

BAY AREA REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEMS AUTHORITY (BAYRICS)

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GENERAL MANAGER

Northern California Chapter
APCO, International (NAPCO)

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SAN FRANCISCO BAY AREA

- 7 million population
- 5th largest tourist destination in the world
- High profile, critical infrastructure:
 - 3 international airports, critical highway/bridge network, 1 million passenger public transit system, Silicon Valley, 5 major oil refineries, 3 major ports.
- ▶ The U.S. Department of Homeland Security ranks the Bay Area as the 4th highest urban area in nation for risk
 - Significant threats to critical infrastructure from terrorism and natural hazard incidents
 - The Bay Area rests upon one of the longest and most active earthquake fault systems in the world
 - Risks from wildfires and tsunamis are also of major concern



CURRENT STATUS OF PUBLIC SAFETY COMMUNICATIONS

Voice – Land Mobile Radio

- Reliable
- Mission critical
- Limits to interoperability
- P25 upgrade costs
- Future: EBRCS model



Broadband (Data) - Air Cards, Smart Phones

- Commercial services
- Not designed for Public Safety
- Not reliable in emergencies
- Data plan/device costs uncertain
- Future: BayWEB/FirstNet Model

BAYRICS AUTHORITY

- 12-Member Joint Powers Authority established in August 2011

**Alameda County
City of Oakland
Marin County
Santa Clara County
State of California
East Bay Hub Cities
(EBRCS)**

**City/County of San Francisco
City of San Jose
Contra Costa County
San Mateo County
Sonoma County
South Bay Hub Cities**



- ▶ Chair: Undersheriff Rich Lucia
- ▶ Vice-Chair: Karen Wong, California Technology Office (State point of contact for FirstNet)
- ▶ Purpose: To oversee funding, policy, and operations of regional interoperable communications networks, including BayWEB.

BAY AREA WIRELESS ENHANCED BROADBAND (BAYWEB)

The BayWEB Partnership:

- **BayRICS Authority**: provides regional governance, spectrum and responsibility for “local control” functions (billing, provisioning, channel management and user training/support)
- **Motorola**: build, operate and maintain the network, using federal Broadband Technology Opportunity Program (BTOP) grant funding
- **Bay Area Public Safety Agencies**: contribute radio sites and backhaul infrastructure (primarily dark fiber) through Site Use Agreements

BAYWEB BENEFITS TO PUBLIC SAFETY

- Interoperable – One network allows faster, coordinated response among Bay Area first responders
- Private – Network is exclusively for public safety users, not shared with commercial traffic or subject to commercial network congestion
- Managed – Ability to prioritize data transmissions by user, application or event
- Secure – Reliability of a hardened network dedicated to public safety
- Low Cost – No site construction costs or minimum service commitments for BayRICS members



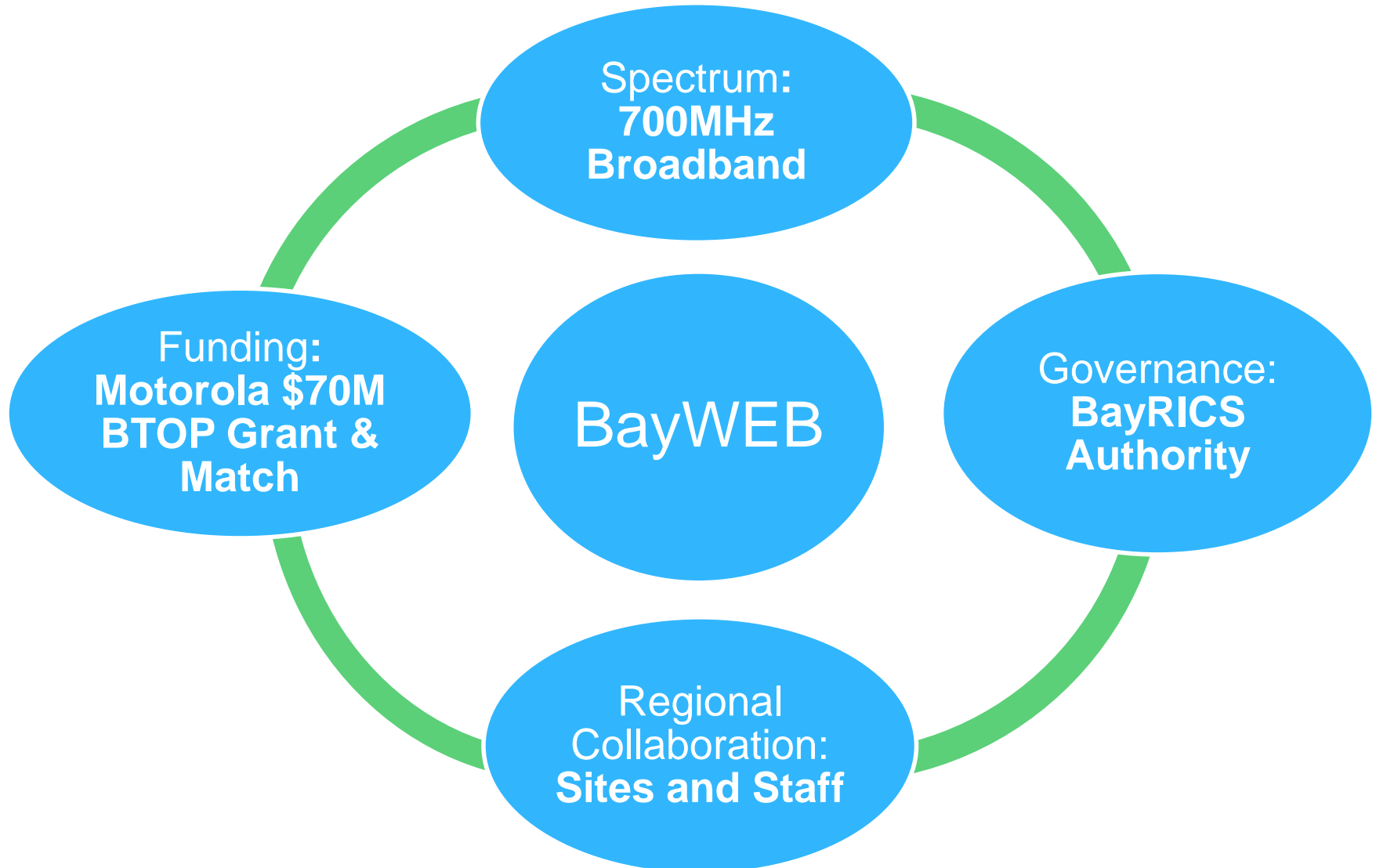
Video, image and access to databases and tools will enhance public safety's ability to meet their mission.

- Streaming video / surveillance
- Large file transfer / download
- License plate reader
- Facial recognition
- Field fingerprinting
- Field reporting
- GIS/Mapping tools
- Database queries



* Slide Courtesy FirstNet

SYSTEM BUILDING BLOCKS



COSTS AND TECHNICAL REQUIREMENTS

- Capital costs: Equipment and Site Remediation paid by Motorola/BTOP Grant
- Maintenance and Operations: Costs covered through Monthly User Fees Paid by Agencies
- Devices: Agencies pay for user devices (vendor neutral)
- Technical Specifications:
 - NPSTC – Public Safety Broadband High-Level Launch Requirements
http://www.npstc.org/download.jsp?tableId=37&column=217&id=2609&file=BBWG_SoR_Launch_12112012.pdf
 - FCC/FirstNet -- Minimum Technical Requirements to Ensure Nationwide Interoperability
<http://apps.fcc.gov/ecfs/document/view?id=7021919873>
 - FirstNet – RFIs and Design Planning Process
<http://www.ntia.doc.gov/press-release/2013/firstnet-issues-rfis-technology-nationwide-wireless-broadband-network>
 - FirstNet – Public Safety Advisory Committee (PSAC)
 - BayRICS Technical Advisory Committee (TAC)

BAYWEB CURRENT STATUS

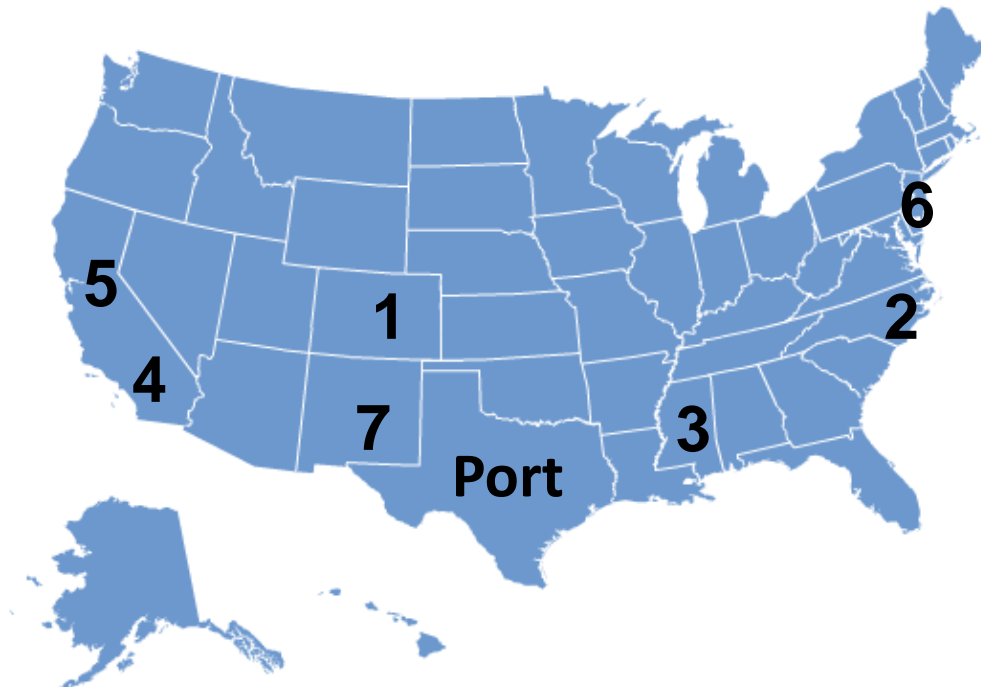


- “Build, Own, Operate and Maintain” (BOOM) Agreement with Motorola signed in January 2012
- Radio Access Network (RAN) Sites
 - 132 Bay Area sites secured through Site Use Agreements with cities and counties (primarily co-locations on existing public safety and government facilities)
- Backhaul Transport
 - Fiber agreements being negotiated with transportation agencies, educational institution networks and municipal fiber owners
 - BayLoop – existing regional microwave loop network
- Network Design Completed – Ready to Hang Equipment
- **Project On Hold Pending FirstNet Review/Authorization**

FIRSTNET AND THE NATIONWIDE PUBLIC SAFETY BROADBAND NETWORK

- February 22, 2012: Middle Class Tax Relief and Job Creation Act of 2012—established First Responder Network Authority (FirstNet) and appropriated \$2B to build a Nationwide Public Safety Broadband Network (additional \$5B through spectrum auctions)
- March 2012: Partial suspension of BTOP grants to allow FirstNet review of projects
- February 12, 2013 FirstNet Board Meeting:
 - FirstNet determines that BayWEB will provide substantial benefits to the development of a nationwide public safety broadband network
 - Directs Board Member Sue Swenson to negotiate spectrum lease agreements with each of the seven BTOP grantees
 - Negotiations currently nearing completion

FirstNet pilot projects will provide broad learning opportunities.



Seven current BTOP projects, and Texas

BTOP Grantees
1. Adams County, CO
2. Charlotte, NC
3. Mississippi
4. LA-RICS (Los Angeles)
5. Bay-RICS (San Francisco)
6. New Jersey
7. New Mexico
Ports
Harris County, TX

- International interference
 - Operational issues
 - Applications

* Slide Courtesy FirstNet

BAYWEB NEXT STEPS

- Negotiate Spectrum Lease with FirstNet
- Lift BTOP Grant Funding Suspension
- Update Site Use Agreements
 - Site configuration changes
 - Include any new conditions from FirstNet as necessary
- Reengage Bay Area Public Safety Stakeholders and City/County Officials (after 18 month delay)
- Coordinate Build Out with FirstNet to Maximize “Key Learning Conditions”
- Project Completion Estimated within 18-24 Months after Funding Suspension Lifted



FIRSTNET NEXT STEPS

- State and Local Consultation Process
- Release 18 Requests for Information (RFI)
- Develop User and Network Requirements
- Establish Device Standards
- Develop Initial Network Design/Business Model
- Develop Individual State Build-Out Plans
- Issue and Award RFPs (operating partners, core, radio equipment, site development, user support services, applications, etc.)
- State Opt-Out Window
- Build Network and Integrate BTOP Projects
- Timeline and Project Plan: TBA

FIRSTNET AND BAYRICS KEY LEARNING CONDITIONS

- User Equipment
 - High Power (1.2 Watt)
 - Multi-Band Devices
- Applications:
 - Streaming Video
 - Integration of Next Generation (NG) 9-1-1 and Wireless Broadband
 - Advanced Automatic Collision Notification (AACN)
 - Non-Mission Critical Voice
 - Voice Over LTE (VoLTE) Push To Talk (PTT): Voxer
 - Crime Databases
- Small Cell LTE and Solutions for Remote Areas
 - Purewave Test Network – Santa Clara (Sept.-Dec. 2013)
 - Harris Demo – Livermore August 2013



QUESTIONS?

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