

BAY AREA REGIONAL INTEROPERABLE COMMUNICATIONS SYSTEMS AUTHORITY (BAYRICS)

BARRY FRASER
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.

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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

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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

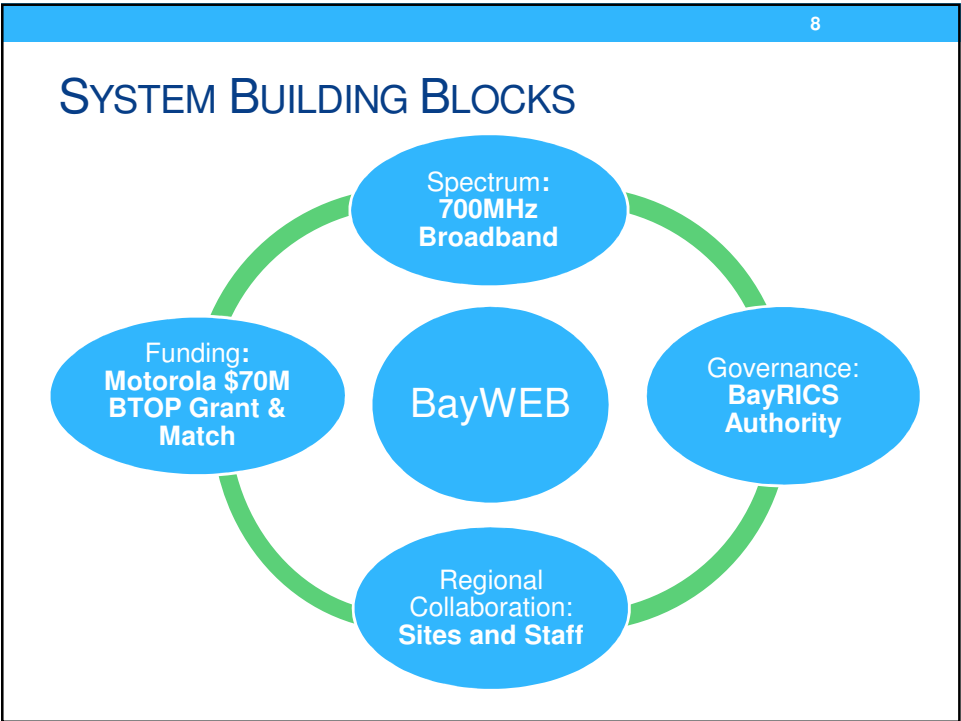
THE PROMISE OF BROADBAND * 7

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



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



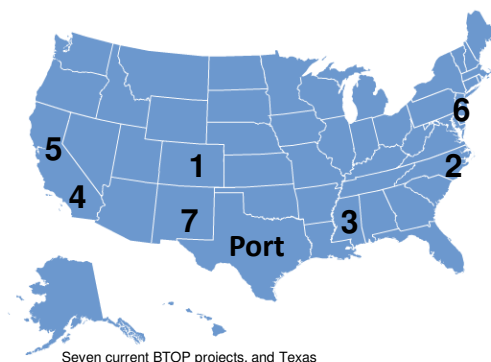
- “Build, Own, Operate and Maintain” (BOOM) Agreement with Motorola signed in January 2012
- Radio Access Network (RAN) Sites
 - 132 Bay Area sites secured through Site Use Agreements with cities and counties (primarily co-locations on existing public safety and government facilities)
- Backhaul Transport
 - 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

LEVERAGING BTOP PROJECTS*

FirstNet pilot projects will provide broad learning opportunities.



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

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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

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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

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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



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QUESTIONS?

Barry Fraser
 General Manager
 BayRICS Authority
 925-803-7882
BFraser@acgov.org
www.bayrics.net

