

# Port Angeles Citywide Wireless Initiative

- Project Overview
- Benefits
- Challenges
- Opportunities



September 14, 2011

# The evolution and growth of broadband technology

- “Wired Nation” concept – early 70’s
- ARPANET – development – 70’s
- High-speed transmission technology
  - Two-way cable – 90’s
  - Fiber optics – 80’s to present
- Integration of transmission technologies
  - Digital voice technologies – 70’s to 80’s
  - Digital video technologies – 90’s to present

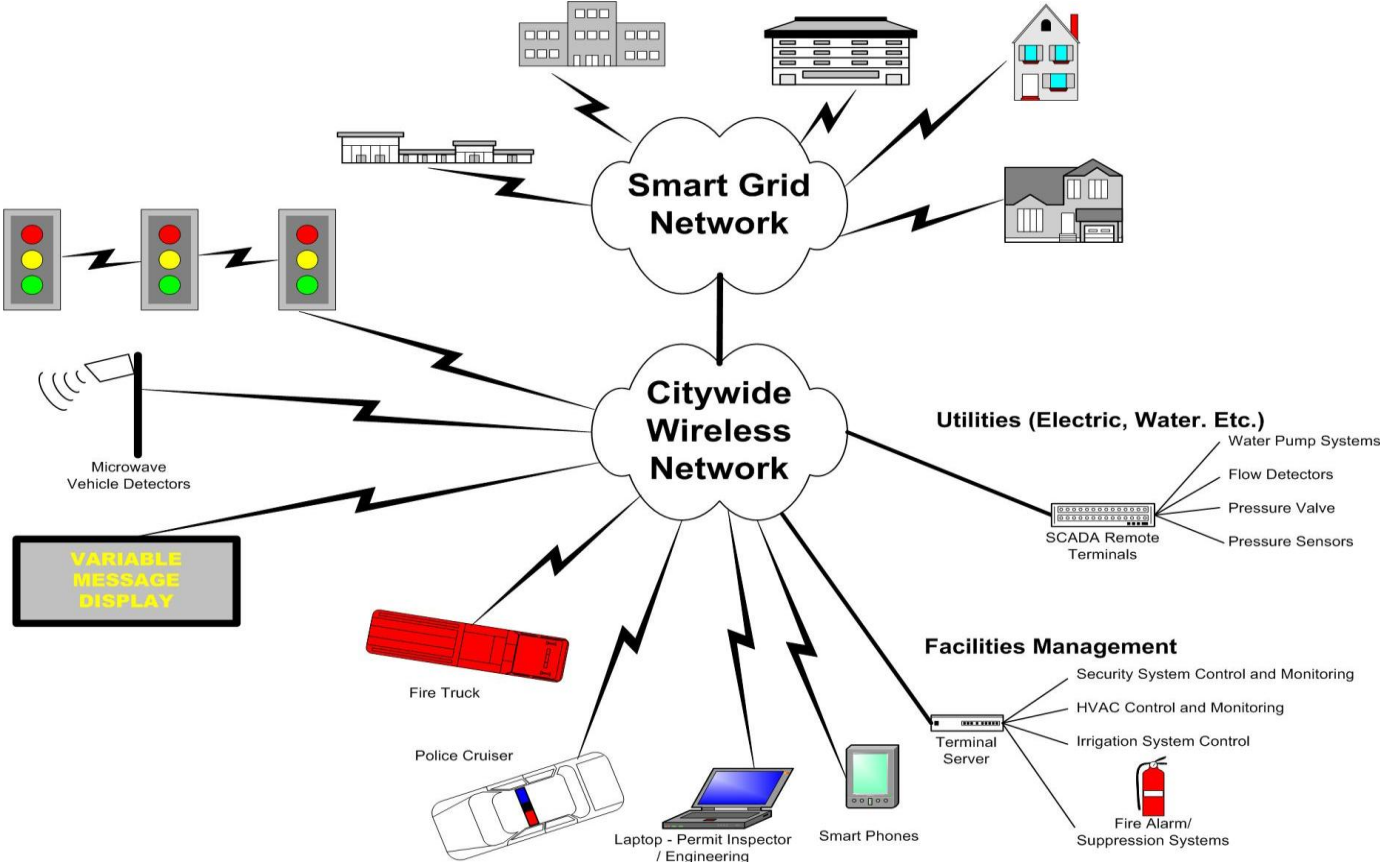
# What is broadband?

- FCC definition: 4 Mbps download, 1 Mbps upload
- Applications supported under current FCC definition:
  - Web browsing
  - File transfers
- Applications *not* supported under FCC definition:
  - Interactive video
  - GIS info
  - Web server
- **Conclusion: FCC definition lags both the market and consumer demand!**

# Examples of Services in Port Angeles

Service	Download speed	Upload speed
Cable TV (Wave)	50 Mbps	5 Mbps
4G LTE Wireless	10 to 15 Mbps	1 to 3 Mbps
DSL (CenturyLink)	40 Mbps	4 Mbps
Independent Fiber Networks (CPI)	100/1,000 Mbps	100/1,000 Mbps

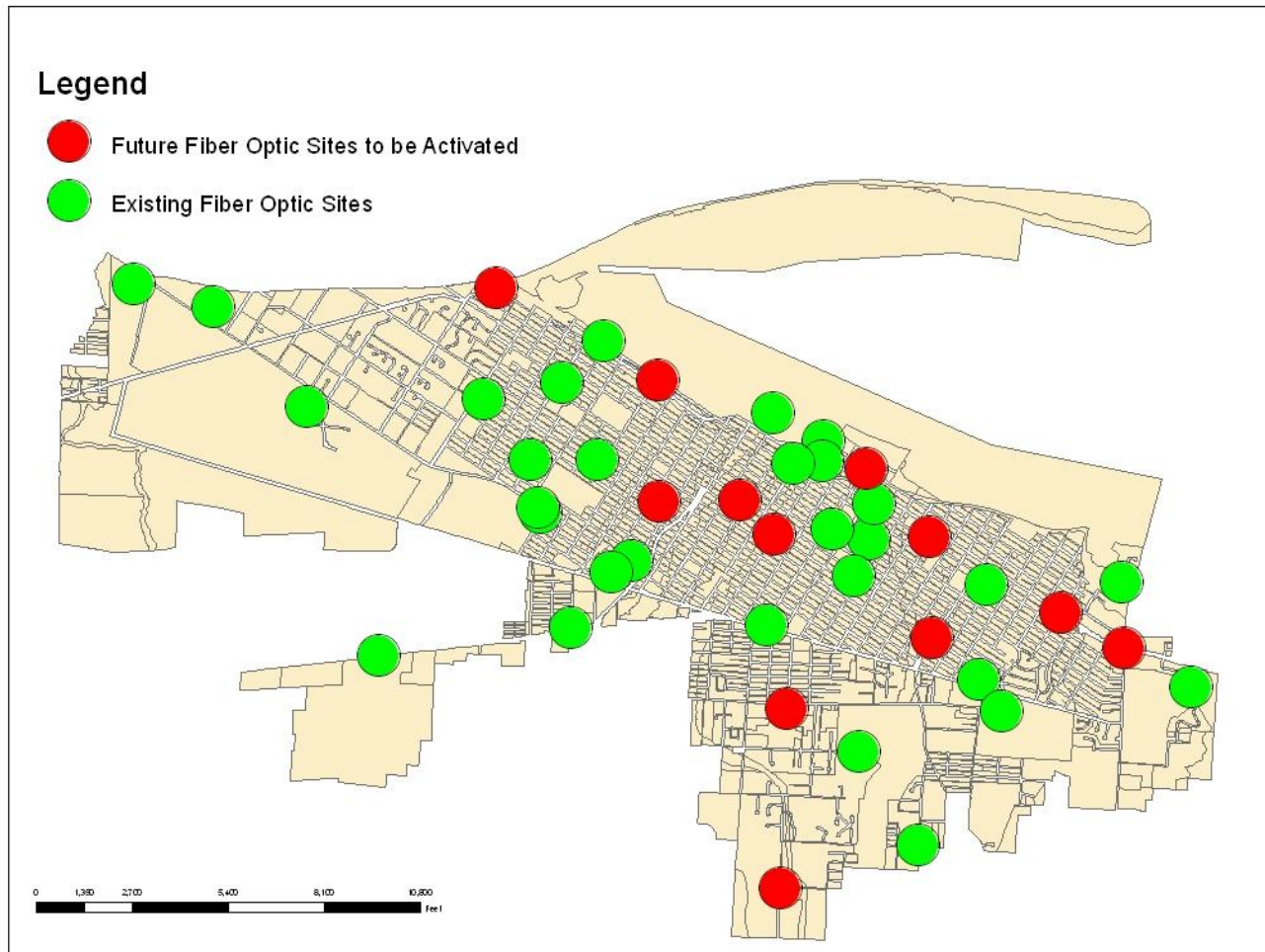
# ABC's of wireless



# Wireless access point



# Leveraging fiber backhaul



# What will the City's BTOP grant enable?

- What's new for the community?
- How will it impact:
  - Public safety
  - Delivery of City services
  - Business
  - Residential users
    - Alternative to existing providers
    - Public hot spots
    - Underserved consumer market

# Wireless strengths

- Properly designed, it can reach everywhere
- No cables or other physical links
- Crosses property lines without easements
- Access devices are multi-vendor sourced and, hence, low cost
- Easy to install by subscribers
- Many existing application devices have built-in 802.11 capability

# Wireless weaknesses

- Data rates are restricted by:
  - Available bandwidth
  - Signal strength
  - Number of users
- Generally works best as a hybrid mix of backbone fiber and microwave
- Subject to malicious interference

# Proposed project schedule

- RFP issued Jul 22 2011
- Pre-proposal conference Aug 5 2011
- Question deadline & survey Aug 19 2011
- Proposal submission deadline Sep 30 2012
- Contract award Jan 17 2012
- Initial phase completion Jun 29 2012
- Project completion Aug 30 2013

# What are the potential business impacts?

- Existing service providers
- New business opportunities
- More options for consumers
- Unique niches to fill

# The Port Angeles Model

- Partner with Public Sector
  - Share assets, fiber, right of way , equipment housing areas
  - Serve as an anchor tenant
- Minimize risk to City and to citizens
- Moving Forward on the Wireless Project
  - Secure the leverage of Federal Funding
  - Address city internal needs
  - Partner with commercial providers

# What might the future hold?

- More spectrum for wireless
  - 3.65 GHz Wi-Max
  - TV “white spaces”
- More connectivity to wireless devices
  - Monitor
  - Remote control
- Expanded use of City wireless access points and backhaul

# Proactive measures

- Take the initiative to leverage the opportunity of the BTOP grant
  - Potentially linked in partnership with FCC, NTIA and others
- Use it as an opportunity to brand Port Angeles as a “Broadband Hot Spot” ideal for high-tech firms
- Look into the viability of creating “pre-wired” office condos in vacant properties

# Your Assignment

- Examine your organization for way to capitalize on this technology
- Challenge others in the community
- Explore ways to get the word out to mature and start-up organizations that might relocate to Port Angeles that require cost effective – high capacity network services