3. The submitted site plan complies with the performance criteria set in these regulations.

4. The proposed facility/tower will not unreasonably interfere with the view from any public park, natural scenic vista, historic building or district, or major view corridor.

5. The lowest six (6) feet of the facility/tower be visually screened by trees, large shrubs, solid walls, or fences and/or nearby buildings.

6. The height and mass of the facility/tower does not exceed that which is essential for its intended use and public safety.

7. The owner of the wireless communication facility has agreed to permit other persons/cellular providers to attach cellular antenna or other communications apparatus which do not interfere with the primary purpose of the facility.

8. There exists no other existing facility/tower that can reasonably serve the needs of the owner of the proposed new facility/tower.

9. The proposed facility/tower is not constructed in such a manner as to result in needless height, mass, and guy-wire supports.

10. The color of the proposed facility/tower will be of a light tone or color (except where required otherwise by the FAA) as to minimize the visual impact and that the tower will have a security fence around the tower base or the lot where the tower is located.

11. The facility/tower is in compliance with any other applicable local, state, or federal regulations.
Rationale and Notes on Article 3

Article 3 is designed to clarify the requirements for submitting an application for a wireless facility siting. By setting out in the regulations specifically what will be required with a siting application, the permitting process will be more efficient for both the municipal and service provider. The standard site plan requirements for the municipality are the base for applications for wireless facility sitings, with these additional requirements to be used for wireless facility sitings.

The General Approval Standards are provided as a clarification method for applicants. By spelling out the items necessary for the application to be approved, it should streamline the application and permitting process. These standards were developed by using a variety of communities’ ordinance language, as well as articles and reports from service providers and commercial publications. These standards are meant to be modified to each municipality’s individual needs, so that they are in line with the existing approval process that is used in each municipality.

Application Procedure and Approval Process Sources:
Language adapted from Timothy J. Thompson (Londonderry, NH Ordinance Report), Pensacola, FL Ordinance excerpt (PAS Information Packet), Bloomington, MN Tower Ordinance, Sprint Spectrum Handbook.
Article 4. General Wireless Communications Facility Performance Standards

4.1 Co-Location Requirements

All commercial wireless telecommunication towers erected, constructed, or located within the municipality shall comply with the following requirements:

1. A proposal for a new commercial wireless telecommunication service tower shall not be approved unless the governing body finds that the telecommunications equipment planned for the proposed tower cannot be accommodated on an existing or approved tower or building within a one mile search radius (one half mile search radius for towers under 120 feet in height, one quarter mile search radius for towers under 80 feet in height) of the proposed tower due to one or more of the following reasons:

   A. The planned equipment would exceed the structural capacity of the existing or approved tower or building, as documented by a qualified and licensed professional engineer, and the existing or approved tower cannot be reinforced, modified, or replaced to accommodate planned or equivalent equipment at a reasonable cost.

   B. The planned equipment would cause interference materially impacting the usability of other existing or planned equipment at the tower or building as documented by a qualified and licensed professional engineer and the interference cannot be prevented at a reasonable cost.

   C. Existing or approved towers and buildings within the search radius cannot accommodate the planned equipment at a height necessary to function reasonably as documented by a qualified and licensed professional engineer.

   D. Other unforeseen reasons that make it infeasible to locate the planned telecommunications equipment upon an existing or approved tower or building.

2. Any proposed commercial wireless telecommunication service tower shall be designed, structurally, electrically, and in all respects, to accommodate both the applicant's antennas and comparable antennas for at least two additional users if the tower is over 100 feet in height or for at least one additional user if the tower is over 60 feet in height. Towers must be designed to allow for future rearrangement of antennas upon the tower and to accept antennas mounted at varying heights.
4.2 **Tower and Antenna Design Requirements**

Proposed or modified towers and antennas shall meet the following design requirements:

1. Towers and antennas shall be designed to blend into the surrounding environment through the use of color and camouflaging architectural treatment, except in instances where the color is dictated by federal or state authorities such as the Federal Aviation Administration.

2. Commercial wireless telecommunication service towers shall be of a monopole design unless the {governing body} determines that an alternative design would better blend in to the surrounding environment.

4.3 **Tower Height**

The maximum tower height permitted in this municipality are calculated by applying the following:

1. If the tower is designed to accommodate only one service provider, the maximum height shall be \(120\) feet from grade.

2. If the tower is designed to accommodate two service providers, the maximum height shall be \(160\) feet from grade.

3. If the tower is designed to accommodate more than two service providers, the maximum height shall be \(200\) feet from grade.

{(see Rationale and Notes on this section for explanation on maximum heights)}

4.4 **Accessory Utility Buildings**

All utility buildings and structures accessory to a tower shall be architecturally designed to blend in with the surrounding environment and shall meet the minimum setback requirements of the underlying zoning district. Ground mounted equipment shall be screened from view by suitable vegetation, except where a design of non-vegetative screening better reflects and complements the architectural character of the surrounding neighborhood.

4.5 **Tower Lighting**

Towers shall not be illuminated by artificial means and shall not display strobe lights
unless such lighting is specifically required by the Federal Aviation Administration or other federal or state authority for a particular tower.

4.6 Antennas Mounted on Structures, Roofs, Walls, and Existing Towers

The placement of wireless telecommunication antennas on roofs, walls, and existing towers may be approved by the {person responsible for enforcement, as stated in Section 1.9.1}, provided the antennas meet the requirements of these regulations, after submittal of:

1. a final site and building plan as specified by Article 3 of these regulations, and;

2. a report prepared by a qualified and licensed professional engineer indicating the existing structure or tower's suitability to accept the antenna, and the proposed method of affixing the antenna to the structure. Complete details of all fixtures and couplings, and the precise point of attachment shall be indicated.

4.7 Temporary Wireless Communications Facilities

Any facility designed for temporary use (as defined in Article 2), is subject to the following:

1. Use of a temporary facility is allowed only if the owner has received a temporary use permit from the {Municipality Name} {Department Name}.

2. Temporary wireless facilities are permitted for use of no longer than 30 days for use while constructing permanent facilities, and no longer than 5 days for use during a special event.

3. The maximum height of a temporary wireless facility is 50 feet from grade.

4. Temporary facilities are subject all applicable portions of these regulations, excluding Sections 3.2 and 3.3.

4.8 Interference with Public Safety Telecommunications

No new or existing telecommunications service shall interfere with public safety telecommunications. All applications for new service shall be accompanied by an intermodulation study which provides a technical evaluation of existing and proposed transmissions and indicates all potential interference problems. Before the introduction of new service or changes in existing service, telecommunication providers shall notify the municipality at least ten calendar days in advance of such changes and allow the
municipality to monitor interference levels during the testing process.

4.9 Abandoned or Unused Towers or Portions of Towers

Abandoned or unused towers or portions of towers shall be removed as follows:

1. The owner of a wireless facility shall file annually a declaration with {person responsible for enforcement, as stated in Section 1.9.1} as to the continuing operation of every facility installed subject to these regulations. Failure to do so shall be determined to mean that the facility is no longer in use and considered abandoned, thus subject to the following:

2. All abandoned or unused towers and associated facilities shall be removed within 180 days of the cessation of operations at the site unless a time extension is approved by the {person responsible for enforcement, as stated in Section 1.9.1}. A copy of the relevant portions of a signed lease which requires the applicant to remove the tower and associated facilities upon cessation of operations at the site shall be submitted at the time of application. In the event that a tower is not removed within 180 days of the cessation of operations at a site, the tower and associated facilities may be removed by the municipality and the costs of removal assessed against the property.

3. Unused portions of towers above a manufactured connection shall be removed within 180 days of the time of antenna relocation. The replacement of portions of a tower previously removed requires the issuance of a new wireless facility permit.

4.10 Signs and Advertising

The use of any portion of a tower for signs other than warning or equipment information signs is prohibited.
Rationale and Notes on Article 4

Article 4 is the backbone of these regulations. These standards apply to wireless facilities regardless of the zoning district in which they are located. Rather than reinventing the wheel, the majority of the language contained in this section has been modified slightly from the Bloomington, MN, Tower Ordinance. Of all the ordinances researched for this project, this ordinance had the most complete information on general requirements.

Section 4.1 is probably the most important and most controversial aspect of these regulations. One of the easiest ways to prevent proliferation of wireless facilities is to require tower sharing between two or more service providers. Service providers determine a lease agreement for the space used for additional antennas. The reason this is controversial, is because such a requirement has yet to be tested in court. There is some concern that language of this sort may be seen as a detriment to free-market competition between service providers. Tower sharing, however, is a very effective way to reduce the number of towers that would locate within a given municipality. These requirements are taken from the Bloomington Tower Ordinance, which has the most complete co-location language of any ordinance examined during research.

The tower and antenna design requirements, Section 4.2, are a second way to help reduce the visual impact of new wireless communications facilities. Of note particularly in this section is the requirement of monopole towers unless the governing body deems otherwise. This is an optional requirement for this model, as some communities may wish not to regulate the type of tower providers construct. Monopole towers are more expensive to build, but are generally less visually intrusive than other towers (such as lattice towers or guyed towers).

Section 4.3, dealing with tower height, is designed to aid in the facilitation of multi-user facilities. The greater the tower height, the more area it can serve. By providing height bonuses, the goal is that multi-user towers become a more attractive alternative. Also, when accommodating multiple users on a single tower, the antennas must be places far enough apart so that they do not interfere with one another. While a 200 foot tower may seem like a price for the
municipality to pay in aesthetics, the alternative of several shorter towers may be even more detrimental to community aesthetics. It should be noted that these standards should differ depending on the population of the community. In rural areas, a 200 foot maximum height should be a viable choice; since there will be fewer towers, greater height is needed for adequate coverage. In more urbanized areas, the maximum heights should be lower, as there are more antennas and smaller cell sizes. The person using this model should craft the maximum heights so that they are appropriate to his/her community’s characteristics.

Section 4.7 deals with a very new wireless practice, the use of temporary facilities, or “Cells on Wheels (COW)”s. Many providers, wishing to establish service as soon as they can, will construct a temporary facility to serve its customers until a permanent facility is constructed. Temporary facilities are also often used in conjunction with conferences or other special events where a majority of the attendees are wireless users (this prevents an overload of a community’s existing system). Without a section dealing with temporary facilities, a community runs the risk of the temporary tower becoming a detriment to aesthetics and safety.

Accessory utility buildings (Section 4.4), often housing equipment necessary for the facility to operate, are subject to the requirements of the zoning district in which they are located. Efforts for compatibility with the surrounding neighborhood context is desired, but screening may be used to hide these buildings as well.

Section 4.9 is another critical element of these regulations, as the technology involved in wireless communications is likely to render towers and antennas unnecessary in the coming years. It is important to stipulate that it is the owner’s responsibility to remove the tower and antennas when they are no longer used. The removal and demolition of towers is expensive and should not be left to the municipality to deal with. By requiring what essentially is a contract for removal during the applications phase, municipalities need not worry about the large expenses associated with tower removal.

Sections 4.5, 4.6, 4.8, and 4.10 are pretty self explanatory. Lighting is unnecessary unless required by the FAA, building mounted antennas are dealt with more specifically in Article 5, interference with public safety communications is essential, and towers should not be
used as a means of advertising or signage.

General Wireless Communications Facilities Performance Standards Sources:
Language adapted from Bloomington, MN Tower Ordinance, Cincinnati Tower Ordinance, Noblesville Indiana Ordinance, & Timothy J. Thompson (from general research)
Article 5. Zoning Specific Wireless Communications Facility Performance Standards

5.1 {Municipality} Zoning Description

{This section will vary from community to community, since each municipality will have different zoning classifications and districts. This model is set up so that each municipality can “plug in” its zoning classifications and districts. The model divides zoning into the following categories:

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Light Commercial
- Moderate Commercial
- Heavy Commercial
- Light Industrial
- Heavy Industrial
- Mixed Use I (Commercial & Residential)
- Mixed Use II (Commercial and Industrial)
- Open Space/Conservation/Agricultural
- Historic/Special Districts

The model will be designed around these general categories; when applying this model to your community, the zoning classifications for your municipality should be substituted throughout this Article for these general categories. While these categories represent a cross-section of typical zoning districts, they may not cover all the classifications used in your community. It is assumed that these general categories will be inclusive enough for the user to substitute any types of zoning not covered in this model.}

5.2 Wireless Facility Siting Standards - Zoning

1. Commercial wireless communications facilities are a permitted use in the following districts, subject to Section 5.4, Performance Criteria:
   A. Heavy Industrial
   B. Light Industrial
   C. Mixed Use II (Commercial and Industrial)
   D. Heavy Commercial
   E. Moderate Commercial
   F. Light Commercial
2. Commercial wireless communications facilities are allowed only as a {conditional use/special exception use/whatever term used for a use requiring a special permit}, requiring the approval of a {conditional use permit/special exception permit/other permit as applicable in municipality}, in the following districts, subject to Section 5.4, Performance Criteria:

A. Mixed Use I (Commercial and Residential)
B. High Density Residential
C. Medium Density Residential
D. Low Density Residential

3. Commercial wireless communications facilities are not allowed in the following districts:

A. Historic/Special Districts
B. Open Space/Conservation/Agricultural

4. Non-commercial wireless facilities (amateur radio antennas) are subject to Section 5.3, Non-Commercial Wireless Facility Standards.

5.3 Non-Commercial Wireless Facility (Amateur Radio Antenna) Standards

1. Towers supporting amateur radio antennas and conforming to all applicable provisions of these regulations shall be allowed only in the rear yard of residentially zoned parcels.

2. In accordance with the Federal Communications Commission's preemptive ruling PRB1, towers erected for the primary purpose of supporting amateur radio antennas may exceed 30 feet in height provided that a determination is made by the {person responsible for enforcement, as stated in Section 1.9.1} that the proposed tower height is technically necessary to successfully engage in amateur radio communications.

5.4 Commercial Wireless Facility Performance Criteria

See Next Page.
<table>
<thead>
<tr>
<th>Zone</th>
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<tbody>
<tr>
<td>Cellular Antenna to be affixed to a new (proposed) ground tower</td>
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<tr>
<td>Cellular antenna to be affixed to an existing building without a roof tower</td>
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<tr>
<td>Cellular antenna to be affixed to a new (proposed) roof tower</td>
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<tr>
<td>Cellular antenna to be added to an existing approved ground tower</td>
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<tr>
<td>Existing Nonconforming tower</td>
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<tr>
<td>Accessory Structures (Equipment Buildings, etc.)</td>
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</tbody>
</table>
5.5 Example of a Ground Tower Application of these Regulations

1) Buildable area dependent on tower height

2) Maximum tower height dependent on zone and type of tower

Setback from adjacent commercial zone can be waived by written consent of property owner(s)

2X TOWER HEIGHT
5.6 Example of a Roof Tower Application of these Regulations

50' ROOF
1) Antenna could be 70' high if placed on penthouse.
2) Antenna could be 100' high if placed on tower located in center of roof.

24' ROOF
1) Antenna on penthouse could be 34' high.
2) Antenna on tower could be 44' high if placed in center of roof.
Rationale and Notes on Article 5

The most important part of this Article is the delineation of zoning classifications. This obviously cannot be done in a model, as it would be impossible to incorporate the zoning classifications of every community in the United States. It is incumbent upon the user to substitute the zoning classifications of his/her community into Article 5. Once the zoning classifications are put into place, these regulations will become complete.

One may wonder why this model allows wireless communications facilities (with a special exception, conditional use permit, etc.) in residential zones. The reason this is done is simply a case of protecting against a legal challenge. In most communities, the vast majority of zoned land is classified as residential. By not allowing any chance of placing a wireless facility in a residential district, you may be eliminating up to 75 or 80 percent of a community’s land area. Because this limits wireless providers so much, it may be seen as a violation of Section 704 of the Telecommunications Act of 1996. Instead of banning wireless facilities from residential zones, these regulations make it much more difficult for wireless facilities to be placed in residential areas, in terms of applications requirements and permits, that it creates a sort of incentive for wireless service providers to locate in non-residential areas.

Another important point to make about Article 5 is the separation of commercial wireless facilities from non-commercial facilities, in particular amateur radio antennas. While amateur radio antennas fall into the wireless communications facility definition, they are treated differently from commercial facilities. Most amateur facilities are located in the yards of or are attached to the user’s home. Obviously it is not the intention of these regulations to prevent amateur radio enthusiasts from participating in their hobbies. Also, the FCC determined (as stated in the regulations) that amateur radio antennas are protected by federal laws, which supersede any local regulations.

Setbacks and other standards for all different kinds of potential wireless facility siting applications are contained in Section 5.4. These standards cover what should be the whole range of potential wireless issues that could come up in any community.
Sections 5.5 and 5.6 are graphical illustrations which are designed to aid the users of these regulations in visualizing a potential site configuration.

Zoning Specific Wireless Communications Facilities Performance Standards Sources:
Language adapted from Bloomington, MN Tower Ordinance (amateur radio), Sacramento County, CA Planning Department Memo (PAS Reference Guide), Timothy J. Thompson (from general research and Londonderry Report).
Chapter 6: Case Study Analysis

As a means of measuring the usefulness of having regulations in place for wireless communications facilities, two communities have been selected (as described in the methodology chapter) as case studies for this project. Before examining the impacts of the model ordinance on Londonderry, NH, and Fishers, IN, it is useful to examine their current situations in terms of wireless communications facilities. (This section is done assuming that Londonderry does not have regulatory language in place, which was the case until December 23, 1996, when the Town Council passed zoning amendments dealing with wireless facilities. The application of the model ordinance for Londonderry is still applicable, since I wrote Londonderry's zoning amendments and they are very similar.)

Current Status: Londonderry, NH

Londonderry does not have any ordinance language dealing with wireless facilities, and its current practice requires only a building permit be issued by the town's Building Inspector. There are no requirements for site plans unless the Building Inspector requests one from the applicant. Because of the way the town's zoning ordinance is written, any uses not covered in the ordinance are assumed to be legal uses in all of its zoning districts.

Without any regulatory backing, the town's Director of Planning & Economic Development, Peter C. Lowitt, AICP, is concerned. The town currently has one tower in use,
and since the passing of the Telecommunications Act, it has received applications for two more. The town is now served by three service providers, Cellular One, Nextel, and Sprint Spectrum. This map shows the locations of existing and approved towers in Londonderry.

Because of the town’s location near Manchester, and the location of Interstate 93, Lowitt expects that several more towers will need to be constructed to serve the town’s population and those traveling along I-93.

Current Status: Fishers, IN

Fishers, like Londonderry, does not have any language in its ordinances dealing with wireless communications facilities. In Fishers, however, the ordinances work differently than in Londonderry. Wireless facilities are essentially not allowed in any of Fishers’ zoning districts. Fishers requires every application for a wireless facility to receive a variance for a special use from the Board of Zoning Appeals.
Fishers currently has three towers in use, and two which have received variances and are awaiting construction. Fishers is served by several wireless providers following the Telecommunications Act (GTE, Ameritech, Sprint, and Cellular One). The map below shows the existing and approved towers in Fishers. Planning & Zoning Administrator Jon Issacs is concerned about tower
proliferation due to Fishers' location near Indianapolis and the rapidly growing population of the community.

**Projections of Tower Buildout without Regulations: Londonderry**

Contrary to the belief of Peter Lowitt, the projections of tower buildout in Londonderry will not include very many additional towers. The future of Londonderry's wireless infrastructure depends greatly upon the auctioning of electromagnetic spectrum by the FCC. The exact number of new wireless service providers depends entirely upon the number of new service providers that enter into the Londonderry market area.

Using the GIS to determine the coverage area of the existing and approved antenna structures (all of which are between the heights of 120 and 150 feet from grade), the existing number of towers is adequate to provide coverage for the entire town. Nextel, Cellular One and Sprint should be well served by their existing facilities.

Projecting the introduction of new service providers is slightly more complicated. This project assumes that there will be the introduction of one additional service provider in Londonderry. This assumption is based upon the likelihood of Manchester approving towers near the Manchester Airport which will serve Londonderry residents, the slight reduction in growth rate for Londonderry, and the existence of several towers both north and south of Londonderry along I-93. With 3 service providers serving the community already, I do not feel that the FCC would have much to gain by allowing more than one additional service provider to locate within Londonderry.

Where would this new facility locate in Londonderry? The data suggests that a new facility could be located in a variety of locations. The projection used here, and shown on the map on page 69, suggests that a tower between the heights of 100 feet and 150 feet would locate in an area zoned AR-I (Agricultural/Residential) north of Litchfield Road. This location is near the center of town, and would have sufficient range to serve the entire town. The projected location would also better serve the proposed Eco-Industrial park planned for the northwestern part of town, south of Manchester Airport, than the other facilities located in town (sound quality
would be better with the new provider, though the three existing facilities do have more than sufficient range to service the Eco-Industrial Park.

While the location of this new facility would provide a good service to the town, the location is near the town's apple orchards, a cherished part of the town culture. Obviously, this is not an area that town officials, nor the town's residents would like to see. However, if the service provider wished to locate there and owner of the property was willing to lease the site, there would be little the town could do, without regulations in place, to prevent the placement of the facility in this area of town.

Projections of Tower Buildout without Regulations: Fishers

Fishers, like Londonderry, is very well served by the existing and approved towers already in place. Each of the existing service providers have facilities of sufficient height to serve the entire town, although Cellular One’s facility does so at a reduced sound quality at the fringes of town. A key factor in the development of Fishers’ wireless infrastructure will be the
future growth of the town’s residential population. If population continues to grow at present rates, the pool of potential wireless subscribers will grow, becoming very attractive to service providers.

As it was in Londonderry, the future of Fishers’ wireless infrastructure depends greatly upon the FCC and its auctions of new portions of the electromagnetic spectrum. Assuming that the population of Fishers continues its rapid growth, it is estimated that there is the potential for two additional service providers to locate facilities within Fishers. This assumption is likely to be affected also by the importance of Fishers’ location in relation to Indianapolis. Because Indianapolis is such an important trip generator and trip generator, service providers are most likely willing to locate along the Interstate highways that serve the metropolitan area.

As shown in the map above, Interstate 69 remains the key element in locational potential
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for new wireless facilities. The projections generated from the GIS show that two new service providers would locate towers along I-69, and that Cellular One would locate an additional tower near the Hamilton Commons Outlet Mall (on the eastern edge of town). The new facilities would be approximately 100 feet tall for the new service providers, and Cellular One’s new facility would be between 80 and 100 feet tall.

The potential new locations have obvious drawbacks. There seems to be an atmosphere of unimpeached tower building in this part of Indiana. In Fishers, and the surrounding area, there are already 12 towers with two approved & awaiting construction. The addition of new facilities will only add to the tower proliferation that exists already.

The projections for tower buildout in both communities suggest that there is a real need for regulation. By using the GIS and imposing some restrictions on new facility locations based on the model regulations from Chapter 5 of this document, the negative effects of these potential new facilities can be mitigated, as described in the following two sections.
Projections of Tower Buildout with Regulations: Londonderry

The imposition of a new service provider in the Londonderry area is easily resolved under the proposed model regulations. Under the model regulations, the provisions related to co-location of different service providers becomes the solution to the imposition of a new provider. By locating the new antennas on the (not yet constructed, but approved) Cellular One tower, the new provider will be able to have coverage for the entire town, without the need for another tower. The Cellular One tower is approved for 150 feet, so locating the new provider’s antennas at between 100 feet and 120 feet will be sufficient for adequate coverage.

Though not projected by the GIS, there may be the potential for facilities to be needed in the area of the proposed Eco-Industrial park. This would not be a problem under the regulations, as facilities could be located in the Industrially zoned area for the park. Because the town already has coverage, this new facility would be a small (under 80 feet) tower designed for heavy usage of wireless communication devices in connection to the Eco-Industrial Park.
Projections of Tower Buildout with Regulations: Fishers

Fishers would also benefit from the adoption of the proposed model regulations. Again, as was the case in Londonderry, co-location is the key for providing locations for the new service providers. Because Fishers is located in an area that already has many towers, the new facilities can easily co-locate on existing towers.

The new service providers can share a tower in two locations. One service provider can co-locate on the GTE tower located in the Town Center District, the other can co-locate on an existing microwave tower located in between the two I-69 exits located in Fishers. The potential new Cellular One facility can co-locate on the proposed GTE tower located near Hamilton Commons. The buildout projections under the regulations are shown in the map below.
Chapter 7: Implications and Conclusions

Wireless communications is a fast-paced, constantly changing business. Because of this, it is important for local governments to act quickly in response to the changed communications industry following the Telecommunications Act of 1996. This project is a tool that, if utilized in coordination with sound planning practices, can aid your local community in responding to the increasing numbers of wireless providers seeking to locate facilities in your municipality. In addition to the model regulations proposed in this project, I recommend the following six items as a checklist of things to do as a local government to respond to the changing environment of wireless communication facilities.

6 Steps for Local Government to Respond to the Wireless Challenge

• Develop an Understanding of the Telecommunications Act
• Temporary Moratorium on New Facilities
• Review Existing Ordinances
• Meet with All Local Service Providers and the Public
• Develop/Amend Regulations
• Continue Regular Meetings with Providers and the Public.

The first step is understanding the Telecommunications Act of 1996, and its implications for local governments. It is important to know that while local governments have the authority to regulate the placement of wireless facilities in their communities, there are limits to that authority as described in Chapter 1. This does not mean, however, that wireless service providers are entitled to preferential treatment on zoning requests involving wireless communications facilities. Any regulatory framework that a community adopts in response to wireless facilities should deal with them, from a procedural standpoint, in the same manner they treat any request for a zoning variance or building permit. It is important to realize that while these wireless facilities are probably a use that many communities have not dealt with in the past, these
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facilities are able to be managed in a regulatory framework just as any other land use would be.

Also of note from the Telecommunications Act of 1996 is the issue of dispute resolution. If a wireless service provider feels that a local government has violated any of the conditions of Section 704 of the Act, the provider must take the locality to court, not the FCC. This is a much better alternative of dispute resolution than it may seem to be. State and Federal courts provide a more neutral arena than the FCC where the interests of the telecommunications industry have been shown to receive favorable treatment in the past (The FCC does, however, deal with issues of dispute based on emissions from the proposed facility).

The second step is to enact a temporary moratorium on any new wireless facility siting applications. A period of 90 days seems to be the norm for this type of municipal action, which should allow you time to complete steps 3 through 5.

The third step for meeting the wireless challenge is to review your existing ordinances. Check to see what language, if any, pertains to towers, antennas, or other wireless facilities. A local government may have ordinance language that is in violation of the Telecommunications Act of 1996 and not even know it. This review should also help you decide whether a zoning amendment or a stand-alone ordinance would be better for your community.

The fourth step is to get the public and local service providers involved in the development of your wireless planning process. An ordinance alone is not enough. While co-location of providers is encouraged in the model through incentives and height bonuses, a key to co-location is opening lines of communication among the participants. When Bloomington, Minnesota, started this process, “the providers all said ‘We think co-location is just nifty. It saves us money and time. We’ll allow anyone to co-locate with us. However, there is no way our competition will go along with it. They hate us.’ But when you sit everyone down in the same room and they all say the same thing, it does not carry any water” (Feedback from Associate Planner Glen Markegard of Bloomington). Bloomington held several meetings with each of the providers present. After several meetings, they would gather in the hallways to talk. They learned who the others were and talked about the difficulties they were having and developed some trust.
Though the model requires co-location and offers incentives to co-locators in the form of height bonuses and time savings, co-located towers may just happen without requirements simply because providers open up good lines of communication. Opening up lines of communication is an important part of planning for wireless facilities.

Integrating the wireless industry and the citizenry of the community are important aspects of the wireless planning process. By involving these two groups early in the process, local government can develop strategies that foster a healthy competition in the wireless industry and ensure that community aesthetics and property values are preserved (National League of Cities, 15). Consensus building activities such as Telecommunications Advisory Groups, Telecommunications Commissions, Task Forces, Community Education, and Wireless Industry Sponsored meetings can develop a relationship between the public, the wireless industry, and the local government, ensuring the development of the wireless infrastructure in a manner that can satisfy all three parties.

The fifth step for local governments is to develop a regulatory framework for dealing with wireless communications facilities. This is the heart of this project, developed in Chapter 5. The set of model regulations developed in this project has been carefully created, making sure to comply with the edicts set forth in the Telecommunications Act of 1996, while seeking to develop a balance between the needs of the wireless industry and the concerns of local governments. The merits of developing a regulatory framework are illustrated in Chapter 6, showing the definite advantages of having regulations in place, as evidenced by the buildout scenarios developed for Londonderry, NH, and Fishers, IN.

The sixth step is simply to keep the lines of communication open. By continuing to meet regularly with service providers and the public, the local government can keep pace with the changing technology that service providers will be wishing to employ in their communities.

It is essential that communities act quickly on the wireless front. The technologies are changing rapidly, construction of facilities is at an all-time peak, and if a municipality does not act now, it may be too late. This project can serve that need for quick action. The policies and regulations proposed in this document are designed to be easily modified and adapted into your
local regulatory framework.
Chapter 8: Bibliography


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Meeting the Challenges of Zoning in the Information Age: Planning for Wireless Communications Facilities


Chapter 9: Appendices

Appendix 1: Section 704 of the Telecommunications Act of 1996

Telecommunications Act of 1996 (S.652)

Section 704

FACILITIES SITING;
RADIO FREQUENCY EMISSION STANDARDS.

(a) NATIONAL WIRELESS TELECOMMUNICATIONS SITING POLICY- Section 332(c) (47 U.S.C. 332(c)) is amended by adding at the end the following new paragraph:

(7) PRESERVATION OF LOCAL ZONING AUTHORITY-

(A) GENERAL AUTHORITY- Except as provided in this paragraph, nothing in this Act shall limit or affect the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction, and modification of personal wireless service facilities.

(B) LIMITATIONS-

(I) The regulation of the placement, construction, and modification of personal wireless service facilities by any State or local government or instrumentality thereof--

(I) shall not unreasonably discriminate among providers of functionally equivalent services; and

(II) shall not prohibit or have the effect of prohibiting the provision of personal wireless services.

(ii) A State or local government or instrumentality thereof shall act on any request for authorization
to place, construct, or modify personal wireless service facilities within a reasonable period of time after the request is duly filed with such government or instrumentality, taking into account the nature and scope of such request.

(iii) Any decision by a State or local government or instrumentality thereof to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record.

(iv) No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions.

(v) Any person adversely affected by any final action or failure to act by a State or local government or any instrumentality thereof that is inconsistent with this subparagraph may, within 30 days after such action or failure to act, commence an action in any court of competent jurisdiction. The court shall hear and decide such action on an expedited basis. Any person adversely affected by an act or failure to act by a State or local government or any instrumentality thereof that is inconsistent with clause (iv) may petition the Commission for relief.

(C) DEFINITIONS- For purposes of this paragraph--

(I) the term 'personal wireless services' means commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services;

(ii) the term 'personal wireless service facilities' means facilities for the provision of personal wireless services; and
(iii) the term 'unlicensed wireless service' means the offering of telecommunications services using duly authorized devices which do not require individual licenses, but does not mean the provision of direct-to-home satellite services (as defined in section 303(v)).'

(b) RADIO FREQUENCY EMISSIONS- Within 180 days after the enactment of this Act, the Commission shall complete action in ET Docket 93-62 to prescribe and make effective rules regarding the environmental effects of radio frequency emissions.

(C) AVAILABILITY OF PROPERTY- Within 180 days of the enactment of this Act, the President or his designee shall prescribe procedures by which Federal departments and agencies may make available on a fair, reasonable, and nondiscriminatory basis, property, rights-of-way, and easements under their control for the placement of new telecommunications services that are dependent, in whole or in part, upon the utilization of Federal spectrum rights for the transmission or reception of such services. These procedures may establish a presumption that requests for the use of property, rights-of-way, and easements by duly authorized providers should be granted absent unavoidable direct conflict with the department or agency's mission, or the current or planned use of the property, rights-of-way, and easements in question. Reasonable fees may be charged to providers of such telecommunications services for use of property, rights-of-way, and easements. The Commission shall provide technical support to States to encourage them to make property, rights-of-way, and easements under their jurisdiction available for such purposes.
Appendix 2: Section 253 of the Telecommunications Act of 1996

Telecommunications Act of 1996 (S.652)  
SEC. 253. REMOVAL OF BARRIERS TO ENTRY.

(a) IN GENERAL- No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.

(b) STATE REGULATORY AUTHORITY- Nothing in this section shall affect the ability of a State to impose, on a competitively neutral basis and consistent with section 254, requirements necessary to preserve and advance universal service, protect the public safety and welfare, ensure the continued quality of telecommunications services, and safeguard the rights of consumers.

(C) STATE AND LOCAL GOVERNMENT AUTHORITY- Nothing in this section affects the authority of a State or local government to manage the public rights-of-way or to require fair and reasonable compensation from telecommunications providers, on a competitively neutral and nondiscriminatory basis, for use of public rights-of-way on a nondiscriminatory basis, if the compensation required is publicly disclosed by such government.

(d) PREEMPTION- If, after notice and an opportunity for public comment, the Commission determines that a State or local government has permitted or imposed any statute, regulation, or legal requirement that violates subsection (a) or (b), the Commission shall preempt the enforcement of such statute, regulation, or legal requirement to the extent necessary to correct such violation or inconsistency.

(e) COMMERCIAL MOBILE SERVICE PROVIDERS- Nothing in this section shall affect the application of section 332(c)(3) to commercial mobile service providers.

(f) RURAL MARKETS- It shall not be a violation of this section for a State to require a telecommunications carrier that seeks to provide telephone exchange service or exchange access in a service area served by a rural telephone company to meet the requirements in section 214(c)(1) for designation as an eligible telecommunications carrier for that area before being permitted to provide such service. This subsection shall not apply--

(1) to a service area served by a rural telephone company that has obtained an exemption, suspension, or modification of section 251(c)(4) that effectively prevents a competitor from meeting the requirements of section 214(c)(1); and

(2) to a provider of commercial mobile services.
Appendix 3: Bloomington, Minnesota Tower Ordinance Excerpts

Revisions Approved 7/1/96

CHAPTER 19

ZONING

***

ARTICLE V. PERFORMANCE STANDARDS

***

SEC. 19.63.05. TOWERS

(a) Purpose. In order to accommodate the communication needs of residents and business while protecting the public health, safety, and general welfare of the community, the Council finds that these regulations are necessary in order to:

1. facilitate the provision of wireless telecommunication services to the residents and businesses of the City;
2. minimize adverse visual effects of towers through careful design and siting standards;
3. avoid potential damage to adjacent properties from tower failure through structural standards and setback requirements; and,
4. maximize the use of existing and approved towers and buildings to accommodate new wireless telecommunication antennas in order to reduce the number of towers needed to serve the community.

(b) Towers in Residential Zoning Districts. Towers shall be allowed only in the following residentially zoned areas:

1. Towers supporting amateur radio antennas and conforming to all applicable provisions of this Code shall be allowed only in the rear yard of residentially zoned parcels.
2. Towers supporting commercial antennas and conforming to all applicable provisions of this Code shall be allowed only in the following residentially zoned locations:
   (A) Church sites, when camouflaged as steeples or bell towers;
   (B) Park sites, when compatible with the nature of the park; and,
   (C) Government, school, utility, and institutional sites.

(C) Co-Location Requirements. All commercial wireless telecommunication towers erected,
constructed, or located within the City shall comply with the following requirements:

(1) A proposal for a new commercial wireless telecommunication service tower shall not be approved unless the City Council finds that the telecommunications equipment planned for the proposed tower cannot be accommodated on an existing or approved tower or building within a one mile search radius (one half mile search radius for towers under 120 feet in height, one quarter mile search radius for towers under 80 feet in height) of the proposed tower due to one or more of the following reasons:

(A) The planned equipment would exceed the structural capacity of the existing or approved tower or building, as documented by a qualified and licensed professional engineer, and the existing or approved tower cannot be reinforced, modified, or replaced to accommodate planned or equivalent equipment at a reasonable cost.
(B) The planned equipment would cause interference materially impacting the usability of other existing or planned equipment at the tower or building as documented by a qualified and licensed professional engineer and the interference cannot be prevented at a reasonable cost.
(C) Existing or approved towers and buildings within the search radius cannot accommodate the planned equipment at a height necessary to function reasonably as documented by a qualified and licensed professional engineer.
(D) Other unforeseen reasons that make it infeasible to locate the planned telecommunications equipment upon an existing or approved tower or building.

(2) Any proposed commercial wireless telecommunication service tower shall be designed, structurally, electrically, and in all respects, to accommodate both the applicant's antennas and comparable antennas for at least two additional users if the tower is over 100 feet in height or for at least one additional user if the tower is over 60 feet in height. Towers must be designed to allow for future rearrangement of antennas upon the tower and to accept antennas mounted at varying heights.

(d) Tower Construction Requirements. All towers erected, constructed, or located within the City, and all wiring therefor, shall comply with the requirements set forth of Section 15.14 of this Code.

(e) Tower and Antenna Design Requirements. Proposed or modified towers and antennas shall meet the following design requirements.

(1) Towers and antennas shall be designed to blend into the surrounding environment through the use of color and camouflaging architectural treatment, except in instances where the color is dictated by federal or state authorities such as the Federal Aviation Administration.
(2) Commercial wireless telecommunication service towers shall be of a monopole design.
unless the City Council determines that an alternative design would better blend into the surrounding environment.

(f) Tower Setbacks. Towers shall conform with each of the following minimum setback requirements:

(1) Towers shall meet the setbacks of the underlying zoning district with the exception of industrial zoning districts, where towers may encroach into the rear setback area, provided that the rear property line abuts another industrially zoned property and the tower does not encroach upon any easements.
(2) Towers shall be set back from the planned public rights of way as shown on the most recently adopted Master Street Plan of the City by a minimum distance equal to one half of the height of the tower including all antennas and attachments.
(3) Towers shall not be located between a principal structure and a public street, with the following exceptions:

   (A) In industrial zoning districts, towers may be placed within a side yard abutting an internal industrial street.
   (B) On sites adjacent to public streets on all sides, towers may be placed within a side yard abutting a local street.

(4) A tower’s setback may be reduced or its location in relation to a public street varied, at the sole discretion of the City Council, to allow the integration of a tower into an existing or proposed structure such as a church steeple, light standard, power line support device, or similar structure.
(5) Towers erected on any protected residential parcel as defined in Section 19.47 of this Code are also subject to the setback provisions of Section 15.14 (d) (8) of this Code.

(g) Tower Height. All proposed towers shall meet the height restrictions set forth in Section 19.47 of this chapter.

(h) Tower Lighting. Towers shall not be illuminated by artificial means and shall not display strobe lights unless such lighting is specifically required by the Federal Aviation Administration or other federal or state authority for a particular tower. When incorporated into the approved design of the tower, light fixtures used to illuminate ball fields, parking lots, or similar areas may be attached to the tower.

(i) Signs and Advertising. The use of any portion of a tower for signs other than warning or equipment information signs is prohibited.

(j) Accessory Utility Buildings. All utility buildings and structures accessory to a tower shall be
architecturally designed to blend in with the surrounding environment and shall meet the minimum setback requirements of the underlying zoning district. Ground mounted equipment shall be screened from view by suitable vegetation, except where a design of non-vegetative screening better reflects and complements the architectural character of the surrounding neighborhood.

(k) Abandoned or Unused Towers or Portions of Towers. Abandoned or unused towers or portions of towers shall be removed as follows:

(1) All abandoned or unused towers and associated facilities shall be removed within 12 months of the cessation of operations at the site unless a time extension is approved by the Planning Manager. A copy of the relevant portions of a signed lease which requires the applicant to remove the tower and associated facilities upon cessation of operations at the site shall be submitted at the time of application. In the event that a tower is not removed within 12 months of the cessation of operations at a site, the tower and associated facilities may be removed by the City and the costs of removal assessed against the property.

(2) Unused portions of towers above a manufactured connection shall be removed within six months of the time of antenna relocation. The replacement of portions of a tower previously removed requires the issuance of a new conditional use permit.

(l) Antennas Mounted on Roofs, Walls, and Existing Towers. The placement of wireless telecommunication antennas on roofs, walls, and existing towers may be approved by the Planning Manager, provided the antennas meet the requirements of this Code, after submittal of 1) a final site and building plan as specified by Section 19.40.12 of this Code, and 2) a report prepared by a qualified and licensed professional engineer indicating the existing structure or tower's suitability to accept the antenna, and the proposed method of affixing the antenna to the structure. Complete details of all fixtures and couplings, and the precise point of attachment shall be indicated.

(m) Interference with Public Safety Telecommunications. No new or existing telecommunications service shall interfere with public safety telecommunications. All applications for new service shall be accompanied by an intermodulation study which provides a technical evaluation of existing and proposed transmissions and indicates all potential interference problems. Before the introduction of new service or changes in existing service, telecommunication providers shall notify the City at least ten calendar days in advance of such changes and allow the City to monitor interference levels during the testing process.

(n) Additional Submittal Requirements. In addition to the information required elsewhere in this Code, development applications for towers shall include the following supplemental information:

(1) A report from a qualified and licensed professional engineer which

(A) describes the tower height and design including a cross section and elevation,
(B) documents the height above grade for all potential mounting positions for co-located antennas and the minimum separation distances between antennas;
(C) describes the tower's capacity, including the number and type of antennas that it can accommodate;
(D) documents what steps the applicant will take to avoid interference with established public safety telecommunications;
(E) includes an engineer's stamp and registration number; and,
(F) includes other information necessary to evaluate the request.

(2) For all commercial wireless telecommunication service towers, a letter of intent committing the tower owner and his or her successors to allow the shared use of the tower if an additional user agrees in writing to meet reasonable terms and conditions for shared use.
(3) Before the issuance of a building permit, the following supplemental information shall be submitted:

(A) Proof that the proposed tower complies with regulations administered by Federal Aviation Administration; and,
(B) a report from a qualified and licensed professional engineer which demonstrates the tower's compliance with the aforementioned structural and electrical standards.

(o) Violations. Any person who shall violate any of the provisions of this Section shall be guilty of a misdemeanor.

***

ARTICLE I. GENERAL PROVISIONS

***

Division B. Definitions

SEC. 19.03. DEFINITIONS.

The following words and terms when used in this Chapter shall have the following meanings unless the context clearly states otherwise:

***

Antenna - Any structure or device used for the purpose of collecting or transmitting electromagnetic waves, including but not limited to directional antennas, such as panels, microwave dishes, and satellite dishes, and omni-directional antennas, such as whip antennas.
Commercial Wireless Telecommunication Services - Licensed commercial wireless telecommunication services including cellular, personal communication services (PCS), specialized mobilized radio (SMR), enhanced specialized mobilized radio (ESMR), paging, and similar services that are marketed to the general public.

Public Utility - Persons, corporations, or governments supplying gas, electric, transportation, water, sewer, or land line telephone service to the general public. For the purpose of this ordinance, commercial wireless telecommunication service facilities shall not be considered public utility uses, and are defined separately.

Tower - Any ground or roof mounted pole, spire, structure, or combination thereof taller than 15 feet, including supporting lines, cables, wires, braces, and masts, intended primarily for the purpose of mounting an antenna, meteorological device, or similar apparatus above grade.

Tower, Multi-User - A tower to which is attached the antennas of more than one commercial wireless telecommunication service provider or governmental entity.

Tower, Single-User - A tower to which is attached only the antennas of a single user, although the tower may be designed to accommodate the antennas of multiple users as required in this Code.

***

ARTICLE IV. DISTRICT REGULATIONS

***

SEC. 19.47. HEIGHT.

(a) Purpose - The purpose of Section 19.47 is to regulate the height of structures in order to maintain the character and scale of the predominant single-family residential development in the City of Bloomington.

(b) Definitions -

(1) Protected residential property - any property within the City that meets all of the following requirements:

(A) The property is zoned R-1, R-1A, or RS-1 and the property may or may not also have a Planned Development (PD) Overlay classification;
(B) The property is designated on the Comprehensive Plan as Low-Density
Residential, Medium-Density Residential, or High-Density Residential; and (C) The property is used or subdivided for use as residential.

(2) Structure height -

(A) Buildings - the height of buildings shall be determined using 2 methods and both methods must comply with the restrictions of Section 19.47(c) of the City Code.

(i) the number of stories shall be determined by counting the total number of above-grade, habitable floors in the building and shall not include walk-out basements, attics, or underground parking;
(ii) the height of buildings shall be determined by measuring the vertical distance from the lowest exterior grade of the building to the ceiling of the highest habitable story of the building. Habitable stories with sloped ceilings shall be measured to the base of the slope.

(B) Parking structures - the height of parking structures shall be determined by measuring the vertical distance from the lowest exterior grade of the parking structure to the highest point of the permanent structure.
(C) Towers - the height of towers shall be determined by measuring the vertical distance from the tower's point of contact with the ground or rooftop to the highest point of the tower, including all antennas or other attachments. When towers are mounted upon other structures, the combined height of the structure and tower must meet the height restrictions of Section 19.47.
(D) Other structures - the height of all other structures shall be determined by measuring the vertical distance from the lowest exterior grade of the structure to the highest point of any part of the structure.
(E) The final determination of height shall be made by the Issuing Authority in accordance with the guidelines of Section 19.47(b)(2)(A), (B), and (C) of the City Code.

(C) Height Limitations

(1) Buildings and Structures Other Than Towers.

(A) In all single-family residential zoning districts (R-1, R-1A, RS-1) the maximum height of any building shall be 2 stories and the maximum height of any structure, including buildings, shall be 30 feet;
(B) In all other zoning districts, the maximum height of any building or structure, excluding towers, shall be as follows:

<table>
<thead>
<tr>
<th>Distance of Building or Structure from the Property Lines of any Protected Residential Property</th>
</tr>
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<tbody>
<tr>
<td></td>
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<tr>
<td>Maximum Height:</td>
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</table>

(2) Towers.

(A) In all protected residential property the maximum height of any tower, including all antennas and other attachments, shall be 30 feet;
(B) In all residential zoning districts other than protected residential property, the maximum height of any tower, including all antennas and other attachments, shall not exceed one foot for each four feet the tower is setback from protected residential property up to a maximum height of 150 feet.
(C) In all non-residential zoning districts, the maximum height of any tower, including all antennas and other attachments, shall not exceed one foot for each two feet the tower is setback from protected residential property up to a maximum height of 150 feet.

(d) Applicability -

(1) In all zoning districts, the maximum height of any structure, building, or portion thereof, other than towers, 600 feet or greater from any protected residential property shall not be governed by Section 19.47 of this Code.
(2) Exceptions - The requirements of section 19.47 of this Code shall apply to all structures and developments otherwise permitted under this Code except:
   (A) planned developments, when approved as a part of a preliminary and final development plan pursuant to Section 19.38.01 of this Code.
   (B) public utility structures, including but not limited to water towers, antennas, lights and signals, power and telephone poles, and poles supporting emergency warning devices.
   (C) church sanctuaries, steeples and bell towers.
   (D) multi-user towers may exceed the height limitations of Section 19.47 by up to 20 feet.
   (E) In accordance with the Federal Communications Commission's preemptive ruling PRB1, towers erected for the primary purpose of supporting amateur radio antennas may exceed 30 feet in height provided that a determination is made by the Planning Manager that the proposed tower height is technically necessary to successfully engage in amateur radio communications.
(e) Noncompliance - Noncompliance of characteristics structures and site development created by the application of Section 19.47 of this Code shall not in any manner limit the legal use of the property, nor in any manner limit the repair, maintenance, or reconstruction of a noncomplying characteristic or feature; however, in no instance shall the degree of noncompliance be increased except as otherwise permitted by this Code.

***

ARTICLE III. DISTRICT USES

***

SEC. 19.27. SINGLE FAMILY RESIDENTIAL (R-1A, R-1) DISTRICTS.

***

(C) Permitted accessory uses -

***

(12) Towers supporting amateur radio antennas. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.

***

(d) Conditional uses -

***

(38) Towers which meet the locational requirements of Section 19.63.05, (b). When reviewing an application for a conditional use permit to erect a tower, it is not required that the City Council make the finding under Section 19.22, subparagraph (1) (E), of this Code. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.

***

SEC. 19.27.01. LARGE LOT SINGLE FAMILY RESIDENTIAL DISTRICT RS-1.

***

(b) Uses

***

(2) Permitted Accessory Uses

***

1. Towers supporting amateur radio antennas. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.

***

(3) Conditional Uses -

***

P. Towers which meet the locational requirements of Section 19.63.05, (b). When reviewing an application for a conditional use permit to erect a tower, it is not required that the City Council make the finding under Section 19.22, subparagraph (1) (E), of this Code. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.28.01. MULTIPLE-FAMILY RESIDENTIAL (RM-12) DISTRICTS.
***
(d) Conditional uses -
***
(8) Towers which meet the locational requirements of Section 19.63.05, (b). When reviewing an application for a conditional use permit to erect a tower, it is not required that the City Council make the finding under Section 19.22, subparagraph (1) (E), of this Code. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.28.02. MULTIPLE-FAMILY RESIDENTIAL (RM-24) DISTRICTS.
***
(d) Conditional uses -
***
(7) Towers which meet the locational requirements of Section 19.63.05, (b). When reviewing an application for a conditional use permit to erect a tower, it is not required that the City Council make the finding under Section 19.22, subparagraph (1) (E), of this Code. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.28.03. MULTIPLE-FAMILY RESIDENTIAL (RM-50) DISTRICTS.
***
(d) Conditional uses -
***
(6) Towers which meet the locational requirements of Section 19.63.05, (b). When reviewing an application for a conditional use permit to erect a tower, it is not required that the City Council make the finding under Section 19.22, subparagraph (1) (E), of this Code. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.30. LIMITED BUSINESS (B-1) DISTRICTS.
***
(d) Conditional uses -
***
(13) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.31. RETAIL BUSINESS (B-2) DISTRICTS.
***
(d) Conditional uses -
***
(30) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
SEC. 19.31.01. REGIONAL COMMERCIAL (CR-1) DISTRICTS.
***
(d) Conditional uses -
***

(6) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.32. GENERAL BUSINESS (B-3) DISTRICTS.
***
(d) Conditional uses -
***

(8) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.33. INDUSTRIAL (I-1, I-2, AND I-3) DISTRICTS.
***
(d) Conditional Uses -
***

(28) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.33.01. INDUSTRIAL PARK (IP) DISTRICT.
***
(d) Conditional Uses -
***

(8) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.34. FREEWAY DEVELOPMENT (FD-1 AND FD-2) DISTRICTS.
***
(d) Conditional uses -
***

(25) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.35. INSTITUTIONAL (IN-1) DISTRICTS.
***
(d) Conditional uses -
***

(9) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
***
SEC. 19.37. CENTRAL BUSINESS (CB) DISTRICT.
***
(d) Conditional uses
(14) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.

SEC. 19.40.06. MIXED USE DISTRICT CX-2.

(d) Conditional uses -

(20) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.

SEC. 19.40.07. COMMERCIAL SERVICE DISTRICTS CS-0.5 AND CS-1.

(d) Conditional uses -

(16) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.

SEC. 19.40.07.01. HIGH INTENSITY MIXED USE DISTRICT HX-2.

(C) Accessory Uses -

(5) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.

SEC. 19.40.08. COMMERCIAL OFFICE DISTRICTS CS-0.5 AND CO-1.

(d) Conditional uses -

(13) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.

SEC. 19.40.08.01 COMMERCIAL-OFFICE/MIXED USE DISTRICT CO-2.

(d) Conditional uses -

(16) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.


(d) Conditional uses -

(6) Towers. For related provisions see Sections 15.14, 19.47, and 19.63.05 of this Code.
CHAPTER 15

BUILDINGS AND STRUCTURES

***

ARTICLE I. BUILDING CODE

***

SEC. 15.14. CONSTRUCTION AND MAINTENANCE OF ANTENNAE AND SUPPORTING TOWERS.

(a) Definitions. The following words and terms, when used in this Section, shall have the following meanings unless the context clearly indicates otherwise:

Antenna - Any structure or device used for the purpose of collecting or transmitting electromagnetic waves, including but not limited to directional antennas, such as panels, microwave dishes, and satellite dishes, and omni-directional antennas, such as whip antennas.

Tower - Any ground or roof mounted pole, spire, structure, or combination thereof taller than 15 feet, including supporting lines, cables, wires, braces, and masts, intended primarily for the purpose of mounting an antenna, meteorological device, or similar apparatus above grade.

(b) Permits.

(1) It shall be unlawful for any person, firm, or corporation to erect, construct in place, place or re-erect, replace, or repair any tower without first making application to the Building and Inspection Division and securing a permit therefor as hereinafter provided.

(2) The applicant shall provide at the time of application sufficient information to indicate that construction, installation, and maintenance of the antenna and tower will not create a safety hazard or damage to the property of other persons.

(3) Permits are not required for:

(A) Adjustment or replacement of the elements of an antenna array affixed to a tower or antenna, provided that replacement does not reduce the safety factor.

(B) Antennas and/or towers erected temporarily for test purposes, for emergency communication, or for broadcast remote pick-up operations, provided that all requirements of Subsection (d) are met, with the exception of (d)(3)(C) which is waived. Temporary antennas shall be removed within 72 hours following installation.

(d) Construction Requirements. All antennas and towers erected, constructed, or within the City,
and all wiring therefor, shall comply with the following requirements:

(1) All applicable provisions of this Code.
(2) Towers shall be certified by a qualified and licensed professional engineer to conform to the latest structural standards and wind loading requirements of the Uniform Building Code and the Electronics Industry Association.
(3) With the exception of necessary electric and telephone service and connection lines approved by the Issuing Authority, no part of any antenna or tower nor any lines, cable, equipment or wires or braces in connection with either shall at any time extend across or over any part of the right-of-way, public street, highway, sidewalk, or property line.
(4) Towers and associated antennas shall be designed to conform with accepted electrical engineering methods and practices and to comply with the provisions of the National Electrical Code.
(5) All signal and remote control conductors of low energy extending substantially horizontally above the ground between a tower or antenna and a structure, or between towers, shall be at least eight feet above the ground at all points, unless buried underground.
(6) Every tower affixed to the ground shall be protected to discourage climbing of the tower by unauthorized persons.
(7) All towers shall be constructed to conform with the requirements of the Occupational Safety and Health Administration.
(8) Antennas and towers shall not be erected in any protected residential parcel as defined in Section 19.47 of this Code in violation of the following restrictions:

(A) Notwithstanding the provisions of Section 19.47 of the Zoning Code, the required setback for antenna and tower not rigidly attached to a building, shall be equal to the height of the antenna and tower. Those antennas and towers rigidly attached to a building, and whose base in on the ground, may exceed this required setback by the amount equal to the distance from the point of attachment to the ground.
(B) No tower shall be in excess of a height equal to the distance from the base of the antenna and tower to the nearest overhead electrical power line which serves more than one dwelling or place of business, less five feet.
(C) Metal towers shall be constructed of, or treated with, corrosive resistant material. Wood poles shall be impregnated with rot resistant substances.

(9) All towers erected within the city must conform to the applicable performance standards in Section 19.63.05 of this Code.

(e) Existing Antennas and Towers. Antennas and towers in residential districts and in existence as of March 15, 1973 which do not conform to or comply with this Section are subject
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to the following provisions:

(1) Towers may continue in use for the purpose now used and as now existing but may not be replaced or structurally altered without complying in all respects with this Section. (2) If such towers are hereafter damaged or destroyed due to any reason or cause whatsoever, the tower may be repaired and restored to its former use, location, and physical dimensions upon obtaining a building permit therefor, but without otherwise complying with this Section, provided, however, that if the cost of repairing the tower to the former use, physical dimensions, and location would be ten percent or more of the cost of a new tower of like kind and quality, then the tower may not be repaired or restored except in full compliance with this Section.

(f) Lights and Other Attachments. No antenna or tower in any protected residential parcel as defined in Section 19.47 of this Code shall have affixed or attached to it in any way except during time of repair or installation any lights, reflectors, flashers, or other illuminating device, except as required by the Federal Aviation Agency or the Federal Communications Commission, nor shall any tower have constructed thereon, or attached thereto, in any way, any platform, catwalk, crow’s nest, or like structure, except during periods of construction or repair.

(g) Number of Towers and Antennas. Only one tower shall exist at any one time on any one protected residential parcel as defined in Section 19.47 of this Code.

(h) Inspections. All towers may be inspected at least once each year by an official of the Building and Inspection Division to determine compliance with original construction standards. Deviation from original construction for which a permit is obtained constitutes a violation of this Section. Notice of violations will be sent by registered mail to the owner and he will have 30 days from the date the notification is issued to make repairs. The owner will notify the Building and Inspection Division that the repairs have been made, and as soon as possible thereafter, another inspection will be made and the owner notified of the results.

(i) Violations. Any person who shall violate any of the provisions of this Section shall be guilty of a misdemeanor.

(j) Interpretation. It is not the intention of this Section to interfere with, abrogate, or annul any covenant or other agreement between parties, provided, however, where this Section imposes a greater restriction upon the use or premises for antennas or towers than are imposed or required by other ordinances, rules, regulations, or permits, or by covenants or agreements, the provisions of this Section shall govern.