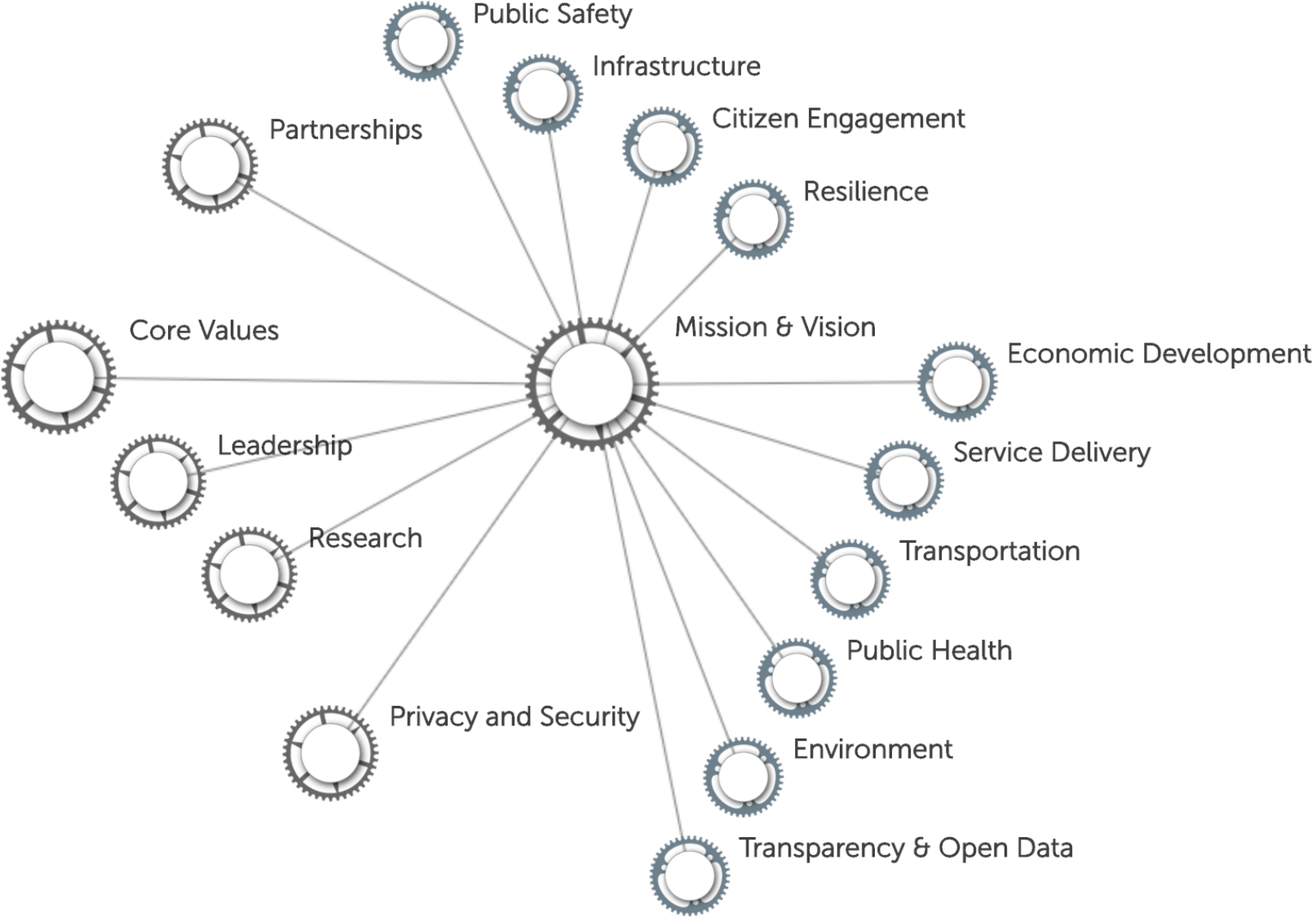


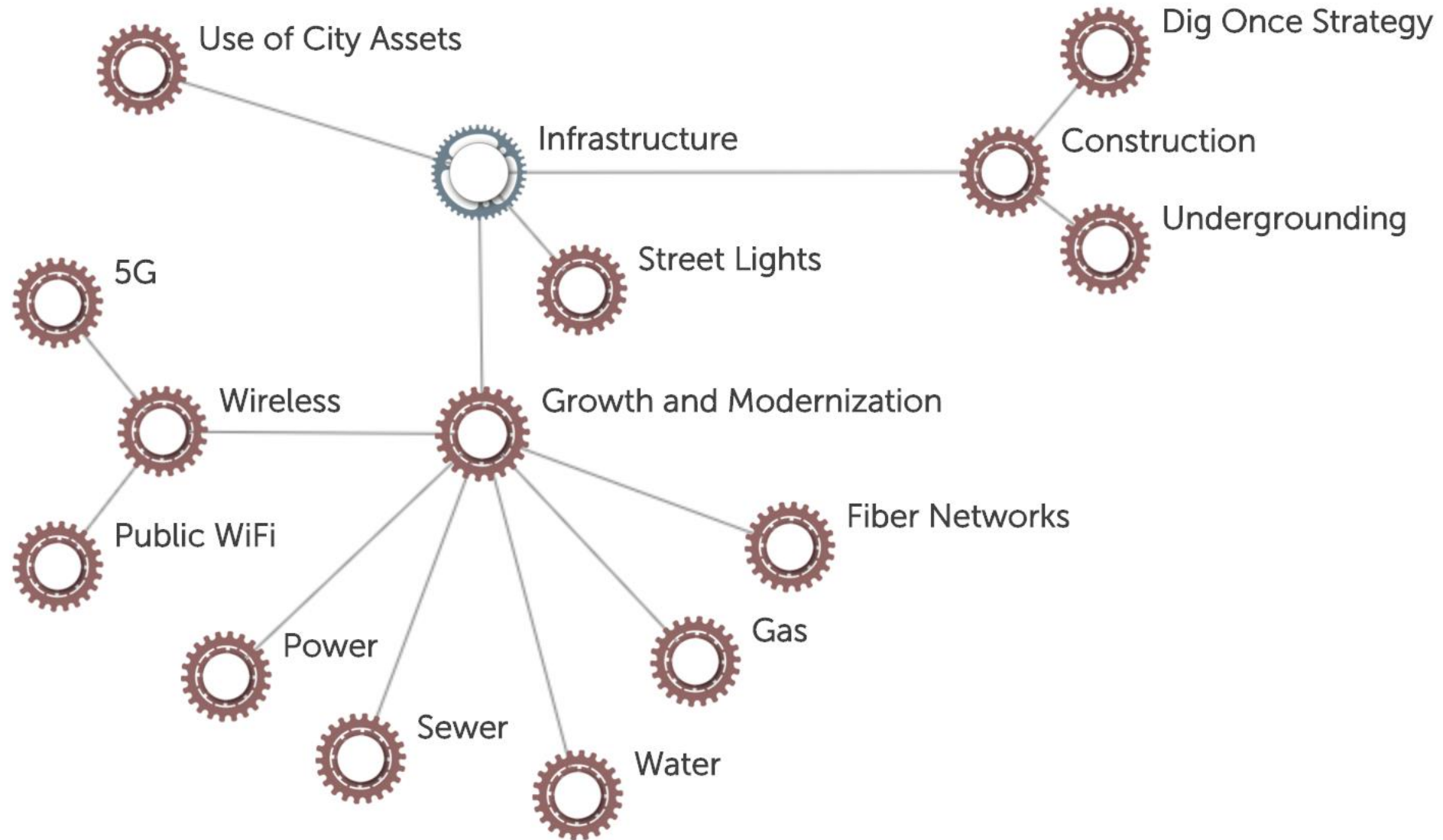
Getting to Smart

City of St Louis: Major Smart City Efforts

Scope of Smart City Initiative



Scope of Smart City Initiative: Infrastructure



Equitable **Infrastructure Growth** Program

- Objective: **Improve the Quality of life for the citizens of St Louis through:**
- **Equal Access to Internet and Technology Outcomes**
 - **Support affordable access** to high speed internet for all citizens/homes
 - **Ensure** the opportunity for the **same level of access** to the internet and quality of service for all citizens
 - **Increase access** to internet and technology via free public WiFi in all public locations such as parks, recreation centers, civic centers, etc.
 - **Accelerate** the the **deployment** of new technologies such as 5G wireless (cell) technology across the city

Equitable **Infrastructure Growth** Program

- **Community Resilience Outcomes**

- **Make utilities less likely to fail** due to things like natural disasters and extreme weather events: Reduce the time it takes to detect failures and restore service after failures or outages
- **Implement smart** infrastructure **technologies** to prevent outages
- **Replace** aging infrastructure such as old power lines, pipes, etc. before they fail or become hazardous
- **Reduce** the number of times and frequency for **opening streets and sidewalks** which disrupt the flow of vehicle and pedestrian traffic

Program Concept



Future State

- **Deconfliction**

- Identify projects that could interfere with other projects

- **Synergy Identification**

- Identify opportunities based on shared priorities, funding availability, etc.

- **Opportunity for Collaboration**

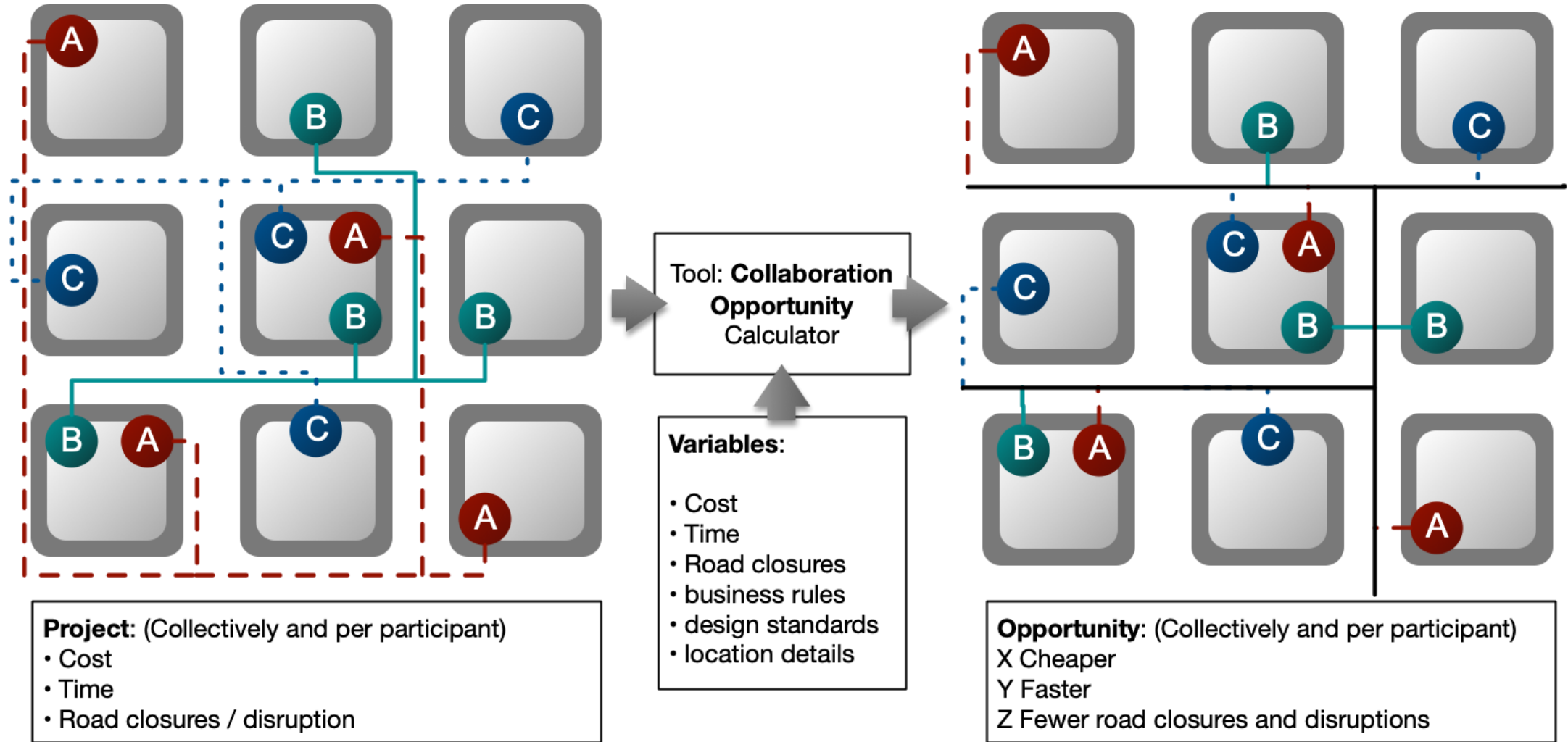
- Identify opportunities to share costs, reduce time, etc. based on outcomes, business rules, etc.

- **Project Coordination & Collaboration**

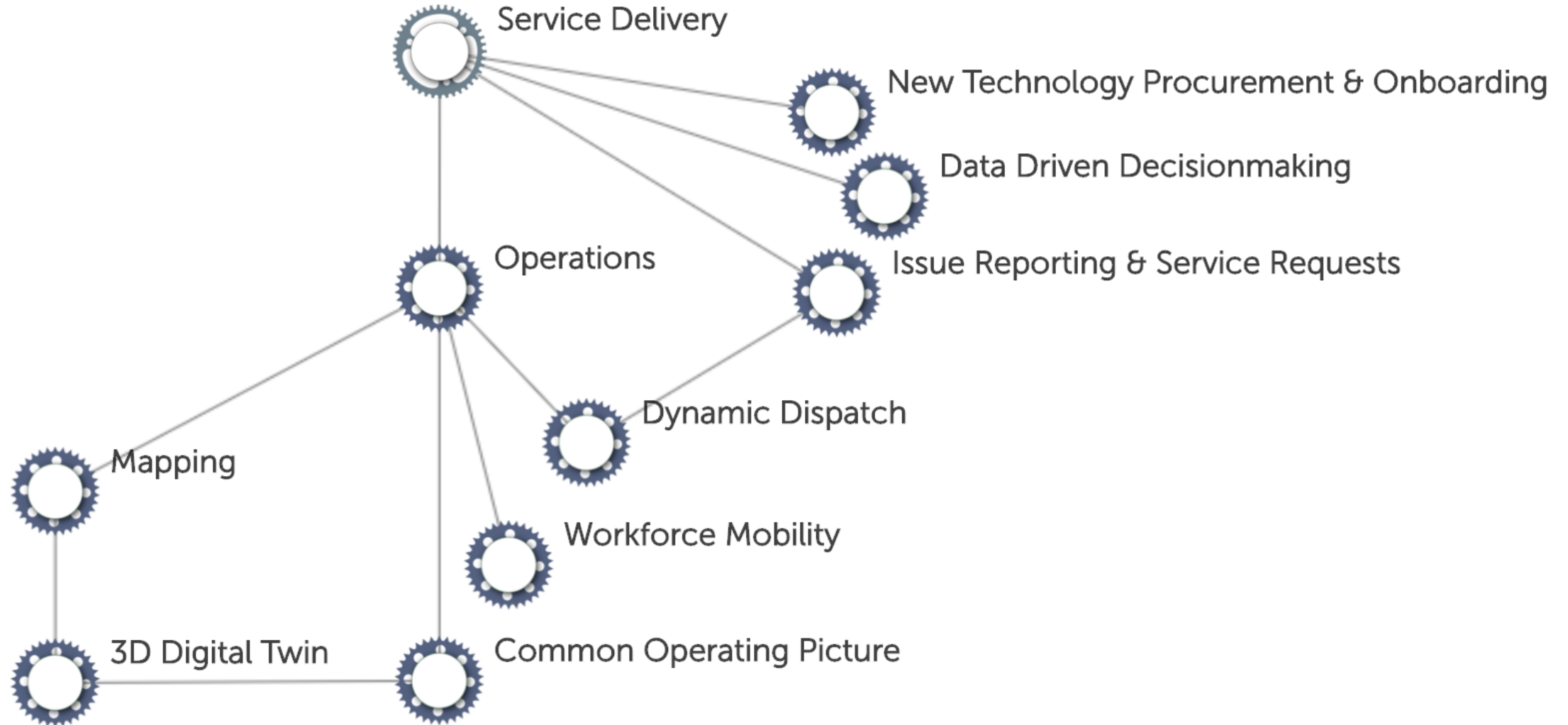
- Coordinate on projects before its too late
- Provided automated status updates
- Notify other members of issues or delays that could affect them
- Notify the public Infrastructure related geospatial **data clearing house**
- Data for internal EIG use
- Data for use by the public

Tools Example: Opportunity for Collaboration & Cost Sharing

3 projects in same 9 block area



Scope of Smart City Initiative: Operations and Service Delivery

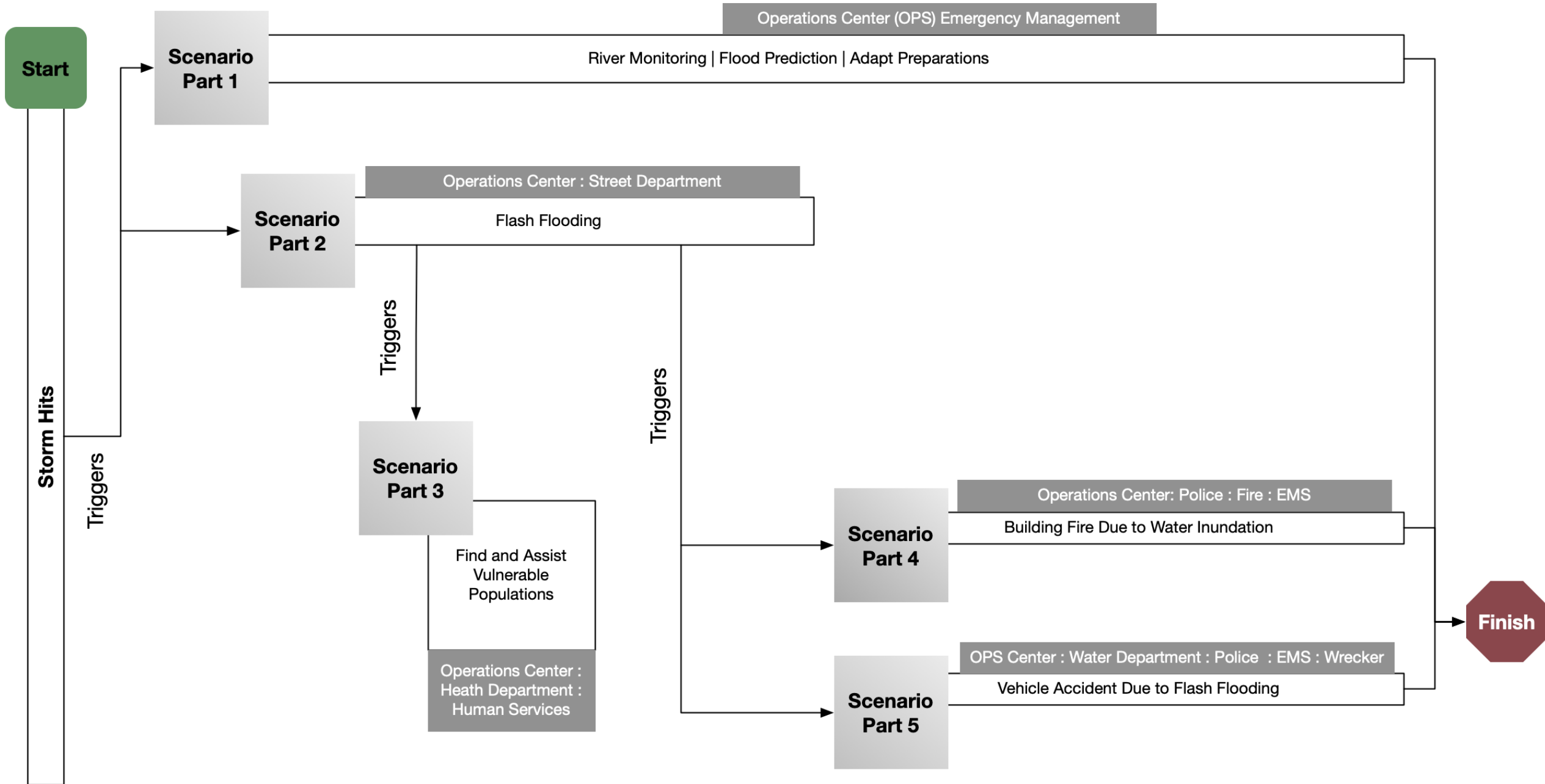


What is the pilot?

- **Real-World Integrated Capabilities:**

- **Situational awareness and common operating picture** – the ability for departments to see what is going on including how the operations of one department affect others as well as the status of operations and responses across departments
- **Computer aided dispatch** – the ability to dispatch resources across departments as needed to support daily operations and emergency responses no matter how big or small; thus, enable dispatching and response as a city versus a group of individual departments
- **Dynamic routing and route planning** – the ability to generate routes (such as trash routes), route resources to a destination, and reroute resources if needed due to various conditions (i.e. road closures due to an event)
- **Workforce mobility** – the ability to task or re-task workers in the field and needed such as the ability to issue a high priority work order divert a street crew or water crew in the field as higher priority work orders come in
- **In building navigation** – the capability to track first responders within a building, guide first responders to location within a building (such as utility rooms and shut off valves).

Pilot Scenario



City of St. Louis Pilot Participants

Departments

- St. Louis Development Corporation
- Public Safety
- Emergency Manager
- Board of Public Service
- Water Department
- City Planner
- Information Technology Services Administration
- Forestry
- Department of Health
- Airport
- Street Department

- Supply Commissioner
- Police
- Fire
- City Counselor

As Observers **(final exercise only)**:

- Civic Leaders?
- Media?
- State and Federal Government Representatives?
- County and Surrounding Municipalities?

Digital Twin: 3D Evolution

Develop **Digital Twin**: Detailed 3D Mapping



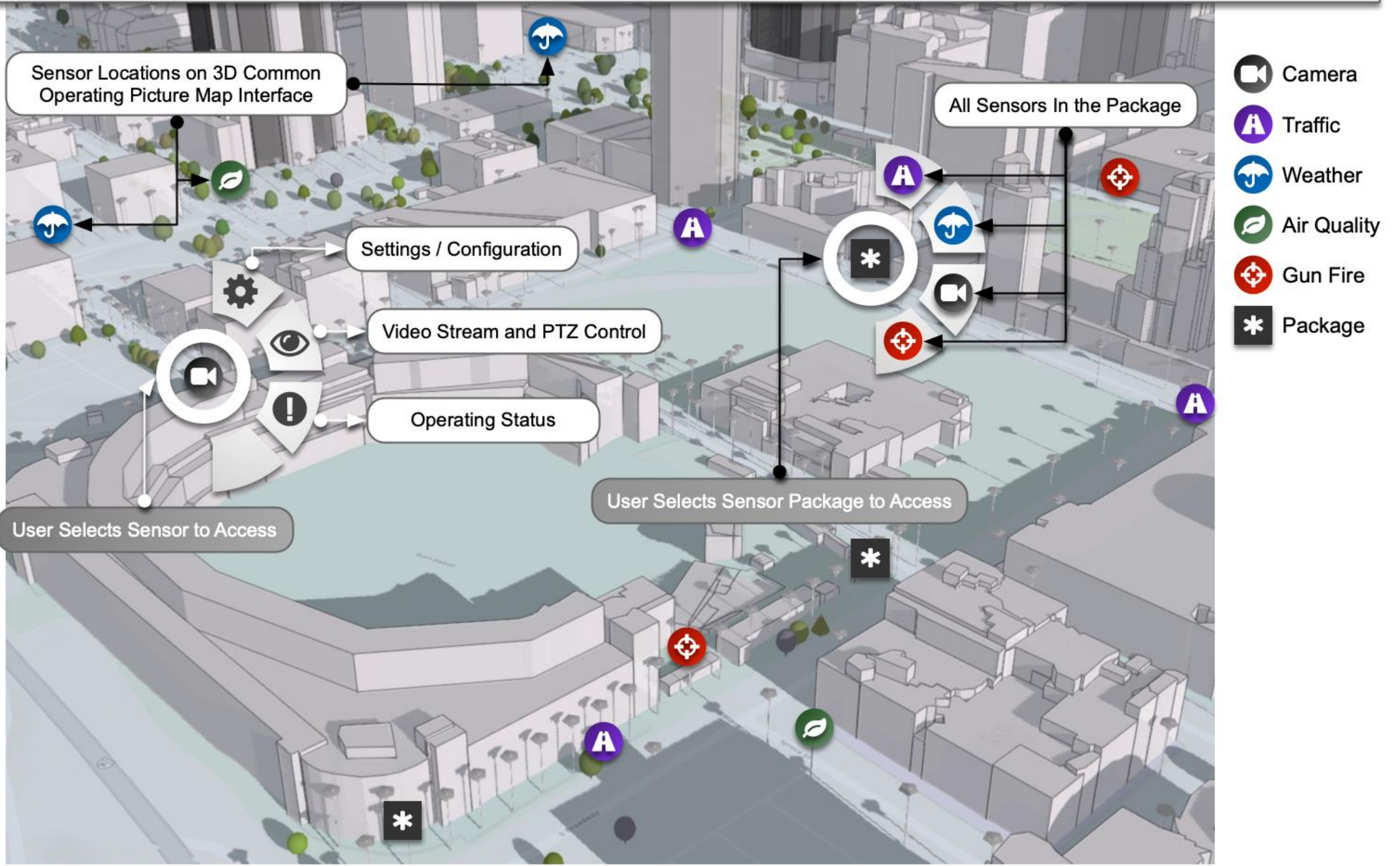
- Shared Funding through EIG
- Ground Lidar and imagery
- **Version 1:** Colorized point cloud
- **Version 2:** Shaded 3D (like the current prototype)
- **Version 3:** Fully skinned version using areal and ground-based imagery

OPERATIONALIZE **Digital Twin**:

- Socioeconomic Operationalization
 - **Understanding the community** based on population characteristics
 - **Understanding** development **opportunities** and their large- and small-scale impacts
 - **Model development** opportunities
 - **Model specific projects** and developments to see what they will look like
 - **Enhanced urban planning** by both public and private entities
- Infrastructure Operationalization
 - **Coordination and collaboration** between all infrastructure growth and modernization stakeholders (power, water, sewer, gas, transportation, roads, communications, etc.)
 - **Coordination of capital improvement** projects
 - **Understanding and assessing the current state** of infrastructure to identify high risk and set growth and modernization priorities across stakeholders

Common Operating Picture: Interaction using a Digital Twin

Sensor Control, Configuration, and Access: Common Operating Picture Integration Concept



Prepare for New Technology Deployments

