

Arlington County Government Safety and Innovation Zone Demonstration Project Overview

Holly Hartell, Department of Technology Services

Safety and Innovation Zone Problem Statement



Imagine:

- A group is celebrating a recent sports win. Is the movement of the group one that should cause concern?
- You are walking down the street late at night and no one is around. You trip and fall and break your ankle but no one can see you. Who can help you?
- A fire alarm goes off. Is there an actual fire or another type of emergency?

How can technology assist with the deployment of public safety resources?

Benefits from the Citizen's Perspective

Crowd Safety

- Improved pedestrian flow and safety
- Improved awareness of erratic or unanticipated behaviors

Public Health

- Improved detection and medical response times for residents needing assistance

Public Safety

- Improved detection of environmental events
- Improved quality of fire response times

Use Cases Identified by Fire and Public Safety Communications & Emergency Management



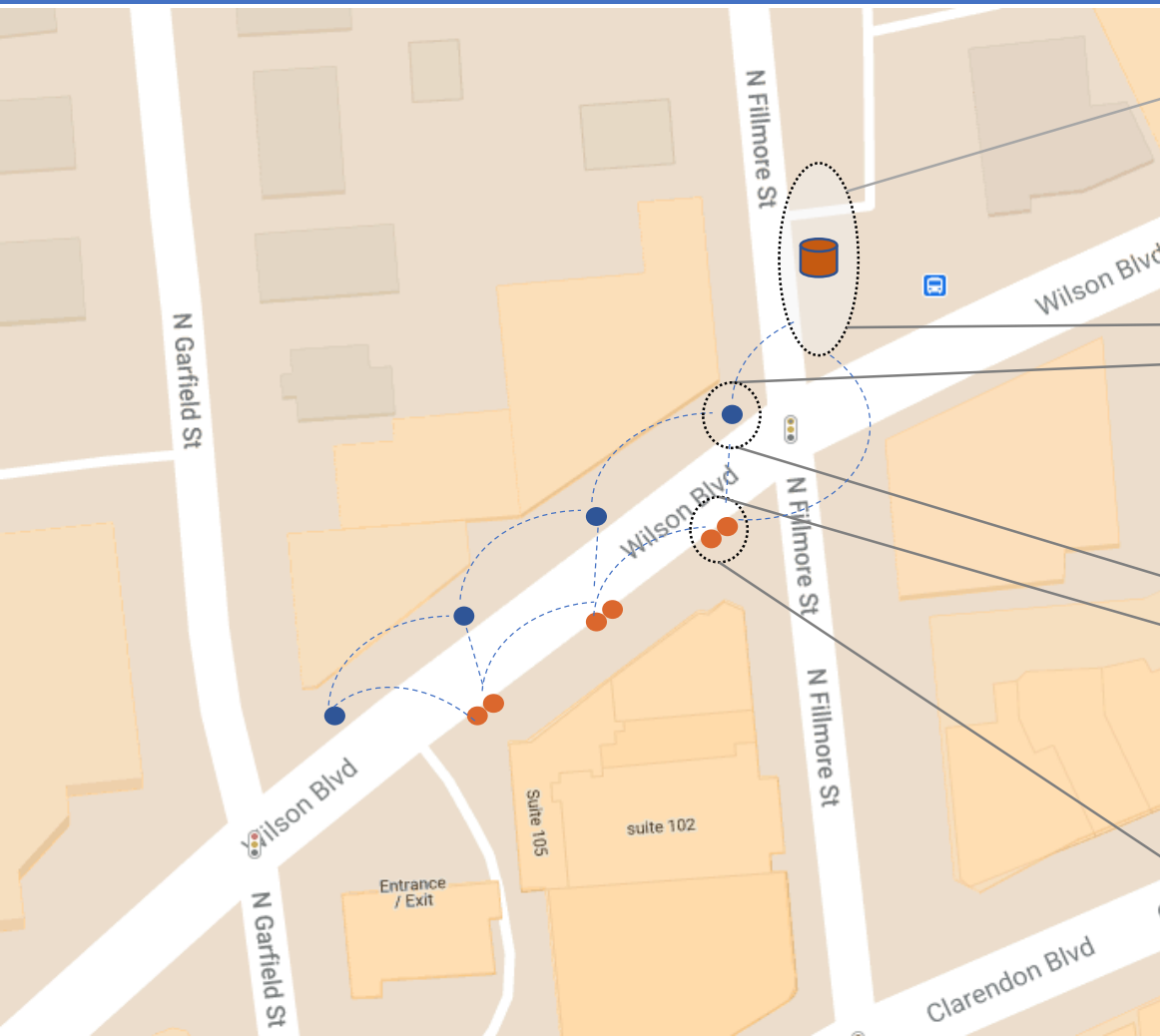
Primary public safety use case:

- **People counting:** Changes in crowd size and flow with recognition of erratic or unexpected movement to improve threat-level determination

Subsequent phases can support additional use cases:

- **Fall detection:** Identification of prolonged resident falls
- **Sound detection:** Identification of abnormally high noises (e.g., blasts, shots) and distress calls (e.g., "help")
- **Environmental shifts:** Identification of sudden temperature shift or smoke

Clarendon Safety & Innovation Zone – Project Definition



Outdoor Enclosure TBD



- Single Carlyle Streetlight
- Double Carlyle Streetlight
- - - Wireless Mesh Connectivity
- Comcast Fiber Tie Point

County will improve public safety while protecting individual's privacy

Arlington Smart Streetlights

Using light fixtures equipped with sensors and processors



Processor

Processor interprets sensor input and produces 2 fully anonymous outputs



Sensor
Sensor Sees Street Scene

Street Scene



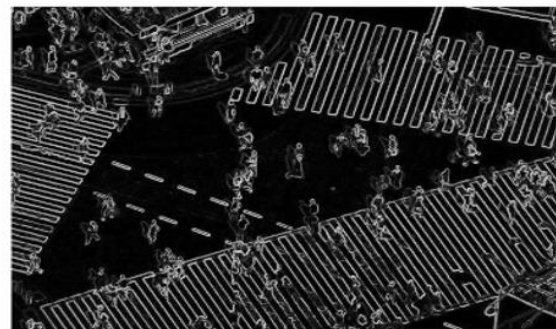
Processor Output #1:

Anonymized meta data

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"node_id": "00:04:4b:e5:b3:d7",  
"msg_version": "1.0",  
"timestamp": "12-04-2021 18:11:",  
"frame_id": "91991",  
"analytics_process_id": "jedge_",  
"capturing_process_id": "jedge_",  
"application_id": "person_detect",  
"object": {  
  "id": "32",  
  "type": "person",  
},  
"node_id": "00:04:4b:e5:b3:d7",  
"msg_version": "1.0",  
"timestamp": "12-04-2021 18:11:",  
"frame_id": "91991",  
"analytics_process_id": "jedge_",  
"capturing_process_id": "jedge_"
```

Processor Output #2:

Anonymous sketch image
(testing and calibration phase only)



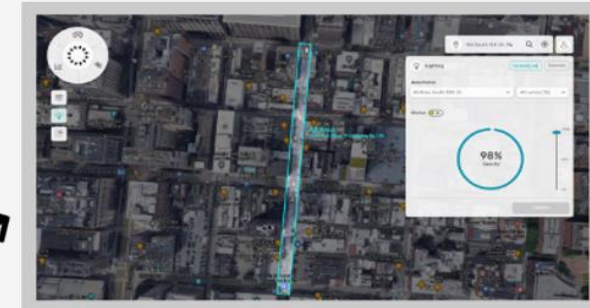
Arlington Server

Processor outputs conveyed to Arlington server via Arlington secure gateway



Arlington Data Management

Arlington uses management tools and dashboards for public safety operations



Arlington Open Data

All metadata published on Arlington Open Data Portal



Unique partnership to Ensure Privacy and Security

US Ignite

- Innovation nonprofit entity advancing smart community initiatives
- Responsible for project management
- Input into data privacy and security

Commonwealth Cyber Initiative (CCI)

- Governor's funded University partnership of data experts
- Responsible for validating that pilot meets County-defined data security and privacy standards

Comcast

- Light fixtures and network infrastructure
- Input into data privacy and security

County

- Fixture installation, data dashboards, usage
- Input and acceptance of data privacy and security guidance
- Overall assessment

Data privacy Do's and Don'ts

DO	DON'T
<p><u>Restrict Data to Use Cases:</u> Collect only data required to support public safety use cases via Safety & Innovation Zone Data Privacy Oversight Panel</p> <p><u>Build in Privacy by Design:</u> Build in “privacy-by-design” principles consistent with the County's privacy assessment framework: → No image data retained after computing text-only, anonymous use case metrics</p> <p><u>Maintain Community Engagement:</u> Ensure broad-based community engagement following County standard process.</p>	<p><u>Diverge</u> from three core “Do” principles</p> <p><u>Record and retain</u> any images that could be used to identify specific individuals or groups of individuals.</p> <p><u>Make any changes</u> to privacy or data management guidelines before or during the pilot without securing concurrence from the Safety and Innovation Data Privacy Oversight Panel, publicizing the changes, and ensuring citizen support.</p> <p><u>Give up management of types of data</u> collected, analysis methods utilized, storage and retention policies, or ownership of data to any third party without approval from the Data Privacy Oversight Panel.</p>

Clarendon Safety and Innovation Zone – Project Timing

- **Estimated project implementation start – June 2021**
 - **Month 0: Install and testing**
 - **Month 1-3: Ideation Phase (3 mo.)**
 - Define data visualization and dashboards to analyze information
 - **Months 4-9: Learning Phase (6 mo.)**
 - Developing and defining metrics to assess efficacy of the solution
 - **Months 10-12: Scaling Phase (3 mo.)**
 - Lessons learned and recommendations

Clarendon Safety and Innovation Zone – Impacts and Key Messages

- **Financial Impact:**
 - Minimal - Donation in goods and Services from US Ignite, CCI and Comcast
- **Engagement:**
 - Communicate to stakeholders during pilot
 - Project site to share information ([Safety and Innovation Zone Demonstration Project - Projects & Planning \(arlingtonva.us\)](https://www.arlingtonva.us/safety-and-innovation-zone-demonstration-project-projects-planning))
 - Assessment and recommendations due to County Manager after completion of pilot
- **Key Messages:**
 - Data will be restricted to defined use cases
 - Any data utilized will be completely anonymous
 - No image or method of identifying an individual will be recorded or stored by a third party
 - Pilot will follow County data privacy principles