Washington, D.C. FirstNet Case Study: Both a Critical First Responder and a Service Provider

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FirstNet and Public Safety Wireless Broadband Panel

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Case Study Outline

▸ Impetus for public safety broadband in the National Capital Region

▸ FirstNet vision – Washington, D.C. as first responder *and* service provider

▸ Envisioned planning process

▸ Lessons learned

Local Role in FirstNet

- FirstNet envisioned by Congress as single national network
- Hardened, public safety grade, interoperable
- State, local, and tribal input in planning
  - State and Local Implementation Grant Program, SLIGP
- Local control in incidents and day-to-day
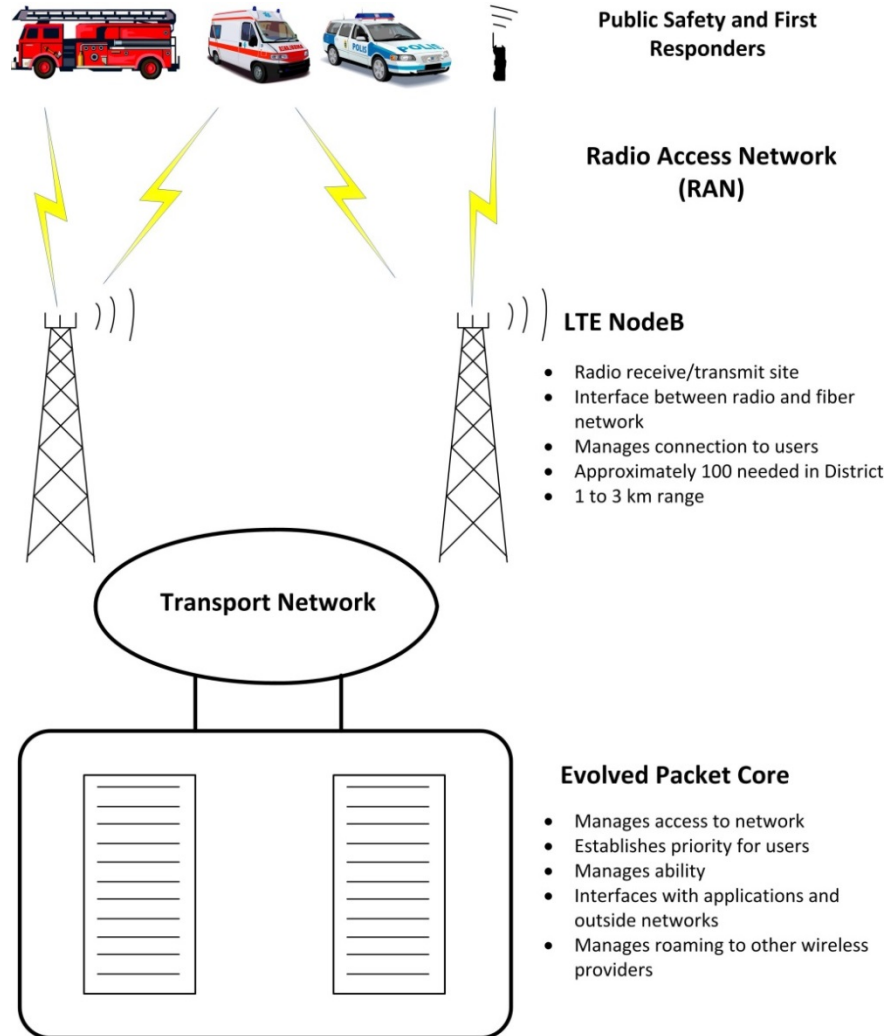- Limited funding requires public-private partnership

Local Role in FirstNet

▶ **Localities can assert needs in state planning process and through other avenues**

  ▶ Functional requirements

  ▶ Ability to afford

  ▶ Local control

  ▶ Available assets

    ▶ Towers

    ▶ Fiber

    ▶ Agreements/coordination

    ▶ Expertise

FirstNet/LTE Architecture

Public Safety and First Responders

Radio Access Network (RAN)

LTE NodeB

- Radio receive/transmit site
- Interface between radio and fiber network
- Manages connection to users
- Approximately 100 needed in District
- 1 to 3 km range

Transport Network

Evolved Packet Core

- Manages access to network
- Establishes priority for users
- Manages ability
- Interfaces with applications and outside networks
- Manages roaming to other wireless providers

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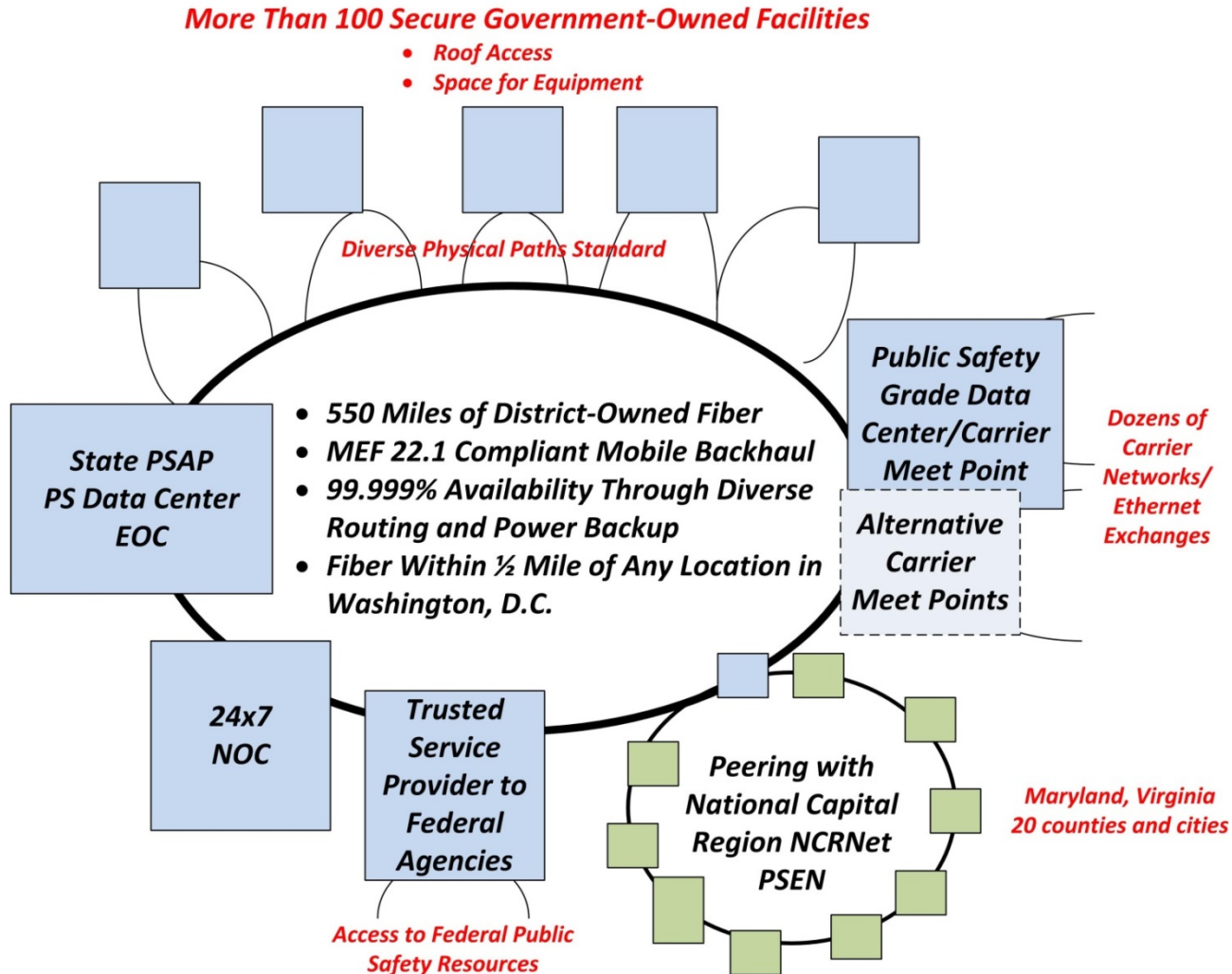# Impetus for Public Safety Broadband in D.C./National Capital Region

▸ **High-profile and risk** – 9/11, 2002 sniper attacks, Navy Yard, large-scale events, severe storms

▸ **Demonstrated limitations of public network**

▸ **Demonstrated capabilities** of city technology and first responder teams in last decade

▸ **Significant work** last decade on wireless broadband

  ▸ District (DC-Net) and regional (NCRnet) fiber networks

  ▸ Regional public safety applications

  ▸ District (WARN) and regional (RWBN) wireless broadband networks under spectrum waiver in 700 MHz Band 14

  ▸ Regional governance

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D.C. Approaches FirstNet as First Responder and Service Provider

- ▸ **Diverse, secure data centers**
  - ▸ Hosting LTE core
  - ▸ Hosting public safety applications
- ▸ **Ubiquitous fiber backhaul connectivity**
  - ▸ Connections between core/RAN/centers/24x7 NOC
  - ▸ Peering with public networks/region/states/federal
  - ▸ Capacity available
  - ▸ High performance and low latency
- ▸ **Radio towers/site locations**
- ▸ **LTE/mobile broadband expertise**
- ▸ **Procurement through intergovernmental agreement**

D.C. Approaches FirstNet as First Responder and Service Provider

More Than 100 Secure Government-Owned Facilities
- **Roof Access**
- **Space for Equipment**

Diverse Physical Paths Standard

State PSAP PS Data Center EOC

- 550 Miles of District-Owned Fiber
- MEF 22.1 Compliant Mobile Backhaul
- 99.999% Availability Through Diverse Routing and Power Backup
- Fiber Within ½ Mile of Any Location in Washington, D.C.

Public Safety Grade Data Center/Carrier Meet Point

Dozens of Carrier Networks/ Ethernet Exchanges

Alternative Carrier Meet Points

24x7 NOC

Trusted Service Provider to Federal Agencies

Peering with National Capital Region NCRNet PSEN

Maryland, Virginia 20 counties and cities

Access to Federal Public Safety Resources

D.C. Approaches FirstNet as Customer and Service Provider

▸ Participation in NTIA State and Local Planning Process (SLIGP)

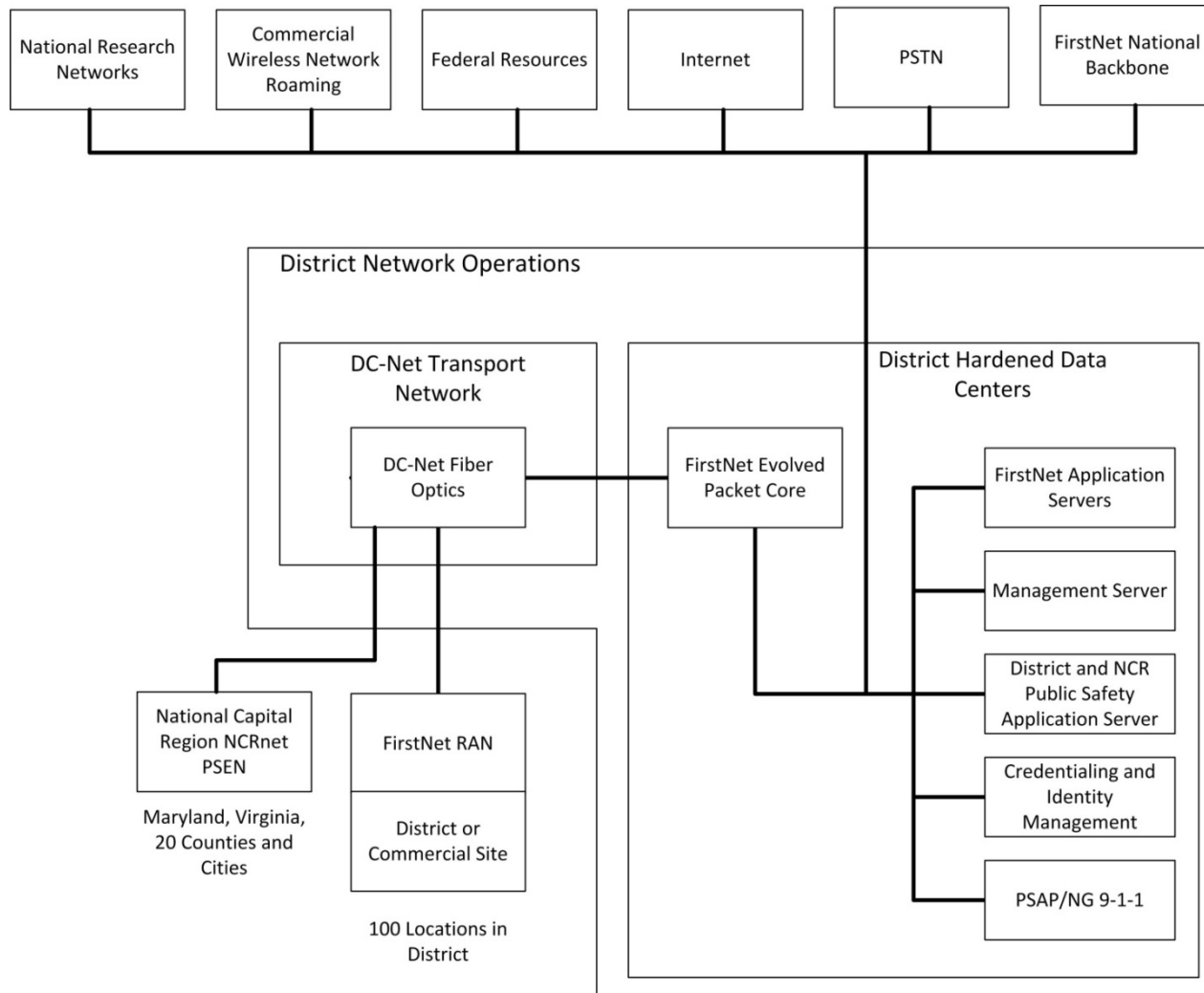▸ Participation in FirstNet RFI process

D.C. Participation in NTIA SLIGP

- Over next three years:
  - D.C. considered a state
  - Consultation with FirstNet
  - Internal information/education – D.C. and dozens of first responder agencies
  - Requirements gathering
  - Coordination with region and non-D.C. first responders
  - Inventory local assets
  - Memorandum of agreement
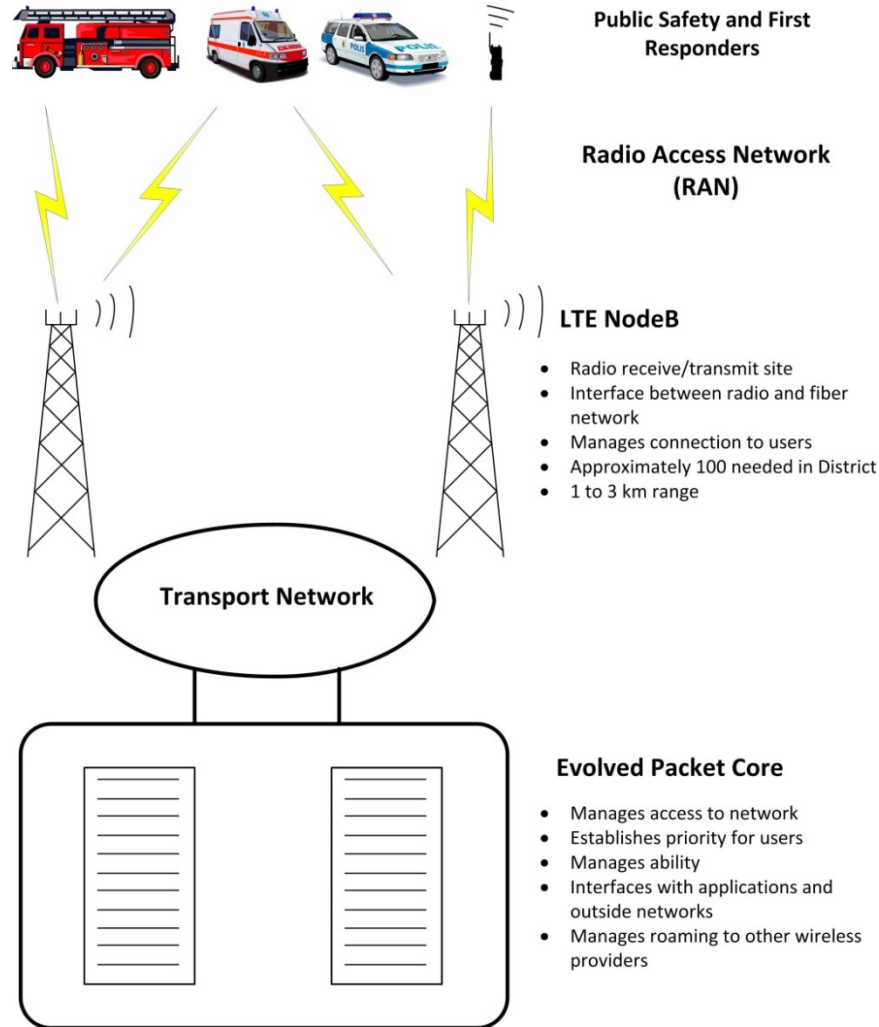 - Comprehensive plan

D.C. Participation in RFI Process

- FirstNet approach to gathering information from manufacturers and service providers

- 17 RFIs since last May

- Information reviewed by FirstNet staff and advisory committees

- D.C. responded to Transport, Data Center, and Network Service Platforms (Identity Management)

Recommended FirstNet Architecture in D.C.

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DC-Net Transport Network

District Facilities

District Hardened Data Centers

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Lessons Learned

- **High value of local government assets**
  - Hardening
  - Available capacity
  - Cost effective

- **Value in a provider–customer model for government services**
  - D.C. has fast track procurement vehicle
  - D.C. has catalog and pricing for services
  - D.C. has service level agreements and contracts

- **Early stages – flexibility and patience**