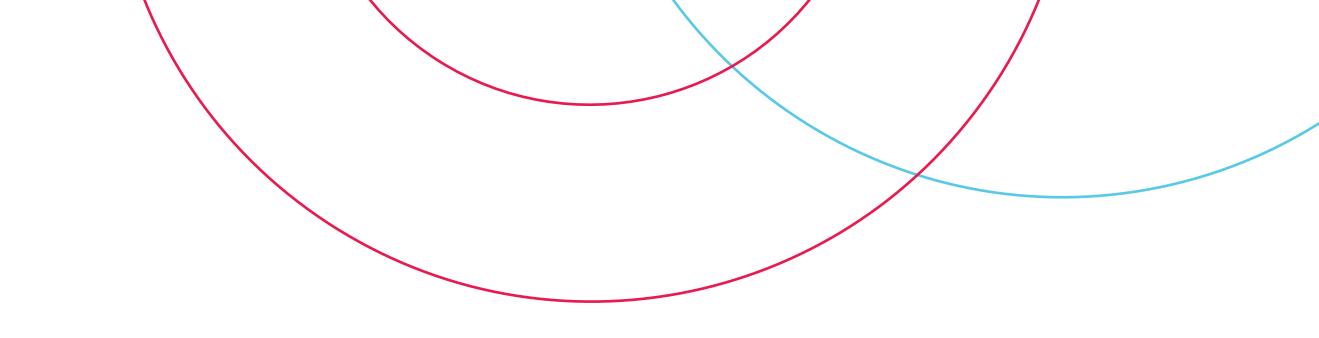# National Spectrum Strategy:

Recommendations from the Cable Industry

Dr. Rikin Thakker, Chief Technology Officer, rthakker@ncta.com

NCTA's interest in the National Spectrum Strategy

About NCTA:

- The principal trade association for the U.S. cable industry, representing cable operators serving more than 80 percent of the nation's households.
- Cable providers have invested hundreds of billions of dollars to build high-speed networks. The industry is the nation's largest residential broadband provider.

Why do we care about Spectrum?

- Spectrum is **crucial** for cable services.
- **Adequate** Wi-Fi spectrum ensures fast speeds and performance.
- Cable providers are also building **competitive** mobile networks, using unlicensed spectrum, shared-licensed spectrum, and spectrum leased from MNOs.
- **Coexistence**-based approaches are critical for the Nation moving forward.
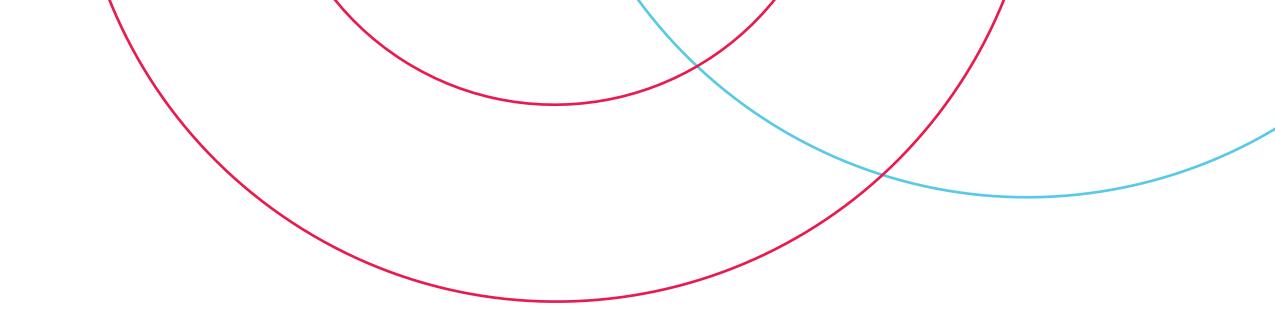
National Spectrum Strategy:
Pillar 1 – Spectrum Pipeline

CBRS – a successful model for shared-licensed access:

- Promotes competition, diversity, and innovation.
- In addition to mobile traffic offloading, other specialized use-cases include private 5G networks for manufacturing, supply chain, agriculture, health care, and education

3.1 GHz:

- NCTA supports **shared-licensed approach** to this band.

- Valuable due to proximity to 3.5 GHz CBRS, **respecting incumbent Federal use.**

- Two-year **PATHSS** process established a strong shared approach.

- PATHSS showed that **clearing approach** for exclusive use would be **too expensive and time-consuming**.

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National Spectrum Strategy:
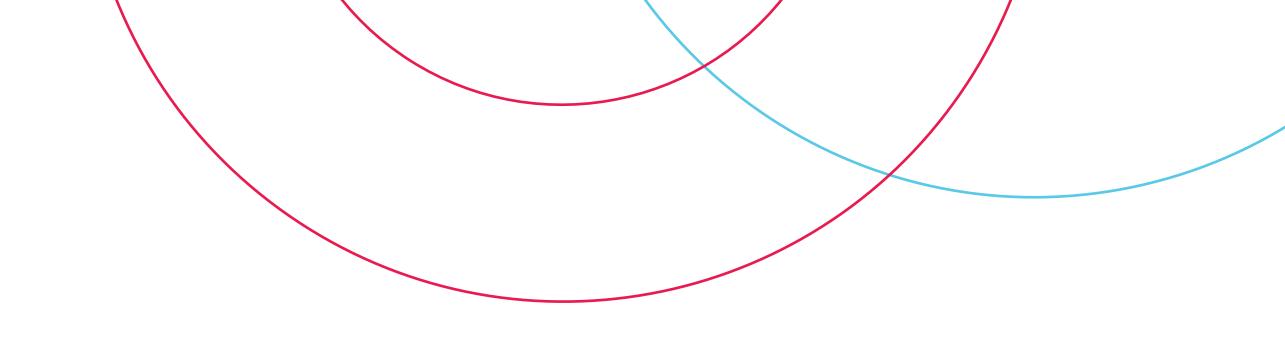# Pillar 1 – Spectrum Pipeline

Future of Wi-Fi:

- Extremely high throughput and low latency applications will require additional bandwidth
- The Lower 7 GHz band is the best near-term opportunity for growth in unlicensed spectrum, as it is adjacent to the existing 6 GHz band.

7/8 GHz:

- The bottom of the band, **7125-7250 MHz:** Important for a **stranded 320-megahertz** channel for Wi-Fi 7.

- **Federal incumbents** in the bottom of the band **are similar to** commercial fixed incumbents in 6 GHz.

- Federal incumbencies get more complicated higher in the 7 GHz band, but **NCTA supports** making as much of the band **available for unlicensed or shared-licensed use** as possible.

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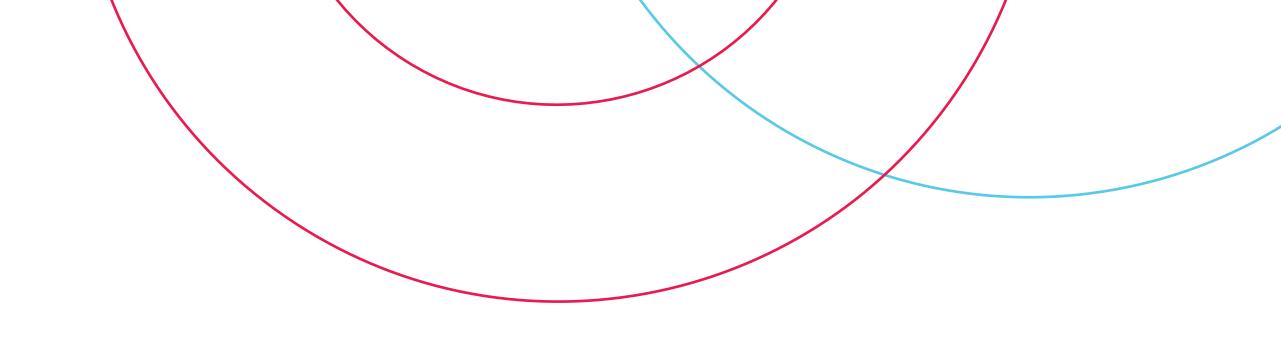# National Spectrum Strategy: Pillar 1 – Spectrum Pipeline

Unique Propagation Characteristics:

- Sharing is much simpler than mid-band spectrum.
- Many users can access the band even in close geographic proximity.

Lower 37 GHz:

- An extensive record at the FCC shows that this band is **well-suited to Federal and non-Federal sharing** using a centralized, third-party database administrator.
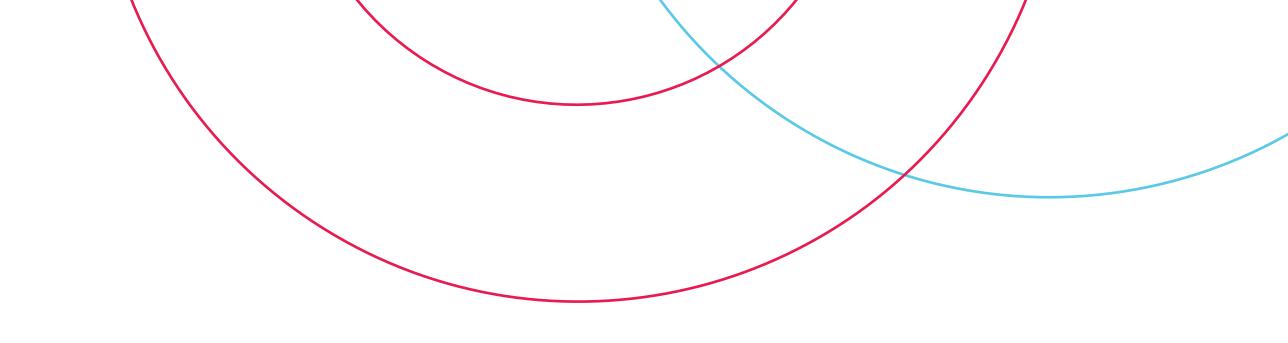
- The **database administrator can ensure** Federal operations are protected and coordinate commercial use of available channels efficiently.

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National Spectrum Strategy:
Pillar 1 – Spectrum Pipeline

Our goal remains to work with DOD, NTIA, the FCC, and other industry members to develop a sharing regime that provides flexibility for different use cases and deployments.
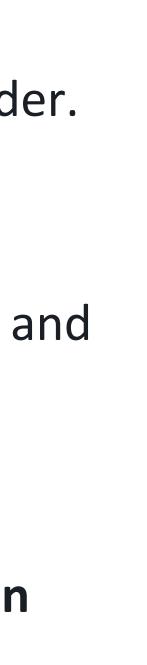
Principles moving forward:

- The work to establish a spectrum pipeline for the future should **promote competition**, consistent with the President's Executive Order.

- **Protecting DOD** and incumbents' current and future operations is critical.

- Shared and unlicensed use are essential for supporting competition and **diversity of use**; exclusive-use bands strongly favor just a few nationwide carriers.
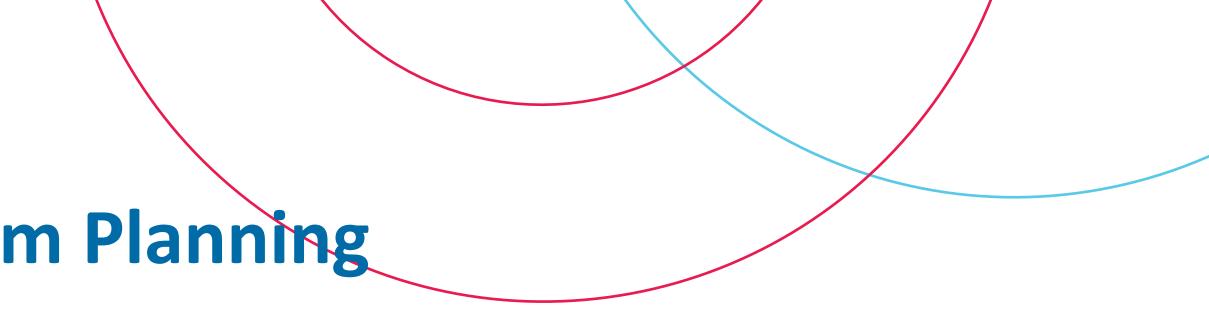
- The work to study the individual bands **must assess shared and unlicensed use** alongside exclusive use, **not only as a fallback option** where exclusive use is not possible.

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National Spectrum Strategy:
Pillar 2 – Collaborative Long-Term Planning

- **Encourage innovation:** Focus on creating a spectral environment that encourages innovation, economic growth, and strong government systems.

- **Focus on spectrum coexistence:** Analysis of future spectrum use, and needs should not be based solely on past models of spectrum use that relied on clearing and exclusivity.

- **Involve a wide variety of stakeholders:** Facilitate productive conversations between federal and non-federal stakeholders. PATHSS was a step in the right direction.

- **Necessary improvement moving forward:** Present as much information as possible in non-classified settings. Continue to ensure that security clearances are appropriately and equitably granted.
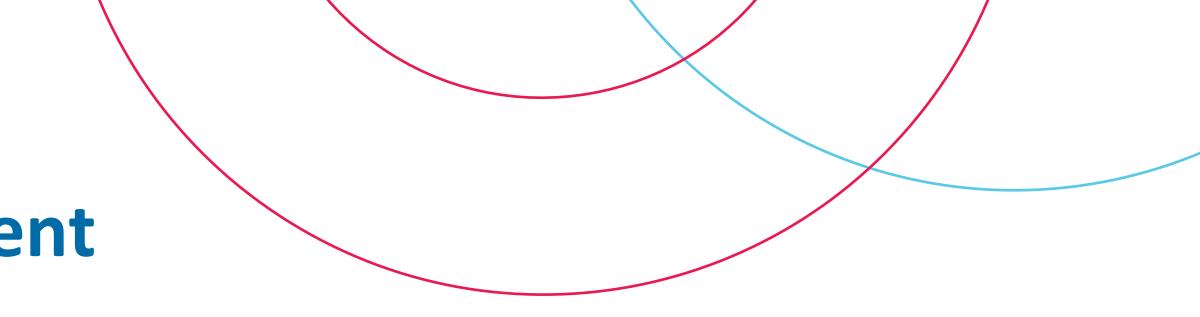
National Spectrum Strategy:
Pillar 3 – Technology Development

Three general priorities for the R&D Plan (submitted as part of the NSF R&D RFI) -

1) Improve Spectrum Utilization Efficiency: Enhance data analysis, reduce false positives, refine database-protection zones for incumbents, and study network densification and lower-power levels for better spectrum flexibility and efficiency.

2) Improve Dynamic Spectrum Access and Management: Update databases and models for modern structures and improve interference protection and propagation models.

3) Update Coexistence Modeling: Revamp propagation models, e.g., clutter measurements reflecting lower-site transmitters, lower-power networks, and indoor operations and better support better probabilistic analysis for real-world risk determination.

Investing in continued development of spectrum-sharing tools will not only help us make more efficient use of spectrum going forward, but also help the United States continue to be the global leader in coexistence technologies.

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Thank you!

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