



# CCI Safe + Smart Cities

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INTRODUCTION + OVERVIEW OF NEWARK, DE PILOT PROJECT

April 27, 2015

# CCI Safe + Smart Cities

## PRESENTATION OVERVIEW

Information Technology:  
Integrated Management + Citizen Engagement

02

Integrated Communications:  
Public Safety + Security

04

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CCI Safe + Smart Cities  
Project Introduction + Pilot Overview

03

Infrastructure Technology:  
Water +Energy

05

Conclusion +  
Q+A

# Why Safe + Smart Cities?

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Traditionally, resiliency/critical infrastructure protection and smart cities efforts have been approached through separate channels with different sets of stakeholders

Continuing this division makes little sense in light of their common objectives:

- ❑ Both aim to improve the operations within each area of critical infrastructure (e.g., public safety, transportation, energy, buildings) as well as to address interdependencies between these areas of critical infrastructure.
- ❑ Both aim to improve connectivity between individuals and their government
- ❑ Both help empower citizens with tools to better understand and manage their communities as well as participate in activities which have been traditionally considered solely the domain of government.

*Resiliency/Critical Infrastructure Protection*

*Smart Cities*



# CCI Safe + Smart Cities Coalition

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## TECHNOLOGY ROLE

- Technology plays a unique role in building safe + smart cities:
  - Ultimately, helps democratize the governance process
  - Enables citizens better understand and communicate with governments and participate in shaping their cities
  - Improves City's capacity for understanding and mitigating risk on an individual basis
  - Better inform decision-makers in planning cities and in responding to adverse events.
  - Create new economic opportunities and technology markets
  - Overcome silos by integrating "safe" and "smart" technologies

# CCI Safe + Smart Cities

## COALITION MEMBERS

### Chesapeake Crescent Initiative (CCI)

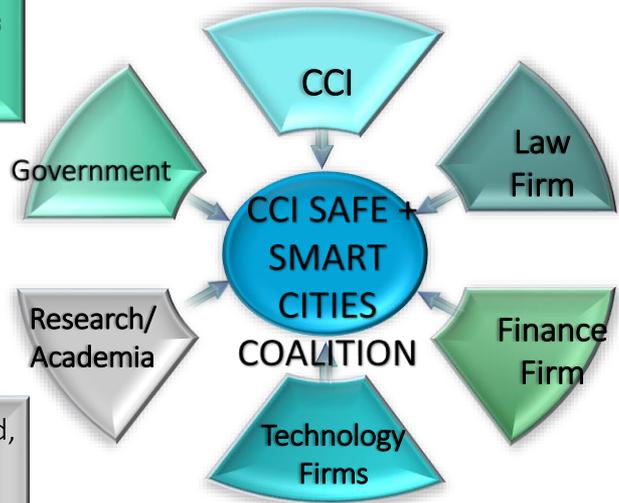
- Regional (MD-VA-DC-DE) nonprofit
- Lead coalition entity
- Facilitates the exchange between the different government participants, industry, academia and others

### Federal, State + Local Government

- Shifts level of involvement depending on needs/locations of pilot
- Coordinates with Coalition to ensure alignment between policies and that what coalition delivers has optimal impact and far-reaching implications

### Holland & Knight

- Global Law Firm
- Look at the jurisdiction's policies and law with respect to governance, authorities, ethics, procurement and incentives



### Univ. of Delaware, Univ. of Maryland, Virginia Tech, Woodrow Wilson International Center for Scholars

- Academic and research institutions
- Shifts level of involvement depending on needs/location of pilot
- Generally, provide expertise around resiliency or urban policy

### National Standard Finance

- Finance company
- Examine the pilot municipality's capabilities in terms of budget, bond authority and alternative financing opportunities

### Cisco, Schneider Electric, Verint, AtHoc, Priority 5

- Technology Industry
- Analyze current state of municipality and provide vendor-neutral advice on how a city can improve their operational efficiency and efficacy as well as their resiliency through the use of technology and data

# CCI Safe + Smart Cities Coalition

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## KEY OBJECTIVES

The Safe + Smart Cities Coalition aims to develop a tangible, actionable and comprehensive “safe + smart cities” program that can:

- ❑ improve the overall operations and management of local government, both in the day to day as well as in times of adversity;
- ❑ expand capabilities in urban data collection, analysis, and dissemination;
- ❑ develop beneficial new linkages among community residents;
- ❑ help democratize and expand individual citizens’ participation in government; and
- ❑ create a replicable public-private collaborative model.

# CCI Safe + Smart Cities: Key Elements

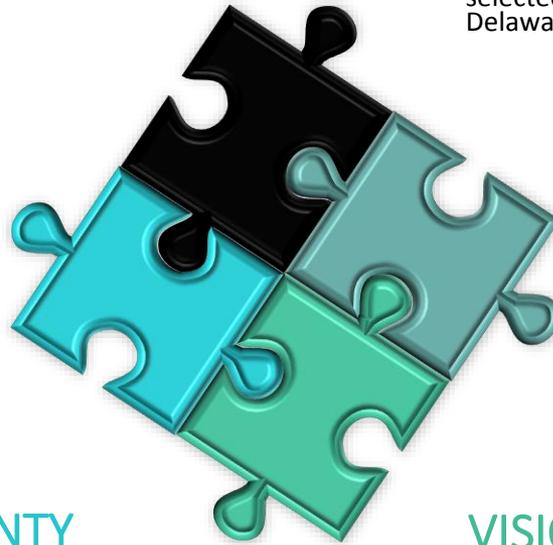
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## MERGER OF SAFE AND SMART

Merger of the best aspects of traditional resiliency/critical infrastructure protection (“safe”) and operational efficiency/citizen-centric (“smart”) concepts with special focus on technology’s role.

## LEVERAGING PUBLIC + PRIVATE SECTORS EFFECTIVELY

Assembled experts from multiple sectors to collaborate with and provide *pro-bono* expertise and recommendations to selected municipalities in the Mid-Atlantic region of Delaware, Maryland, Virginia and the District of Columbia.



## RESPECT FOR PILOT CITY CHARACTER + SOVEREIGNTY

Endeavored to learn about the City as much as possible to build on past efforts and ensure that recommendations were in line with the City’s character and vision Further, pilot cities are under no obligation to implement blueprint recommendations from the Coalition.

## VISIONARY, BUT PRAGMATIC

Recommendations intended to provide pragmatic and feasible options - offered through a “Safe + Smart Cities” Blueprint document -- to help visionary urban communities achieve or exceed their “safe and smart” objectives while also increasing global competitiveness, sustaining regional economic growth, and improving citizens’ lives.

# Why Newark, DE?

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- ❑ Coalition considered several communities as location of safe + smart cities pilot site across the Mid-Atlantic Region
- ❑ Coalition first considered Newark, DE on the recommendation of Gov. Markell
- ❑ Newark, DE was selected as first pilot site because:
  - ❑ Visionary leadership open to innovative approaches and track record of implementation
  - ❑ Citizen-centric, service-oriented approach
  - ❑ Unique assets and opportunities

# CCI Safe + Smart Cities

## PILOT PROCESS

# CCI Safe + Smart Cities Pilot Process



# CCI Safe + Smart Cities

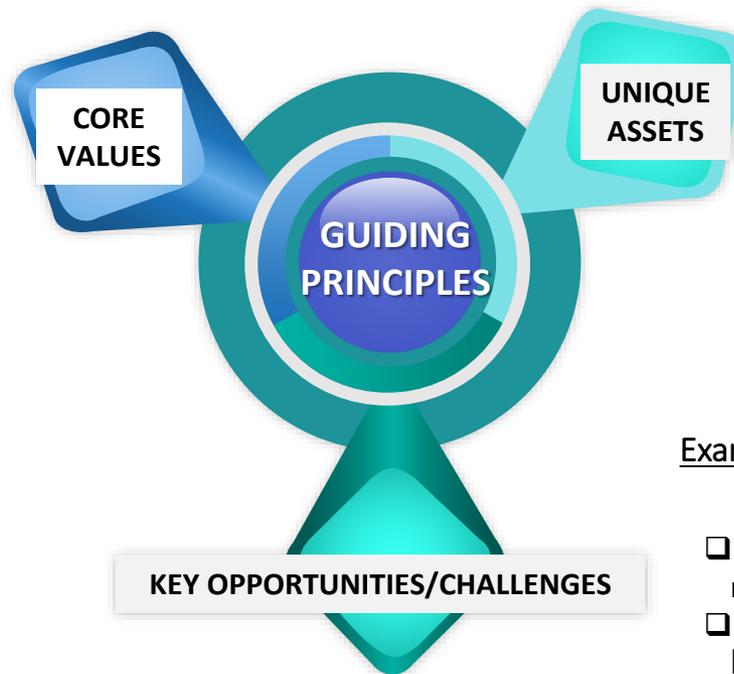
## STAGES 1-2: UNDERSTANDING NEWARK, DE

### Examples of Core Values

- Inclusive College Town + Home Town
- Citizen-Centric, Service Oriented, Transparent Government
- Sustainable Community, Environmentally + Economically

### Examples of Unique Assets

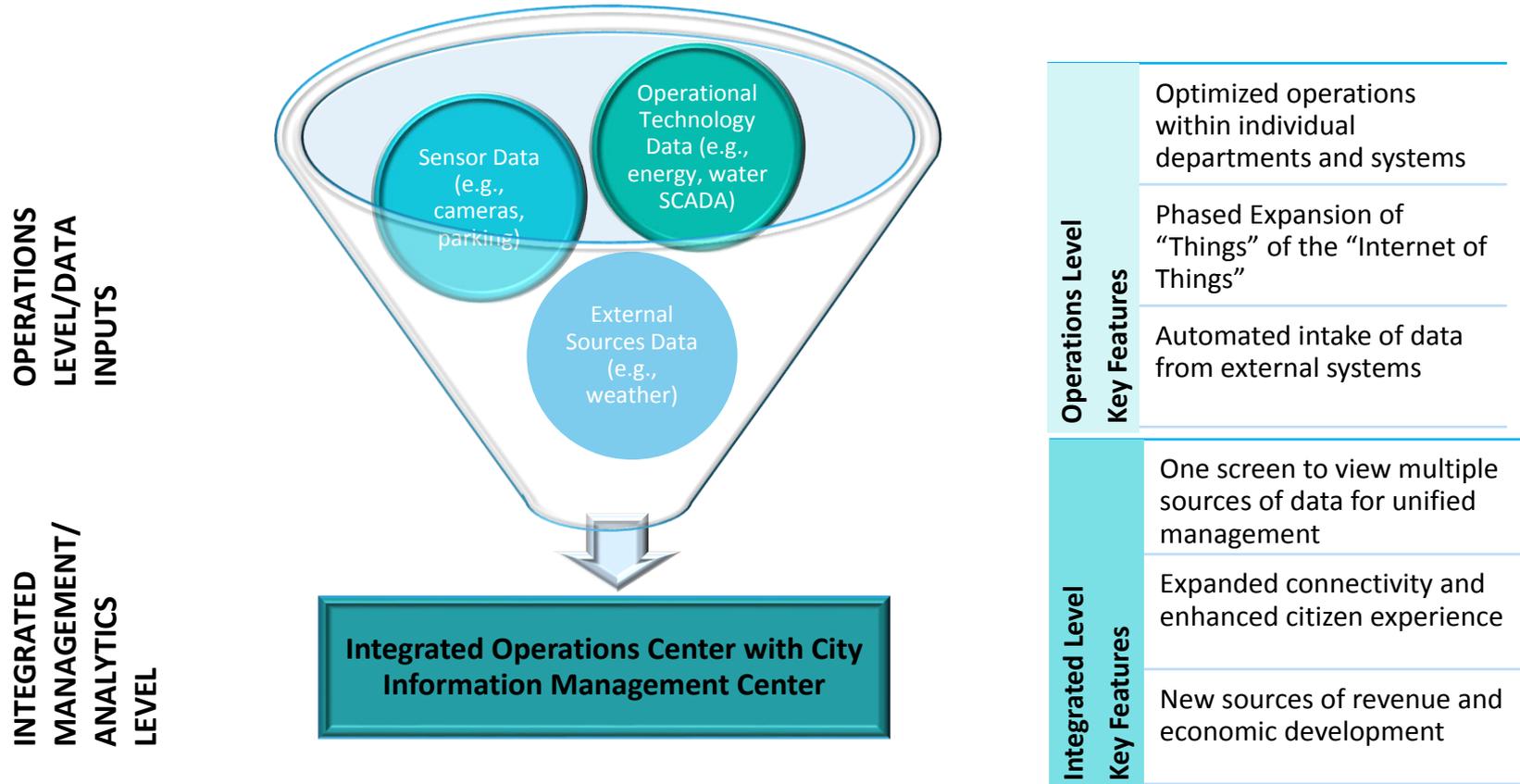
- Highly educated community
- Presence of University of Delaware
- Water and Electric Utility
- Volunteer first responders



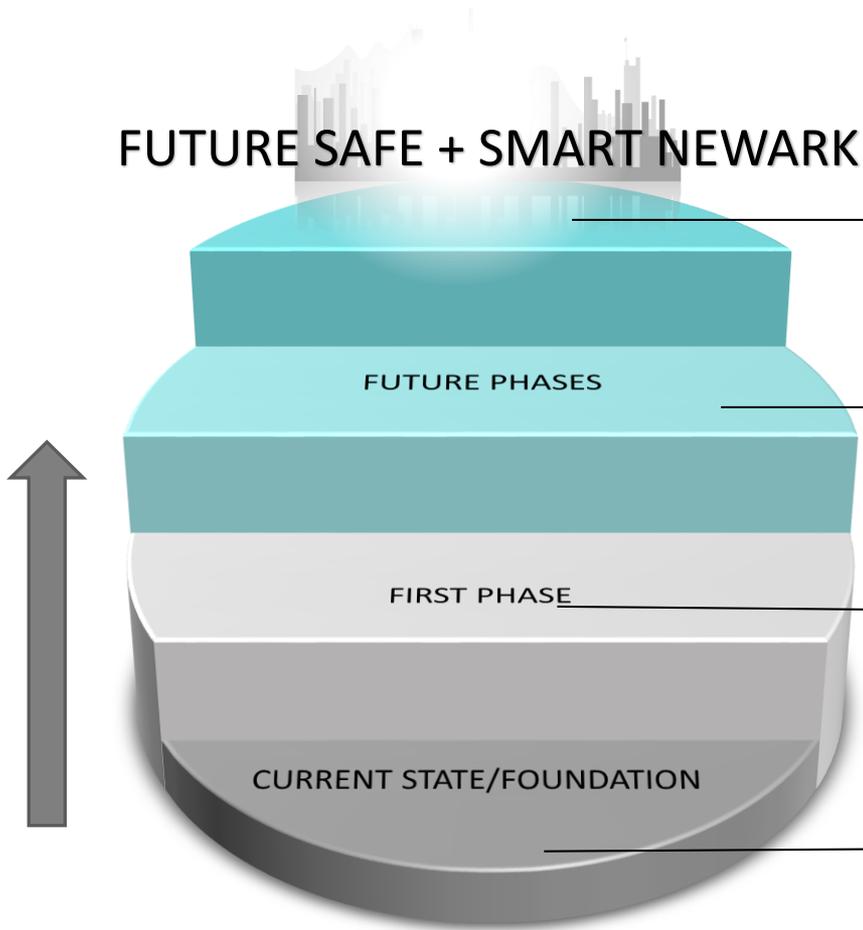
### Examples of Key Opportunities and Challenges

- Identifying new sources of revenue
- Improving Citizens' Access to Information
- Enhancing Citizen Notification and Warnings

# Tech Perspective: Anatomy of Ideal Safe + Smart Newark



# FUTURE SAFE + SMART NEWARK



## Ideal Safe + Smart State

- Functioning Integrated Management System
- High level of data inputs and improved analytical processes
- Leverage economic development opportunities
- Additional Sources of Revenue
- Improved Connectivity with Citizens

## Future Phases: Scale Up

- Keep building on the foundation in future phases by ensuring that future investments by City – no matter where – have the capability to provide input to a city-level information management platform (i.e., use open technologies that can plug into the main system)

## First Phase: Build on Strong Foundation

- Address immediate needs/take best advantage of emerging opportunities, but find ways which also build the foundational elements for a Safe + Smart City.
- Leverage existing assets and opportunities, but perhaps expand upon them
- Look at strengthening operation of specific infrastructure areas as well as beginning to develop integrated information technology

## Newark Positioned to be Safe + Smart Cities Model

- Visionary, innovative leadership
- Practice holistic team governance (not siloed)
- Possession of unique assets (utility)
- Core values in line with safe + smart values, so technology can simply enhance the ability to achieve goals.

# Examples of Recommendations

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CCI SAFE + SMART CITIES

# Information Technology: Integrated Management + Citizen Engagement

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CCI SAFE + SMART CITIES

# Elements of the Safe + Smart Offering

## 1. Citizen Connectivity

- Main Street Wi-Fi
- Smart Lighting – Multi-Sensor Node

## 2. Citizen Experience

- Wi-Fi Citizen Portal
- Digital Interactive Kiosks

## 3. Intelligent Operations Center



We focus on the core of our value, and that means primarily targeting 'walking cities' and other complementary markets like campuses.\* There was a great report recently that showed that **walking cities are both smarter and richer.**

That's a great headline for any Mayor who wants to revitalize their downtown.



# Focus Areas for Newark, a Safe + Smart Community

## Efficiencies City Network



A converged **City Network** that creates a “City Platform” to facilitate urban services

- Lighting
- Parking
- Surveillance
- Traffic
- Incident Management
- Environmental

## New Revenue Streams



Leveraging city assets (e.g.. City street furniture) leveraging the out of home advertising market

Smart Parking, optimize enforcement and participation

Smart Kiosks & Wi-Fi financial model for projected revenue generation with ROI

## Citizen Engagement



Inclusive platform to promote citizen engagement to harness and act on new ideas for a city.

Expose What, Where, and When for a community to:

*Inform*  
*Protect*  
*Revitalize*

## Economic Growth Through Innovation



Leveraging the City Platform to attract, retain, and empower start-ups, entrepreneurs, and business to create new urban services.

Ability to partner with the STAR Camus and the Delaware Technology Park

# Understanding Newark's Opportunities and Challenges

## Citizen / Government Communication



Need to engage with citizens around city services. Resulting data benefits citizen, planning, safety agencies,

## Parking



Need to expand and reveal live parking availability information to reduce circling and congestion and increase revenue through better enforcement.

## Traffic



Need to monitor and manage traffic incidents to reduce congestion, noise and pollution and improve livability

## Public Safety



Need to automatically detect security incidents, shorten response time, and analyze data to develop plans to proactively reduce crime

## Street Lighting



Need to manage street lighting equipment, maintenance location and performance to reduce energy and operating costs

# Safe + Smart City Infrastructure Management: Leverage Investment Across City-wide Issues



Included in Phase 1

## City Operations Center

### 1 Parking



Give citizens live parking availability information to reduce circling and congestion

### 2 Traffic



Monitor and manage traffic incidents to reduce congestion and improve livability

### 3 Safety & Security



Automatically detect security incidents, shorten response time, and analyze data to reduce crime

### 4 Location Services



Provide view of people flow data to aid planning and leverage location data for contextual content and advertising

### 5 Street Lighting



Manage street lighting to reduce energy and maintenance costs

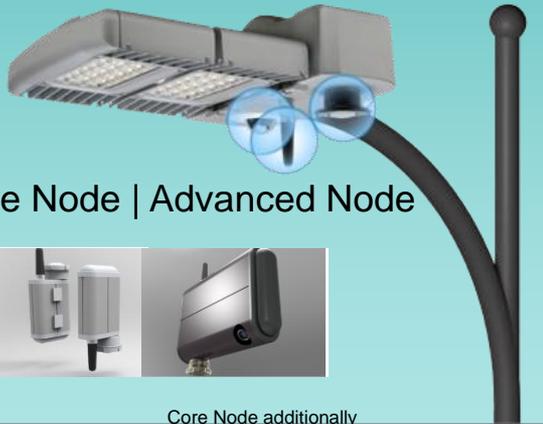
## Common Information Layer: CIM Software

## GIS

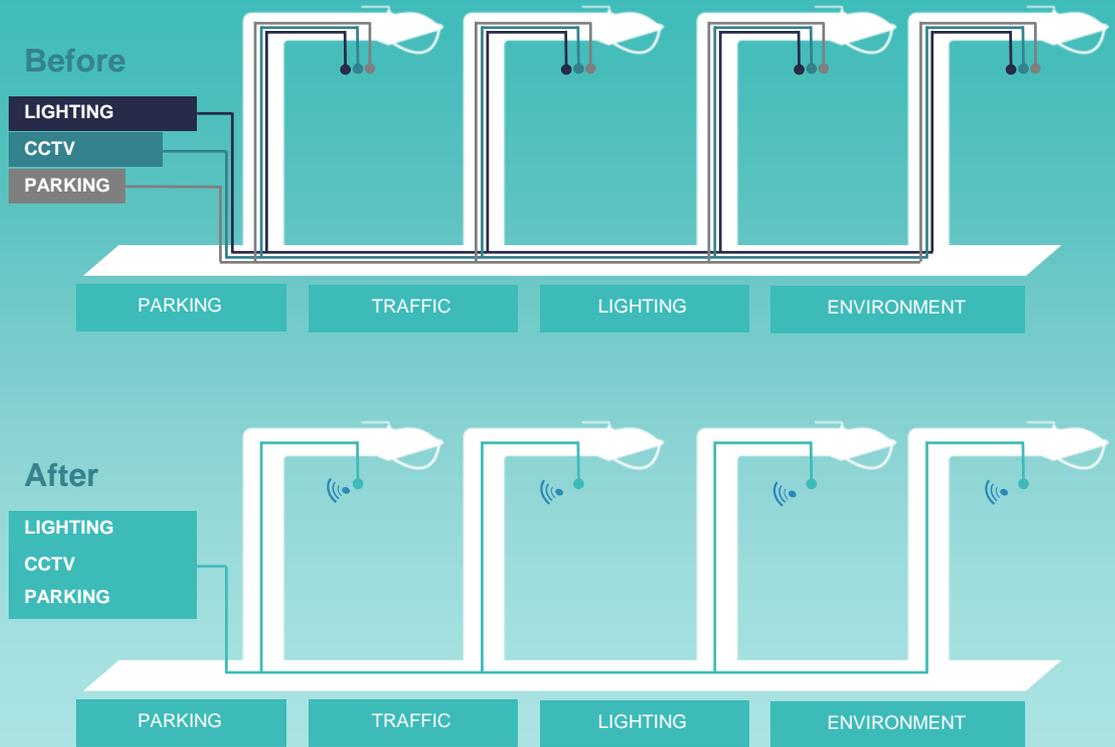
## Shared Infrastructure Layer: Smart+Connected City Wi-Fi

# City Lighting to Build a City Network with Multi-Service Node

The Intelligent Multi-Service Node platform turns LED light fixtures into sensor-equipped, smart devices capable of capturing and transmitting data near real-time, enabling new applications and services (lighting, parking management, safety and security, location-based etc.) Additional 30-40% Energy Savings

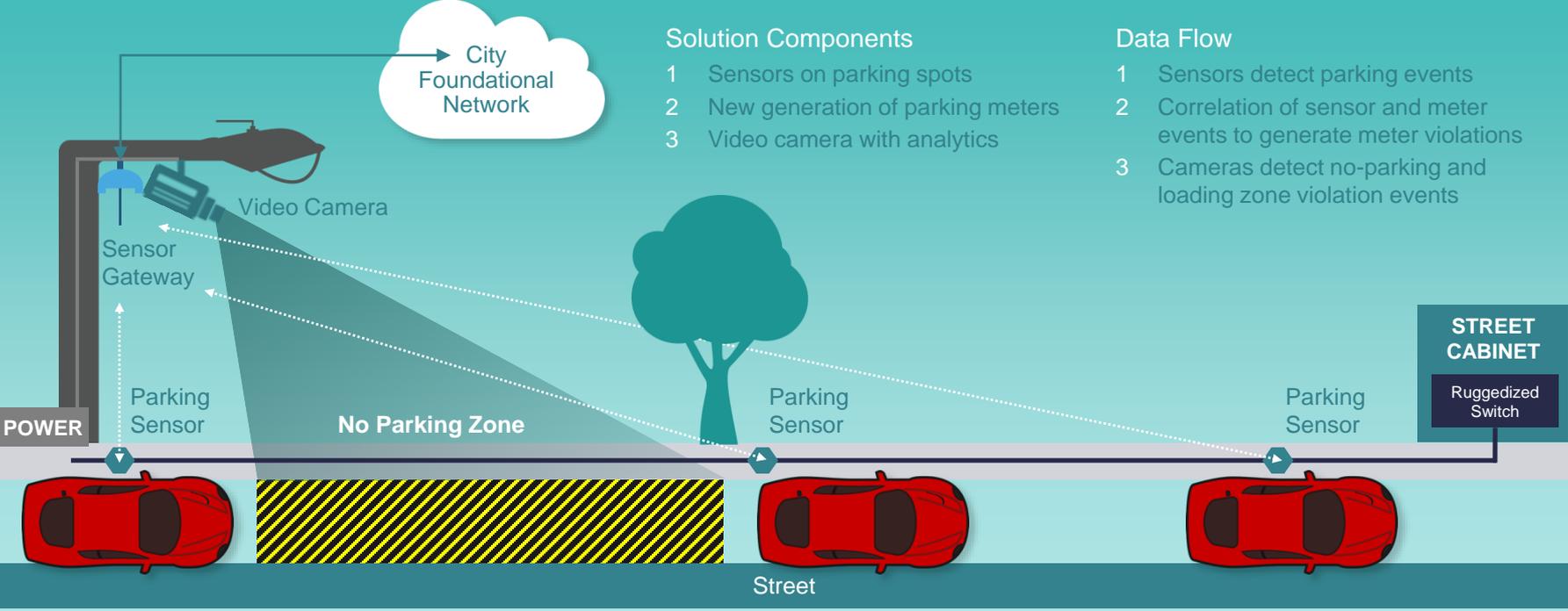


- Core Node additionally
- Light controls
  - Power Monitoring
  - Accelerometer
  - Motion Sensing
  - Video
  - Temperature
  - Humidity
  - Atmospheric Pressure

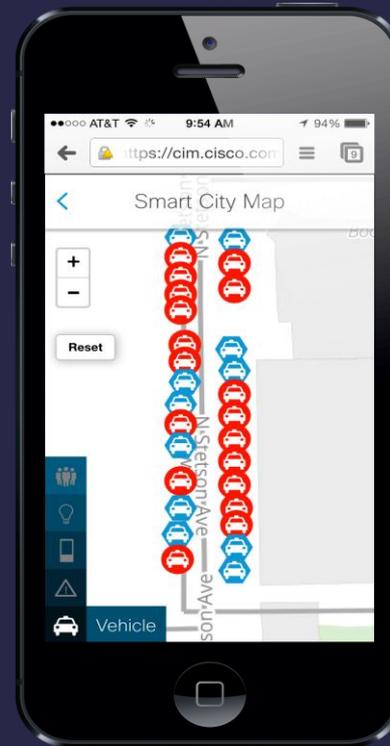


Phase 1: Lighting, Parking and Citizen Engagement are key use cases addressed, facilitated by WiFi on Main Street

# Safe + Smart City Parking: How It Works



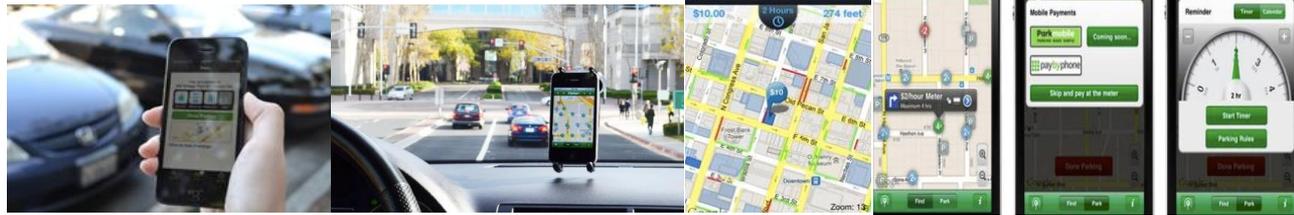
# Smart Parking



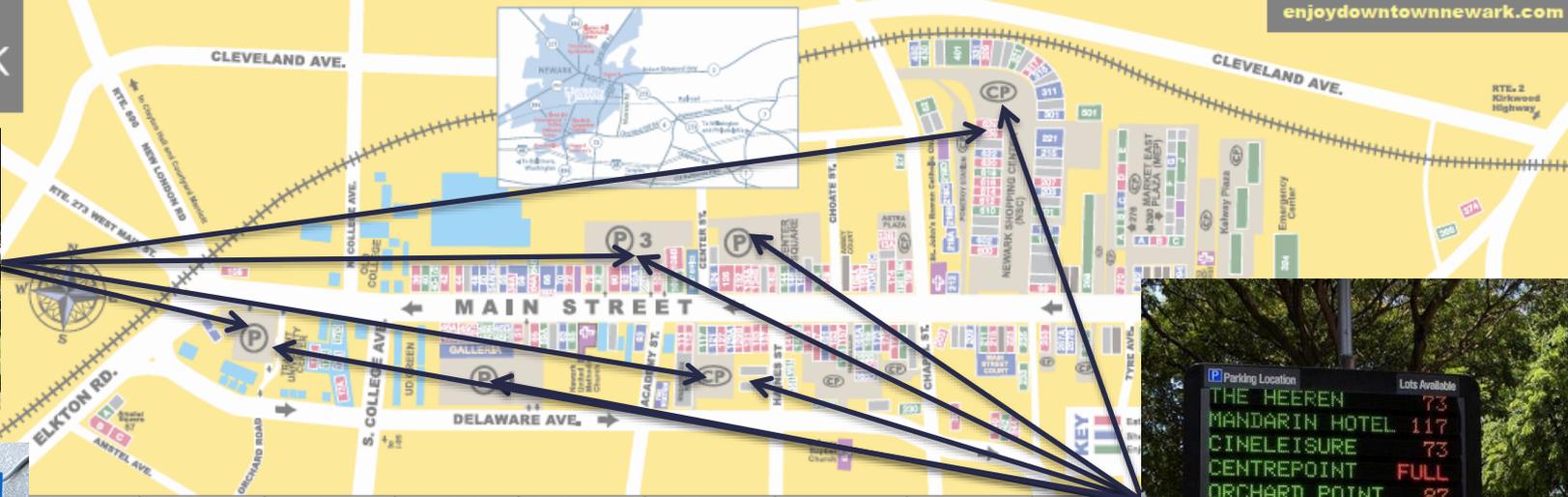
Available Spaces: 17 (current)  
Occupied Spaces: 0 (current)



# Safe + Smart Smart Parking

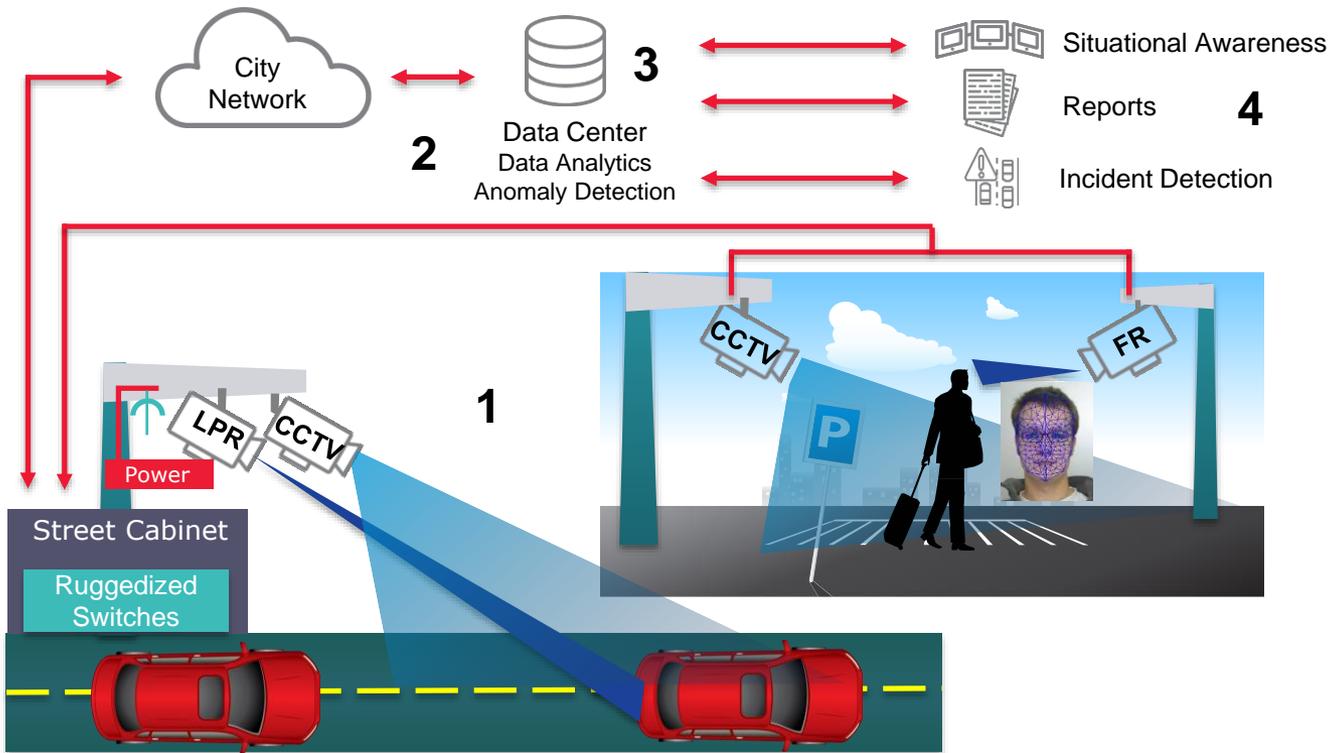


enjoydowntownnewark.com



W. Main St.	46H Downtown Newark Parking Office	66 National's & 10 Newark Newark	126 Home Crown Cakes	164 Main Street Barber Shop	190 Santa Fe Mexican Grill	276A Chess Salon	362 Shire's Point Store	450 AUSPAPERS
104 Toward Food Court	46M Parking Office	66 Newark Newark	127 D.P. Dough	165 Yogurt City	190 Napoli City	276B Newark Arts Alliance	364 McDonald's	451 Newark Blue Hair Co.
106 Vita Nova	46N Monte Boutique	66 Indian Sitar	128 Delwood Farming Co.	166 Michelle Kubic's	190 Seasons Plaza	276C Newark Arts Alliance	366 Shri's Hair Co.	452 Shri's Hair Co.
108 Yolkies Shop	46P T Mobile	66 Carica di Napoli	129 Yogo Berry Protein Yogurt	167 Mainstream Nutrition	191 U.S. Main Men's Hair Care	276D Wendy's Oriental Food Store	368 Shri's PC's	453 Metro PCS
110 New Office	46Q Tractor's Tractor-Bustin Robotics	66 Ursula's Claudia B. Travel	130 The Main Squares	168 Canamas LLC	191 Blue Line of Newark	276E Capella Blue Hair Concepts	370 Advance America	454 Lady P's Hair Design
112 PNC Bank	46R Switch Snowboards & Skateboards	66 Wilmington Travel Company	131 Miss Sachi Restaurant	169 U.S. Optical	191 Fabful Plus	276F Newark National Foods Co-op	372 Heart & Home	455 Mediterranean Caffe
114 Deer Park Towers	46S Rainbow Books & Music	66 Carlini Ciliano	132 Sweet & Sassy Cakes	170 Subway	191 The Six Stars	276G The Awareness Center	374 Capriotti's	456 Capriotti's
W. Main St.	46T California PERA	66 Christian Science Reading Room	133 Challenge Chargeburger	171 Village Imports	191 Newark Food/Beverage Lounge	276H Shari Lin Taper & Co. Inc.	376 The Saigon Restaurant	457 The Saigon Restaurant
116 Newark Dill & Doggie	46U California PERA	66 Room	134 Powers Food	172 U.S. Main Men's Hair Care	191 Mark Street Computers Mid Atlantic Plant	276I Fullon Bank	378 Tuna & Crab	458 Tuna & Crab
118 UPS Store	46V TI Inkies	66 Shores	135 Starbucks Coffee	173 The Days of Knights	191 Perino Hoagies	276J The Trucking Rules	380 Fusion Fitness	459 Dollar Tree
120 The Hand Shop	46W The Delaware Bank Exchange	66 Abbott's Shoe Repair	136 481A Professional Tans	174 Freddy's Wings To Go	191 Newark Food/Beverage Lounge	276K Karyn Pa Academy	382 Amani Margaret's Antique Mall	460 Wooden Pellets
122 Central Bank	46X Kaplan Text Prep	66 A Cut Above	137 Cafe Eye	175 Iron Hill Brewery & Eatery	191 U.S. Main Men's Hair Care	276L The Trucking Rules	384 Amani Margaret's Antique Mall	461 Newark Discount Liquors
124 Plaza a Pizza	46Y Newark Camera Shop	66 The Delaware Bank Exchange	138 Fried House Restaurant	176 All Eats	191 U.S. Main Men's Hair Care	276M The Trucking Rules	386 Amani Margaret's Antique Mall	462 Newark News & Tobacco
126 Ciro's Pizza	46Z Newark Camera Shop	66 The Delaware Bank Exchange	139 Gado	177 Siro's Deli	191 U.S. Main Men's Hair Care	276N The Trucking Rules	388 Amani Margaret's Antique Mall	463 Newark News & Tobacco
128 Kidder's	46AA Newark Camera Shop	66 The Delaware Bank Exchange	140 Fred House Restaurant	178 Siro's Deli	191 U.S. Main Men's Hair Care	276O The Trucking Rules	390 Amani Margaret's Antique Mall	464 Newark News & Tobacco
130 Lulliano Food You	46AB Newark Camera Shop	66 The Delaware Bank Exchange	141 Iron Hill Brewery & Eatery	179 Siro's Deli	191 U.S. Main Men's Hair Care	276P The Trucking Rules	392 Amani Margaret's Antique Mall	465 Newark News & Tobacco
132 Brown To Go	46AC Newark Camera Shop	66 The Delaware Bank Exchange	142 Iron Hill Brewery & Eatery	180 Siro's Deli	191 U.S. Main Men's Hair Care	276Q The Trucking Rules	394 Amani Margaret's Antique Mall	466 Newark News & Tobacco
134 Knowledge Eye Care	46AD Newark Camera Shop	66 The Delaware Bank Exchange	143 Iron Hill Brewery & Eatery	181 Siro's Deli	191 U.S. Main Men's Hair Care	276R The Trucking Rules	396 Amani Margaret's Antique Mall	467 Newark News & Tobacco
136 Ambition Salon	46AE Newark Camera Shop	66 The Delaware Bank Exchange	144 Iron Hill Brewery & Eatery	182 Siro's Deli	191 U.S. Main Men's Hair Care	276S The Trucking Rules	398 Amani Margaret's Antique Mall	468 Newark News & Tobacco
138 Underman's Bookstore	46AF Newark Camera Shop	66 The Delaware Bank Exchange	145 Iron Hill Brewery & Eatery	183 Siro's Deli	191 U.S. Main Men's Hair Care	276T The Trucking Rules	400 Amani Margaret's Antique Mall	469 Newark News & Tobacco
W. Main St.	46AG Newark Camera Shop	66 The Delaware Bank Exchange	146 Iron Hill Brewery & Eatery	184 Siro's Deli	191 U.S. Main Men's Hair Care	276U The Trucking Rules	402 Amani Margaret's Antique Mall	470 Newark News & Tobacco
140	46AH Newark Camera Shop	66 The Delaware Bank Exchange	147 Iron Hill Brewery & Eatery	185 Siro's Deli	191 U.S. Main Men's Hair Care	276V The Trucking Rules	404 Amani Margaret's Antique Mall	471 Newark News & Tobacco
142	46AI Newark Camera Shop	66 The Delaware Bank Exchange	148 Iron Hill Brewery & Eatery	186 Siro's Deli	191 U.S. Main Men's Hair Care	276W The Trucking Rules	406 Amani Margaret's Antique Mall	472 Newark News & Tobacco
144	46AJ Newark Camera Shop	66 The Delaware Bank Exchange	149 Iron Hill Brewery & Eatery	187 Siro's Deli	191 U.S. Main Men's Hair Care	276X The Trucking Rules	408 Amani Margaret's Antique Mall	473 Newark News & Tobacco
146	46AK Newark Camera Shop	66 The Delaware Bank Exchange	150 Iron Hill Brewery & Eatery	188 Siro's Deli	191 U.S. Main Men's Hair Care	276Y The Trucking Rules	410 Amani Margaret's Antique Mall	474 Newark News & Tobacco
148	46AL Newark Camera Shop	66 The Delaware Bank Exchange	151 Iron Hill Brewery & Eatery	189 Siro's Deli	191 U.S. Main Men's Hair Care	276Z The Trucking Rules	412 Amani Margaret's Antique Mall	475 Newark News & Tobacco
150	46AM Newark Camera Shop	66 The Delaware Bank Exchange	152 Iron Hill Brewery & Eatery	190 Siro's Deli	191 U.S. Main Men's Hair Care	277A The Trucking Rules	414 Amani Margaret's Antique Mall	476 Newark News & Tobacco
152	46AN Newark Camera Shop	66 The Delaware Bank Exchange	153 Iron Hill Brewery & Eatery	191 Siro's Deli	191 U.S. Main Men's Hair Care	277B The Trucking Rules	416 Amani Margaret's Antique Mall	477 Newark News & Tobacco
154	46AO Newark Camera Shop	66 The Delaware Bank Exchange	154 Iron Hill Brewery & Eatery	192 Siro's Deli	191 U.S. Main Men's Hair Care	277C The Trucking Rules	418 Amani Margaret's Antique Mall	478 Newark News & Tobacco
156	46AP Newark Camera Shop	66 The Delaware Bank Exchange	155 Iron Hill Brewery & Eatery	193 Siro's Deli	191 U.S. Main Men's Hair Care	277D The Trucking Rules	420 Amani Margaret's Antique Mall	479 Newark News & Tobacco
158	46AQ Newark Camera Shop	66 The Delaware Bank Exchange	156 Iron Hill Brewery & Eatery	194 Siro's Deli	191 U.S. Main Men's Hair Care	277E The Trucking Rules	422 Amani Margaret's Antique Mall	480 Newark News & Tobacco
160	46AR Newark Camera Shop	66 The Delaware Bank Exchange	157 Iron Hill Brewery & Eatery	195 Siro's Deli	191 U.S. Main Men's Hair Care	277F The Trucking Rules	424 Amani Margaret's Antique Mall	481 Newark News & Tobacco
162	46AS Newark Camera Shop	66 The Delaware Bank Exchange	158 Iron Hill Brewery & Eatery	196 Siro's Deli	191 U.S. Main Men's Hair Care	277G The Trucking Rules	426 Amani Margaret's Antique Mall	482 Newark News & Tobacco
164	46AT Newark Camera Shop	66 The Delaware Bank Exchange	159 Iron Hill Brewery & Eatery	197 Siro's Deli	191 U.S. Main Men's Hair Care	277H The Trucking Rules	428 Amani Margaret's Antique Mall	483 Newark News & Tobacco
166	46AU Newark Camera Shop	66 The Delaware Bank Exchange	160 Iron Hill Brewery & Eatery	198 Siro's Deli	191 U.S. Main Men's Hair Care	277I The Trucking Rules	430 Amani Margaret's Antique Mall	484 Newark News & Tobacco
168	46AV Newark Camera Shop	66 The Delaware Bank Exchange	161 Iron Hill Brewery & Eatery	199 Siro's Deli	191 U.S. Main Men's Hair Care	277J The Trucking Rules	432 Amani Margaret's Antique Mall	485 Newark News & Tobacco
170	46AW Newark Camera Shop	66 The Delaware Bank Exchange	162 Iron Hill Brewery & Eatery	200 Siro's Deli	191 U.S. Main Men's Hair Care	277K The Trucking Rules	434 Amani Margaret's Antique Mall	486 Newark News & Tobacco
172	46AX Newark Camera Shop	66 The Delaware Bank Exchange	163 Iron Hill Brewery & Eatery	201 Siro's Deli	191 U.S. Main Men's Hair Care	277L The Trucking Rules	436 Amani Margaret's Antique Mall	487 Newark News & Tobacco
174	46AY Newark Camera Shop	66 The Delaware Bank Exchange	164 Iron Hill Brewery & Eatery	202 Siro's Deli	191 U.S. Main Men's Hair Care	277M The Trucking Rules	438 Amani Margaret's Antique Mall	488 Newark News & Tobacco
176	46AZ Newark Camera Shop	66 The Delaware Bank Exchange	165 Iron Hill Brewery & Eatery	203 Siro's Deli	191 U.S. Main Men's Hair Care	277N The Trucking Rules	440 Amani Margaret's Antique Mall	489 Newark News & Tobacco
178	46BA Newark Camera Shop	66 The Delaware Bank Exchange	166 Iron Hill Brewery & Eatery	204 Siro's Deli	191 U.S. Main Men's Hair Care	277O The Trucking Rules	442 Amani Margaret's Antique Mall	490 Newark News & Tobacco
180	46BB Newark Camera Shop	66 The Delaware Bank Exchange	167 Iron Hill Brewery & Eatery	205 Siro's Deli	191 U.S. Main Men's Hair Care	277P The Trucking Rules	444 Amani Margaret's Antique Mall	491 Newark News & Tobacco
182	46BC Newark Camera Shop	66 The Delaware Bank Exchange	168 Iron Hill Brewery & Eatery	206 Siro's Deli	191 U.S. Main Men's Hair Care	277Q The Trucking Rules	446 Amani Margaret's Antique Mall	492 Newark News & Tobacco
184	46BD Newark Camera Shop	66 The Delaware Bank Exchange	169 Iron Hill Brewery & Eatery	207 Siro's Deli	191 U.S. Main Men's Hair Care	277R The Trucking Rules	448 Amani Margaret's Antique Mall	493 Newark News & Tobacco
186	46BE Newark Camera Shop	66 The Delaware Bank Exchange	170 Iron Hill Brewery & Eatery	208 Siro's Deli	191 U.S. Main Men's Hair Care	277S The Trucking Rules	450 Amani Margaret's Antique Mall	494 Newark News & Tobacco
188	46BF Newark Camera Shop	66 The Delaware Bank Exchange	171 Iron Hill Brewery & Eatery	209 Siro's Deli	191 U.S. Main Men's Hair Care	277T The Trucking Rules	452 Amani Margaret's Antique Mall	495 Newark News & Tobacco
190	46BG Newark Camera Shop	66 The Delaware Bank Exchange	172 Iron Hill Brewery & Eatery	210 Siro's Deli	191 U.S. Main Men's Hair Care	277U The Trucking Rules	454 Amani Margaret's Antique Mall	496 Newark News & Tobacco
192	46BH Newark Camera Shop	66 The Delaware Bank Exchange	173 Iron Hill Brewery & Eatery	211 Siro's Deli	191 U.S. Main Men's Hair Care	277V The Trucking Rules	456 Amani Margaret's Antique Mall	497 Newark News & Tobacco
194	46BI Newark Camera Shop	66 The Delaware Bank Exchange	174 Iron Hill Brewery & Eatery	212 Siro's Deli	191 U.S. Main Men's Hair Care	277W The Trucking Rules	458 Amani Margaret's Antique Mall	498 Newark News & Tobacco
196	46BJ Newark Camera Shop	66 The Delaware Bank Exchange	175 Iron Hill Brewery & Eatery	213 Siro's Deli	191 U.S. Main Men's Hair Care	277X The Trucking Rules	460 Amani Margaret's Antique Mall	499 Newark News & Tobacco
198	46BK Newark Camera Shop	66 The Delaware Bank Exchange	176 Iron Hill Brewery & Eatery	214 Siro's Deli	191 U.S. Main Men's Hair Care	277Y The Trucking Rules	462 Amani Margaret's Antique Mall	500 Newark News & Tobacco
200	46BL Newark Camera Shop	66 The Delaware Bank Exchange	177 Iron Hill Brewery & Eatery	215 Siro's Deli	191 U.S. Main Men's Hair Care	277Z The Trucking Rules	464 Amani Margaret's Antique Mall	501 Newark News & Tobacco
202	46BM Newark Camera Shop	66 The Delaware Bank Exchange	178 Iron Hill Brewery & Eatery	216 Siro's Deli	191 U.S. Main Men's Hair Care	278A The Trucking Rules	466 Amani Margaret's Antique Mall	502 Newark News & Tobacco
204	46BN Newark Camera Shop	66 The Delaware Bank Exchange	179 Iron Hill Brewery & Eatery	217 Siro's Deli	191 U.S. Main Men's Hair Care	278B The Trucking Rules	468 Amani Margaret's Antique Mall	503 Newark News & Tobacco
206	46BO Newark Camera Shop	66 The Delaware Bank Exchange	180 Iron Hill Brewery & Eatery	218 Siro's Deli	191 U.S. Main Men's Hair Care	278C The Trucking Rules	470 Amani Margaret's Antique Mall	504 Newark News & Tobacco
208	46BP Newark Camera Shop	66 The Delaware Bank Exchange	181 Iron Hill Brewery & Eatery	219 Siro's Deli	191 U.S. Main Men's Hair Care	278D The Trucking Rules	472 Amani Margaret's Antique Mall	505 Newark News & Tobacco
210	46BQ Newark Camera Shop	66 The Delaware Bank Exchange	182 Iron Hill Brewery & Eatery	220 Siro's Deli	191 U.S. Main Men's Hair Care	278E The Trucking Rules	474 Amani Margaret's Antique Mall	506 Newark News & Tobacco
212	46BR Newark Camera Shop	66 The Delaware Bank Exchange	183 Iron Hill Brewery & Eatery	221 Siro's Deli	191 U.S. Main Men's Hair Care	278F The Trucking Rules	476 Amani Margaret's Antique Mall	507 Newark News & Tobacco
214	46BS Newark Camera Shop	66 The Delaware Bank Exchange	184 Iron Hill Brewery & Eatery	222 Siro's Deli	191 U.S. Main Men's Hair Care	278G The Trucking Rules	478 Amani Margaret's Antique Mall	508 Newark News & Tobacco
216	46BT Newark Camera Shop	66 The Delaware Bank Exchange	185 Iron Hill Brewery & Eatery	223 Siro's Deli	191 U.S. Main Men's Hair Care	278H The Trucking Rules	480 Amani Margaret's Antique Mall	509 Newark News & Tobacco
218	46BU Newark Camera Shop	66 The Delaware Bank Exchange	186 Iron Hill Brewery & Eatery	224 Siro's Deli	191 U.S. Main Men's Hair Care	278I The Trucking Rules	482 Amani Margaret's Antique Mall	510 Newark News & Tobacco
220	46BV Newark Camera Shop	66 The Delaware Bank Exchange	187 Iron Hill Brewery & Eatery	225 Siro's Deli	191 U.S. Main Men's Hair Care	278J The Trucking Rules	484 Amani Margaret's Antique Mall	511 Newark News & Tobacco
222	46BW Newark Camera Shop	66 The Delaware Bank Exchange	188 Iron Hill Brewery & Eatery	226 Siro's Deli	191 U.S. Main Men's Hair Care	278K The Trucking Rules	486 Amani Margaret's Antique Mall	512 Newark News & Tobacco
224	46BX Newark Camera Shop	66 The Delaware Bank Exchange	189 Iron Hill Brewery & Eatery	227 Siro's Deli	191 U.S. Main Men's Hair Care	278L The Trucking Rules	488 Amani Margaret's Antique Mall	513 Newark News & Tobacco
226	46BY Newark Camera Shop	66 The Delaware Bank Exchange	190 Iron Hill Brewery & Eatery	228 Siro's Deli	191 U.S. Main Men's Hair Care	278M The Trucking Rules	490 Amani Margaret's Antique Mall	514 Newark News & Tobacco
228	46BZ Newark Camera Shop	66 The Delaware Bank Exchange	191 Iron Hill Brewery & Eatery	229 Siro's Deli	191 U.S. Main Men's Hair Care	278N The Trucking Rules	492 Amani Margaret's Antique Mall	515 Newark News & Tobacco
230	46C0 Newark Camera Shop	66 The Delaware Bank Exchange	192 Iron Hill Brewery & Eatery	230 Siro's Deli	191 U.S. Main Men's Hair Care	278O The Trucking Rules	494 Amani Margaret's Antique Mall	516 Newark News & Tobacco
232	46C1 Newark Camera Shop	66 The Delaware Bank Exchange	193 Iron Hill Brewery & Eatery	231 Siro's Deli	191 U.S. Main Men's Hair Care	278P The Trucking Rules	496 Amani Margaret's Antique Mall	517 Newark News & Tobacco
234	46C2 Newark Camera Shop	66 The Delaware Bank Exchange	194 Iron Hill Brewery & Eatery	232 Siro's Deli	191 U.S. Main Men's Hair Care	278Q The Trucking Rules	498 Amani Margaret's Antique Mall	518 Newark News & Tobacco
236	46C3 Newark Camera Shop	66 The Delaware Bank Exchange	195 Iron Hill Brewery & Eatery	233 Siro's Deli	191 U.S. Main Men's Hair Care	278R The Trucking Rules	500 Amani Margaret's Antique Mall	519 Newark News & Tobacco
238	46C4 Newark Camera Shop	66 The Delaware Bank Exchange	196 Iron Hill Brewery & Eatery	234 Siro's Deli	191 U.S. Main Men's Hair Care	278S The Trucking Rules	502 Amani Margaret's Antique Mall	520 Newark News & Tobacco
240	46C5 Newark Camera Shop	66 The Delaware Bank Exchange	197 Iron Hill Brewery & Eatery	235 Siro's Deli	191 U.S. Main Men's Hair Care	278T The Trucking Rules	504 Amani Margaret's Antique Mall	521 Newark News & Tobacco
242	46C6 Newark Camera Shop	66 The Delaware Bank Exchange	198 Iron Hill Brewery & Eatery	236 Siro's Deli	191 U.S. Main Men's Hair Care	278U The Trucking Rules	506 Amani Margaret's Antique Mall	522 Newark News & Tobacco
244	46C7 Newark Camera Shop	66 The Delaware Bank Exchange	199 Iron Hill Brewery & Eatery	237 Siro's Deli	191 U.S. Main Men's Hair Care	278V The Trucking Rules	508 Amani Margaret's Antique Mall	523 Newark News & Tobacco
246	46C8 Newark Camera Shop	66 The Delaware Bank Exchange	200 Iron Hill Brewery & Eatery	238 Siro's Deli	191 U.S. Main Men's Hair Care	278W The Trucking Rules	510 Amani Margaret's Antique Mall	524 Newark News & Tobacco
248	46C9 Newark Camera Shop	66 The Delaware Bank Exchange	201 Iron Hill Brewery & Eatery	239 Siro's Deli	191 U.S. Main Men's Hair Care	278X The Trucking Rules	512 Amani Margaret's Antique Mall	525 Newark News & Tobacco
250	46CA Newark Camera Shop	66 The Delaware Bank Exchange	202 Iron Hill Brewery & Eatery	240 Siro's Deli	191 U.S. Main Men's Hair Care	278Y The Trucking Rules	514 Amani Margaret's Antique Mall	526 Newark News & Tobacco
252	46CB Newark Camera Shop	66 The Delaware Bank Exchange	203 Iron Hill Brewery & Eatery	241 Siro's Deli	191 U.S. Main Men's Hair Care	278Z The Trucking Rules	516 Amani Margaret's Antique Mall	527 Newark News & Tobacco
254	46CC Newark Camera Shop	66 The Delaware Bank Exchange	204 Iron Hill Brewery & Eatery	242 Siro's Deli	191 U.S. Main Men's Hair Care	279A The Trucking Rules	518 Amani Margaret's Antique Mall	528 Newark News & Tobacco
256	46CD Newark Camera Shop	66 The Delaware Bank Exchange	205 Iron Hill Brewery & Eatery	243 Siro's Deli	191 U.S. Main Men's Hair Care	279B The Trucking Rules	520 Amani Margaret's Antique Mall	529 Newark News & Tobacco
258	46CE Newark Camera Shop	66 The Delaware Bank Exchange	206 Iron Hill Brewery & Eatery	244 Siro's Deli	191 U.S. Main Men's Hair Care	279C The Trucking Rules	522 Amani Margaret's Antique Mall	530 Newark News & Tobacco
260	46CF Newark Camera Shop	66 The Delaware Bank Exchange	207 Iron Hill Brewery & Eatery	245 Siro's Deli	191 U.S. Main Men's Hair Care	279D The Trucking Rules	524 Amani Margaret's Antique Mall	531 Newark News & Tobacco
262	46CG Newark Camera Shop	66 The Delaware Bank Exchange	208 Iron Hill Brewery & Eatery	246 Siro's Deli	191 U.S. Main Men's Hair Care	279E The Trucking Rules	526 Amani Margaret's Antique Mall	532 Newark News & Tobacco
264	46CH Newark Camera Shop	66 The Delaware Bank Exchange	209 Iron Hill Brewery & Eatery	247 Siro's Deli	191 U.S. Main Men's Hair Care	279F The Trucking Rules	528 Amani Margaret's Antique Mall	533 Newark News & Tobacco
266	46CI Newark Camera Shop	66 The Delaware Bank Exchange	210 Iron Hill Brewery & Eatery	248 Siro's Deli	191 U.S. Main Men's Hair Care	279G The Trucking Rules	530 Amani Margaret's Antique Mall	534 Newark News & Tobacco
268	46CJ Newark Camera Shop	66 The Delaware Bank Exchange	211 Iron Hill Brewery & Eatery	249 Siro's Deli	191 U.S. Main Men's Hair Care	279H The Trucking Rules	532 Amani Margaret's Antique Mall	535 Newark News & Tobacco
270	46CK Newark Camera Shop	66 The Delaware Bank Exchange	212 Iron Hill Brewery & Eatery	250 Siro's Deli	191 U.S. Main Men's Hair Care	279I The Trucking Rules	534 Amani Margaret's Antique Mall	536 Newark News & Tobacco
272	46CL Newark Camera Shop	66 The Delaware Bank Exchange	213 Iron Hill Brewery & Eatery	251 Siro's Deli	191 U.S. Main Men's Hair Care	279J The Trucking Rules	536 Amani Margaret's Antique Mall	537 Newark News & Tobacco
274	46CM Newark Camera Shop	66 The Delaware Bank Exchange	214 Iron Hill Brewery & Eatery	252 Siro's Deli	191 U.S. Main Men's Hair Care	279K The Trucking Rules	538 Amani Margaret's Antique Mall	538 Newark News & Tobacco
276	46CN Newark Camera Shop	66 The Delaware Bank Exchange	215 Iron Hill Brewery & Eatery	253 Siro's Deli	191 U.S. Main Men's Hair Care	279L The Trucking Rules	540 Amani Margaret's Antique Mall	539 Newark News & Tobacco
278	46CO Newark Camera Shop	66 The Delaware Bank Exchange	216 Iron Hill Brewery & Eatery	254 Siro's Deli	191 U.S. Main Men's Hair Care	279M The Trucking Rules	542 Amani Margaret's Antique Mall	540 Newark News & Tobacco
280	46CP Newark Camera Shop	66 The Delaware Bank Exchange</						

# Safety and Security (Phase 2: Easily Integrated)



## Solution Components

- Video camera, license plate reader, face recognition camera
- Network
- Data center
- Data analytics and visualization software

## Data Flow

1. Different sensors monitor live city conditions
2. Collected data is sent over the secure network to the data center
3. Analytics detect potential incidents and validation methods are applied to reduce false alarms
4. Situational awareness picture is updated and disseminated, validated incidents are reported to operator and security pattern reports are generated

# Citizen Engagement Platform.... To Inform, Protect & Revitalize

**Interactive platform:** that integrates information from open government programs, local businesses, and citizens

## Emergency Notifications



## Empower Small Business



## Smart Screens localized & personalized



## Real time location aware urban app



# Existing content can be integrated and branded for City specific applications



**CITY**

- City apps
- City 311
- City 911
- Alerts
- I'm Here
- Wayfinding
- Shopping
- Dining
- Entertainment
- News & Weather



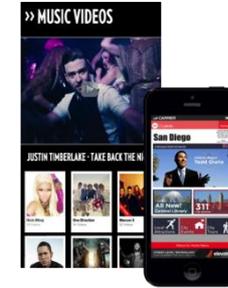
**RETAIL**

- Interactive Directory
- Fashion
- Special Offers
- Gift Card
- Kids Club
- Dining
- Photo
- Mall Insider (Join Newsletter)



**TRANSIT**

- Bus
- Flights
- Bike
- Train
- I'm Here (Nearby Shopping, Dining, Entertainment)
- Weather
- Wayfinding



**ENTERTAINMENT**

- Music & Movie Downloads
- Events
- Purchase Tickets
- Photo
- Video
- Hotels
- Restaurants & Nightlife
- Sports
- E-Commerce

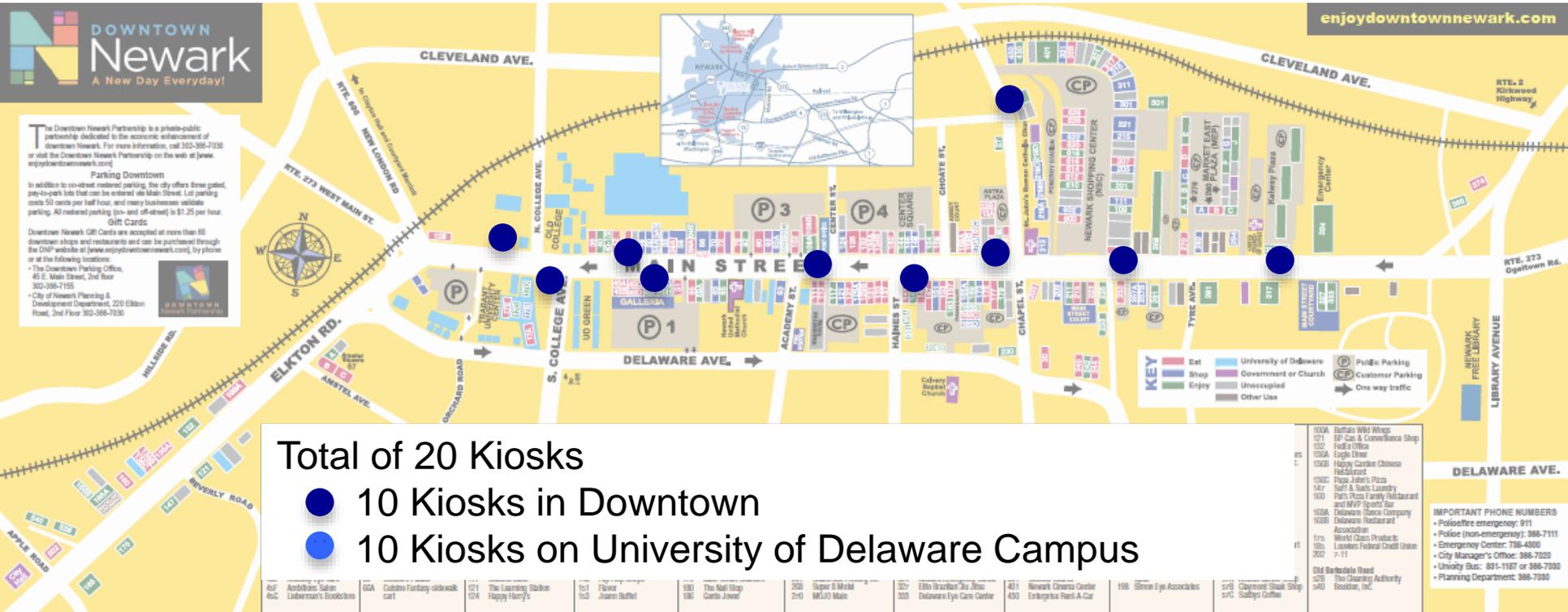
Social Media Integration \*

Hyper-Local Services \*

Geo-Targeted Mapping \*

Hand-Off Features

# Safe + Smart Citizen Experience Interactive Engagement Kiosks



# City Operation Center – “Single Pane of Glass”



# Safe + Smart City Operations Center:

An End-to-End Solution Addressing Limitations with Control Room Operations Through 6 Key Advantages

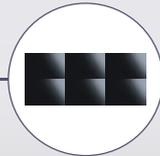
## Requirements For Control Rooms



**Collect Input**  
Everything You Want to See!



**Transmit/Distribute**  
Maximize Bandwidth Efficiency



**Display/Operate**  
IP-based Ultimate Video Wall



**Create Contents**  
Easy Map Customizing



**Monitor/Control**  
World's Only Integrated Control Environment



**Maintenance**  
Minimize TCO

### Safe + Smart City Operations Center

### Custom Integration Service

- Various inputs such as camera, PC screen, web, data, etc.
- Unlimited camera input maintaining original resolution.

- Controlled video stream as required by display (effective for long distance display)

- Operate display as one monitor
- Ability to display multiple inputs (400 inputs per monitor)

- GIS map (Google/Bing/ESRI Arc GIS), editing tool

- Integrate various inputs, such as Camera, PC screen, and data integration
- Integrate monitoring, response to alarm, and control

- Simple system configuration
- Minimal system change for expansion

# Infrastructure Technology: Water + Energy

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# City of Newark: Energy and Water



# Energy and Water

Implement **platform technologies** for City-wide application for;

Geographic Information (**GIS**)

**Weather** Information

Control System (**SCADA**)

**Physical Security** and Monitoring

Water: Implement **Water SCADA** and monitoring systems

Energy: Implement **resiliency measures** across a multi-substation area

Recommendation: **Platform Technologies**

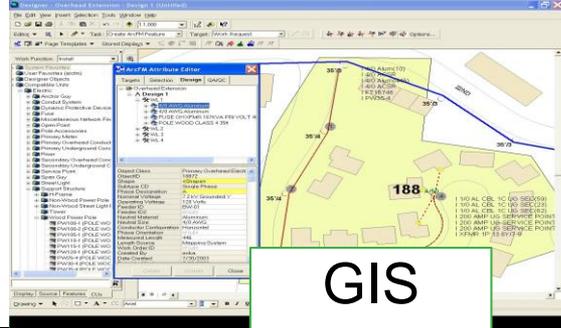
Challenge/Risk: Implement **Industry Leading technology** – City-wide benefits

Potential Impact(s): Supporting **common platforms** reduces cost and supportability

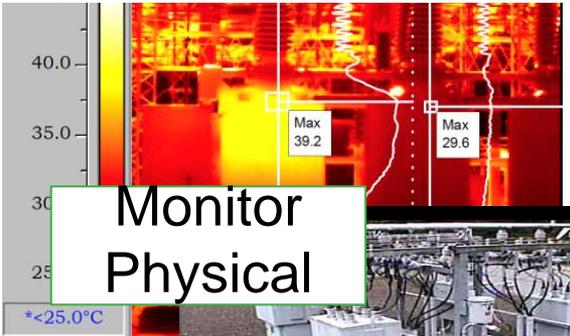
Identified Solution(s): **SCADA, GIS, Weather, Physical Monitoring**



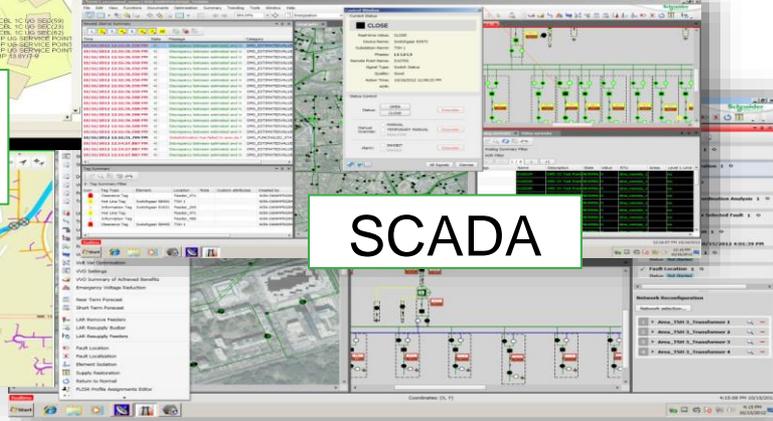
Weather



GIS Mobilize



Monitor Physical



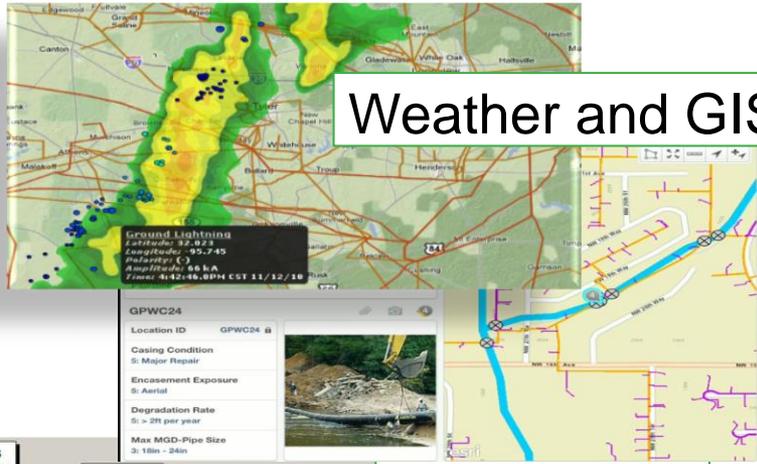
SCADA

# Recommendation: Water Infrastructure and Monitoring

**Challenge/Risk:** Implement **Water System Monitoring and Operations**

**Potential Impact(s):** **Water supply integrity** for the City

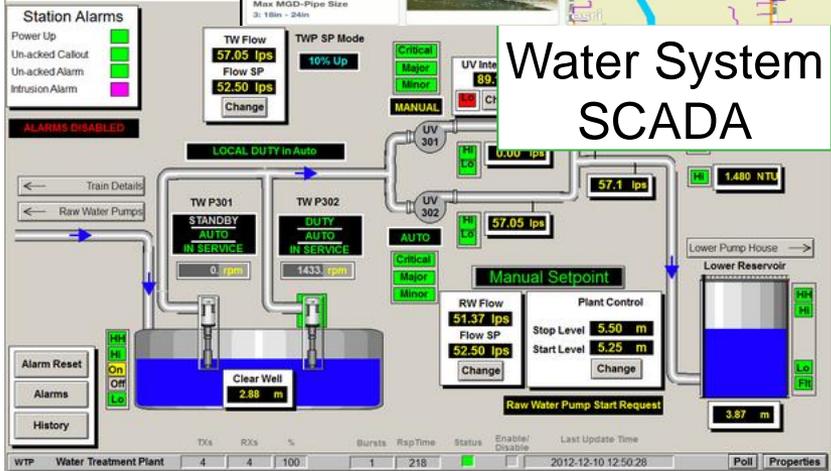
**Identified Solution(s):** **SCADA, GIS, Weather, Physical Monitoring**



Weather and GIS

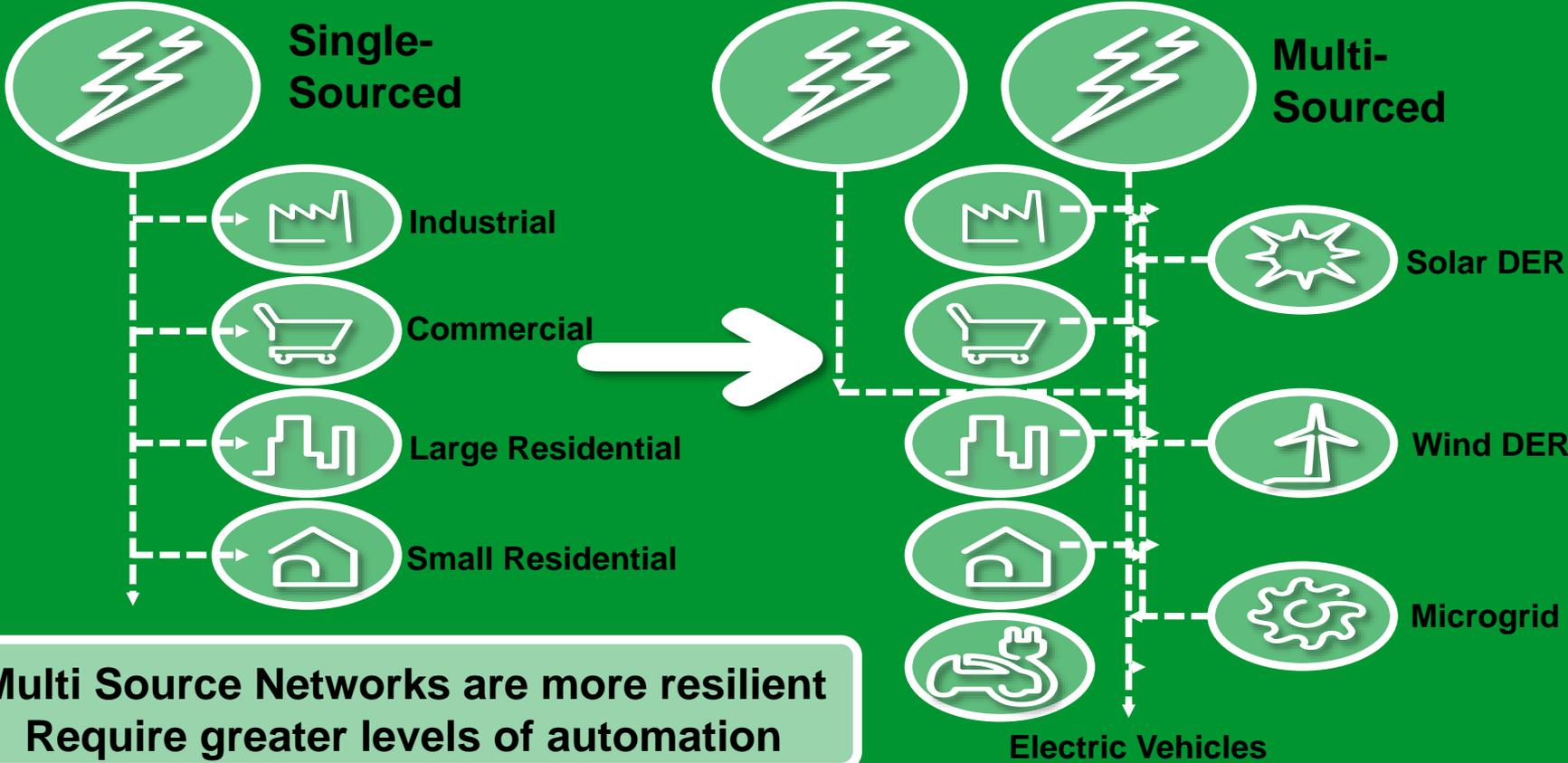


Monitor Quality, Level and Security



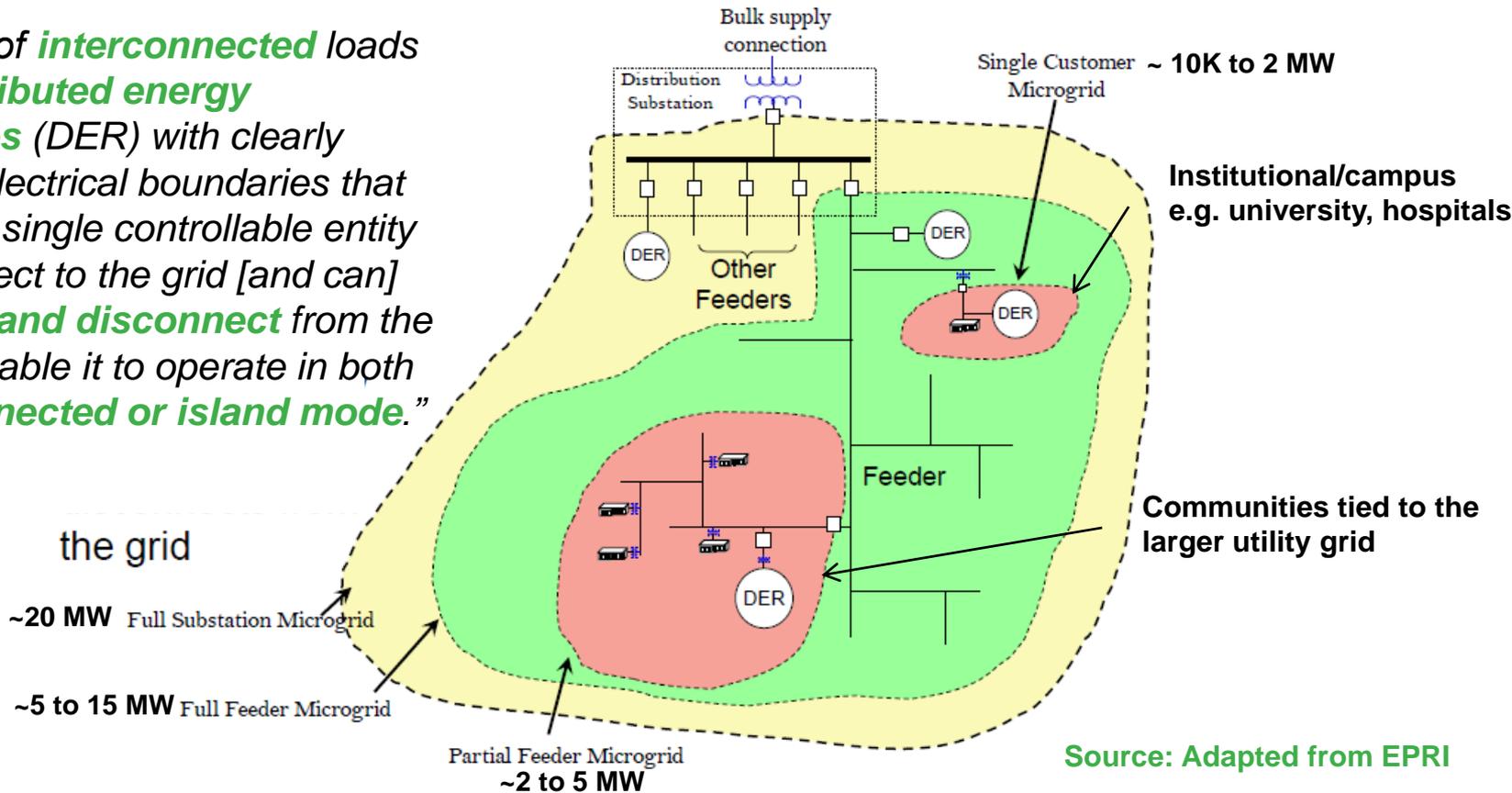
Water System SCADA

# Energy: Traditional vs. Resilient: Electrical Distribution Systems

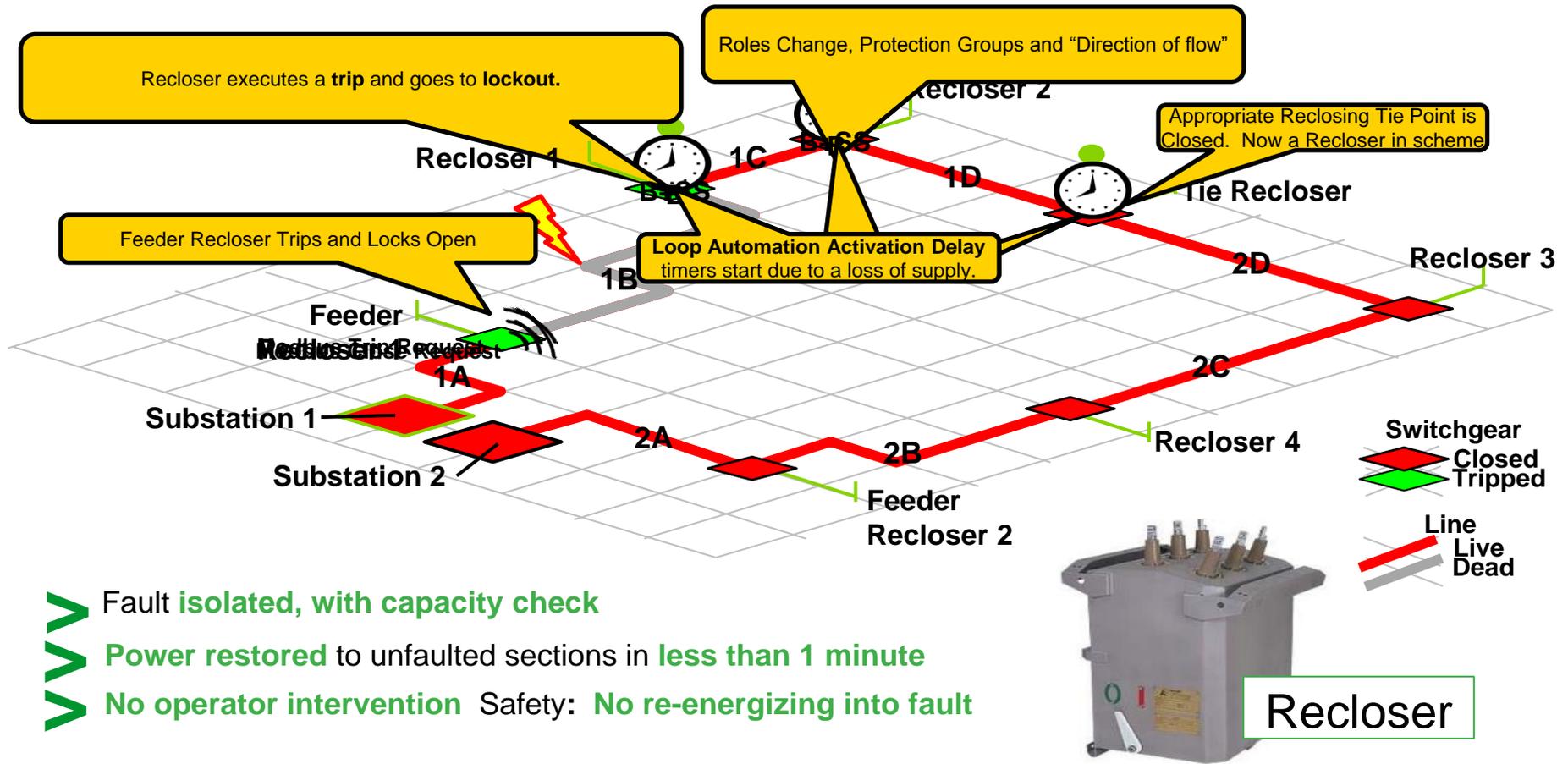


# Energy: What is a **Microgrid**?

“A group of **interconnected** loads and **distributed energy resources** (DER) with clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid [and can] **connect and disconnect** from the grid to enable it to operate in both **grid-connected or island mode**.”

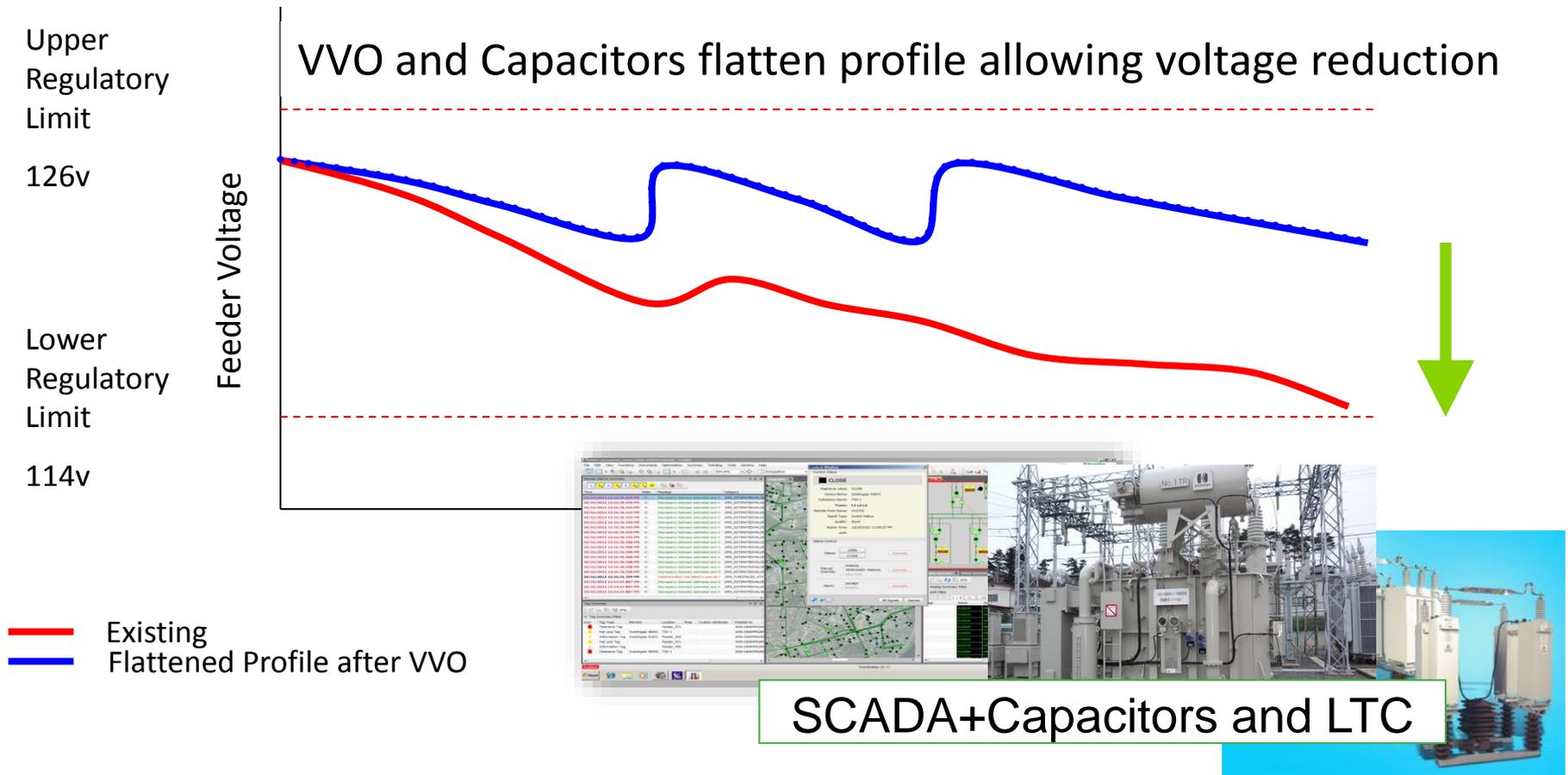


# Recommendation: Multi-Substation Automatic Reclosing System



-  Fault **isolated, with capacity check**
-  Power **restored** to unfaulted sections in **less than 1 minute**
-  **No operator intervention** Safety: **No re-energizing into fault**

# Recommendation: Multi-Substation Power Optimization System

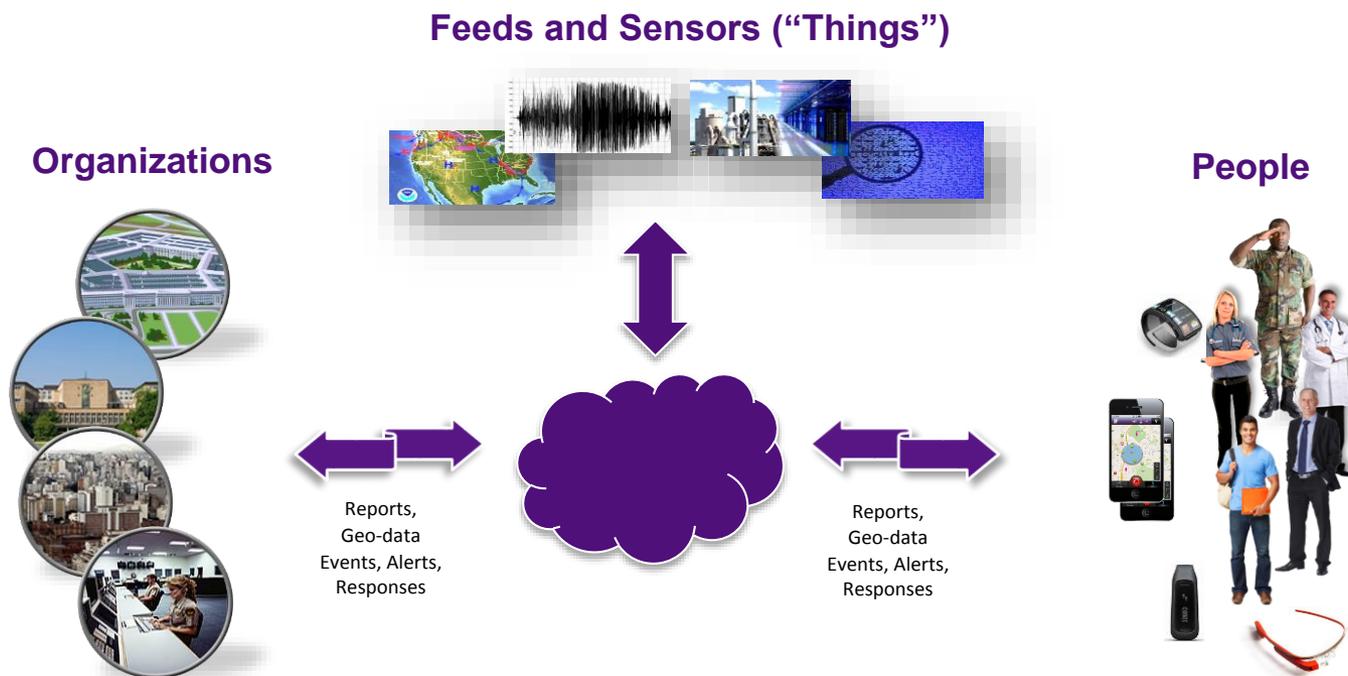


# Integrated Communications: Public Safety + Security

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# Connecting organizations, individuals and devices



# Creating an Inclusive, Collaborative Crisis Communication System

## Trusted and Secure

- Network and content are secure; members are authenticated; delivery is assured; transactions can be audited

## Relevant and Actionable

- Content is filtered and curated to assure relevancy - by context, source and preferences

## Seamless Connectivity

- Establish connections quickly and easily between organizations, whether ahead or during times of crisis

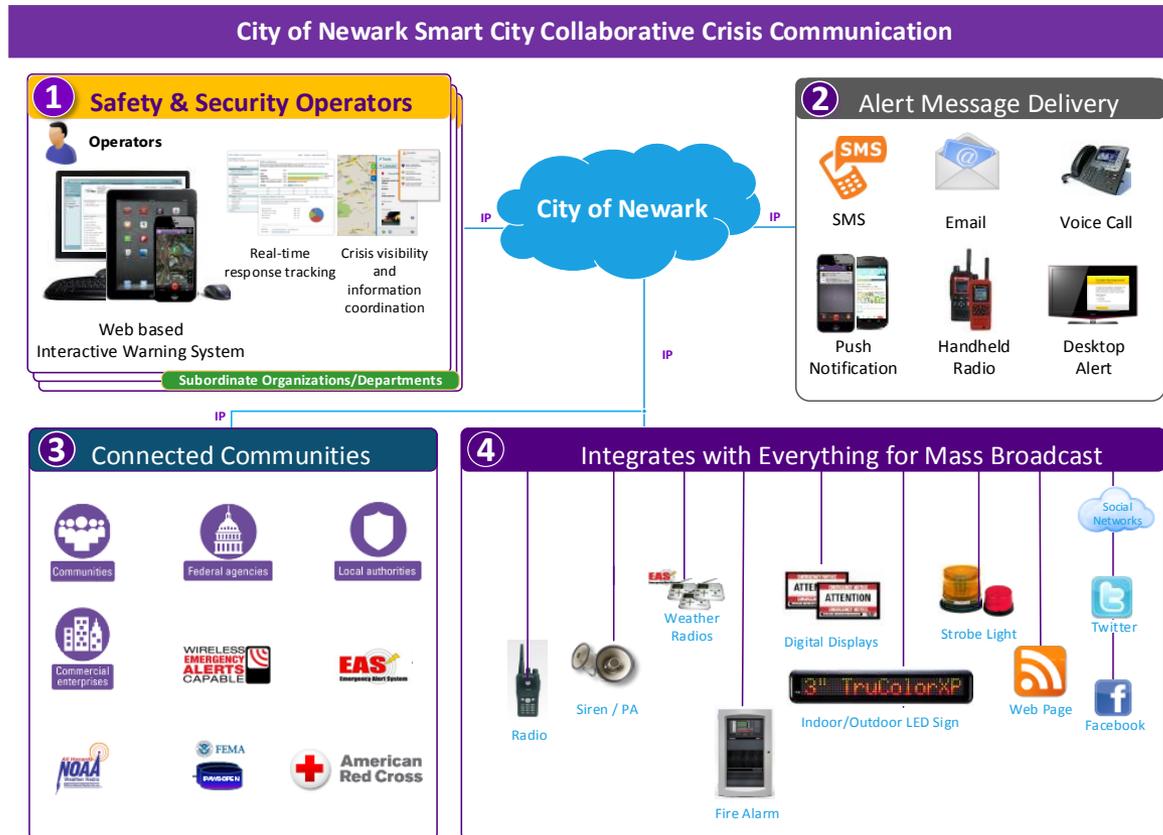
## Inclusive

- Wide range of organizations can join network – across government and business, enterprise or local, domestic and international

## Member Managed

- Network is permissioned-based, controlled and managed by principal members

# Integrated Crisis Communication



# Conclusion/Q&A

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