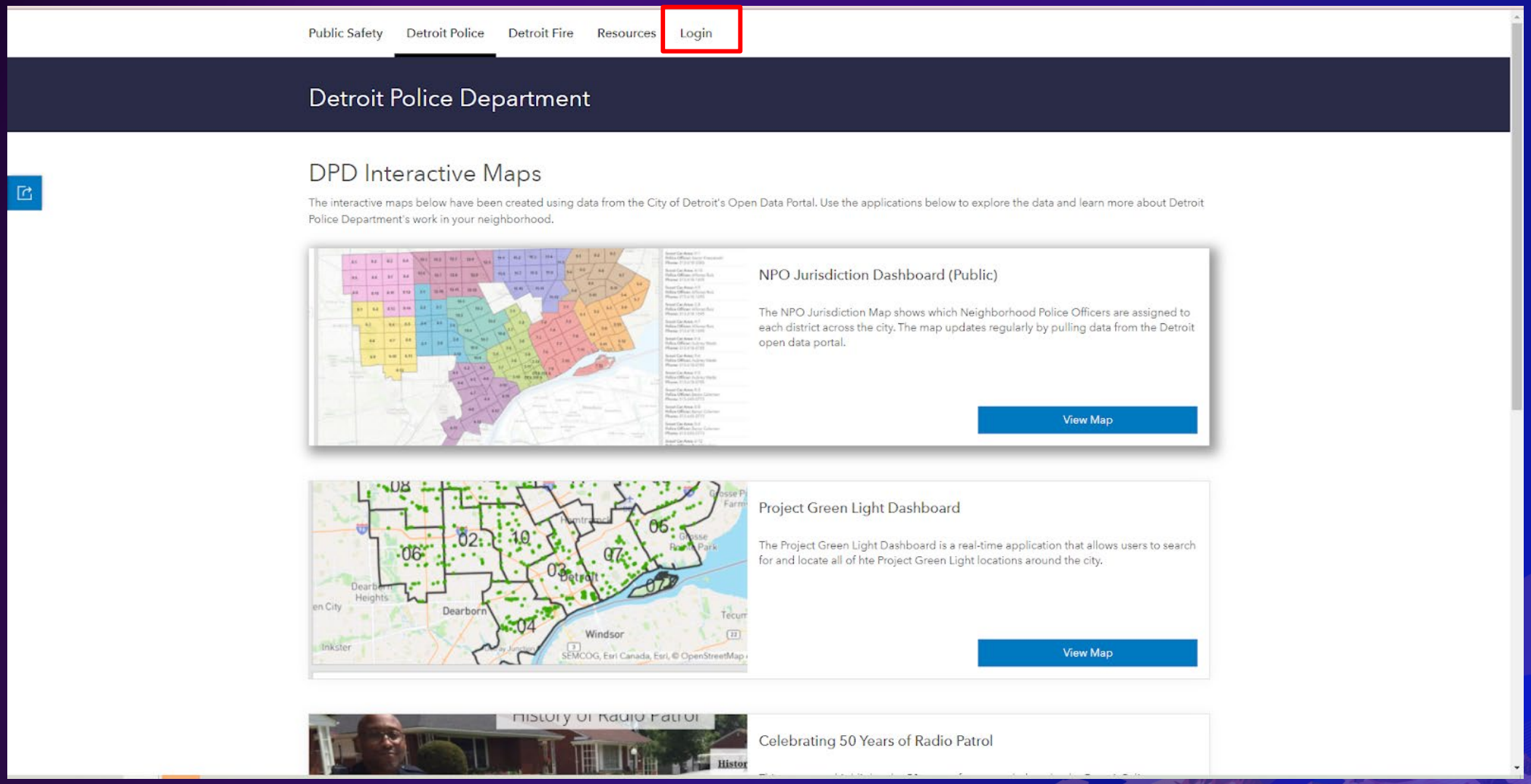
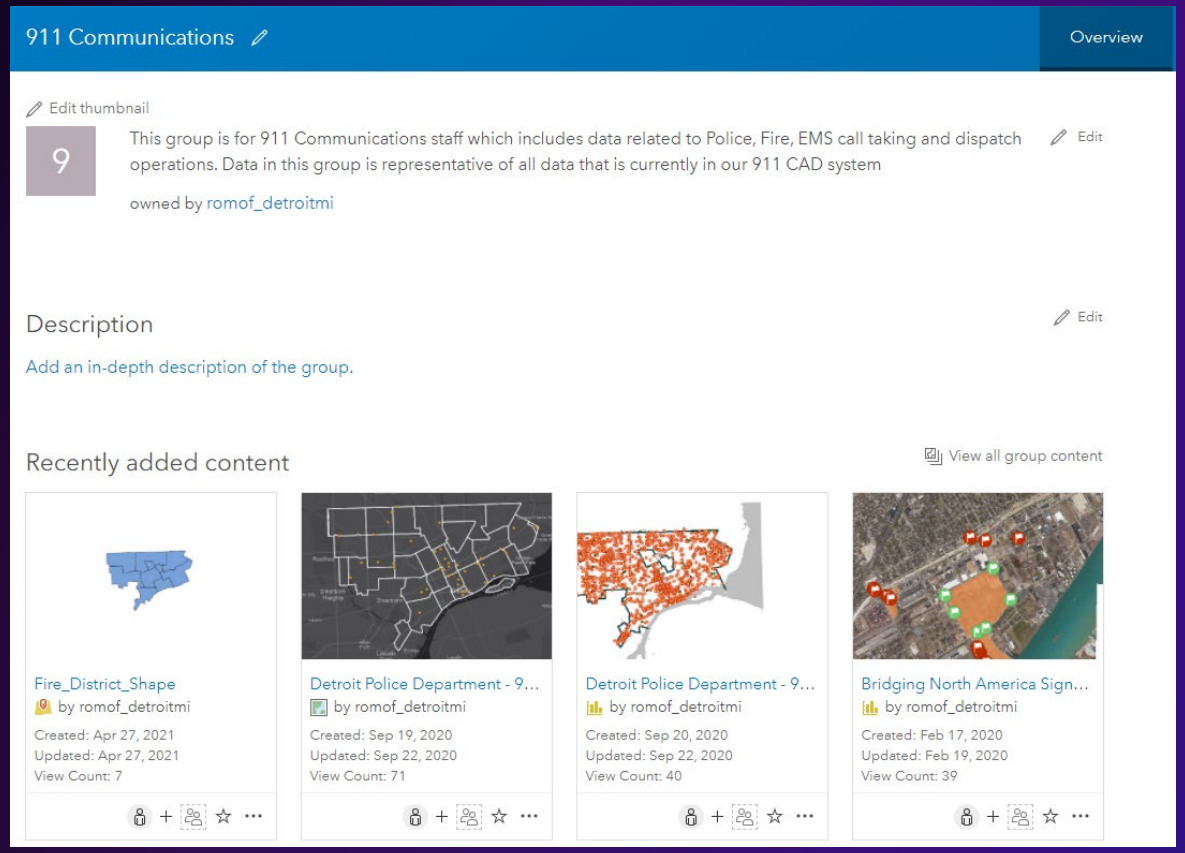
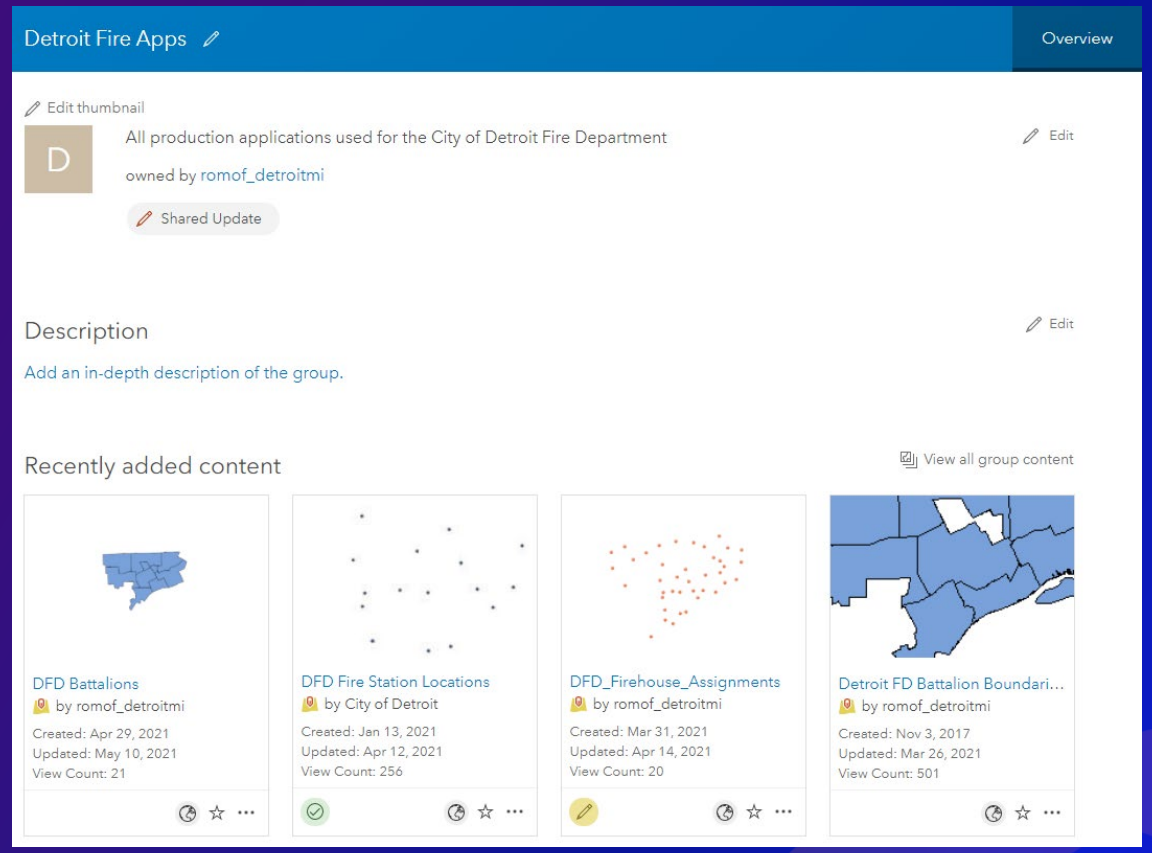


Creating Apps & Groups for Private Use





What Does Success Look Like?

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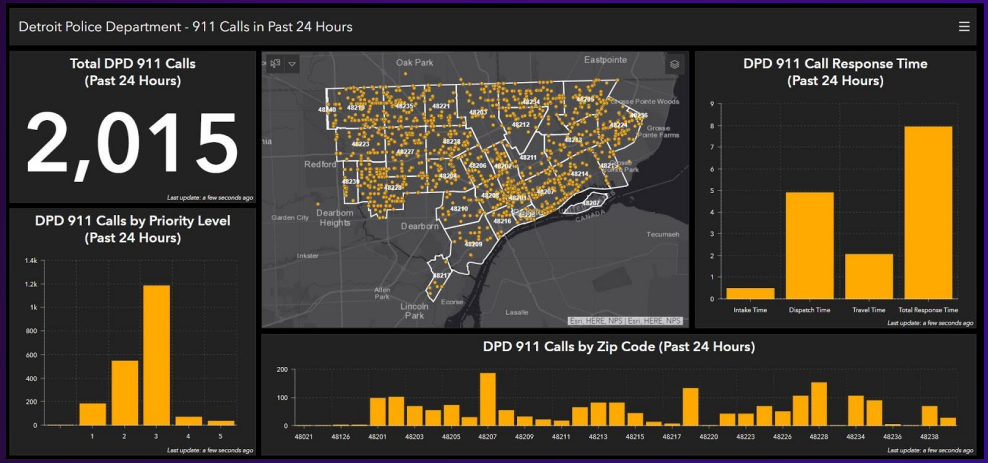
<u>People</u>

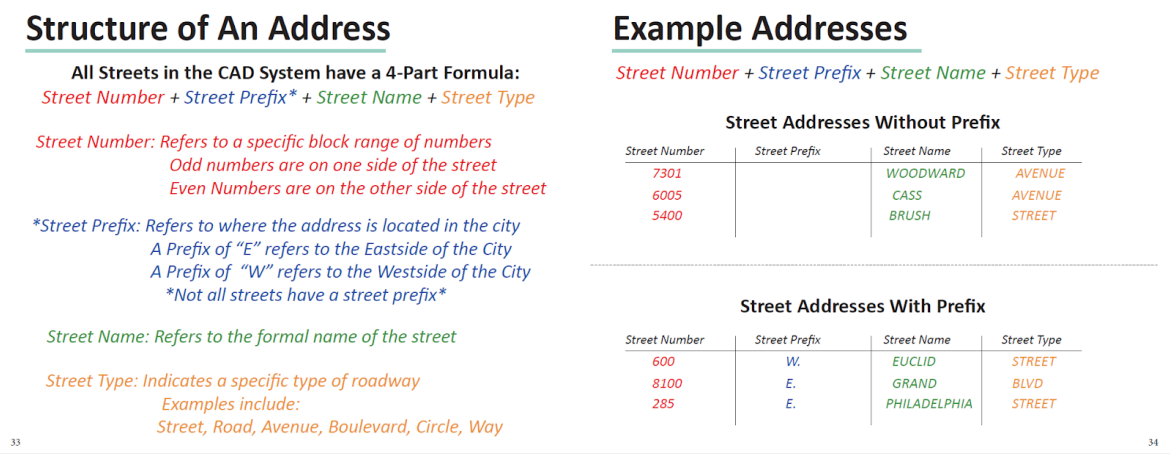
- Training staff in the use of new technologies
- Developing greater confidence in tech systems
- Being inclusive in the design and development process

What Does Success Look Like?

Processes

- Improve source data and workflows
- Creating standardization across multiple departments
- Develop ongoing training and education materials





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What Does Success Look Like?

Technology

- Build solutions that consider future growth and needs
- Create fun visualizations to get people excited
- Be thorough in documentation to support longevity

Detroit’s New Public Safety GIS Infrastructure

Thank You

Frank Romo

Public Safety GIS

City of Detroit

romof@detroitmi.gov