

# Community Technology

## Current issues and emerging technologies

The City of Surprise continues to grow, and technology will be a key component of community building. Community building has been described as a focus on strengthening the capacity of residents, associations, and organizations to work, individually and collectively, to foster and sustain positive neighborhood attitude and change<sup>1</sup>. The integration of community technology with community building will create tremendous synergy. It will empower residents and families and improve their overall environment.

With population nearing the 100,000 mark, Surprise is at an important juncture. It is in the City's interest to evaluate its current community technology inventory, address the future of those assets, and encourage a wide diversity of technology.

The list below summarizes the primary technologies affecting the city and a list of recommendations for consideration.

**Broadband** refers to a communications medium that includes a two-way link between senders and receivers and transports large amounts of data, video or voice information. In the City of Surprise, Cox Communications is the predominant provider of broadband services (54% of market) with Qwest trailing in market share. Cox and Qwest use technologies that bury cable in City right-of-way. Satellite dish networks also provide some components of broadband services and have a small market share. Satellite services are delivered wirelessly and do not impact City right-of-way.

### Recommendations:

- *Survey citizens about what they want and need in terms of internet, phone and TV services.*
- *Develop a plan or framework with the aim of enabling city communication with citizens and visitors in the media of their choice.*
- *Assess civil authority's ability to communicate with residents in a disaster scenario*
- *Create a benchmark system with regular updates to assess City's broadband competitiveness*
- *Create policies to require developers in business parks and residential subdivisions to install fiber and structured wiring systems.*
- *Study the possibility of creating a municipal- owned self-healing metropolitan fiber-optic network to bring fiber to the home.*
- *Explore feasibility of laying fiber optic "backbone" from downtown Phoenix telecom provider hub to Surprise*
- *Identify funding for enhanced telecommunications infrastructure for Surprise Center, especially proposed Life Sciences Campus and bio-incubator*
- *Consider viability of an economic development strategy that targets online education firms like the University of Phoenix*

**Television** services are delivered to citizens through broadband (cable) subscription or through the air (free broadcast and satellite subscription). Television is emerging from a pure entertainment medium to become an interactive Internet lifestyle medium. Television enhancements such as TiVo, on-demand viewing, instant replay and HDTV with surround sound are changing the way people utilize their TV's. All these new products and services drive a need for more capacity (bandwidth) into the home.

Recommendations:

- *Review ROW management*
- *Work with builders to require structured wiring in all new construction*
- *Develop plan for potential expanded use of public access channel(s), including distance education, interactive television, and locally produced content*

**Wi-Fi** is the current hot technology that has cities vying to be the first, largest or most complete implementation of wireless community networks. Wi-Fi is used by citizens to connect wirelessly to the Internet. Most new computers sold have the capability of connecting to a Wi-Fi network. Currently, several businesses such as Starbucks and Barnes & Noble have Wi-Fi networks for their customers. Tempe and Scottsdale have announced and are implementing city-sponsored Wi-Fi networks that offer limited free service and paid subscription services to citizens.

Recommendations:

- *Study the feasibility of Wi-Fi coverage of all areas of the city*
- *Write an RFP to provide a Wi-Fi network on Surprise Center (Phase I) with alternatives for added phases in other locations as demand dictates*

**Cellular** technology and cell phones are currently experiencing a revolutionary product convergence that brings together phones, PDA's and camera/videos. Cell phones are saturating the marketplace with speed, power and price. The cell towers that deliver this technology are sprouting up throughout the City. While citizens want new cell services, they are resistant to towers in their backyards. The City of Surprise has a current policy of encouraging cell providers to locate services on City-owned property to provide revenue and control over aesthetics.

However, city acquisition of property at locations needed to support cell towers lags far behind and will result in pressure to build more towers in locations less acceptable to the populace. Some cities require cell providers to co-locate, meaning that several providers place their equipment on the same tower. Some cities also require cell towers to be aesthetically "stealthy". However, there are only so many ways to hide a cell tower.

Recommendations:

- *Hire a firm to review where cell towers need to be located to cover the entire city at build out.*

- *Once areas are identified for cell towers, write a co-location ordinance requiring service providers to locate on one tower, to prevent the proliferation of towers.*

**BPL** or Broadband over Power Lines is an emerging technology that transports high-speed Internet services through existing power lines into the home. Used more widely in Europe, it is relatively new in the United States.

*Recommendations:*

- *Meet with APS to explore broadband over power lines for identified areas.*
- *If mutually agreeable, design a demonstration project for a neighborhood or business district.*

References

1. Pinkett, Randal. (April, 2000). *Bridging the Digital Divide: Sociocultural Constructionism and an Asset-Based Approach to Community Technology and Community Building*. MIT Media Laboratory.

# Surprise banks on technology network

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Surprise wants to convert techie terms, such as wi-fi, broadband and fiber optics, into household names through the Surprise Connects technology plan.

Surprise Connects is a set of recommendations to build a community technology network incorporating various technologies to better serve Surprise residents.

"We'd like to lead the way (with technology)," said Randy Jackson, Surprise's chief information officer. "This is really the future of our community along with the rest of the country."

The council approved the Surprise Connects technology plan last week, which will allow the city's Information Technology Department to research residents' technology desires and needs and develop better uses of technology to serve city residents.

"Government is more efficient and open when we communicate with people in the technology of their choice," Jackson said.

The plan includes recommendations for better developing and expanding four main technologies: broadband, wireless Internet or wi-fi, cellular service and television.

Broadband, or cable, connections offer a fast way to transfer information and have become one of the most popular ways to access the Internet. Under Surprise Connects, city officials will develop policies that would require developers to install broadband systems called fiber optics networks and develop communication plans with residents using broadband technology.

The city might also look at installing its own fiber optics network and allow Internet companies to use it.

"We don't want to get into the Internet business," Jackson said. "... (But) we could actually lease our fiber to companies."

Wireless Internet allows users to access the Web without plugging in to an ethernet or phone port.

See **NETWORK**, Page A5

## NETWORK

From Page A1

Surprise officials will study the feasibility of creating a citywide wireless network. This setup would provide access throughout Surprise at commercial and public sites, something several cities nationwide have done.

Valley cities with wireless networks include Scottsdale and Tempe.

The near ubiquity of and demand for cellular technology requires cellular signal towers, which can be unsightly and are often unwanted by residents.

To limit the number of towers within city limits, Surprise will look to hire an outside firm to research the areas where cellular access is needed and then work with cellular companies to collocate service. Collocation of cellular service would limit the number of towers around the city and still provide coverage for residents.

Television is also covered under Surprise Connects, and city officials hope to develop more and better communication uses for the most used medium in the country.

Jackson said once staff has researched and evaluated residents' needs and developed plans, they will request bids from companies to construct technology networks.

"For Surprise to continue to attract what we're after ... this technical capability is extremely important," Councilor Cliff Elkins said. "We have the potential to offer our citizens a service that, I think, is greatly needed."