



NPAC Point-to-Point Concept

Leveraging Public / Private
Partnerships

northhighland.
HIGHLAND WORLDWIDE

The Big Picture

- The NPAC Communications Interoperability Plan (CIP) envisions a series of projects that are aligned with the California State Communication Interoperability Plan (CalSCIP)
- A key need, and hence a key goal, of the NPAC CIP is to develop a point to point (PT2PT) network that enables connectivity between radio sites and PSAPs for increased interoperability and enhanced operability
- Developing a PT2PT network for the NPAC also supports the CalSCIP by supporting the concept of a system-of-systems

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PT2PT Network Concept

- Connect each OA's central site (e.g. dispatch center, main equipment vault) to each other
- Connect each OA's remote sites (e.g. repeater site, receiver sites) to their central site
- Tie OA dispatch centers and other critical buildings together with the site-to-site portion of the network
- Tie OA hubs together to form a region wide network
- Provide adequate capacity to carry Voice, Video, and Data needs for NPAC OAs

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PT2PT Implementation

- Developing the PT2PT network would likely be completed in phases
- The network could incorporate various technologies based on operational need and availability such as: licensed microwave, 4.9 GHz point-to-point, satellite backhaul, landline T1, and fiber
- The likely first phase might connect each of the major PSAPs in the NPAC.
- Once the PSAPS are connected, then the network(s) can be connected to existing and new radio sites for site-to-site connectivity
- The following four slides depict this phased build out

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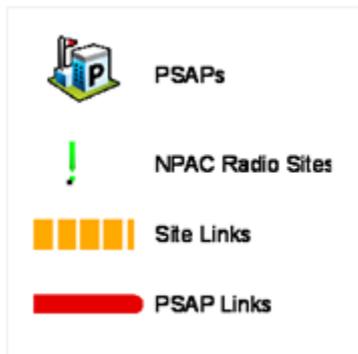
Current Situation – No connectivity

-  PSAPs
-  NPAC Radio Sites
-  Site Links
-  PSAP Links



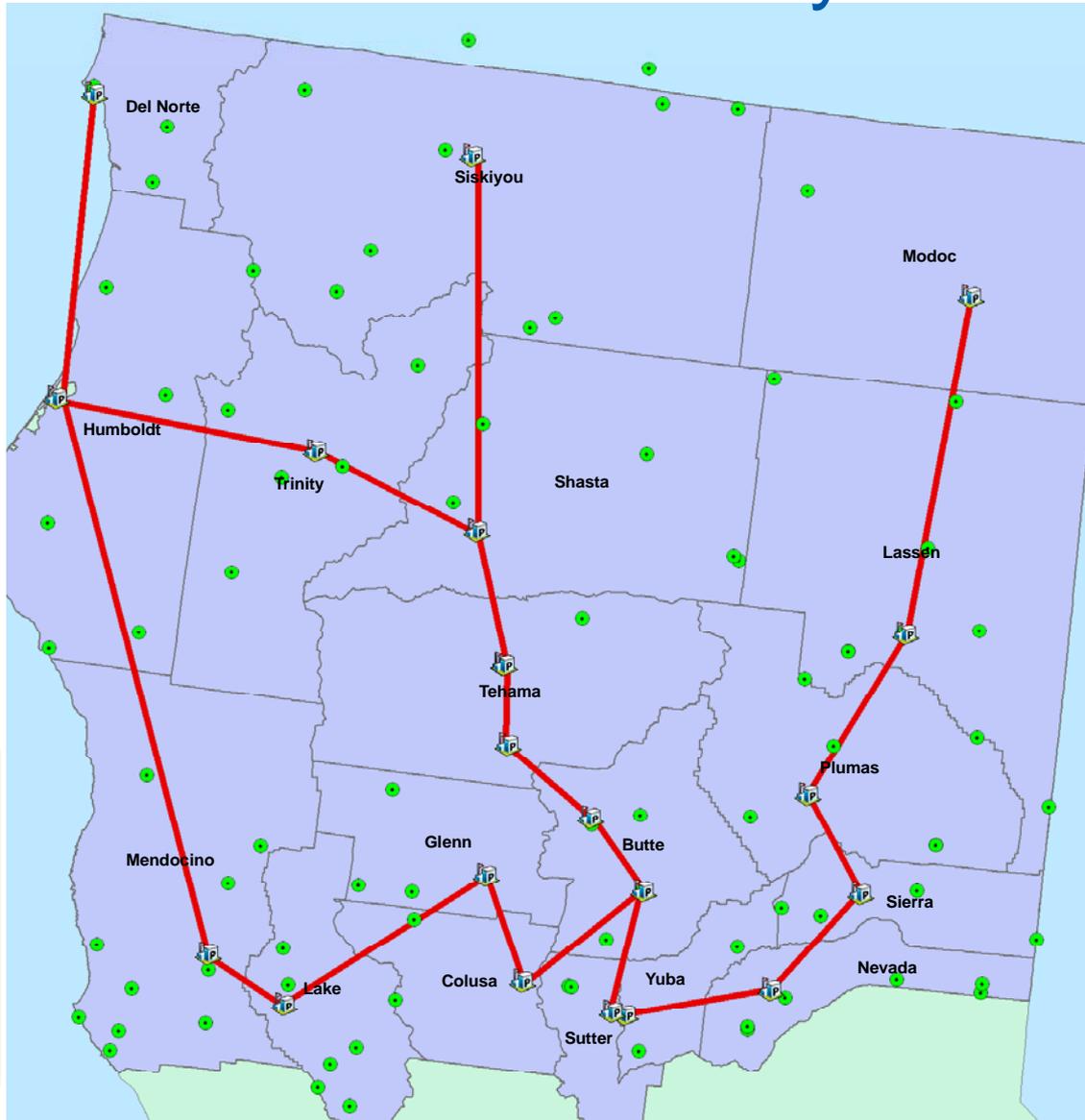
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Conceptual Phase 1 – PSAP Connectivity



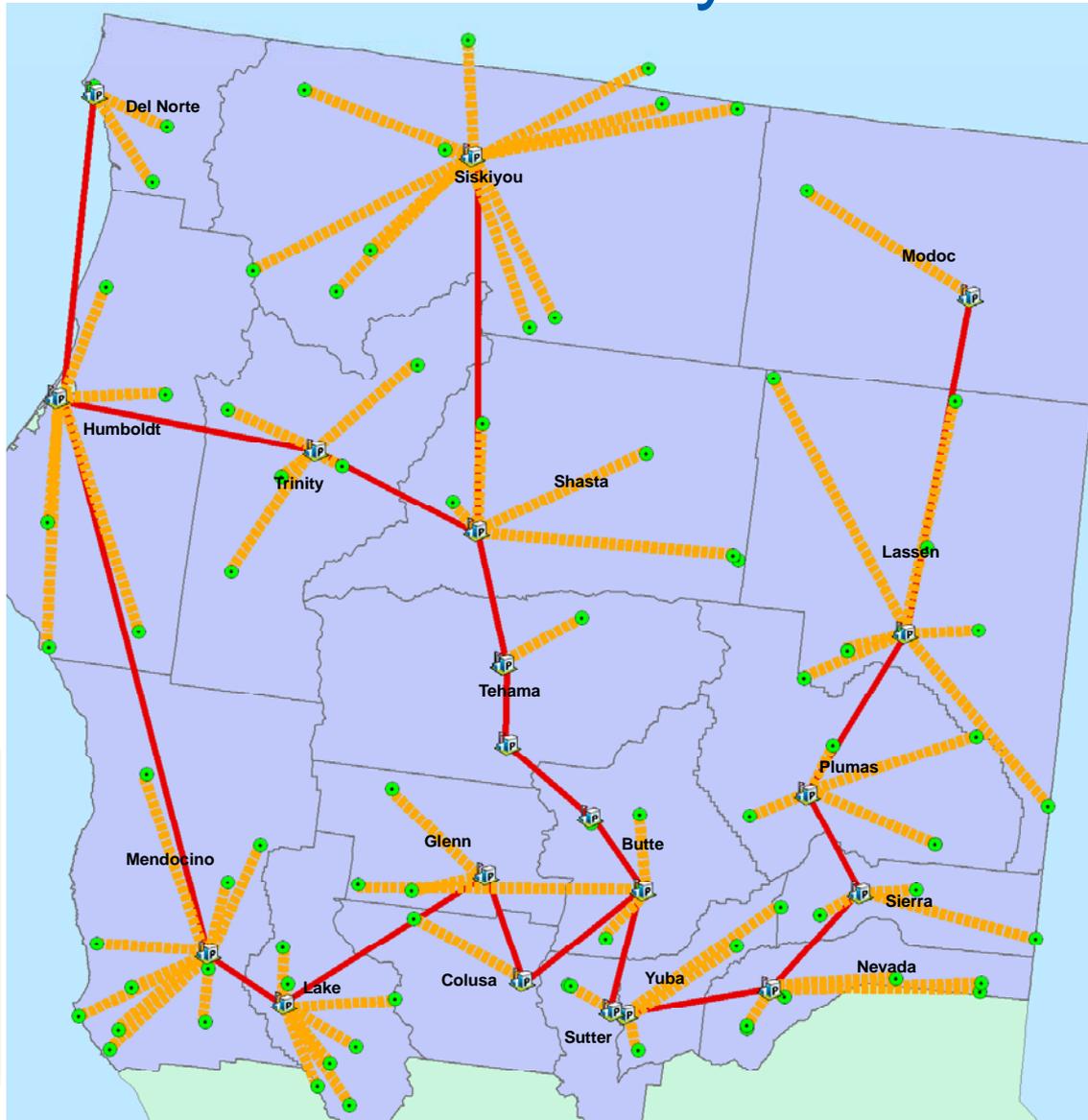
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Phase 1 – No site connectivity



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Phase 2 – Site connectivity



-  PSAPs
-  NPAC Radio Sites
-  Site Links
-  PSAP Links

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Benefits of Starting with the PSAPs

- Many of the PSAPs within the NPAC lack connectivity with neighboring PSAPs, other than regular telephone service.
- This lack of connectivity reduces the ability to share voice, video, or data with neighbors reducing response capability.
- It also does not address the need of an alternate connection in the event of telephone system failure during a major event such as an earthquake.

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The Other Side of the Coin...

- PSAP-to-PSAP connectivity does not address NPAC needs for site-to-site connectivity
- Site-to-Site connectivity enables advanced system designs such as voting and simulcast
- PSAP-to-Site connectivity also allows for direct connection to allow dispatcher override for greater command and control of radio systems

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Summary and Recommendation

- PSAP-to-PSAP connectivity is a capability that the NPAC does not have right now and provides two key benefits:
 - ANY capability is better than NO capability, regardless of the medium used to provide it (fiber vs. microwave, etc.)
 - Creating PSAP-to-PSAP connectivity provides a key foundational component needed to complete a robust PT2PT network and further increases operational response capabilities
- The NPAC's opinion is that all potential private / public partnerships should be explored to provide the greatest response capability to NPAC's public safety agencies

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