

CHAPTER 13 - TECHNOLOGY & TELECOMMUNICATIONS

This element of the Vacaville General Plan addresses the provision of telecommunications services to businesses, residences and the City organization; the establishment of a policy framework for dealing with other, unforeseen technology issues that may arise; and, the protection of public resources from damage related to the installation and maintenance of the technology infrastructure. It is an optional element, not required by state law.

13.1 General Policy Issues

A wide variety of utilities and technologies are central to a modern community. These include public utilities, discussed in Chapter 5. Street light and traffic control light standards, also found in the right-of-way, are increasingly being used as mounts for small telecommunications antennas, serving public purposes such as traffic control light coordination, and private purposes such as wireless communications. Also included are above-ground and in-ground private utilities such as electrical transmission and distribution lines, natural gas pipes, and telecommunications wires and towers. Adequate provision of these utilities and services allows businesses to prosper, homes and schools to be connected to educational resources from across the world, and government services to be easily accessed by citizens. Likewise, lack of these facilities can be a major detriment to the health and development of a community. Since most of these facilities and services are provided by private companies, a partnership between government, industry and citizens is needed.

The field of technology and telecommunications changes very rapidly. Policies and regulations need to provide predictability to businesses and citizens, but also need to be flexible enough to respond to the changing marketplace. The infrastructure used to deliver telephone, cable television, and Internet content is constantly evolving. As the distinctions between these and other services blur, laws (especially national laws) written to regulate each industry individually become confusing or irrelevant.

Many of the facilities necessary to provide telecommunications services are located in the public right-of-way, or in public utility easements adjacent to the right-of-way. This includes cable television and telephone switching boxes in front yards and landscaped road setbacks, as well as pipelines and cables under road beds. Each time a new facility is installed, or that maintenance work is done on an existing facility, there is a chance that the public investment in landscaping and roads can be damaged. As more providers enter the various and overlapping markets, however, the frequency of installation and maintenance work increases. Uncoordinated work schedules can lead to repeated cutting and digging in public roadways. This disrupts the quiet nature of residential areas, the flow of people and goods in commercial areas, and substantially shortens the life of public streets. All of these damage the vitality of the community. Incompatible equipment can lead to an excess number of facilities with duplicate functions. On the other hand, shared facilities and coordinated, properly scheduled maintenance and installation work provides the benefits of technology to the community without adding visual blight and extra cost.

In many older residential and commercial areas, electrical distribution lines are located on poles in the public right-of-way. These poles and overhead lines can cause a serious disruption in the aesthetic characteristics of a neighborhood or commercial center. In newer developments, the distribution lines for electricity are placed underground, along with cable television, telephone and natural gas lines.

With these thoughts in mind, the City of Vacaville has established the following general policies on technology and telecommunications:

Guiding Policies

- 13.1-G1 Technological facilities and services should be available to the broadest possible cross-section of residents, businesses and institutions in Vacaville.
- 13.1-G2 The City will maintain regulatory control over its right-of-way, in order to protect the public investment and the livability of the community. This local control of right-of-way will be consistent with the confines set by federal and state regulations.
- 13.1-G3 The City will use telecommunications and other technologies to assist in the development of quality jobs and educational facilities, and to help insure an informed public.
- 13.1-G4 The City will prepare and keep up-to-date appropriate ordinances, policies and master plans to regulate the installation of telecommunications facilities for the best interests of the community. As new technologies emerge, the City will amend existing regulations or adopt new ones, consistent with the broadly defined best interest of the community.
- 13.1-G5 The City will endeavor to work with other governmental institutions to ensure that technological facilities are adequate, properly and safely located, and not unnecessarily redundant.
- 13.1-G6 The placement and operation of telecommunications facilities and other technological infrastructure shall be such that the public health and safety is not compromised.
- 13.1-G7 When approving telecommunications and similar facilities, balance the need for aesthetics and screening with the function of the facility and the need to provide services to the public.

13.2 Provide Technological Facilities and Services to the Community

The primary technological issue at this time is connection of homes, businesses and institutions such as schools to the Internet. Because telephone service is universally available in Vacaville, and because wireless connections are possible, there are no fundamental technological obstacles to the ability of every business, home or school in the city to connect to the Internet. Cost issues may be significant to some users. The primary technological issue is now that of high speed Internet access. As the Internet becomes more graphically intense, the speed at which data is transmitted and received becomes very important. Slow speed connections lessen the ability of users to receive and transmit information in a timely, affordable manner.

There are a variety of technologies currently available to provide high speed Internet access. These include access via cable television facilities, using phone line copper wire and fiber optical lines, dedicated Internet lines, as well as increasingly-capable wireless and satellite services. At the current pace of technological change, new methods of connection may be identified and developed very quickly.

Implementing Policies

- 13.2-I1 Develop a telecommunications master plan for Vacaville. This plan should include the following elements:
- ◆ Emphasize the best quality service for consumers, and foster competition in order to provide service at better rates. This can generally be accomplished by fostering effective competition.
 - ◆ Work with service providers to encourage the provision of high-speed telecommunications service to all existing areas of the community. This will require installation of new facilities and retrofitting existing facilities to ensure that all areas receive service.
 - ◆ Establish standards for new development to ensure that high-speed telecommunications facilities are provided from the beginning.
 - ◆ Coordinate with local school districts, Solano Community College and other governmental institutions to attempt to provide for their special needs.
 - ◆ Work with local businesses to identify special telecommunications needs, and to ensure that service providers are available to address those needs.
- 13.2-I2 Monitor changes to technology, and to federal and state regulations, to ensure that Vacaville is able to respond to those changes in a timely manner.
- 13.2-I3 Identify areas where telecommunications providers can jointly locate equipment such as switching shelters. These shared locations can increase service availability and reduce cost by allowing for sharing of security, landscaping and maintenance costs.

- 13.2-I4 Ensure that the City's franchise ordinance maximizes affordable access to all telecommunications services by all members of the community. This may include:
- ◆ Provision of high-speed facilities to all areas of the community, including those that may be less profitable to serve.
 - ◆ Retrofitting of facilities in older neighborhoods and commercial centers to ensure their technological viability.
 - ◆ Providing access to channels and broadcast facilities for City of Vacaville programming, as well as programming for other governmental agencies and local service and non-profit organizations.

13.3 Maintain Control of Rights-Of-Way

The public right-of-way includes streets, sidewalks, and landscaping areas. Adjacent to most rights-of-way are public utility easements. These areas represent a sizeable public investment, in the form of property acquisition, installation and maintenance of improvements. These public rights-of-way are also ideal locations for the placement of public and private utilities that serve the entire community, such as power and gas distribution lines and telecommunications cables. Switching cabinets and vaults where local-serving lines join trunk lines are also commonly sited in rights-of-way. Utilities that are licensed by the state Public Utilities Commission and/or that have franchise agreements with the City of Vacaville have certain rights to use public rights-of-way to provide their services, although the City has the general authority to establish procedures and standards for street cuts and repairs. By locating telecommunications facilities in the right-of-way, services are extended to every area served by the City street grid. This provides the broadest possible access to these important services. In addition, the placement of facilities in a single location avoids the potential cacophony of poles and lines, or underground conduits, that would be needed if each individual carrier located facilities where they could.

The City also owns open space, park lands, and other buildings and facilities that may be suited for the location of telecommunications facilities as well. These areas do not have the same right of use issues as the public right-of-way, but may be leased to service providers.

Work in the public right-of-way on utility systems has the potential to damage the public investment. There are many documented instances across the country where uncoordinated work by utility companies installing and maintaining cable and conduit under streets has left the streets inaccessible to the public for long periods of time, and in poor condition once the work is completed. The reduced life of streets that are repeatedly cut and patched (but are rarely actually repaired by the telecommunications company doing the work) has also been widely observed in other communities. The placement of switching cabinets and vaults in landscaping areas can damage or destroy plant materials and irrigation lines, as well as detracting from the otherwise pleasant appearance of major streets and even individual neighborhoods.

City policies are needed to balance the need to provide open access to the public right-of-way for all service providers with the need to protect the public's investment in the property and improvements. In addition, federal law and state regulations that require non-discriminatory rules on use of the public right-of-way must be complied with. Franchise agreements between the City and service providers are one way to do this. Some utility franchises are established by state law (telephone, for example) while other franchises are left to local negotiations, although both examples have severe and substantial limitations on the exercise of local authority. These agreements provide rights to use of the right-of-way to the franchisee, and provide the City with money to help pay for the repair of damages caused by installation and maintenance work. Franchise agreements also provide the City with tools to ensure services are provided to areas that may be less economically desirable for the provider to serve. In the case of the cable television franchise, the agreement gives access to channels and broadcast facilities to the City, other governmental agencies, and non-profit organizations.

One way to provide a location for telecommunications cables that requires minimum street cutting is for the City to require installation of conduit when streets are initially constructed. This conduit can be empty, and available for any and all service providers to fill with cable; filled with 'dark' fiber that is owned by the City, and leased for use by service providers; or, filled with 'lighted' fiber that allow the City to operate its own telecommunications services.

Implementing Policies

- 13.3-I1 Adopt a right-of-way ordinance that gives clear authority to the City to regulate activities in the public right-of-way, and to collect reasonable fees and/or in lieu services for the use and maintenance of the public right-of-way by private service providers. Regulation of activities includes limitations on the timing of work that may disrupt public use of roads and sidewalks, repair standards, mandatory facility sharing, and restrictions on the installation of duplicative equipment.

- 13.3-I2 Amend the Standard Specifications for Public Improvements to designate a location for the placement of conduit for telecommunications use, and to establish repair standards.

- 13.3-I3 Ensure that the City's franchise ordinance is kept up-to-date to deal with the changing nature of federal and state law, as well as the changing nature of telecommunications technology.

- 13.3-I4 Amend the Telecommunications chapter of the Land Use and Development Code as needed to keep up-to-date on changes in telecommunications technology and practices.

13.4 Economic Development, Education and Government Services

Access to the Internet is becoming an essential feature of most businesses. For example, many goods and services are advertised and ordered on line. Businesses benefit by advertising their own goods on the Internet, and by purchasing goods and services that they need in the same way. In addition, more workers are 'telecommuting', where they work from their home, connecting to the main office through telecommunications technology. This benefits the community and region by reducing traffic on the roads and providing citizens with more time to commit to their families and local organizations and activities. It also may provide more opportunities for individuals to open their own businesses from home, by eliminating the need to rent expensive office space.

Education also benefits from high speed Internet access. Schools have access to a world - literally - of information and educational programs. Students also have better access to teaching and research materials from home. Students, especially adults, who are outside of the traditional educational system can take classes at their own convenience over the Internet.

As citizens and businesses are coming to rely on the Internet for economic and educational activities, they come to expect the same sort of access and service from government. Agencies with quality infrastructure and an Internet presence can help residents sign up for programs, take out permits, and participate in general governance more effectively. They can also use the Internet to provide critical information during emergencies such as floods or the aftermath of earthquakes.

When new areas of the City are developed, new parcels are created and new facilities such as roads and pipelines are installed. The City has established a 'control network' to allow the accurate identification of all new parcels and facilities. Accurate mapping of newly developed areas assists emergency response planning, modeling to determine future facility needs, and general mapping activities.

Implementing Policies

- 13.4-I1 Explore the formation of an industry and business working group to ensure that special needs of the business community are identified and met. This will not only serve existing businesses, but will help make sure that Vacaville has the adequate telecommunications infrastructure to attract new businesses providing high quality jobs.
- 13.4-I2 Explore the formation of an educational working group with the Vacaville and Travis Unified School Districts, as well as with the Vacaville campus of Solano College.
- 13.4-I3 Look for ways to ensure that City ordinances and policies encourage telecommuting. Look for ways to encourage home businesses that use the

Internet and operate in a way that does not change the residential character of neighborhoods.

- 13.4-I4 Coordinate City of Vacaville telecommunications services with other local governments, as well as with appropriate regional, state and national governmental agencies, so as to provide citizens the greatest possible open and convenient access to governmental programs and information.
- 13.4-I5 Require new development to provide accurate maps based upon the Citywide Control network.
- ◆ New tentative and final map applications should include electronic as well as paper maps, tied to the control network.
 - ◆ Locations of new public facilities should be electronically mapped.
 - ◆ The City should establish a format for submittal of electronic parcel and facility maps.

13.5 Health and Safety Issues

Telecommunications services have become important tools for the law enforcement and emergency medical services. Not only is radio used to dispatch units, but also data on suspects and patient records is commonly sent to vehicle-based computer systems. Global Positioning System (GPS) receivers are used to keep track of emergency response vehicles. A high quality telecommunications system for City safety services can be enhanced by joint use with private telecommunications facilities.

Wireless telecommunications facilities emit radio-frequency electromagnetic radiation (EMR). The power and frequency of these emissions is regulated by federal law, administered by the Federal Communications Commission (FCC). So long as transmitters operate within the FCC limits, the City is limited by law in its ability to consider EMR as an environmental or health factor.

Implementing Policies

- 13.5-I1 Develop a City Public Safety Telecommunications Plan. Include in this plan potential sites for location of telecommunications facilities to serve emergency response providers in the City. Where possible, reduce equipment and service costs by sharing facilities with other service providers.
- 13.5-I2 Ensure that the City's telecommunications and Internet services are capable of providing timely emergency information.
- 13.5-I3 Review the potential health and environmental impacts of new telecommunications facilities, consistent with the requirements of federal and state laws and regulations.

13.6 Community Appearance

Telecommunications and other utility facilities can have a substantial impact upon the appearance of a community. Too many above-ground facilities can block the visibility of signs in commercial districts, and detract from the residential character of neighborhoods. It is important to balance the need to provide services to the community with the desire to have an aesthetically pleasing place to live and work.

- 13.6-I1 Where possible, screen above-ground telecommunications facilities from easy public view. This can be done by careful placement of facilities, installation of appropriate landscaping and other screening materials, and the use of "stealth" facilities that blend in with surrounding vegetation or buildings.
- 13.6-I2 Encourage the grouping of facilities, such as multiple users on a single telecommunications tower or the placement of multiple towers in a single location.

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Amendments to the Vacaville General Plan

March 13, 2001

Resolution No. 2001-29 - Adoption of new Technology and
Telecommunications Element, an optional General Plan Element