

MUNICIPALITIES POSSESS THE RIGHT TO INDEPENDENTLY AND PROFESSIONALLY MONITOR & MEASURE EXISTING AND FUTURE NETWORKS IN THEIR COMMUNITY,

Stamford, CT

5G Municipal Rights & Powers



**Cardinal
Communications**

Joseph M. Sandri, Jr., Esq.

CEO, Thought Delivery Systems

*President, National Spectrum
Management Association
(NSMA)*

COO, The Balance Group

Member:

- *U.S. Supreme Court Bar*
- *District of Columbia Bar*
- *IEEE*

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Municipality Powers: Overview



- Stamford, CT possesses extensive powers to protect its citizenry.
- Municipal Powers Related to 5G Infrastructure:
 - Generally: 10th Amendment Enumerated Powers
 - Specifically:
 - Compliance & Monitoring: RF emissions, signage & fencing.
 - Zoning, Building & construction permits & setbacks
 - Health, safety & welfare
 - Business law
 - Tax Assessors & Property Taxes
 - Criminal charges and law enforcement
 - Civil cases:
 - Personal injury cases
 - Contract disputes
 - Business litigation

Municipality Powers: Examples

QUESTIONS TO ASK



- Compliance: Municipalities May Require & Enforce:
 - Whether prior 4G, and proposed 5G systems, were properly mapped and designed. Do they meet safety criteria? Were they deployed where they were supposed to be? Broadband performance measures? Examples:
 - Sites identified by certified surveyor?
 - Building permits meet weight and wind loading criteria? Electrical and fire safety criteria?
 - Geographic coordinates.
 - Poles; ducts, conduits, rights-of-way.
 - Human RF Exposure Laws.
 - The Federal Communications Commission (FCC) sets those standards, but did the carrier provide proof of compliance reports to the municipality? Do those reports pass muster when submitted to *3rd party review*?
 - Are Network Proposals in Sync With Evolving Legal cases?

PROPER SIGNAGE & FENCING

IS AN INDEPENDENT, CERTIFIED SPECTRUM MANAGER REVIEWING?



Regulatory Radiated Emission Radiation Signage



**Title, background color and RF energy advisory symbol are mandatory.
Also required is an explanation of the RF source, behavior necessary to comply
with exposure limits and up to date contact information.**

Multiple signs may be necessary.

See CFR Title 47: Telecommunication § 1.1307 (b) (4) Mitigation for details.

Are there certified site-surveyed RF maps and reports? Pre & Post Build?



5G Microwave/Fiber Hybrid Performance – 100Mbps, 500Mbps, 1Gbps, 3Gbps

LEGEND

- Fiber Optic Network
- Underground
- Overhead



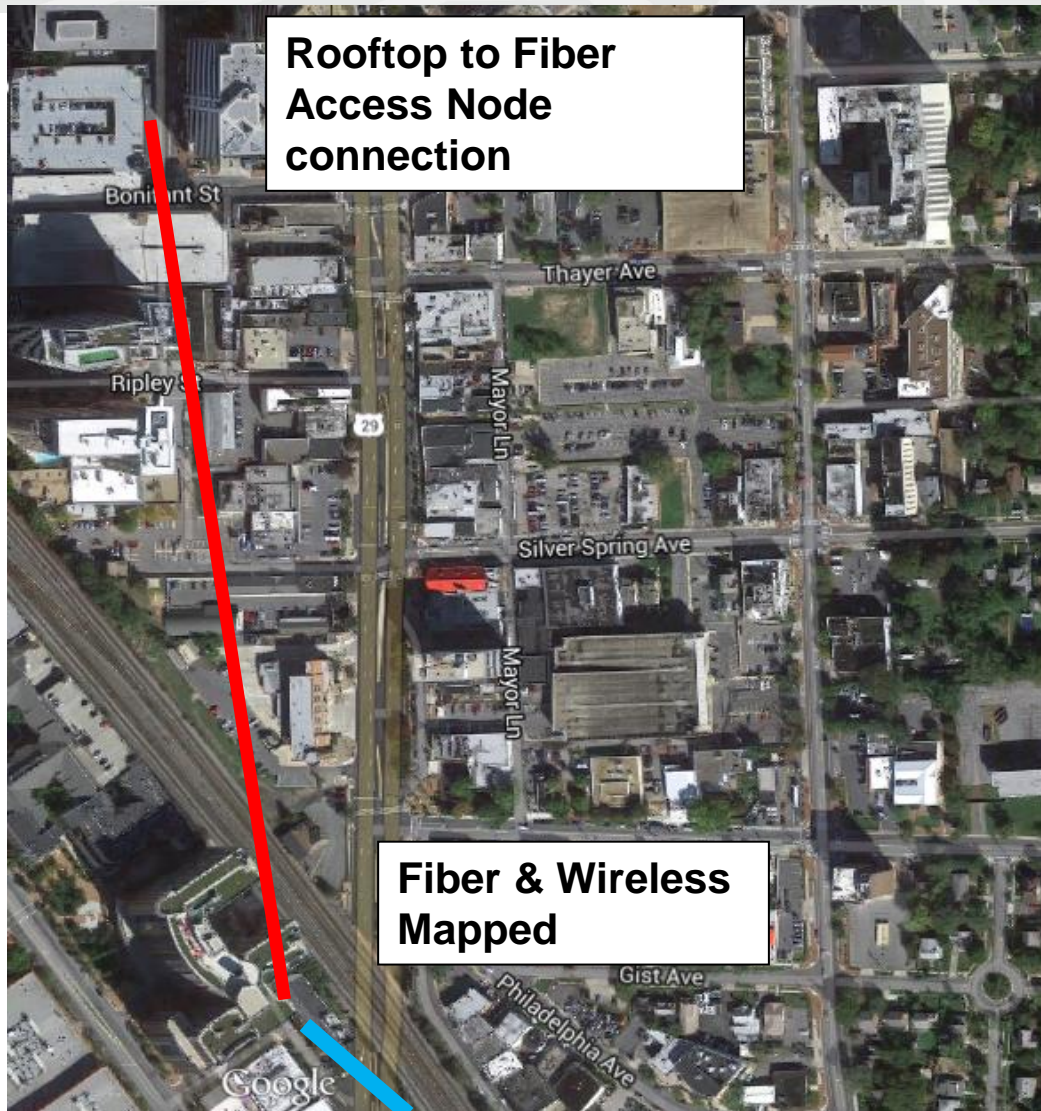
COMPLIANCE:

- Broadband Performance
- RF Exposure Monitoring, Signage and Fencing.

Do maps exist which indicate where signage and fencing are required?

Best Practice: Deploy independent, 3rd party, certified Spectrum Managers to oversee quality control on behalf of the municipality.

Muni Service Level Agreement (SLA): Licensed, *Safe*?



■ Cardinal
'Wireless
Fiber' Link
3 Gbps
(3000 Mbps)

■ Verizon
Fiber
Redundant
(300 Mbps)

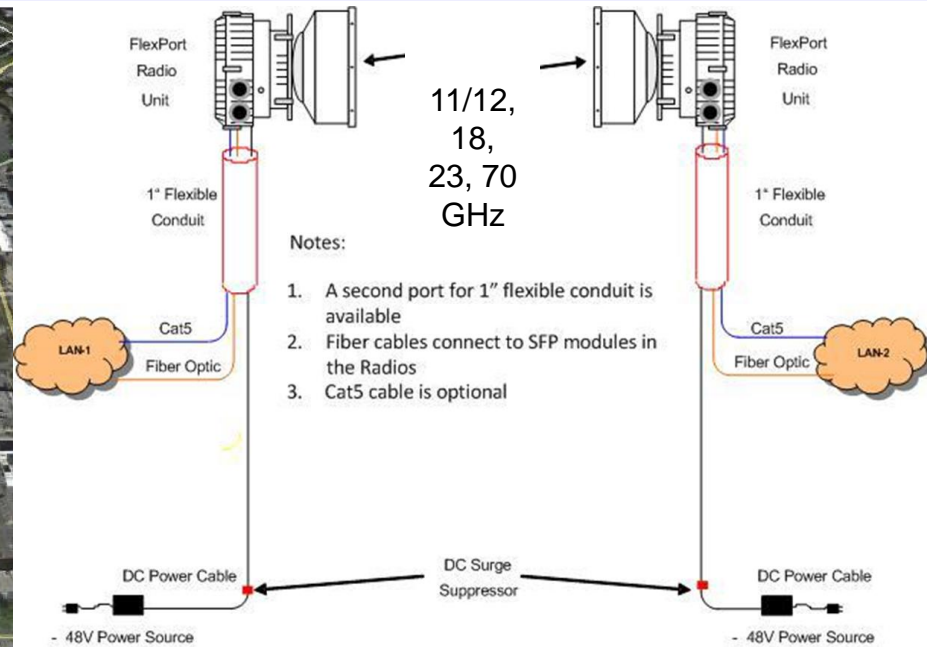
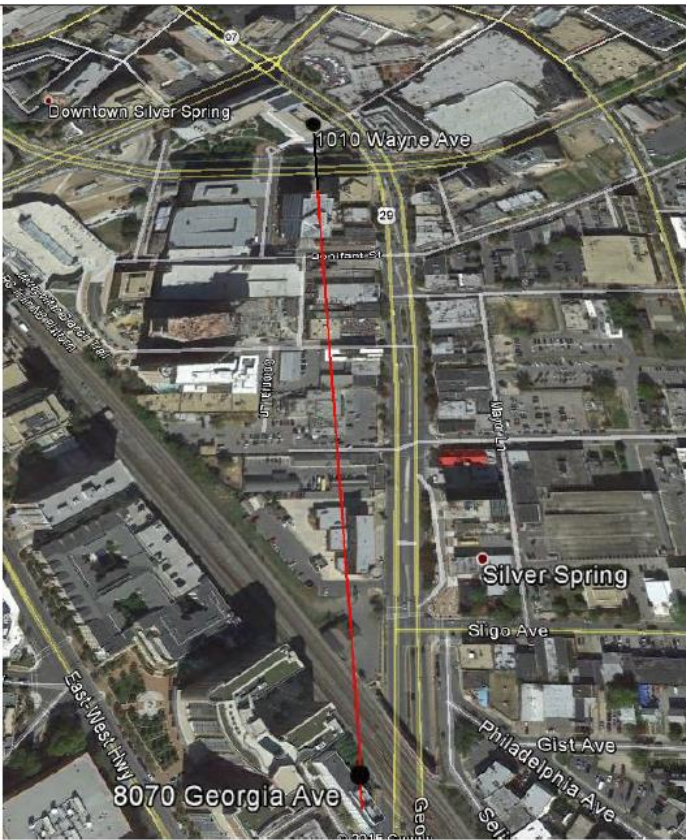
Physical-diversity network example:

- Compliant with Pub. Law 108-447, Section 414. Federal Standard.
- Broadband Throughput and Quality Measured Regularly.
- 3Gbps 'wireless fiber' extension, meets or exceeds *Human RF Exposure Requirements*, as certified by 3rd party licensed spectrum manager.
- Also a separate fiber network

Low-Latency, +99.999% Signal Availability, Licensed, Full Duplex Links



SERVICE LEVEL AGREEMENT (SLA): CALIBRATED RF SAFETY MEASUREMENTS, BROADBAND THROUGHPUT, SAFETY, ROUTINE QUALITY ASSESSMENTS, ETC.



RECOMMENDATION: Prior to building more networks, submit *existing* networks in the community to review by an independent, professional, certified Spectrum Manager survey to:

- (i) Monitor and measure actual readings,
- (ii) Grade compliance with existing performance and safety standards and
- (iii) Enable widespread sharing with the public and the research community in order to continuously ensure improvements in the environment and to inform all parties about best practices.

THANK YOU!



Joseph M. Sandri, Jr., Esq,
CEO
Thought Delivery Systems, Inc.
Cardinal Communications is a Division of TDSI

President
National Spectrum Management Association

(o) 202-223-1028

(m) 202-253-3956

president@nsma.org

www.nsma.org