

Presentation on the Wireless Broadband Pilot Project to the MGSA Board

Presented by:

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Pilot Background

- Initial Discussions with GGT in Early 2008
- Golden Gate Transit (GGT) Goals
 - Increase Ridership by
 - Increasing productivity for commuters
 - Allow customers to check email, visit websites, and use VPN connections at broadband speeds from any Wi-Fi-enabled laptop or PDA
 - Give customers one more reason to use mass transit
- MGSA Goals
 - Demonstrate the functionality of the network concept for various mobile and remote applications

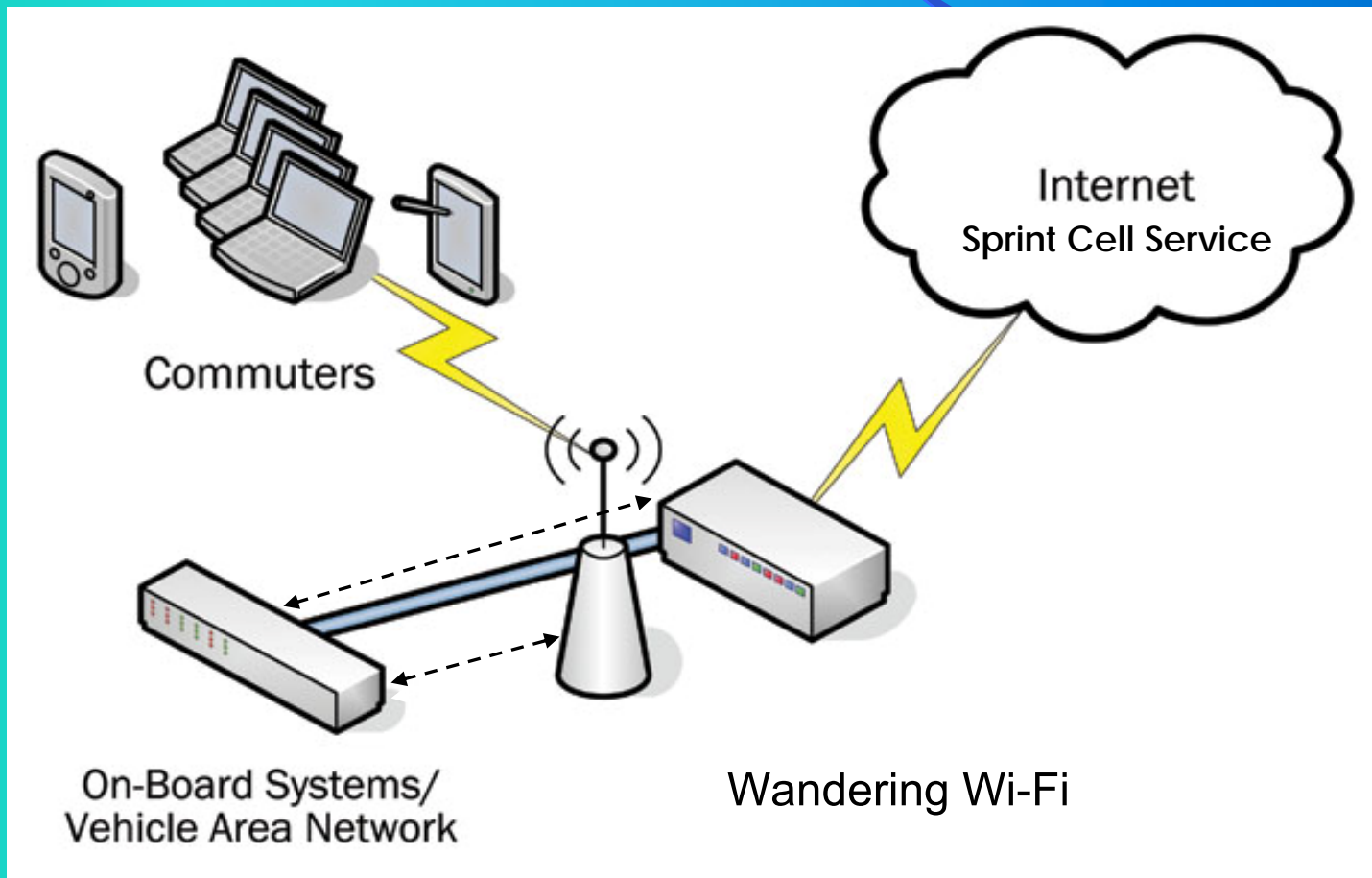
Pilot Background

- Pilot Project Begins in June/July 2008
 - Six-month Pilot Period
 - Identified Routes (7 buses)
 - 72x and 75
 - Long Routes Through Marin County
 - Log & Usage Records Kept
 - Rider Surveys Performed

Pilot Background

- Technologies Utilized
 - Wi-Fi gateway provides accessibility to riders
 - Cellular backhaul to and from buses to the Internet

GGT Project Overview



Pilot Testing

- CBG Tests Speed and Dependability of the Pilot in July 2008
 - Initial stationary tests conducted at GGT's 1011 Anderson Drive facility to gain baseline
 - Mobile testing on the 72X and 75 routes through Marin
 - Average speeds slightly below 1Mbps in forward direction and approximately 400 Kbps return

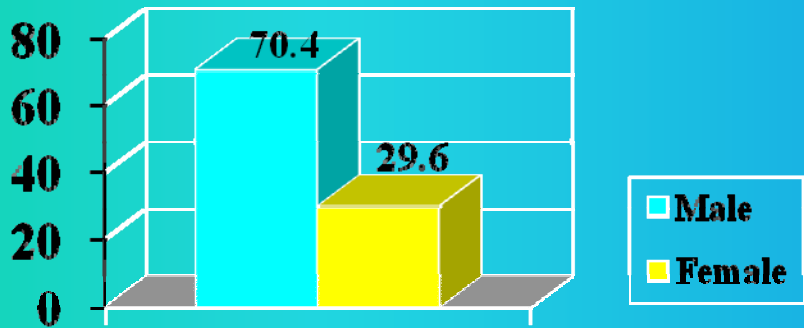
Pilot Testing

- Tests of Various Applications Proved Successful
 - E-Mail
 - Web Browsing
 - Banking
 - Streaming Video
 - Streaming Audio
 - File Sharing

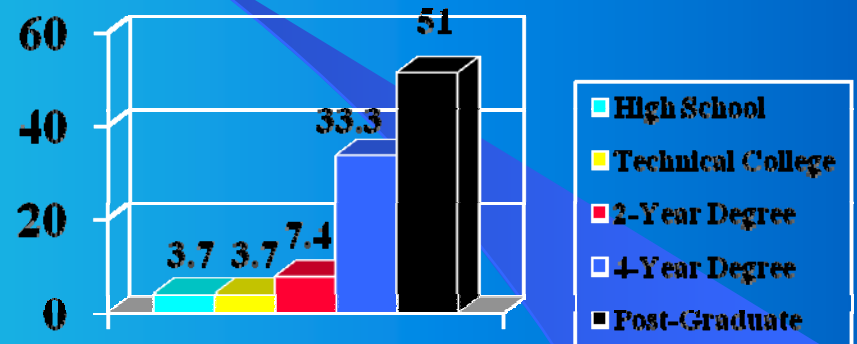
Ridership Surveys

- CBG and GGT Developed Surveys to Ascertain Opinions of Riders
 - Demographics Survey
 - Perception Survey
 - Network effectiveness
 - Network value

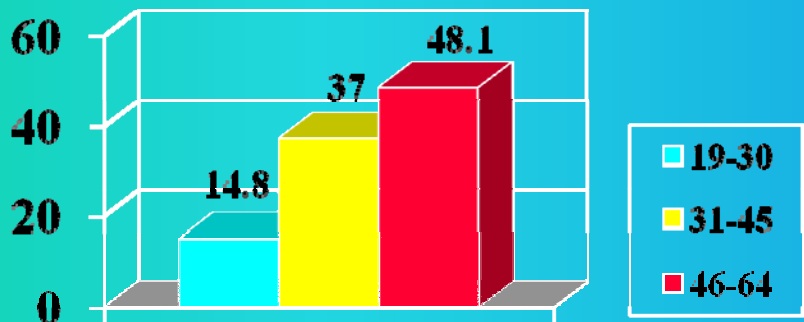
Demographics



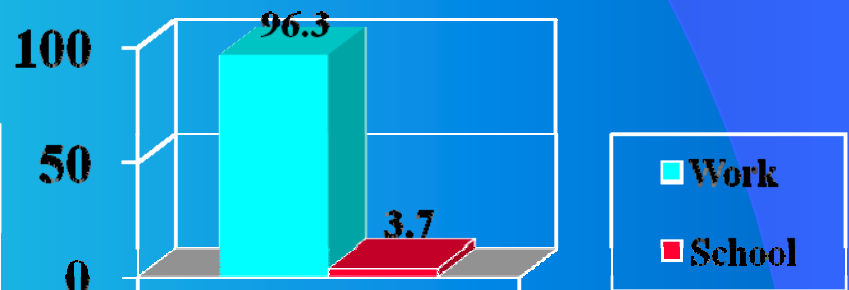
Gender



Education

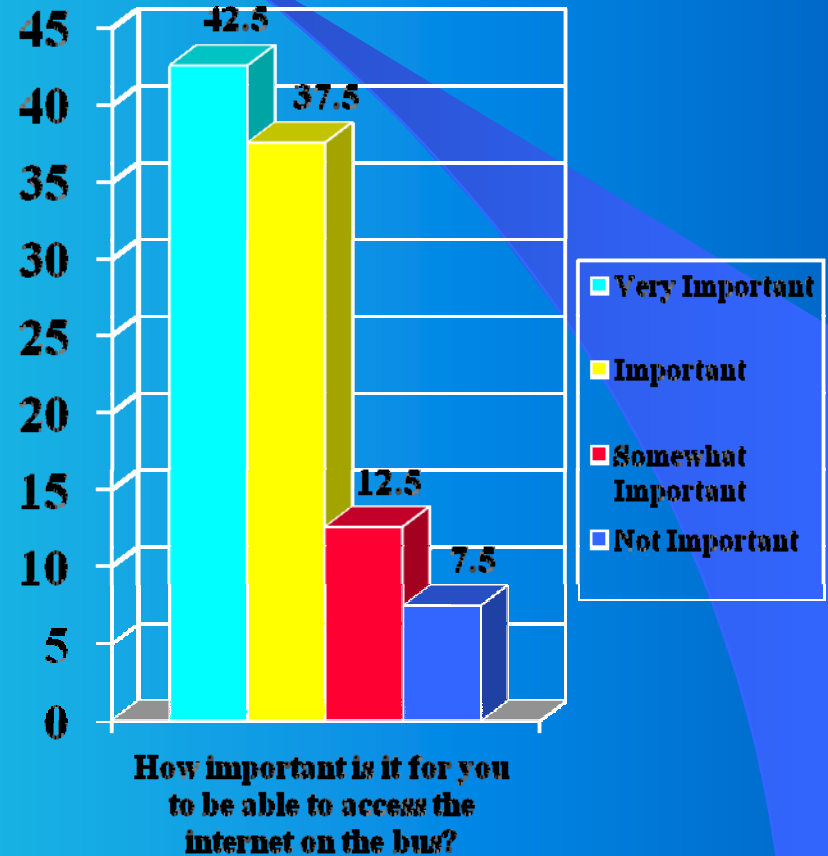
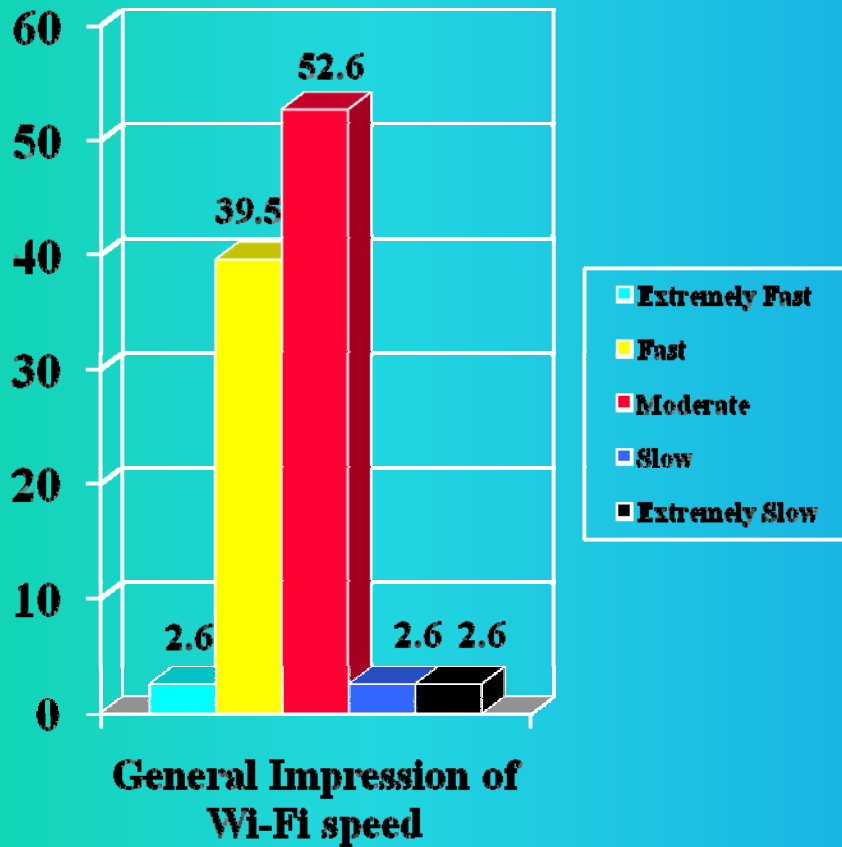


Age

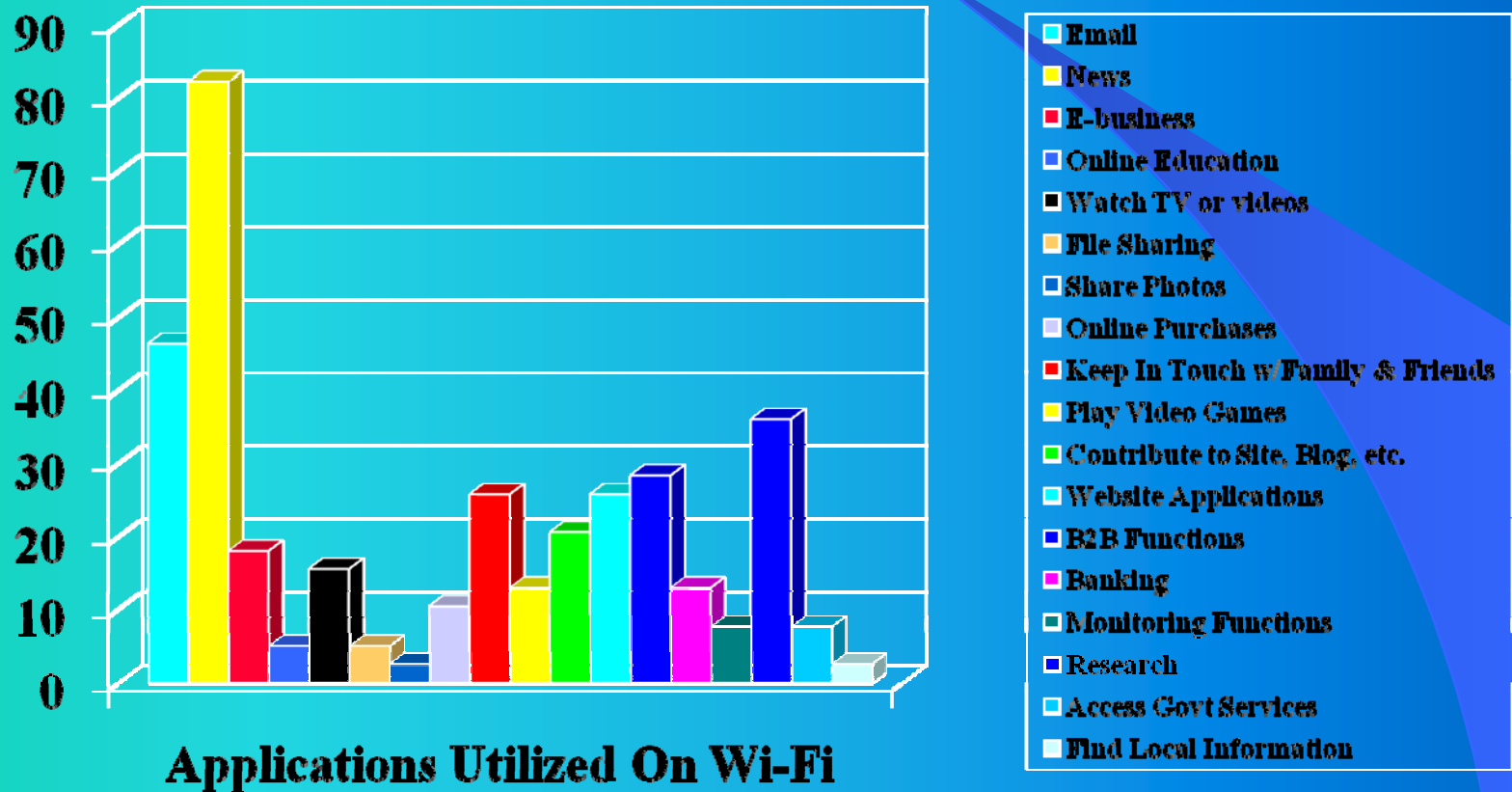


Reason for Riding Bus

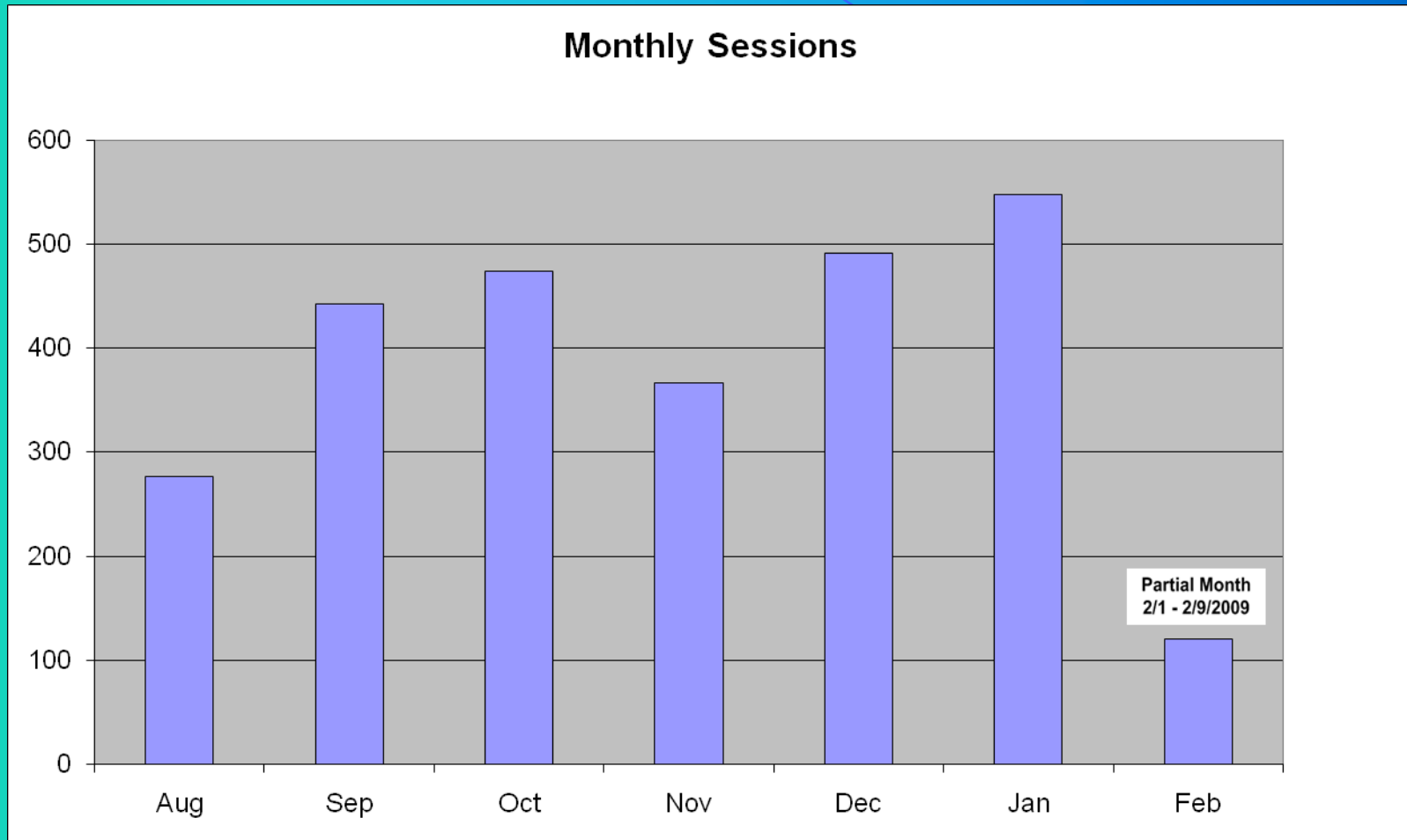
Rider's Perceptions



Enabled Applications



Network Utilization



Rider Comments

- What an unexpected and wonderful surprise to get Wi-Fi this morning.
- I love it! It's definitely an incentive to ride for me.
- A little slow for things like video, but works well for email and basic web surfing.
- Very reliable and fast enough.
- I appreciate having the access. Thanks!

Applications for MGSA Members

- Marin Transit
 - Offer Wi-Fi service in conjunction with GGT's rollout to entire fleet
 - Offer service to paratransit riders who rely on electronic communication
- Public Safety
 - Emergency/Disaster/special event locations
 - Shared Cellular connectivity
 - Facilitates temporary mobile network users
 - Cost savings
 - Shared, secure local area network access

Applications for MGSA Members

- Public Works
 - Monitoring and control of facilities in remote areas
 - Large construction/problem response sites
 - Shared Cellular connectivity
 - Facilitates temporary mobile network users
 - Cost savings
 - Shared, secure local area network access
- Community and Social Services
 - Community Centers
 - Remote medical screening locations

Considerations for the Future

- GGT Moving Forward (Update since CBG Report to the MGSA Board)
 - Developing an RFP for rolling out Wi-Fi service on the entire bus fleet and ferries
 - Respondent would finance both networks and charge a minimal fee to riders
 - Open to building the networks independent of each other
 - May revisit/reinstitute roll-out of free service if RFP doesn't produce favorable responses

Considerations for the Future

- Other Marin Explorations
 - Expand on existing deployments such as
 - City hot spots
 - Public Safety wireless access
 - Coordinated plan
 - Share/find financial resources
 - Leverage existing networks
- National Explorations and Possibilities
 - Underlying local government networks and applications serve as foundation
 - Residential service leverages the local government network

Considerations for the Future

- National Explorations and Possibilities
 - Financed in large part by public or grant funds
 - “Network-of-networks”
 - Wireless
 - Wireline
 - Must anticipate and recognize update needs over time

Recommended Potential Directions and Next Steps

- Leverage the success of the GGT Pilot
- Pursue a “network-of-networks” approach
 - Leverage existing network development efforts of agencies within Marin
 - Possible hybrid approach to meet various needs
 - Wireless
 - Wireline

Recommended Potential Directions and Next Steps

- Policy-making organization takes the lead on broadband development activities
- Coordinate efforts between entities to obtain grant funds
- Emphasize sharing of information, applications and resources
- Potentially pursue networks as part of necessary procurement of new, and upgrade of existing, networks

Thank You!

CBG Communications, Inc.