

Protecting Critical Infrastructure

Resiliency through planning and preparation

November, 2019



Introduction

From our credo:

“We have work because our customers value our high-quality communications services”

“We Run To A Crisis, Not Away”



An enterprise approach for business continuity

Crisis management structure:

- Cross-functional teams
- Emergency operations centers led by senior management
- Local empowerment

Robust annual exercise program:

- Internal processes: Storm preparation, cyber attack, building evacuations
- Public and private sector partners: Con Edison, NYS Electric and Gas

Focus on mission critical plans:

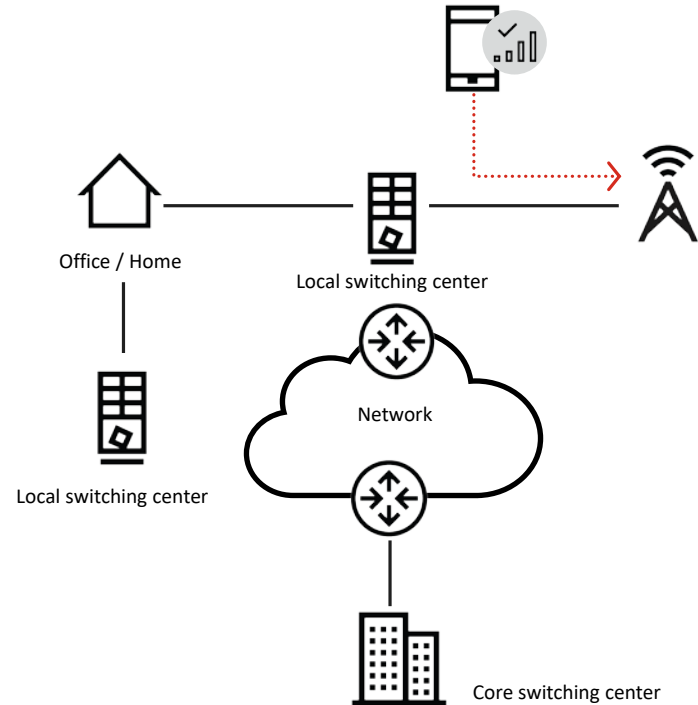
- Network systems: Equipment centers, switching, transport
- IT systems: Provisioning, call center routing, self-service tools
- Functional Teams: NMC, tech support, warehouse logistics
- Each plan is updated, exercised and certified each year

Experienced team:

- Global presence and responsibility
- 20-plus years in tech and emergency management
- Industry certifications

Network capabilities: Resilience

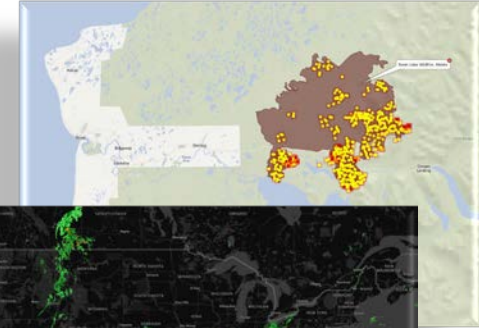
- Rigorous design & engineering standards
- Site selection
- Fire suppression & security systems
- Back-up batteries & generators
- Diverse circuit paths – multiple building entry points
- Expanding mesh networks
- Continued transition to fiber networks
- Disaster recovery plans
- Real-time monitoring and diagnostics
- Portable Assets (COWs, COLTs, generators)



Network capabilities: Situational awareness

The Global Event Management Center is responsible for Global Event Monitoring, Incident Management Support, and Planned Network Maintenance Administration.

- **Global Event Monitoring** – Information Sharing & Analysis Center (ISAC) supporting the monitoring, information gathering, risk analysis, and situational awareness for Verizon operations globally.
- **Incident Management** – Support of Incident Management Coordination when regional, national, or global incident management of an event is required.
- **Change Management** – Administration of planned outages/maintenance of Verizon systems/networks in accordance with pre-defined guidelines and policies.



Network capabilities: Deployable assets



Satellite Backhaul

Satellite Pico-cell on a Trailer (SPOT)



Wireless coverage

Cell on Wheels (COW)
Cell on Light Truck (COLT)



Backup power

Generator on a Trailer (GOATs)



Mobile incident command post

Conference space/workstations

Network capabilities: Specialized training

Major Emergency Response Incident Team (MERIT) –

Verizon's hazardous materials team

- First and Longest Operating HazMat team in Telecom industry, since 1993.
- Team skill sets include technical systems restoration, outside plant, facilities engineering, customer equipment restoration, environmental health and safety, ICS compliance
- Capable of entering and recovering in most hazardous environments



Network capabilities: Our people

The most critical recovery asset

- Thousands of highly-trained and experienced technicians
- Proven ability to respond
- Clear direction and priorities
- Test equipment and tools
- Credentials and company vehicles
- Emergency response training



Exercises and special events

Exercises identify government and private sector capabilities:

- Establish key contacts
- Understand response timeframes
- Tests capabilities in field



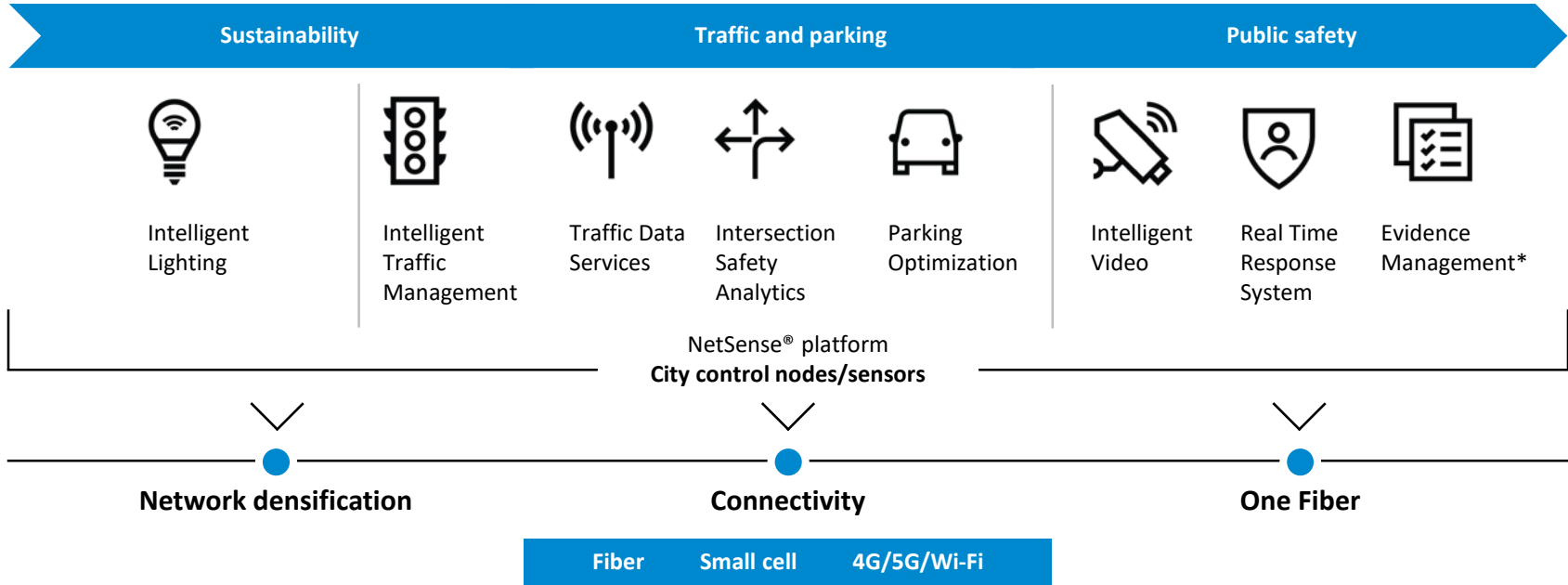
Special events & National Special Security Events (NSSEs):

- Pro-active coordination with government agencies
- Advance preparation: deploy and test assets
- NATO & G8 Summits, Super Bowls, Presidential Inauguration & Conventions

Example Exercises	Location
ESF #2 Exercises	Multiple Cities
FEMA Capstone exercises	Multiple Cities
DHS, FBI, NCTC Joint Counterterrorism Awareness Workshops	Multiple cities
Golden Guardian Functional Exercise Ventura County EOC (CA)	Ventura, CA
VERTEX Exercise (VA)	Northern VA
Tennessee Emergency Management exercise	Nashville, TN
Cascadia Rising – FEMA & multiple states	Pacific NW
Cyberstorm 6	Washington DC



Integrated smart communities solutions



*2H, 2019, Subject to change

Summary

- Verizon is focused on consistently providing high-quality services to our customers
- We invest considerable time and money to prepare for emergency situations, and to test our ability to respond – not only for events that affect us, but also those that affect our customers
- Our response capabilities and our teams have been tested and proven under many difficult, disastrous circumstances

“We don’t wait for the future. We build it.”



Thank You

