



# NSMA's Spectrum Management 2011 Conference

*Unleashing the Wireless Broadband  
Revolution - The President's Initiative to  
Repurpose 500 MHz*

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25 May 2011

# Presidential Memorandum – 28 June 2010

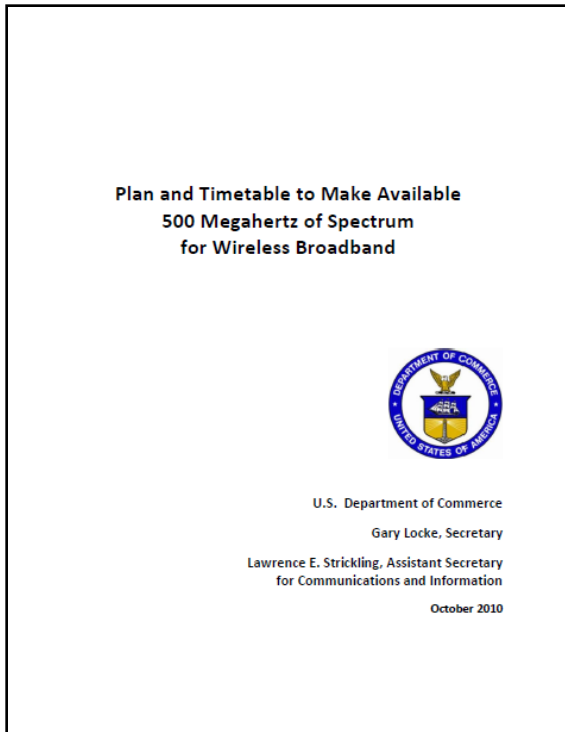
“This new era in global technology leadership will only happen if there is adequate spectrum available to support the forthcoming myriad of wireless devices, networks, and applications that can drive the new economy.” – President Barack Obama



- DOC, through NTIA, directed to complete a plan and timetable, in collaboration with the FCC, making available 500 MHz over 10 years suitable for wireless broadband on an exclusive or shared basis
- Fast Track Process as a down payment
- OMB to lay the groundwork to make available adequate funding, incentives, and assistance for affected entities to accomplish this
- A publicly available spectrum inventory is essential to supporting the policy goal of ensuring the most efficient possible use of spectrum
- NTIA to develop a plan to facilitate research, development, testing, and experimentation by researchers

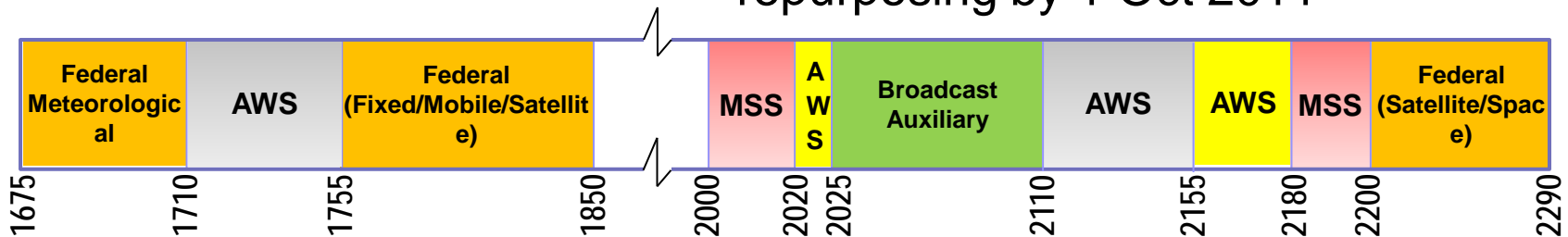
# Plan and Timetable for 500 MHz

## “The 10-Year Plan”



<http://www.ntia.doc.gov/reports.html>

- Plan released 15 Nov 2010
- Identifies over 2200 MHz below 4.4 GHz for consideration
- Spectrum repurposing focused primarily for exclusive use but also to consider shared and unlicensed
- Bands offering possibilities will be prioritized for further evaluation
- Industry remains focused on the 1755-1850 MHz band
- First high priority band to be decided for repurposing by 1 Oct 2011



# Fast Track Band Evaluation

An Assessment of the Near-Term Viability of  
Accommodating Wireless Broadband Systems in the  
1675-1710 MHz, 1755-1780 MHz, 3500-3650 MHz, and  
4200-4220 MHz, 4380-4400 MHz Bands



U.S. Department of Commerce

Gary Locke, Secretary

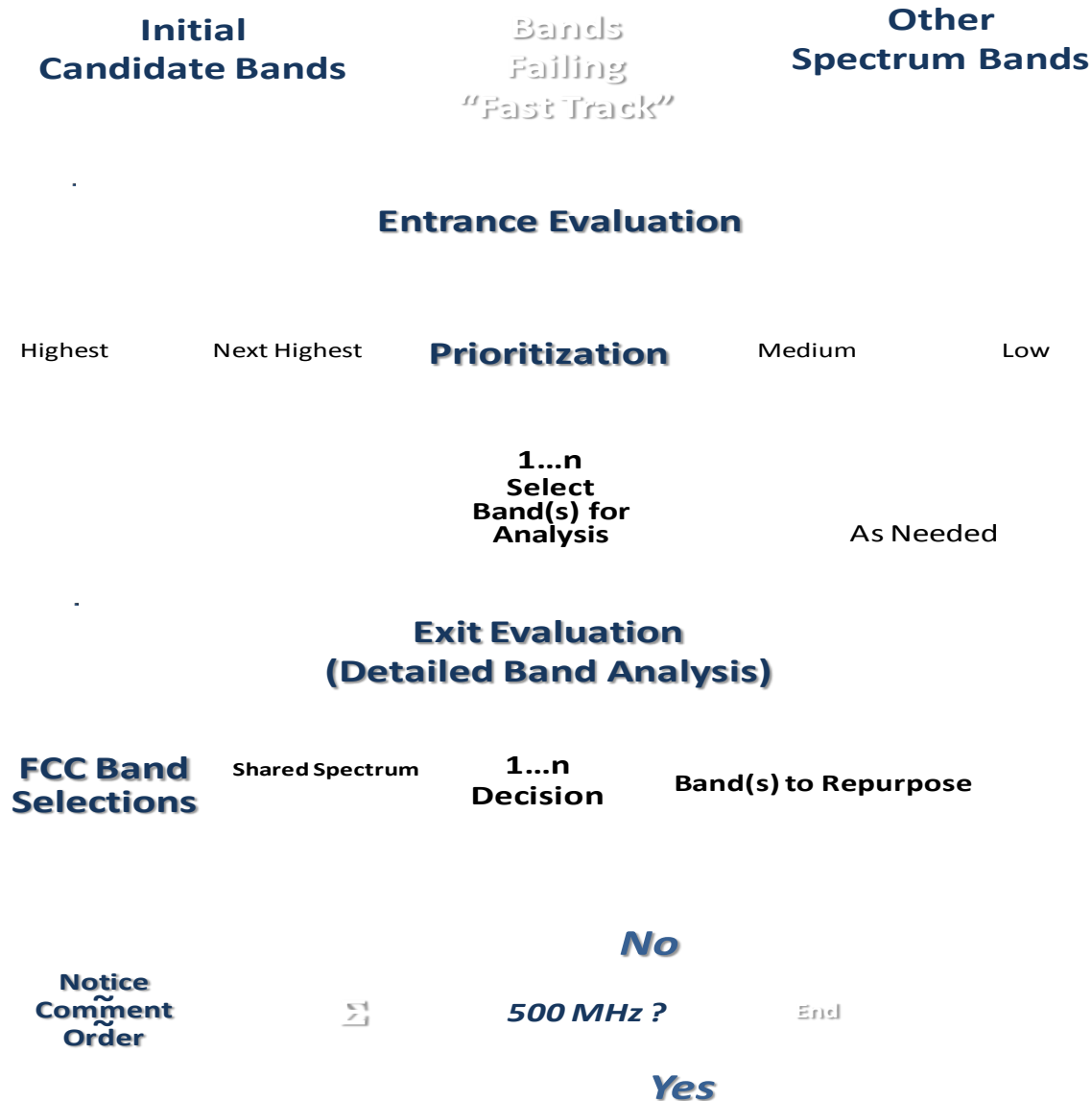
Lawrence E. Strickling, Assistant Secretary  
for Communications and Information

October 2010

<http://www.ntia.doc.gov/reports.html>

- To be made available within 5 years
  - Only Geographical Sharing considered
  - Some modification of Federal operations may be required
- Candidate Bands considered:
  - 1675-1710 MHz
  - 1755-1780 MHz
  - 3500-3650 MHz
  - 4200-4220 and 4380-4400 MHz
- Results : 115 MHz recommended for repurposing
  - 1695 – 1710 MHz (15 MHz)
  - 3550 – 3650 MHz (100 MHz)
  - NTIA letter to FCC suggesting they take appropriate action

# High Level View of the Band Selection Process



# Executing the Ten-year Process – Where We are Today

## First Interim Progress Report on the Ten-Year Plan and Timetable



U.S. Department of Commerce

Gary Locke, Secretary

Lawrence E. Strickling, Assistant Secretary  
for Communications and Information

April 2011

- Entrance Evaluation
  - Relocation - Completed
    - 7 selection factors
    - Recommended 6 bands to go forward for detailed analysis
    - Most promising 1755-1850 MHz
  - Sharing Opportunities - Ongoing
- Detailed Analysis Phase
  - 1755-1850 MHz
  - Determined comparable bands for the various types of operations
  - Currently determining technical/operational consideration to include cost and schedule
- Expecting Decision by 1 October

<http://www.ntia.doc.gov/reports.html>

# Funding, Incentives and Assistance

- OMB, working with Commerce (NTIA) and in consultation with the agencies, shall incorporate in the Plan and Milestones (October 1, 2010) adequate funding, incentives and assistance to make the 500 MHz available
- OMB considering means to allow funds in the existing Spectrum Relocation Fund to be used to cover future relocations and to use the Fund to:
  - Fund planning and research
  - Fund staffing to support relocation
  - Cover costs for commercial services where appropriate to replace government systems
  - Enable upgrade of equipment
  - Cover costs associated with sharing spectrum

# A Broad Range of Questions

Questions about Spectrum Use



?

**Broad-based, National-level:** What and how spectrum should be repurposed?

**Broad-based, National-level:** What are the Aggregate future spectrum use estimates for The National Interests?

**Broad-based, Economic:** Does the supply meet the demand? What value is assigned to spectrum?

?

**Single Mission:** What LMR frequencies are needed to support peak capacity during a natural disaster?

?

**Single Agency:** What total BW and in what bands is it needed to support a new radar system?

?

**Single user:** What assignments are needed to support operation of radio XYZ?

?

Total System/Network Bandwidth

Total National Functional Capacity

?

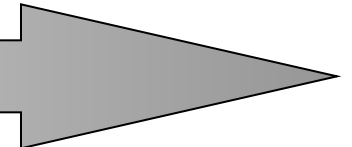
Specific Assignment

General Spectrum Use

Detailed Spectrum Use

Spectrum Use Performance

Increasing Level of Complexity & Participation





# Inventory of the Radio Spectrum

- Drivers:
  - White House sees it essential in better understanding how spectrum is used
  - Congress has shown an interest
  - We simply need it!
- What should an inventory look like?
  - Need to go beyond just who and what is using the spectrum
  - Need to better understand and be able to describe the frequency of use. When is it being used, duration of use
  - Need to describe where is it being used
  - Need to be able to provide it in a format that helps the business planner, the entrepreneur, the innovator or the researcher so that can better understand the spectrum environment
- This will also aid the decision/policy makers within our Federal government

# Facilitating Spectrum Sharing Technologies

## *The Wireless Spectrum R&D Senior Steering Group*

- Goal - One way to make spectrum available for useful purposes is to increase spectrum efficiency and sharing
- Purpose - Fulfill the EM's 3<sup>rd</sup> objective
  - Effort to create a US Government-wide plan for spectrum-related activities by researchers
  - President's CTO, Mr. Aneesh Chopra, directed that a group be formed within the Network IT Research & Development (NITRD) Program Subcommittee
  - Set out 3 objectives: Transparency, Smart Investment, Solicit Opportunities (Includes Test Bed)
  - Collaboration must be within the R&D community
  - Co-chairs from NSF and NTIA
  - Considers a broad range of activities
  - US Government participants – DOD (includes DARPA & Labs), DHS, NASA, DOJ(NIJ), DOE (Idaho National Labs), DOC (NIST/NTIA/ITS)

## In Summary

- **Spectrum Demand today is definitely increasing and will continue do so into the future**
- **It's getting harder to find**
- **It costs time and money to make it happen**
- **Any good manager needs to know his inventory**
- **Technology can help us**



**Questions?**