



City of Portland, Oregon
Bureau of Development Services
Land Use Services

FROM CONCEPT TO CONSTRUCTION

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MEMO

AUDITOR 01/25/12 PM 3:41

Date: January 25, 2012
To: Mayor Adams and City Council
From: Sylvia Cate, Senior Planner, Land Use Services
Phone number 503 823 7771
Re: LU 11-125536 CU AD: VERIZON AT 6904 SE FOSTER ROAD

BACKGROUND SUMMARY

Verizon Wireless appealed the Hearings Officer's decision of denial for a proposed wireless telecommunications facility located on the property of Mt Scott Fuel Company. The public hearing on the appeal was held on January 11, 2012.

At the conclusion of the hearing, City Council determined it was appropriate to reopen the record for this application so that all interested parties could submit new information and new argument. Council directed City staff to prepare a memo to Council clarifying a number of issues. This memorandum provides the following:

- Description and comparison of *Effective Radiated Power* [ERP] definitions as used by the FCC and defined within PCC Title 33, Zoning Code
- Legislative history of zoning regulations applicable to Radio Frequency Transmission Facilities and the intent of 'ERP' as a review threshold within Title 33
- Key milestones in the evolution of cellular technology, indicated by the ► symbol
- Clarification of zoning regulations applicable to wireless applications
- Answers to questions raised by Council to staff during the appeal hearing

The fact that Mayor Adams participated in the hearing remotely, via a wireless connection, is an excellent example of how deeply embedded wireless telecommunication services have become in our daily lives. It is also an excellent example of the capabilities that are now available through the technology the wireless industry currently utilizes, which are magnitudes more advanced than what was available when Congress passed the 1996 Telecommunications Act. This rapid evolution of technology combined with the ubiquitous presence of wireless services poses many challenges in implementing zoning code regulations which have not been significantly amended since 2004.

All of the above factors contribute to the many concerns and issues that were raised by the neighbors and by Verizon Wireless during the appeal hearing.

ISSUES BEFORE COUNCIL

1. What is Effective Radiated Power [ERP] and how does the FCC define it?

The FCC defines ERP as:

Effective radiated power (ERP) (in a given direction). The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

The FCC is responsible for licensing all wireless telecommunications facilities as well as radio and television broadcast facilities. The FCC sets and enforces all standards for these facilities, including power limits, frequency allocations, and emission levels. Calculating ERP for radio communications engineering and spectrum management is a technical exercise where ERP is a defined term that is a standardized theoretical measurement of radio frequency energy expressed in watts. This calculation is determined by the mathematical formula [ERP = P_t C_t G] or in plain language:

$$\text{ERP} = \text{Transmitter Power} \times \text{Feedline Loss} \times \text{Antenna Gain}$$

This technical definition is significantly different from the way the City defines ERP, primarily because the City ***does not calculate*** ERP.

PCC Title 33, Zoning Code, defines ERP [33.910, page 9] as:

Effective Radiated Power (ERP). A calculation of the amount of power emitted from a radio frequency antenna.

The intent of this zoning definition is to determine the ERP of any wireless/radio/television facility based on the power emitted by one antenna, ***or*** when the FCC allows transmission of *multiple channels per individual antenna*, the Title 33 definition is implemented as: the power emitted by one channel of one antenna. This is consistent with the FCC's regulations establishing maximum limits based on *one channel of a transmitting antenna* for wireless telecommunications facilities.

Title 33 utilizes '1,000 Watts ERP' throughout the zoning code as a *review threshold* which determines:

- *when* wireless telecommunications facilities are allowed by right,
- *when* they are exempt from land use reviews, and
- *when* they require a Conditional Use review.

When a Conditional Use review is triggered, the '1,000 Watts ERP' review threshold also establishes which set of approval criteria apply and which development standards apply.

However, because of the ambiguous definition of ERP in the zoning code, the Hearings Officer was unable to determine if the intention of ERP in the zoning code included the 'per one channel' consideration. The Hearings Officer attempted to determine the legislative intent of this code provision, but he found the legislative commentary in the record before him insufficient to make a determination of intent.

The record for LU 11-125536 CU AD contains several instances in which City staff states that the *intent* of ERP within the zoning code is implemented as a *review threshold* in order to distinguish higher powered radio and broadcast facilities from the much lower powered wireless telecommunications facilities. In that regard, the intent of using ERP as a review threshold in the zoning code was an effort on the part of the City to utilize an FCC standard

that was applicable to wireless telecommunications facilities, so that the intended approval criteria and development standards were triggered for these specific facilities. This, in part, explains why the FCC defines 'ERP' quite differently from the zoning code.

2. What is the Legislative history of 'ERP' in the zoning code?

The 'Cellular Era' began in Portland in 1985. The first 'cell site' in the City was reviewed and constructed in 1985 with a facility hosted on the rooftop of the Weatherly Building on SE Morrison Street. It was approved as a Conditional Use under the zoning code in effect at that time, under the criteria and standards in the zoning code for 'Radio and Television Broadcast Facilities'. ERP was one of the applicable standards, but the 1985 zoning code did not define the term.

► Cellular technology at that time consisted of 'car phones' hardwired into personal automobiles; there were no hand-held units.

In the ensuing six years, two basic cell networks were developed in the City. The City adopted the current zoning code in 1991, which included Chapter 33.274, *Radio and Television Broadcast Facilities*. Facilities providing mobile radio services to car phones were distinguished from broadcast facilities by the code with a *review threshold* of 100 uW/cm^2 (100 milli-Watts per square centimeter). *At that time* this mirrored a FCC technical standard for the maximum emission level allowed for cellular services. This Title 33 review threshold established when wireless facilities were subject to Type II or Type III reviews when not allowed by right. However, all cellular, radio and broadcast facilities subject to 33.274 regulations were reviewed under the same Conditional Use approval criteria in the current code: 33.815.225.D.

► Cellular technology had evolved beyond hardwired car phones; the now infamous 'Motorola Brick' hand-held mobile phone was introduced to the marketplace the following year.

Over the next five years, cellular network development was modest. The City amended Chapter 33.274 twice: in 1992 to correct typographical and scrivener's errors; and in 1993 to amend some development standards and create a long range plan and advisory board for the Healy Heights Tower Farm, now known as the Healy Heights Plan District.

► By this time, cellular technology had evolved and the first models of hand-held 'flip phones' had been introduced to the marketplace.

A new era in wireless communications was spawned by passage of the '96 Telecommunications Act which also created significant regulatory changes for broadcast radio, television, and cable industries. The FCC allocated previously reserved radio frequencies to create a new class of 'cellular' services, called PCS [Personal Communications Services] and auctioned this spectrum to multiple telecommunications entities. Rapid growth in multiple wireless network build-outs ensued, and 'cell phone' technology began evolving rapidly as well.

One year later, City Council adopted major amendments to the 1997 zoning code to accommodate the new telecommunications industry after Congress passed the '96 Telecom Act. The original title of the chapter, '*Radio and Television Broadcast Facilities*' was revised to '*Radio Frequency Transmission Facilities*'. New Conditional Use approval criteria were developed to specifically apply to the new cellular networked communications systems. Because of the new radio frequencies allocated for cellular use, the 1991 zoning code *review threshold* of '100 uW/cm²' was now obsolete. The amended zoning code now distinguished wireless from high powered broadcast facilities by 'ERP'. Planning staff assigned to this 1996 legislative project recognized that the FCC limited wireless facilities to 1,000 watts ERP per channel. Thus '1,000 watts ERP' became the new *review threshold* used in the zoning code to steer wireless facilities to a new set of Conditional Use approval criteria, specifically created to address the siting and visual impacts of cellular facilities. Today, the review threshold '1,000 watts ERP' is found throughout the zoning code as a tool to determine when these facilities are allowed, exempt, or subject to land use review.

The legislative history of this major amendment included the following request to the City by the wireless telecommunications industry:

Define ERP: Currently, the term "effective radiated power" (ERP) is not completely defined in the text of the chapter. According to BOP current planning staff, ERP is interpreted and enforced by radio channel for the purposes of these regulations.

Requested Action: Modify Section 33.274 to include /define ERP is evaluated on a per radio channel basis

Unfortunately, the definition was never updated for further clarity. Meanwhile, BDS has been applying 'ERP' as *the power of one radio channel of one antenna*, as indicated in testimony in the legislative record that Bureau of Planning staff interprets 'ERP' to be based on one channel of one antenna.

► Cellular technology began rapidly evolving with the economic impetus of the '96 Telecom Act. Miniaturization in electronics had shrunk the size of hand-held 'flip phones' to fit in a shirt pocket. Large monopoles [aka 'cell towers'] typically 100+ feet in height developed along major transportation corridors and major street intersections.

Eight years later, to address the proliferation and visual impacts of monopoles, City Council in 2004, authorized the Office of Community Technology [OCT] to create and administer a new 'Wireless in the Right of Way' program. Coordinating with this new policy direction, the zoning code also was amended in 2004, with Conditional Use approval criteria for wireless facilities specifically revised to work in parallel with the new Wireless in the Right of Way regulations. This 2004 legislative project is the last major amendment to the zoning code regulations for wireless telecommunications facilities.

In adopting these 2004 major amendments to the zoning code, the Council made a conscious policy choice to try to take the pressure off of private property owners, residential neighborhoods, and the planning process by co-locating as many of wireless facilities in the public right of way as possible. The policy intent recognizes that the presence of wireless facilities co-located with other facilities in and of itself tends to reduce visual clutter and intrusiveness. The revised Conditional Use approval criteria applicable to wireless communications facilities requesting a new tower now requires:

The applicant must prove that a tower that is taller than the base zone height standard allows or is within 2,000 feet of another tower is the only feasible way to provide the service, including documentation as to why the proposed facility cannot feasibly be located in a right-of-way

These policy choices sharply reduced applications for new towers on private property. The OCT currently reports approximately 70 wireless facilities located in public rights of way throughout the City. Each of these ROW-based facilities represents one less new monopole on private property.

► By 2004, cellular technology had evolved on the transmitting facility side as well as on the customer side. Advances in electronics allowed wireless providers, particularly those in the Personal Communication Services [PCS] category, to install 'micro-cell' base systems into their existing network with 'suitcase' sized equipment and antenna arrays that could be collocated on utility poles. Meanwhile, cell phone technology provided a myriad of compact phone units that accommodated additional wireless services, such as texting, digital photography, video and the introduction of advanced wireless services called '3G' technology.

► Today, eight years after the last major amendment to Chapter 33.274, the wireless telecommunications industry is actively introducing '4G' technology which provides a myriad of services: web access, voice and data communications, texting, 'in phone' photography and video, downloading and streaming live video from the internet. These services now animate a wide variety of digital devices: lap top computers, digital pads, digital notebooks, and 'smart phones' are the thickness of a few credit cards and employ touch screen user interfaces.

Some emerging 4G technologies are not recognized by the current zoning code regulations. Generally, planning and zoning policies and regulations are expected to have a 20 year shelf life requiring modest revisions over the years. Most land uses and development that zoning regulates change relatively slowly. However, in the wireless telecommunications category, the technology evolves rapidly and once introduced to the marketplace, accelerates rapidly. In this regard, it is not unusual to watch regulatory language become obsolete seemingly overnight.

SUMMARY OF INTENT DERIVED FROM LEGISLATIVE HISTORY OF RF LEGISLATION

Based on the examination of the legislative history and amendments to the zoning regulations applicable to Radio Frequency Transmission Facilities, the intent of the zoning code is to utilize the ambiguously defined 'ERP' as a *review threshold*, by specifying which set of regulations and approval criteria are applicable to facilities based on the maximum '1,000 watts ERP' that the FCC has established *on a per channel basis* for these facilities.

The City neither calculates nor regulates 'ERP'. However, by utilizing this language as a zoning code threshold, it often creates a false impression for the public that this 'threshold' is a 'guarantee' that all wireless facilities will operate below 1,000 watts ERP. Because of the advances in radio engineering, the frequencies used by the wireless industry are subdivided into channels in order to carry the myriad number of conversations, down loads, data streams, etc. that wireless customers are accessing. The opposition is correct that the *cumulative* ERP is well above 1,000 watts ERP when all the channels of one antenna are summed together. However, those higher ERP values, the number of channels and the frequency ranges are regulated by the FCC, not the City of Portland.

ADDITIONAL QUESTIONS POSED BY CITY COUNCIL

- **Q:** What is the FCC 'shot clock' and how does it affect wireless applications?

A: The 'shot clock' is a new federal requirement for local governments to review wireless applications more quickly.

On November 18, 2010, the Federal Communications Commission issued a Declaratory Ruling on Wireless Siting. The ruling responds to a petition filed by CTIA-The Wireless Association seeking clarification of Section 332 (c)(7) of the Communications Act of 1934 as amended. That section of the Act acknowledges state and local authority over decisions concerning "the placement, construction and modification of personal wireless service facilities," subject to limitations. Among the limitations is the requirement that a local government act on a request to place, build or modify personal wireless facilities "within a reasonable period of time." If a local government fails to do so, any person adversely affected by the local government's "failure to act" may file suit in federal court within 30 days.

The practical application of the FCC shot clock is quite similar to the more familiar 120-day clock for land use reviews. The 'shot-clock' provides a 30 day completeness review period, and then either 60 or 120 additional days for a local government to render a final decision. The difference in shot clock length depends on the type of wireless application: facilities collocating with other facilities are subject to the shorter clock, applications for a brand new facility, such as Verizon's application, are subject to the longer timeline. Similar to the 120-day clock, the applicant can chose to extend this timeline. However, ORS limits the amount of time the 120-day clock can be extended, while the FCC shot clock has no maximum extension limit. In this case, Verizon has extended both clocks to allow sufficient time for the continued appeal and new open record period.

- **Q:** Does Title 33 require a Radio Frequency Engineer to prepare calculations?

A: No.

The zoning code does not require a Radio Frequency engineer to prepare calculations. Both the ERP and emission density calculations that are required to be submitted can be, and often are, prepared by automated software programs. All of these calculations, as well as many more, are required by the FCC for every proposed wireless facility. These calculations are theoretical, based on the 'worst possible case scenario' [i.e. every single channel of a facility operating simultaneously at maximum allowed power] and are required prior to build out of the facility. When measurements are required by the zoning code, they are to be conducted as follows:

*All measurements required in this chapter must be made by a qualified licensed engineer with a Federal Communications Commission First Class **or** General Radio-Telephone License **or** under the supervision of a registered professional electrical engineer*

Ironically, Chapter 33.274 does not require any measurements; the only time the zoning code requires post-development measurements is in the Healy Heights Plan District, at 33.533.080, *Monitoring and Power Density Measurements* which states:

*Monitoring must be performed by a qualified technician **or** engineer.*

The City Council heard testimony by the opposition that the signed and stamped engineering reports prepared for Verizon and submitted to the FCC demonstrate that the proposed facility will not comply with FCC standards. The FCC is the only agency with the legal authority to make such a determination.

Opposition testimony asserted that the signed and stamped engineering reports documented that the proposed facility would exceed FCC standards for emission levels and requested that the City Council not approve this 'non-compliant' facility unless an EPA environmental review was conducted and approved. FCC regulations establish thresholds for when such additional environmental studies are required. The proposed facility is categorically exempt from additional environmental review per FCC regulations. Federal law prohibits a local government from denying a request to construct such facilities based on "harmful radio frequency emissions" as long as the wireless telecommunications facility meets the standards set by the FCC.

- **Q:** What is the Definition of 'Facility'?

A: There is no Title 33 definition of 'facility'.

The opposition is correct that there is no zoning code definition for radio frequency transmission facility in 33.910, Definitions. The zoning code considers these as a 'Use Category' and describes these facilities at 33.920.540 as:

33.920.540 Radio Frequency Transmission Facilities

- A. Characteristics.** Radio Frequency Transmission Facilities includes all devices, equipment, machinery, structures or supporting elements necessary to produce nonionizing electromagnetic radiation within the range of frequencies from 100 KHz to 300 GHz and operating as a discrete unit to produce a signal or message. Towers may be self supporting, guyed, or mounted on poles or buildings.

The opposition argues that Verizon's proposal actually consists of 9 distinct facilities, and as such, based on ERP calculations, exceeds FCC standards. However, this use category includes the following descriptor: "...operating as a discrete unit to produce a signal or message". Verizon's proposed facility is considered a discrete unit that is configured in three sectors so that the proposed facility will operate on a 'line of sight' basis with other facilities within the Verizon telecommunications network. Each of the three sectors will have both transmitting and receive-only antennas. All wireless telecommunications facilities operated by the licensed companies are configured in three sectors, and will not function properly as a discrete unit without all three sectors.

The zoning code utilizes this characteristics description to establish setbacks from property lines and distances from residential zones. These measurements are established by the closest corner of the perimeter security fencing that encloses these facilities.

- **Q:** Why does the size of accessory equipment supporting wireless facilities vary so much?

A: It depends on the scope of the wireless provider's FCC license.

City Council raised questions as to why the 'footprint' of accessory equipment varies so widely from a small suitcase sized box that can be attached to a utility pole to a 20 x 47 foot compound, as proposed by Verizon. Each service provider has specific frequency ranges

assigned to them by the FCC. Some telecom providers operate with relatively few frequency ranges, other providers operate systems with multiple frequencies in the cellular, PCS and reallocated analog Television spectrum. Each channel that a service provider is authorized to use requires one discrete transmitter. As a result, some providers with relatively few frequencies, particularly in the 'PCS' spectrum, can provide services with relatively small equipment and relatively few transmitters. Other providers, who are licensed for multiple channels in multiple frequencies, require a much larger area to accommodate the myriad of transmitters. FCC regulations require the equipment compounds to have backup battery power and/or generators for backup power in case of emergencies. Building and fire codes require specific separation and clearances for the various types of equipment in a wireless compound which further enlarges the equipment footprint.

CONCLUSIONS AND CONSIDERATIONS FOR CITY COUNCIL

The Hearings Officer was unable to determine the 'ERP' of Verizon's facility as defined by Title 33 because he found, that the definition was too ambiguous. Further, he did not have the full summary of the legislative history of the use of 'ERP' in the zoning code to help him determine the intent and application of 'ERP' within the regulatory framework of Chapter 33.274.

If City Council makes a determination that 33.815.225.D should apply to wireless telecommunications facilities, BDS will apply this portion of the zoning code to all future wireless applications as well as all radio and television broadcast applications. Because the zoning code requires a Type III Conditional Use procedure when applying subsection -D, specific notification requirements and a public hearing before the City's Hearings Officer are required. Because of the FCC 'shot clock', some of these applications will require a final decision by the City within 60 days of 'deemed complete.'

Additionally, all existing exceptions and exemptions for wireless facilities currently embedded in the zoning code would no longer apply. Wireless facilities currently are allowed by right to collocate on existing monopoles, many modifications of a facility are allowed by right, and siting these facilities in specific base zones are allowed by right when other thresholds are met. A decision to apply subsection -D would supersede these existing regulations.

The Bureau of Development Services processed 89 building permits, 25 Type II Design reviews, 27 Type II Conditional Use reviews, and one Type III Conditional Use review during 2011, for a total of 142 wireless related permit applications. Processing these applications subject to subsection -D will result in an increase of up to an average of 11 wireless hearings per month before the Hearings Officer and/or the Design Commission.

Attachments:

1997 legislative record hardcopy; also available in digital format at:

http://efiles.portlandoregon.gov/webdrawer/search/rec?sm_anyword=171718&sort1=rs_dateCreated&count&rows=50

Photographs of different types of Radio Frequency Transmission Facilities within the City of Portland

SUMMARY OF LEGISLATIVE AMENDMENTS TO RADIO FREQUENCY FACILITY REGULATIONS

| Update Packet | Project | Ordinance | Effective Date |
|---------------|---|-----------------|----------------|
| 8.1 | Random Stuff (Amendments Package 5) | 165376 | 5/29/1992 |
| 14.1 | Radio & TV Broadcast Facility Standards | 166920 | 10/1/1993 |
| 50 | RF Facilities Amendments (near R & OS zones) | 171718 | 11/29/1997 |
| 65 | Code Maintenance 2000 | 174263 | 4/15/2000 |
| 102 | CM 2004 - 1B - RF Transmission Facilities | 178480 | 6/18/2004 |
| 118 | RICAP 1 and Living Smart | 179980 & 179994 | 4/22/2006 |
| 129 | RICAP 4—Pt A | 182429 | 1/16/2009 |
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Legislative History for Ordinance 171718; Amendments to RF Facilities, effective November 29, 1997, follows this summary chart.

These files are also available in digital format at:

http://efiles.portlandoregon.gov/webdrawer/search/rec?sm_anyword=171718&sort1=rs_dateCreated&count&rows=50

BY FAX

SPARC RECORD
RETURN TO BLDG 225
ARCHIVES & RECORDS CENTER

FORTRAN RECORD



18
SPARC RECORD
RETURN TO BLDG 225
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Agency: Public
Requestor: kelly tilden
Address: 131/140/will call
File ID: 171718
Location: 35-16-13
Date Out: 05/30/00

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CITY OF
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October 30, 1997

TO: City Council
FROM: Cary Pinard and Shannon Buono, Planning Support Group
SUBJECT: Technical Amendment to the Radio and Television Broadcast Facilities Report and Recommendation.

On Wednesday, October 22, Council passed amendments to the Radio and Television Broadcast Facilities Report and Recommendation. One of the amendments modified the "ring of trees" landscaping requirement and amended the tower approval criteria to more clearly explain the instances in which tree planting around the base of a cellular tower will be advisable.

One reference to the "ring of trees" requirement in the development standards section of the proposed code language was inadvertently missed. In order to be consistent with Council action, we recommend the removal of this reference. We apologize for this mistake.

pg. 15 (33.274.040.C.9.b):

- b. In OS and R zones and within 50 feet of an R zone. A tower and all accessory equipment or structures located in an OS or R zone or within 50 feet of an R zoned site must meet the following landscape standards:
 - (1) Tower landscaping. A landscaped area that is at least 15 feet deep and meets the L3 standard must be provided around the base of the tower. ~~In addition, a ring of trees must be planted so that the trees completely surround the base of the tower. The height and spacing of the trees will be determined as part of the conditional use review.~~

CC: David Knowles
Steve Gerber
Sylvia Cate

1717-18

Xtra



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October 22, 1997

TO: City Council
FROM: Cary Pinard and Shannon Buono, Planning Support Group
SUBJECT: Amendments to the Radio and Television Broadcast Facilities Report and Recommendation.

Attached are amendments reflecting Council discussion after the Radio and Television Broadcast Facilities hearing on Thursday, October 16, 1997.

1. The first issue focuses on concerns about the requirement for a ring of trees to be planted around the base of a new tower in an OS or R zone or within 50 feet of an R zone. Council requested further clarification of this requirement because of the potential for mature trees to block the "line-of-sight" required by the communication antennas or the potential for trees to preclude the ability of the tower to house additional communication facilities.

The purpose of the proposed requirement is to visually soften the portion of a tower that is not in use (the area between the ground and the bottom of the lowest antenna). The ability to provide co-location opportunities and the need for a "line-of-sight" between facilities can be accommodated while also minimizing the visual impact of a tower on the surrounding area. In addition, the requirement for trees will be administered through a Type III conditional use review at which time the variety and spacing of the trees can be determined.

The criteria can be more clearly written to explain that the existing site conditions, proposed tower height and other co-location factors will be considered when determining what kind and how many trees to plant around the base of the tower. Therefore, we recommend that the approval criteria related to visual impacts (33.815.225.B.3 and B.5) be combined and modified in the following way:

The visual impact of the tower on the surrounding area must be minimized. This can be accomplished by one or more of the following methods:

- a. *Limiting the tower height as much as possible given the technical requirements for providing service and other factors such as whether the tower will provide co-location opportunities;*
- b. *Planting trees around the tower as a way to soften its appearance. The variety and spacing of the trees will be determined based on the site characteristics, tower height, and other co-location factors; or*
- c. *Other methods that adequately minimize visual impact.*

2. The second issue concerns the landscaping requirement in C, E, or I zones more than 50 feet from an R zone.

The proposed regulation requires 15 feet of L3 landscaping around the base of a tower and all accessory equipment located at grade unless the facility or equipment is screen by an existing fence or building. Current code requires that similar structures and equipment (mechanical equipment, exterior storage, garbage can areas, etc.) provide anywhere from 5 feet to 25 feet of landscaped screening depending on the zone. And, for the most part, the screening required must meet the L3 standard.

In response to the concerns raised at the Council hearing, we recommend that the landscaping required around the base of a tower and around all accessory equipment located on the ground in a C, E, or I zone more than 50 feet from an R zone be reduced to 5 feet of L3.

3. Finally, the third issue concerns the requirement that antennas mounted on existing buildings or other non-broadcast structures in OS or R zones or within 50 feet of an R zone be hidden from view. The concern raised relates to antennas that are mounted to the top of a building on metal poles or brackets that project the antenna above the roof line.

The proposed development standard and corresponding approval criteria will only be applied when a facility is going through a Type I conditional use review. The sole purpose of the review is to ensure that the visual impact of an antenna mounted to an existing building is minimized. It is not the intention to limit the ways in which an antenna can be mounted to a building to those listed in the standard, but merely to ensure that whatever mounting technique is approved, has few if any visual impacts on the surrounding area.

The standard and approval criteria can be more clearly written to convey this intention and therefore, we recommend that the development standard and the approval criteria related to "hidden antennas" be modified in the following ways:

- * Development standard (33.274.040.D.2.b):

Antennas mounted on existing buildings or other non-broadcast structures. This standard only applies to facilities located in OS or R zones or within 50 feet of an R zone. The visual impact of antennas that are mounted to existing buildings or other non-broadcast structures must be minimized. For instance, on a pitched roof, an antenna may be hidden behind a false dormer, mounted flush to the facade of the building and painted to match, mounted on a structure designed with minimal bulk and painted to fade into the background, or mounted by other technique that equally minimizes the visual impact of the antenna. The specific technique will be determined by the conditional use review.

- * Approval criteria (33.815.225.A.1):

The visual impact of an antenna must be minimized. For instance, it can be hidden behind a compatible building feature such as a dormer, mounted flush to the facade of the building and painted to match, mounted on a structure designed with minimal bulk and painted to fade into the background, or mounted by other technique that equally minimizes the visual impact of the antenna.

Exhibit A, attached, makes these recommended changes to the language presented in the Planning Commission Report and Recommendation dated September 30, 1997. Staff recommends that City Council modify the Report and Recommendation as indicated in this memo.

CC: David Knowles
Steve Gerber
Sylvia Cate

EXHIBIT A

Recommended changes to language presented in the Planning Commission Report and Recommendation dated September 30, 1997.

pg. 15 (33.274.040.C.9):

9. Landscaping and screening. The base of a tower and all accessory equipment or structures located at grade must be fully screened from the street and any abutting sites as follows:
- a. In C, E ~~and~~ or I zones more than 50 feet from an R zone. A tower and all accessory equipment or structures located in the C, E, ~~and~~ or I zones more than 50 feet from an R zone must meet the following landscape standard:
 - (1) Generally. Except as provided in (2), below, a landscaped area that is at least 455 feet deep and meets the L3 standard must be provided around the base of a tower and all accessory equipment or structures.
 - (2) Exception. If the base of the tower and any accessory equipment or structures are screened by an existing building or fence, then some or all of the required landscaping may be relocated subject to all of the following standards.
 - The building or fence must be on the site;
 - The fence must be at least six feet in height and be totally sight-obscuring;
 - The relocated landscaping must meet the L2 standard. The relocated landscaping cannot substitute for any other landscaping required by this Title; and
 - If any part of the base of the tower or accessory equipment is not screened by a building or fence, 455 feet of L3 landscaping must be provided.

pg. 23 (33.815.225.B):

- B. Approval criteria for facilities operating at 100 watts ERP or less, proposing to locate on a tower in an OS or R zone, or in a C, E, or I zone within 50 feet of an R zone.
1. [No change]
 2. [No change]
 3. The visual impact of the tower on the surrounding area must be minimized. This can be accomplished by one or more of the following methods:
 - a. Limiting the tower height as much as possible given the technical requirements for providing service and other factors such as whether the tower will provide co-location opportunities;

b. Planting trees around the tower as a way to soften its appearance. The variety and spacing of the trees will be determined based on the site characteristics, tower height, and other co-location factors; or

c. Other methods that adequately minimize visual impact;

4. [No change]

5. ~~The visual impact of the tower on the surrounding area must be minimized;~~

65. [No change]

76. [No change]

pg. 17 (33.274.040.D.2):

2. Standards. In addition to the regulations in Subsection C. above, facilities operating at 100 watts ERP or less located in OS, R, C, or EX zones or EG or I zones within 50 feet of an R zone, must meet all of the following standards:

b. Antennas mounted on existing buildings or other non-broadcast structures. This standard only applies to facilities located in OS or R zones or ~~C or EX zones~~ within 50 feet of an R zone. The visual impact of A antennas that are mounted to existing buildings or other non-broadcast structures must be minimized hidden from view. For instance example, on a pitched roof, an antenna may be hidden behind a false dormer, or the antenna may be mounted flush to the facade of the building and painted to match, mounted on a structure designed with minimal bulk and painted to fade into the background, or mounted by other technique that equally minimizes the visual impact of the antenna. The specific technique will be determined by the conditional use review.

pg. 23 (33.815.225.A):

A. Approval criteria for facilities operating at 100 watts ERP or less, proposing to locate on an existing building or other non-broadcast structure in an OS or R zone or within 50 feet of an R zone.

1. The visual impact of an antenna must be minimized hidden from view. There are several ways to hide the antenna. For instance, it can be hidden behind a compatible building feature such as a dormer, mounted flush to the facade of the building and painted to match, mounted on a structure designed with minimal bulk and painted to fade into the background, or mounted by other technique that equally minimizes the visual impact of the antenna; or hidden by other method that minimizes visual impact;



RECEIVED
OCT 27 3 14 PM '97
BARBARA CLAR, AUDITOR
CITY OF PORTLAND, OR.
BY _____

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version

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Real Estate & Property
Management Services
3350 161st Avenue S.E. M/S 223
Bellevue, Washington 98008

Telephone: 425 603 2100
Facsimile: 425 603 2910

October 14, 1997

Members of the Portland City Council
1220 SW 5th Avenue Room 202
Portland, Oregon 97204

Honorable Council Member:

The purpose of this letter is to address the new regulations governing cellular telephone and other radio frequency transmission facilities, governed by Chapter 33.274 of the Portland Zoning Code, about which you will be holding a public hearing on Thursday, October 16, 1997. As you may know, AirTouch Cellular is a major provider of cellular telephone service in the Portland metropolitan area, and, therefore, these regulations significantly affect our ability to serve our customers.

We have a long and productive relationship with the Bureau of Planning (BOP), one we look forward to maintaining for many years to come. We have provided some technical assistance in the drafting of these regulations and have attended all of the public hearings before the Planning Commission, testifying when given the opportunity. We appreciate the City's desire to control the impacts of these facilities without impeding the provision of these vital communication services. Although somewhat more stringent than the current regulations, we believe we can live with most of these new standards. However, there are several provisions of the proposed regulations with which we have concerns.

1. Technical and FCC authority to regulate RF emissions
2. Collocation standards
3. Landscaping

1. Technical Issues

Since the enactment of the Federal Communications Act over 50 years ago, the FCC has always possessed exclusive jurisdiction over radio frequency ("RF") emissions and interference matters.¹ Congress reaffirmed this jurisdiction only last year as part of the Telecommunications Act of 1996 in declaring that local governments may not regulate commercial mobile radio services ("CMRS") and other "personal wireless" facilities on the basis of RF emissions, clarified that the Commission alone may establish the technical standards governing such emissions, and gave the Commission express preemption power over state and local governments which attempt to regulate RF emissions.²

¹ See, e.g., 47 U.S.C. § 303(e) and (f). See also Conference Report, H.R. Rep. No. 104-458, 94th Cong. 2d Sess. 209 (1996) ("Conference Report"); Head v. New Mexico Board of Examiners, 374 U.S. 424, 430 n.6 (1993) (FCC has exclusive jurisdiction over radio technical matters). In fact, the federal government has exerted exclusive control over radio issues since the Radio Act of 1927, 44 Stat. 1162 (1927). See generally Whitehurst v. Grimes, 21 F.2d 787 (D. Ken. 1927) (preempting local regulation over radio matters).

² See 47 U.S.C. § 332(c)(7)(B)(iv). The general rule is that local governments have no regulatory authority over CMRS. See 47 U.S.C. § 332(c)(3) (giving only states non-rate, non-entry "other terms and conditions" authority over CMRS).

As the FCC notes, the most the 1996 Act confers on local governments is the ability to "inquire" whether a specific CMRS base station/transmitter complies (or will comply after construction) with Commission RF emissions rules.³ However, an ability to inquire into compliance with federal rules does not mean that a local government may also attempt to enforce the federal rules, or to prescribe separate RF emissions requirements.

AirTouch questions whether local governments really need to make inquiry regarding a licensee's compliance with Commission environmental rules. After all, complying with all Commission rules — including its environmental rules — is a condition of obtaining and maintaining a radio license;⁴ and, non-compliance subjects FCC licensees to the full enforcement authority of the Commission.⁵ Nevertheless, as a corporate citizen, AirTouch is not opposed to responding to reasonable inquiries from local government officials or the public.. .

The proposed zoning code, for example Table 274-2, is inconsistent with the 1996 FCC Standard for Maximum Permissible Exposure (MPE). There are situations where the public could be exposed to RF emissions levels that would exceed the FCC limits but would be consistent with table 274-2. Generally speaking, the FCC guidelines consider any area that is accessible to workers or members of the public rather than habitable portion of a structures. The FCC standard, also considers total RF emissions from single or multiple source depending on the situation.

Requested Action:

Adopt modifications to the City's Zoning Code to comply with FCC Standards or eliminate all RF measurement provision and rely on the expert agency to enforce its standards.

a) **Certification.** In section 33.274.070 (A), the City requires that all measurements related to a specific facility be documented by "a certified licensed engineer with a Federal Communication Commission First Class or General Radio-Telephone License or under the supervision of a registered professional electrical engineer".

Under current FCC rules, many CMRS base stations/transmitters "are deemed individually and cumulatively to have no significant effect on the quality of human environment and are categorically excluded from environmental processing."⁶ As a result, and consistent with CEQ and FCC rules, licensees are not required to demonstrate compliance with the FCC's environmental guidelines with respect to their categorically excluded facilities: "[T]he exclusion from performing a routine evaluation will be a sufficient basis for assuming compliance."⁷

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⁶ 47 C.F.R. § 1.1306(a). The CMRS base stations/transmitters that are not categorically excluded from a routine environmental assessment are specified in Rule 1.1307(a) and (b). See 47 C.F.R. § 1.1307(a), (b).

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AirTouch is not opposed to giving local governments the same information required by the expert agency (i.e., the FCC), under federal law local governments have no right to seek additional information — information which the expert agency has determined is unnecessary. Such activity would constitute the very kind of local government regulation of the CMRS industry which the Communications Act forbids.

Requested Action:

Modify Section 33.274.070 to require FCC Licensee(s) only to provide copies of compliance statements consistence with FCC regulations and no information is required for facilities categorically excluded from FCC environmental rules.

b) Define ERP. *Currently, the term "effective rated power" (ERP) is not completely defined in the text of the chapter. According to BOP current planning staff, ERP is interpreted and enforced by radio channel for the purposes of these regulations.*

Requested Action:

Modify Section 33.274 to include /define ERP is evaluated on a per radio channel basis

2. Collocation

a) Collocation of Other Cellular Providers. *In 33.274.040 (C)(10)(b), there is a new requirement specifying the number of two-way radio and/or microwave dishes which must be accommodated for every 20 - 40 feet of tower, but the regulations are silent whether the applicant for a new tower must also include capacity for one or two additional cellular providers; it is the demand for the latter which has been driving the need for new towers. The cellular industry is open to collocation, with a substantial increase in the number of jointly-operated towers. Therefore, it is critical for the City to explicitly state its requirements in this matter.*

With regard to collocation, it must be remembered that one of the disadvantages of collocation is that the facility must be bigger and often taller to accommodate more than one cellular provider. The prohibition of "top-hat" antennas and lattice towers only partially ameliorates these aesthetic impacts. Moreover, just because an applicant builds in this extra capacity does not guarantee that another provider will request collocation. In this scenario, the applicant invests a significant amount of money to build a more substantial tower and nearby land uses bear the visual impacts without necessarily gaining the benefits of collocation. One way to address this problem is to require an applicant to build a foundation which can provide structural support for a tower large enough to carry 2-3 cellular providers, but allow a smaller tower initially with the option to install the larger, possibly taller tower only at the time that a collocation agreement for another major user is completed. This is the approach recently adopted in Eugene at AirTouch's suggestion.

Requested Action. ***With regard to collocation, Modify Section 33.274.040 (C)(10)(b) to clarify how many additional cellular providers must be accommodated on a new tower.***

exposure limits in § 1.1310 and the preparation of an EA if the limits are exceeded, is necessary only for facilities, operations, and transmitters that fall into the categories listed in Table 1, or those specified in paragraph (b)(2) of this section. All other facilities, operations and transmitters are categorically excluded from making such studies or preparing an EA."(emphasis added).

Require that an applicant build the tower foundation large enough to support the ultimate number of cellular, two-way radio and microwave dishes required but initially allow a smaller tower to be installed with a larger one only as needed to accommodate other users.

3. Landscaping

- a) **Depth of Landscape Buffer.** According to proposed landscaping standards in 33.274.040 (C)(9), the depth of the landscaped area around a tower facility must be 10 feet deep in a C, E and I zone and 15 feet in R and OS zones and in any zone within 50 feet of an R zone, planted to the L3 standard. According to Section 33.248.020(C), the L3 standard includes ".....enough high shrubs to form a screen 6 feet high and 95% opaque year round. In addition, one tree is required for every 30 lineal feet of landscaped area or as appropriate to provide a canopy over the landscaped area. Ground cover plants must fully cover the remainder of the landscaped area. A 6-foot high masonry wall may be substituted for the shrubs...."

The purpose of this landscaping is to obscure the base of the tower, equipment building and security fence. (See the discussion below about screening the tower itself with a ring of trees.) This can be accomplished by the continuous row of shrubs or masonry wall, punctuated by trees, in a planting strip no greater than 5-7 feet. Requiring 10 and 15 feet, respectively, depending on the zone, is both unnecessary and onerous. Such requirements could be vulnerable to a challenge under Dolan v. City of Tigard in that the remedy required exceeds that which is necessary to minimize the adverse impact.

The new standards also have practical problems. Assume that the typical cellular telephone site is 40' X 40'. If there is a five-foot landscaped area around the perimeter of the site, the lease area is increased to 50' X 50', or 2,500 sq. ft. At 10 feet, the leased area is increased to 60' X 60', or 3,600 sq. ft., and at 15 feet, the lease site becomes 70' X 70', or 4,900 sq. ft., nearly doubling the lease area to accommodate landscaping to the L3 standard.

- Landlords will be more reluctant to lease tower sites if the amount of land required is twice that which is really necessary. In practice, the 15-foot buffer is not so much a problem in residential zones, since the 40,000 sq. ft. lot minimum discourages locating towers in residential areas except on existing buildings. However, almost all commercial areas in the city are located along major arterials and are rarely more than 50' - 100' deep. As a result, the more stringent 15-foot standard would apply on most commercial sites.
- On lots less than 60 feet wide, it will be impossible to meet these requirements.
- Even the 10-foot standard in C, E and I zones not within 50 feet of residential zones is onerous and will discourage landlords from leasing sites to cellular providers, thereby impeding the location of towers in these zones. Towers are often located on the rear portions of such sites where the proposed landscaping will be of little aesthetic value and will interfere with other activities of the primary business, e.g., outdoor storage, vehicle maneuvering. In such situations, requiring that the landscaping be moved elsewhere on the site may not be practical as there may not be enough space to accommodate the requirement. Moreover, landlords will balk at having to add landscaping above that already required, again because it is at the

expense of productive use of the site. This is particularly true in industrial zones.

Requested Action: *Modify the proposed landscaping requirements 33.274.040 (C)(9) as follows:*

- *In C and E zones, eliminate all reference to landscaped area depth, requiring only the width necessary to accommodate the L3 landscaping requirement. To protect residential areas, require a 10-foot landscaped buffer only on the side(s) of the facility adjacent to an R zone. Retain the requirement that some or all of tower landscaping can be moved elsewhere on the site, but lower the requirement for this displaced landscaping to the L2 standard.*
 - *Eliminate the landscaping requirement in I zones as these are the least intrusive locations for towers. If the City wishes to encourage the location of towers in such zones, it should create incentives to do so. Elimination of landscaping is one such incentive.*
 - *Explicitly exempt roof-mounted facilities from landscaping requirements. Although this may appear obvious, the provision which allows tower landscaping to be moved elsewhere on the site could potentially be applied by an over-zealous planning official.*
- b) Ring of Trees Requirement.** *Section 33.274.040 (C)(9)(b) requires that in OS and R zones and on sites in other zones within 50 feet of an R zone "a ring of trees be planted so that the trees completely surround the base of the tower. The height and spacing of the trees will be determined as part of the conditional use review." It is presumed that the purpose of the trees is to screen the middle and upper portions of the tower itself, in addition to the L3 landscaping around the perimeter of the facility. There are significant problems with this requirement:*
- *As noted above, the L3 standard already requires trees, one for every 30 lineal feet of landscaping. The ring of trees requirement appears to be a duplication of other landscaping requirements.*
 - *The requirement is in direct conflict with Section 33.274.040 (10)(b) which requires an applicant to design the tower to carry a number of other communication facilities, including two-way radio, microwave dishes and presumably at least one additional cellular telephone facility. These communication facilities have a common technical requirement, that is, they must have an unobstructed "line-of-sight" to their receivers. If a bulk of the tower is to be obscured by tall trees, the whole purpose of collocation is lost, as only the upper portions of the tower will be usable once the proposed ring of trees reaches maturity.*
 - *This requirement subjects a very large area of ground to root invasion over time (issue with asphalt surfaces, drainage systems, underground utilities, etc.), and bars other uses from large areas, not consistent with efficient use of commercial and industrial land.*

Requested Action. *Remove the "ring of trees" requirement from Section 33.274.040 (10)(b)*

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Other

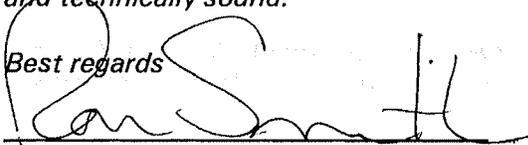
a). **Type I Conditional Uses.** In the new regulations, Section 33.274.050 delineates the type of review procedures for those facilities which are conditional uses. In 33.274.050 (A), building-mounted facilities of less than 100 watts ERP in the OS and R zones and within 50 feet of an R zone are to be treated as Type I conditional uses. There is no such thing as a Type I conditional use. By its very nature, a conditional use is a discretionary land use action in which the approval authority has the right to impose additional conditions of approval. Applicants have the right to appeal discretionary decisions. The Type I procedure is ministerial, i.e., based on "clear and objective standards". Type I decisions rendered by the Planning Director are final and cannot be appealed. There are two options for this class of facilities:

- They are permitted outright subject to the development standards in Section 33.274.040, and, therefore, should be moved back to Section 33.274.035, or
- They are considered a true conditional use, requiring either a Type II or Type III review.

Requested Action: Request that the BOP staff review the proposed Type I conditional use procedure for its consistency with state land use law and make modifications to Section 33.274.050(A) as appropriate.

Thank you for the opportunity to respond to these regulations. We are hopeful that the City Council will refer the proposed regulations back to the BOP staff so that they can make necessary modifications to ensure that the proposed regulations are reasonable, effective and technically sound.

Best regards



Ron Smith
Corporate Real Estate Manager

cc Steve Gerber, BOP
Carrie Pinnard, BOP

To _____
Date 10/28 Time 9:16 AM PM

WHILE YOU WERE OUT

M Beverly Bookin
of 241-2423

Phone Numbers

Office _____ Telephoned
 Voicemail _____ Please call
 FAX _____ Returned your call
 Pager _____ Called to see you
 Mobile _____ Wants to see you
 e-mail _____ Will call again
 URGENT

Message

letter re: new zoning
reg -
Our Touch
Ron Smith

OCT 20 3 17 PM

BARBARA CLAR, AUDITOR
CITY OF PORTLAND, OR.

Shannon B.

BY _____ 823-5630

**USWEST NEWVECTOR GROUP
P.O. BOX 91211
BELLEVUE, WA 98009-221**

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Fax Cover Sheet

DATE: October 20, 1997 **TIME:** 2:23 PM
BY: BARBARA CLAR, AUDITOR
CITY OF PORTLAND, OR.

TO: CAY KERSHNER **PHONE:** (503) 823-4086
FAX: (503) 823-4571

FROM: RON SMITH **PHONE:** (425) 603-2134
USWEST **FAX:** (425) 603-2910

RE:

CC:
Number of pages including cover [7]



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Fax version

U S West NewVector Group, Inc.
Real Estate & Property
Management Services
3350 161st Avenue S.E. MS 223
Bellevue, Washington 98008

Telephone: 425 603 2100
Facsimile: 425 603 2910

October 20, 1997

Members of the Portland City Council
1220 SW 5th Avenue, Room 202
Portland, Oregon 97204

Honorable Council Member:

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1. Technical and FCC authority to regulate RF emissions
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2. Collocation

a) **Collocation of Other Cellular Providers.** *In 33.274.040 (C)(10)(b), there is a new requirement specifying the number of two-way radio and/or microwave dishes which must be accommodated for every 20 - 40 feet of tower, but the regulations are silent whether the applicant for a new tower must also include capacity for one or two additional cellular providers; it is the demand for the latter which has been driving the need for new towers. The cellular industry is open to collocation, with a substantial increase in the number of jointly-operated towers. Therefore, it is critical for the City to explicitly state its requirements in this matter.*

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- *The requirement is in direct conflict with Section 33.274.040 (10)(b) which requires an applicant to design the tower to carry a number of other communication facilities, including two-way radio, microwave dishes and presumably at least one additional cellular telephone facility. These communication facilities have a common technical requirement, that is, they must have an unobstructed "line-of-sight" to their receivers. If a bulk of the tower is to be obscured by tall trees, the whole purpose of collocation is lost, as only the upper portions of the tower will be usable once the proposed ring of trees reaches maturity.*
- *This requirement subjects a very large area of ground to root invasion over time (issue with asphalt surfaces, drainage systems, underground utilities, etc.), and bars other uses from large areas, not consistent with efficient use of commercial and industrial land.*

Requested Action. *Remove the "ring of trees" requirement from Section 33.274.040 (10)(b)*

171718

Other

a). **Type I Conditional Uses.** In the new regulations, Section 33.274.050 delineates the type of review procedures for those facilities which are conditional uses. In 33.274.050 (A), building-mounted facilities of less than 100 watts ERP in the OS and R zones and within 50 feet of an R zone are to be treated as Type I conditional uses. There is no such thing as a Type I conditional use. By its very nature, a conditional use is a discretionary land use action in which the approval authority has the right to impose additional conditions of approval. Applicants have the right to appeal discretionary decisions. The Type I procedure is ministerial, i.e., based on "clear and objective standards". Type I decisions rendered by the Planning Director are final and cannot be appealed. There are two options for this class of facilities:

- They are permitted outright subject to the development standards in Section 33.274.040, and, therefore, should be moved back to Section 33.274.035, or
- They are considered a true conditional use, requiring either a Type II or Type III review.

Requested Action: Request that the BOP staff review the proposed Type I conditional use procedure for its consistency with state land use law and make modifications to Section 33.274.050(A) as appropriate.

Thank you for the opportunity to respond to these regulations. We are hopeful that the City Council will refer the proposed regulations back to the BOP staff so that they can make necessary modifications to ensure that the proposed regulations are reasonable, effective and technically sound.

Best regards

Ron Smith
Corporate Real Estate Manager

cc Steve Gerber, BOP
Carrie Pinnard, BOP

TESTIMONY SIGN-UP
FOR

171718

TC 3PM - Radio /TV Broadcast Regs #1604

IF YOU WISH TO SPEAK TO THE CITY COUNCIL,
PLEASE PRINT YOUR NAME AND ADDRESS BELOW

NAME

ADDRESS & ZIP CODE

| | NAME | ADDRESS & ZIP CODE |
|----|--------------|--|
| 1 | JOHN W. HUNT | (Representing AirTouch Cellular) P.O. Box 746, KIRKLAND, WA 98083 |
| 2 | SPENCER VAIL | ATTN wireless |
| 3 | KEVIN MARTIN | Sprint PCS |
| 4 | WAYNE WOOTEN | US WEST WIRELESS |
| 5 | | |
| 6 | | |
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Date: 10/16/97

Page 1 of

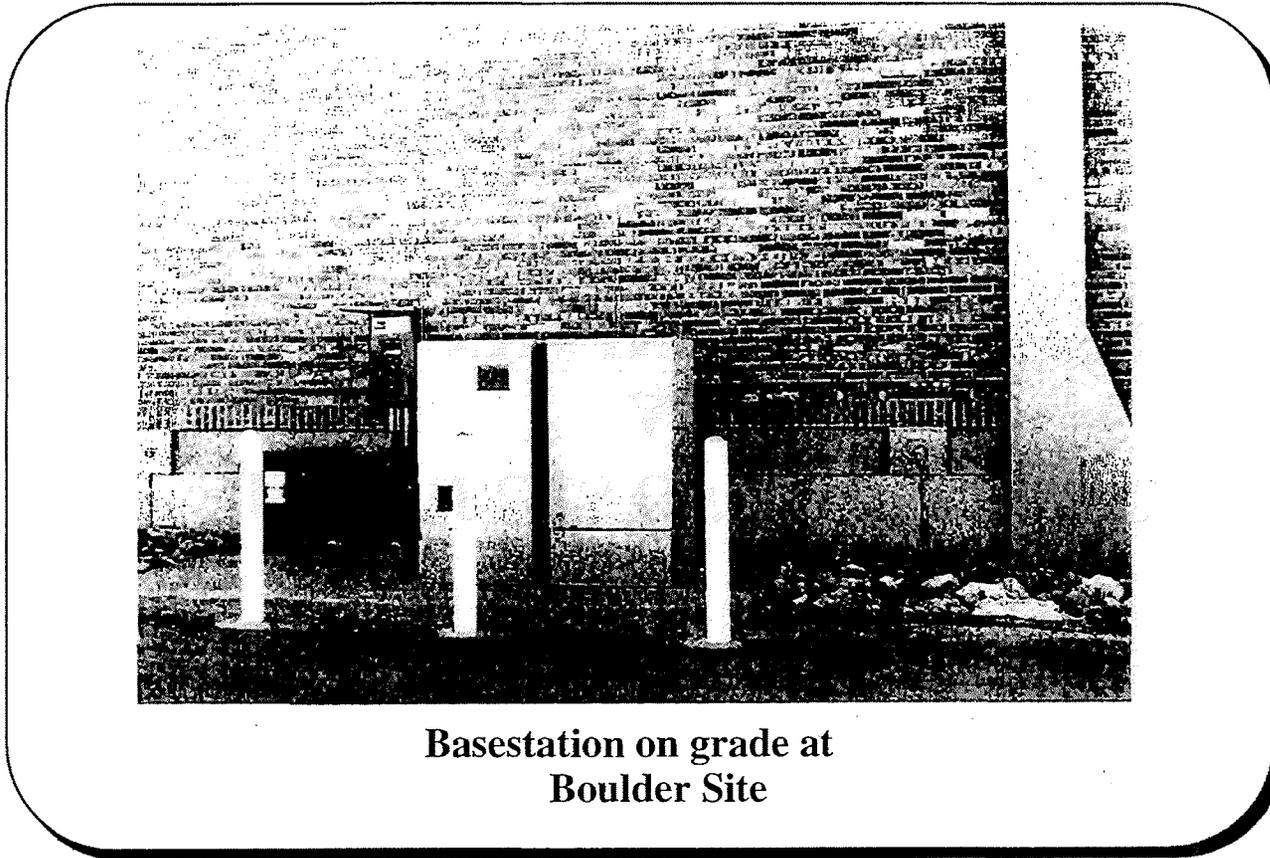
Submitted by
Wayne Wooten
10/16/97

**EXAMPLES OF EQUIPMENT
AND
ANTENNA INSTALLATIONS**

171718

USWEST[®] Communications - Wireless

OPERATIONS & ENGINEERING



Basestation on grade at
Boulder Site

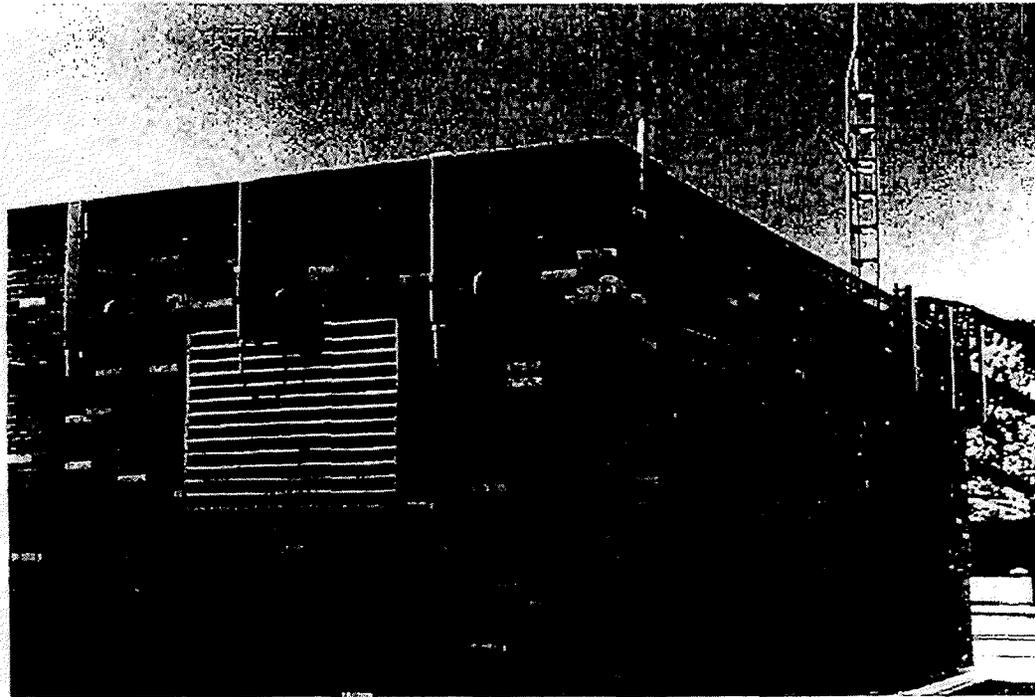
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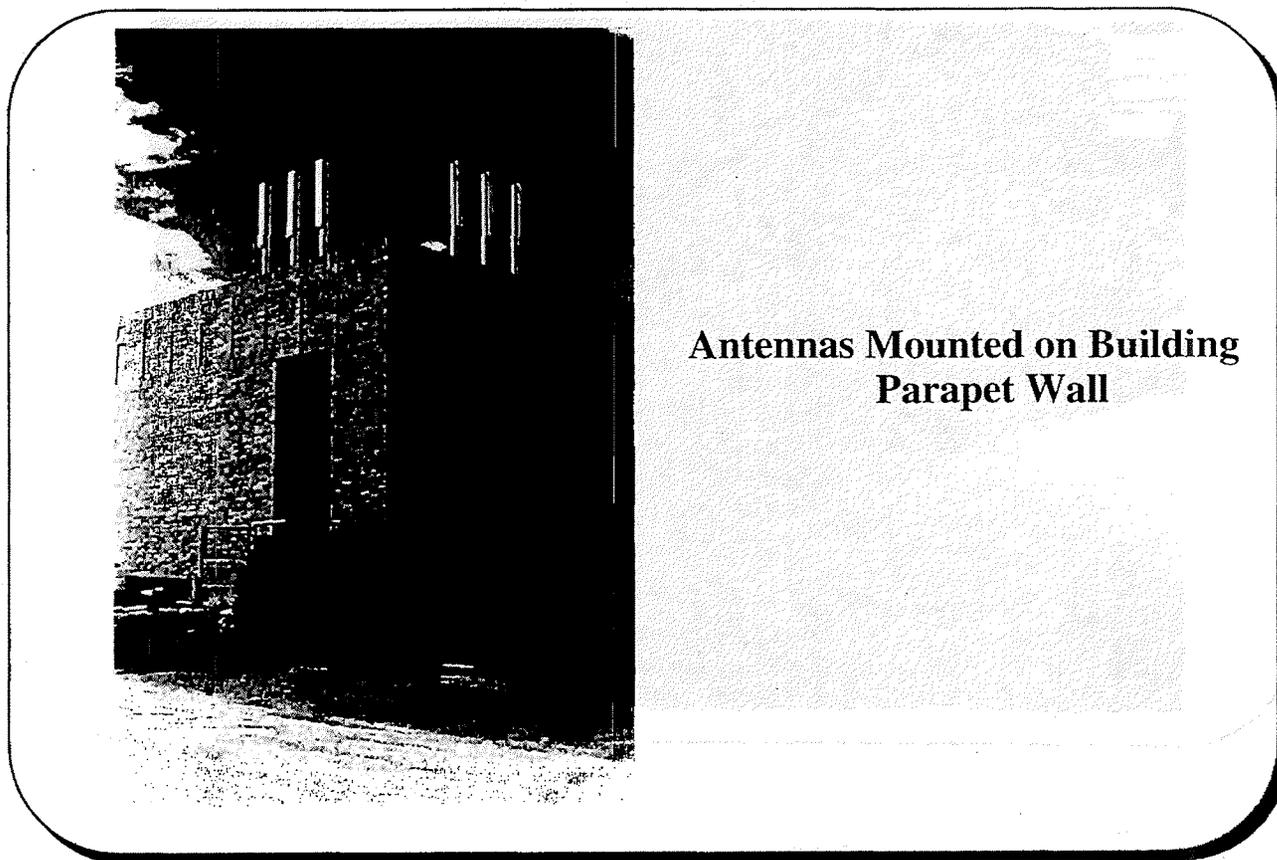


Antennas Mounted on Penthouse

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MEMORANDUM

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Sprint PCS™

**Network Operations
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Property/Portland MTA**
7770 SW Mohawk, Bldg. F
Tualatin, Oregon 97062

Telephone: 503 612 1000
Fax: 503 612 1078

15 October 1997

Portland City Council
c/o Shannon Buono
Portland Bureau of Planning
1120 SW Fifth Avenue, Rm 1002
Portland OR 97204

VIA FACSIMILE

**SUBJECT: PLANNING COMMISSION RECOMMENDATION - RADIO AND TELEVISION
BROADCAST FACILITIES AMENDMENTS**

I have reviewed the Planning Commission's recommendation and wish to submit the following comments and suggestions:

1. **33.274.040(C)(9) Landscaping and Screening:** This section requires a 10-15 foot landscape buffer around cell sites. This standard is excessive. A typical 40' x 40' lease area used for a PCS site would have to be increased to 50' x 50' or 55' x 55' to accommodate the landscape buffer. This almost doubles the amount of land actually needed to place the facility. Furthermore, PCS sites are frequently tucked away in unused corners and niches within existing commercial and industrial developments. Large landscape buffers will limit the availability of appropriate sites and consume more land than is really necessary.

Requiring that all sites "...be fully screened..." is not always desirable. The equipment used in telecommunication installations is very expensive, costing in excess of \$250,000. Depending on location, hiding this equipment behind totally site-obscuring fences and dense vegetation makes easy targets for vandalism. Perimeter landscaping should be reviewed on a case-by-case basis.

2. **33.274.040(E) Additional Requirements in R zones:** This section sets a 40,000 square foot minimum lot size for R zones and states that "This regulation must be met in addition to the regulations in Subsections C. and D. above." The preceding statement would seem to preclude the ability to apply for an adjustment. The statement should be amended or the legislative record made clear to indicate that the adjustment option is available to modify this standard.

3. **33.274.050(A) Type I procedure:** This section establishes a Type I Conditional Use. However, there are no provisions in Chapter 33.815 for such an application; only Type II and III Conditional Uses are described.

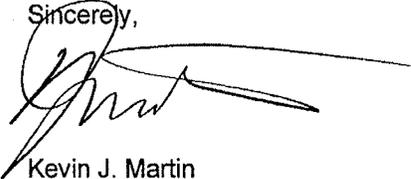
4. **33.815.225(B)(2) Approval criteria for facilities operating at 100 watts ERP or less...:** This criterion states that a tower "...must be sleek, clean and uncluttered..." This standard is extremely vague and discretionary. It should be replaced with the language from section 33.274.040.D(2)(a), which is clear and objective. Additional standards requiring removal of climbing pegs and internal routing of coax may also be appropriate. This also applies to 33.815.225(C)(2).

5. 33.815.225(B)(5) Approval criteria for facilities operating at 100 watts ERP or less....:

This criterion is essentially a rewording of B(2). It should be deleted. This also applies to 33.815.225(C)(4).

Please enter this letter into the hearing record. If you have any questions about these comments or if I can provide you with any additional information, please give me a call at (503) 612-1028.

Sincerely,



Kevin J. Martin
Land Use Coordinator
Sprint PCS

c: Steve Gerber



CITY OF
PORTLAND, OREGON

BUREAU OF PLANNING

Charlie Hales, Commissioner
David C. Knowles, Director
1120 S.W. 5th, Room 1002
Portland, Oregon 97204-1966
Telephone: (503) 823-7700
FAX (503) 823-7800

October 8, 1997

TO: Commissioners' Assistants
City Attorney

FROM: Cary Pinard, Project Manager
Shannon Buono, Associate City Planner

SUBJECT: Briefing — Radio and Television Broadcast Facilities Code Changes

CITY COUNCIL HEARING

DATE: Thursday, October 16, 1997

TIME: 3:00 p.m.

DESCRIPTION

City Council will be considering the Planning Commission recommendation to amend the Radio and Television Broadcast Facilities chapter of the Zoning Code. The Planning Commission is recommending several amendments to the Zoning Code in order to limit tower proliferation in or near residential and open space zones, encourage co-location opportunities as an alternative to new towers, reduce the visual impact of towers, antennas and accessory equipment, streamline the permitting process and reduce unnecessary land use reviews.

ISSUES

The Planning Commission held three public hearings on the proposed changes and received testimony from neighbors and representatives of the wireless telecommunication industry. The major issues that came up during the hearing that Council should be aware of include:

- Concerns over the appropriateness of wireless communication (cellular) towers in or near residential zones. The testimony given by neighbors was directed at the aesthetic and health concerns surrounding the siting of towers near residential zones. The Planning Commission recommendation strengthens the approval criteria for towers in or near residential zones and will ensure that towers are constructed only when the cellular telephone service can be provided in no other way (i.e. antennas on buildings or other existing tall structures). The concern over the health implications of these low powered antenna facilities is addressed in a memo to Council that has been attached as an appendix to the Planning Commission Report and Recommendation.
- Much of the testimony from cellular telephone industry representatives addressed their concern over the lack of flexibility to site facilities (towers included) in the locations that will provide the service that is required by the FCC. The Planning Commission recommendation provides flexibility by making it easier for the industry to build cellular facilities far away from residential and open space zones while also meeting the goal of reducing tower proliferation in or near residential neighborhoods.

RECOMMENDED COUNCIL ACTION

The Planning Commission recommends that City Council adopt the Planning Commission recommendation (Ordinance and Report).

Cary Pinard, Steve Gerber, Shannon Buono and Sylvia Cate will be briefing you on Monday, October 13. If you have any questions, please call Cary at x7846.

cc: David Knowles

171718



CITY OF
PORTLAND, OREGON
BUREAU OF PLANNING

Charlie Hales, Commissioner
David C. Knowles, Director
1120 S.W. 5th, Room 1002
Portland, Oregon 97204-1966
Telephone: (503) 823-7700
FAX (503) 823-7800

October 8, 1997

Mayor Katz and City Commissioners
Portland City Council
City Hall
Portland, Oregon 97204

SUBJECT: Radio and Television Broadcast Facilities

Dear Mayor Katz and City Commissioners:

On behalf of the Portland Planning Commission, I am forwarding our recommendation for changes to the Radio and Television Broadcast Facilities chapter of the Zoning Code. We are recommending several amendments in order to address the recent rapid growth in the wireless (cellular) telecommunications industry:

- Limit tower proliferation in or near residential and open space zones by strengthening approval criteria to ensure that new towers are constructed near residential zones only when alternative siting options are not feasible (i.e. antennas on buildings or other existing tall structures);
- Encourage co-location opportunities as an alternative to new towers;
- Reduce the visual impact of towers, antennas and accessory equipment by strengthening the development standards for all facilities;
- Streamline the permitting process by making the code language clear and concise; and
- Reduce unnecessary land use reviews for facilities that are co-locating or locating far away from residential or open space zones.

The proliferation of towers in the City is an immediate concern. These code improvements will ensure that Portland preserves its residential neighborhoods while at the same time providing adequate wireless telecommunication services.

Sincerely,

Richard Michaelson, President *cro*
Portland Planning Commission

EXHIBIT A

171718

**Radio and Television Broadcast Facilities
Planning Commission Report and Recommendation
September 30, 1997
Amendments to the Zoning Code**

**Bureau of Planning
Portland, Oregon**

For more information, contact
Shannon Buono
Portland Bureau of Planning
1120 SW Fifth Avenue, Rm 1002
Portland, Oregon 97204

Phone: 503-823-7662
Fax: 503-823-7800
TDD: 503-823-6868

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This report proposes amendments to the Zoning Code in response to the recent rapid growth in the wireless telecommunication industry. In the past two year, 126 new wireless telecommunication sites have been built, an unprecedented number considering that a total of 74 sites were built in the decade between 1985 and 1995. Most of these wireless telecommunication facilities (antennas) have been sited on existing buildings. However, not every area in the city provides these mounting opportunities, and where there is a lack of existing tall structures, antenna facilities have been mounted on towers in order to provide adequate signal coverage.

The Planning Commission believes that in order to minimize the visual impact of wireless telecommunication, the Zoning Code should allow and encourage the siting of these facilities on existing buildings and existing towers, discourage new towers in or near residential and open space zones, and apply development standards to regulate the design and placement of antennas and towers.

The Zoning Code currently has standards requiring new towers to be designed to accommodate additional antennas. However, at the same time, the code practically discourages co-location by requiring a Type III conditional use review for proposals to co-locate wireless communication antennas on existing towers outside of industrial zones, and a Type II conditional use to co-locate on an existing building. Amendments proposed in this report will encourage the siting of new facilities on existing towers and buildings, will discourage new towers in or near residential and open space zones, thus reducing the overall number of new towers built in Portland.

Other amendments proposed in this report strengthen design and development standards that will mitigate the visual impact of towers, antennas and accessory equipment. Also included are some technical clarifications of Code language that is confusing or conflicts with other sections of the Code.

Planning Commission Recommendation

Planning Commission recommends that City Council take the following actions:

- Adopt the ordinance that amends Title 33, Planning and Zoning; and
- Adopt the Planning Commission Report and Recommendation.

Introduction

History

Between 1985 and 1995 there were only two wireless telecommunication companies in Portland. Five more companies entered the Portland market during 1996 and 1997, when the Federal Communications Commission (FCC) auctioned off additional telecommunication licenses. These new companies, known collectively as wireless telecommunication services, are required by the FCC to meet a number of performance standards including the provision of a high level of signal coverage and service within the Portland area. The standards have resulted in an entire network of wireless telecommunication facilities being built in one year as opposed to one decade.

Today, Portland has seven wireless telecommunications service providers which account for a total of 200 wireless telecommunication broadcast sites within the city. Since each carrier has slightly different siting and coverage needs, facilities sometimes do not coincide. New towers will be necessary as these systems grow and mature; however, with the code improvements proposed, the number of new towers can be minimized, especially in or near residential and open space zones.

Current Context

The Zoning Code currently allows some wireless telecommunication facilities by right (in industrial zones, for instance), but approximately half of the existing wireless telecommunication sites in the city were approved through a land use review. Most of these reviews were for a conditional use, and/or design review if the site was in a design zone.

In general, wireless telecommunication facilities are concentrated in the downtown area and near major roadways and intersections throughout the city. However, to meet FCC performance requirements for universal signal coverage and service accessibility and due to the size of the city (150 square miles), the wireless telecommunication companies have had to locate some facilities in or near residential zones in order to provide adequate coverage.

In Portland, the distribution of wireless telecommunication facilities is as follows: more than 60% are in commercial, employment and industrial zones; roughly 10% are in open space zones; and about 25% are in residential zones. Over 70% of the sites in residential zones are either mounted on the roofs of multi-story apartment complexes or on existing water towers. There are currently only six towers in residential zones, and five of them are on sites that have an existing approved conditional use, such as a church.

Although 70% of the wireless telecommunication facilities in the city are mounted on the roofs of multi-story buildings or on existing tall structures, such as water towers, not every area in the city provides these mounting opportunities. When signal coverage requirements converge with a lack of existing tall structures, a tower is required to support the antennas at the

needed height. Towers have a much greater visual impact than roof-mounted facilities. Approximately, 30% of all sites in the city are on towers.

The proliferation of towers in the city is an immediate concern given that the FCC is continuing to auction off additional licenses for more telecommunication providers serving this market area. Current estimates based on FCC auction plans are for a total of 10 telecommunication providers in the Portland metro area. Fortunately, at least one-third of existing towers either currently host more than one facility or have been designed to support future co-location.

Conclusion

Because of the infusion of additional wireless telecommunication providers to this area, Planning Commission recommends a number of amendments to the Zoning Code to further achieve the objectives of limiting tower proliferation in or near residential and open space zones, emphasizing co-location opportunities as an alternative to new towers, reducing the visual impact of towers, antennas and accessory equipment, streamlining the permitting process and reducing unnecessary land use reviews. Planning Commission also proposes amendments that clarify language that is currently confusing or conflicts with other sections of the Zoning Code.

The majority of the proposed changes affect only wireless telecommunication facilities—those broadcasting at 100 watts effective radiated power (ERP) or less. A few clarifying changes are proposed for facilities in the 101 watts to 999 watts ERP range. No changes are proposed for facilities broadcasting at 1000 watts ERP or greater. The chart on the following page summarizes the regulatory approach of these proposals.

The amendments to the Zoning Code are shown beginning on page 5: proposed code language is shown on the right-hand pages, with commentary on the left-hand pages. Language to be added is underlined; language to be deleted is shown in ~~strikethrough~~.

**Summary of Proposed Regulations for
Radio and Television Broadcast Facilities
(Radio Frequency Transmission Facilities)**

| FACILITY | ZONES | | OS, R and C or EX within 50' of an R zone | EG and I within 50' of an R zone | C, E and I more than 50' from an R zone |
|---|---------------|--|--|---|---|
| | TYPE | | | | |
| 100 watts or less (most wireless communication facilities) | on a building | | Type I | Type I | plan check |
| | on a tower | | Type III | Type III | plan check OR Type III if tower is taller than base zone allows, or within 2,000' of another tower |
| 101 - 999 watts (most 2-way communication facilities such as radio dispatchers) | on a building | | Type II | plan check | plan check |
| | on a tower | | Type III | Type III | plan check OR Type III if tower is taller than base zone allows, or within 2,000' of another tower |
| 1,000 watts or more (television and radio broadcast facilities) | on a building | | Type III | Type III | Type III |
| | on a tower | | Type III | Type III | Type III |

REPORT

33.274 Radio Frequency Transmission Facilities

Planning Commission recommends changing the title of this chapter from Radio and Television Broadcast Facilities to Radio Frequency Transmission Facilities because the new name more accurately reflects the use being regulated. The Code language shown in this report reflects the name change wherever it appears.

33.274.010 Purpose

The purpose statement currently addresses the issues of health and safety, quality of living in residential zones and opportunity for continued growth of the industry. Planning Commission recommends adding two new statements: one to discourage new towers in or near residential and open space zones; and a second ensuring that new towers will only be constructed in or near residential or open space zones when alternative locations for the facility are not feasible.

33.274.025 When a Conditional Use Review is Required

This section has been added to the chapter as a way to make it clear in the beginning of the chapter that a facility may be subject to a conditional use review. Currently, mention of the conditional use review is not made until very near the end of the chapter.

33.274.030 Facilities Exempt from Regulation

Planning Commission recommends dividing this section into two separate sections: 1) 33.274.030, Facilities Exempt from this Chapter, and 2) 33.274.035, Facilities Allowed Without a conditional use review.

Facilities that are exempt from the chapter under 33.274.030 are allowed by right and are exempt from the regulations of this chapter. They remain subject to other applicable Zoning Code and Building Code regulations and must go through the plan check process before they can get a building permit. Generally, the facilities that are exempt from the chapter are emergency, scientific or defense facilities, amateur antennas, extremely low powered facilities (7 watts ERP or less), and wireless telecommunication facilities that are co-locating on a existing tower.

Facilities that are allowed without a conditional use review under section 33.274.035 are allowed by right but they are subject to the development standards of this chapter. They also must go through the plan check process which determines compliance with the standards of this chapter as well as compliance with other applicable Zoning Code and Building Code regulations. Generally, the facilities that are exempt from a conditional use review are those that are locating in a zone or manner that has little or no impact on residential or open space zones. These are the types of facilities that Planning Commission wants to encourage (as opposed to new towers) and therefore, proposes to allow them without a conditional use review as an incentive.

Unless exempted by either of the above sections, all new facilities are subject to a conditional use review and the development standards of the chapter.

Recommendation: Amend Chapter 33.274, Radio and Television Broadcast Facilities, as follows.

CHAPTER 33.274
RADIO AND TELEVISION BROADCAST FREQUENCY TRANSMISSION
FACILITIES

Sections:

- 33.274.010 Purpose
- 33.274.020 When the Regulations Apply
- 33.274.025 When a Conditional Use Review is Required
- 33.274.030 Facilities Exempt from Regulation This Chapter
- 33.274.035 Facilities Allowed without a Conditional Use Review
- 33.274.040 Development Standards
- 33.274.050 ~~Review~~ Procedures for Conditional Use Review and Approval Criteria
- 33.274.060 Registration of Existing Facilities
- 33.274.070 Measurements
- 33.274.080 ~~Review of Radio and Television Broadcast~~ Frequency Transmission Facility Regulations

33.274.010 Purpose

Radio and television broadcast Frequency Transmission ~~Facilities~~ are regulated to:

- Protect the health and safety of citizens from the adverse impacts of radio frequency emissions;
- Reduce the number of towers that are built in or near residential and open space zones;
- Ensure that towers in or near residential or open space zones are only sited when alternative locations or building mounts are not feasible;
- Preserve the quality of living in residential areas which are in close proximity to radio and television broadcast frequency transmission facilities; and
- Preserve the opportunity for continued and growing service from the radio and television broadcast frequency transmission and communications industries.

33.274.020 When the Regulations Apply [No change]

33.274.025 When a Conditional Use Review is Required

Unless exempted by 33.274.030 or 33.274.035 below, all new Radio Frequency Transmission Facilities require a conditional use review. Approval criteria for these reviews are stated in Chapter 33.815, Conditional Uses.

33.274.030 Facilities Exempt from Regulation this Chapter

All of the following are allowed without a conditional use and are exempt from the regulations of this chapter:

- A. Emergency or routine repairs, reconstruction, or routine maintenance of previously approved facilities, or replacement of transmitters, antennas, or other components of previously approved facilities which do not create a significant change in visual impact or an increase in radio frequency emission levels;
- B. Industrial, scientific, and medical equipment operating at frequencies designated for that purpose by the Federal Communications Commission;
- C. Military and civilian radars, operating within the regulated frequency ranges, for the purpose of defense or aircraft safety;

COMMENTARY

33.274.030.D

This change will encourage co-location on existing towers by requiring a Type III procedure for a new tower proposing to locate within 2,000 feet of an existing tower. Also, the Type III process will give the City the opportunity to confirm whether a real need exists for a new tower.

33.274.030.J

This exemption has been moved and significantly recast in section 33.274.035, Facilities Allowed without a conditional use.

33.274.030.K

The exemption for temporary facilities has been moved to Chapter 33.296, Temporary Activities.

It is replaced with an exemption that will encourage co-location for wireless telecommunication facilities. This exemption will allow a new wireless telephone antenna to be mounted on an existing, approved tower without an additional conditional use review. The exemption also limits the ways in which the antenna can be mounted to the tower in order to keep the visual impact of the tower to a minimum.

33.274.030.M

This exemption has been moved and significantly recast in 33.274.035, Facilities Allowed without a conditional use.

- D. Point-to-point microwave facilities provided that:
1. ~~a~~Any new tower, pole, or mast meets the height requirements of the base zone or is less than 50 feet in height, whichever is less; and
 2. Any new tower is more than 2,000 feet from any other Radio Frequency Transmission Facility that is supported by a tower;
- E. Amateur and citizen band transmitters and antennas;
- F. Two-way communication transmitters used on a temporary basis by "911" emergency services, including fire, police, and emergency aid or ambulance service;
- G. Radio transceivers normally hand-held or installed in moving vehicles, such as automobiles, watercraft, or aircraft. This includes cellular phones;
- H. Towers, masts, poles, or other supporting structures accessory to a residential use, with a transmitter output power of 1,500 watts or less;
- I. Transmitters operating at a frequency less than 1 GHz and at less than 7 watts transmitter power output, provided that any new tower, pole, or mast meets the height requirements of the base zone or is less than 50 feet in height, whichever is less;
- ~~J. Transmitters and antenna operating with an effective radiated power (ERP) of 100 watts or less, provided that:~~
1. ~~They are sited at least 500 feet from any other radio frequency emission source in the same frequency range; and~~
 2. ~~If in an R zone, the lot is at least 40,000 square feet; and~~
 3. ~~Any new tower, pole, or mast meets the height requirements of the base zone;~~
- ~~K. Temporary facilities, operating with less than 1,000 watts ERP, for a period of time not to exceed 30 days of consecutive operation, nor more than 120 days of operating in total;~~
- ~~L.L. Radio frequency machines which:~~
1. Have an effective radiated power (ERP) of 7 watts or less; or
 2. Are designated and marketed as consumer products, such as microwave ovens and remote control toys; or
 3. Are in storage, shipment, or on display for sale, provided such machines are not operated; and
- ~~M. Facilities in EG, IG, and IH zones, broadcasting at less than 1,000 watts ERP.~~
- K. Facilities operating at 100 watts ERP or less, locating on any existing radio transmission tower that has been approved as a conditional use or allowed under Section 33.274.035, below. Triangular "top hat" style antennas mounts are prohibited. Antennas must be mounted to a tower either on davit arms that are no longer than 5 feet, flush with the tower, or within a unicell style top cylinder.

33.274.035 Facilities Allowed without a Conditional Use Review

Currently, a wireless telecommunication facility that meets the base zone height standard and is 500 feet from any other facility is exempt from a conditional use review and is not subject to the development standards of this chapter.

This new section recasts the exemption in several ways. First, it requires that all new tower facilities and facilities to be mounted on existing buildings meet the development standards of the chapter. Second, it requires a Type III conditional use review for any new tower locating in an open space zone or in or within 50 feet of a residential zone. And, third, it creates incentives for wireless communication companies to build facilities away from residential and open space zones.

The closer a facility gets to a residential or open space zone, the more stringent the regulations become. For example, the fastest and least complicated way to build a wireless communication facility will be to site it in an Industrial or Employment zone more than 50 feet from a residential zone. If a company needs to propose a site in a Commercial zone, then the easiest and fastest way to get it approved will be to locate it on an existing building, mount it flush to the side of the building and paint it to match. But, if a wireless communication company needs to propose a new tower in an open space zone or in or within 50 feet of a residential zone, then a Type III conditional use review will automatically be required and the approval criteria will more strictly evaluate the facility and require that the company prove that the proposed location is the only siting alternative.

33.274.040 Development Standards

In general, the development standards section has been enhanced to ensure that facilities have fewer impacts on residential and open space zones.

33.274.040.A Purpose

The purpose statement has been modified to reflect the desire to reduce the impact of towers on residential and open space zones.

33.274.040.B When standards apply

This change will ensure that modifications to a facility meet the development standards regarding radio frequency emission levels and distance between antennas and habitable areas of structures, both of which relate to human health and safety. These standards currently apply to new towers and not to modifications to existing towers. The proposed change also clarifies that increasing the height of a tower is not considered a modification of a tower.

33.274.035 Facilities Allowed without a Conditional Use Review

All of the following are allowed without a conditional use but are subject to the development standards in this chapter:

- A. Facilities in C, E, or I zones operating at 100 watts ERP or less, mounted on an existing building or other non-broadcast structure provided that the facility is more than 50 feet from an R zone.
- B. Facilities in C, E, or I zones operating at 100 watts ERP or less, supported by a new tower provided that:
 - 1. The tower is more than 50 feet from an R zone;
 - 2. The tower meets the height requirement for buildings in the base zone; and
 - 3. The tower is more than 2,000 feet from any other facility that is supported by a tower.
- C. Facilities in C and EX zones operating at between 101 and 999 watts ERP mounted on an existing building or other non-broadcast structure provided that the facility is more than 50 feet from an R zone.
- D. Facilities in EG and I zones operating at between 101 and 999 watts ERP mounted on an existing building or other non-broadcast structure.
- E. Facilities in C, E, or I zones operating at between 101 and 999 watts ERP supported by a new tower provided that:
 - 1. The tower is more than 50 feet from an R zone;
 - 2. The tower meets the height requirement for buildings in the base zone; and
 - 3. The tower is more than 2,000 feet from any other facility that is supported by a tower.

33.274.040 Development Standards

- A. Purpose.** The development standards:
 - Ensure that Radio Frequency Transmission Facilities will be compatible with adjacent uses;
 - Reduce the visual impact of towers in residential and open space zones whenever possible;
 - Protect adjacent populated areas from excessive radio frequency emission levels;
 - Protect adjacent property from tower failure, falling ice, and other safety hazards; and
 - ~~Provide development in a manner resulting in an appearance compatible with the allowed uses of the base zone.~~
- B. When standards apply.** Unless exempted by 33.274.030, above, the development standards of this section apply to all applications for new Radio And Television Broadcast Frequency Transmission Facilities regulated by this chapter. Applications to modify existing facilities regulated by this chapter are only required to meet the standards of Paragraphs C.3, C.4, C.5, C.6, and C.9 in addition to any previous conditions of approval. 2, Tower finish, C.3, Tower illumination and D.4, Landscaped area. Increasing the height of a tower is not considered modification of an existing facility.

COMMENTARY

33.274.040.C General requirements

Currently, there are five development standards that apply to all radio frequency transmission facilities that are not exempt from the chapter: tower grouping and sharing, tower finish, tower illumination, emission levels, and antenna requirements. There are five additional standards that apply to facilities in residential zones: site size, tower setback, guy anchor setback, landscaping, and tower design.

Planning Commission proposes to combine the two groups of existing development standards into one group that applies to all facilities regardless of the zoning of the site. The Planning Commission also proposes to add two additional standards to the general requirements: one standard to regulate the height of any device used to mount an antenna on an existing building; and a second to regulate abandoned facilities.

33.274.040. C.1 Tower sharing; and C.2 Grouping of towers

Currently, this is one standard. For clarification purposes, Planning Commission proposes to separate it into two standards.

33.274.040.C.5 Radio frequency emission levels

This change brings the Code into compliance with new Federal Communications Commission (FCC) regulations which were adopted on August 1, 1996.

33.274.040.C.6 Antenna requirements

This change clarifies that antennas must be sited a minimum distance from the habitable area of a structure.

C. General requirements.

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- 12. Grouping of towers and tower sharing. The grouping of towers that support facilities operating at 1,000 watts ERP or more on a site is encouraged where technically feasible. However, tower grouping may be provided if it will not result in radio frequency emission levels exceeding the standards of this chapter.
- 1. Tower sharing. Where technically feasible, new facilities must co-locate on existing towers or other structures to avoid construction of new towers. Requests for a new tower must be accompanied by evidence that application was made to locate on existing towers or other structures, with no success; or that location on an existing tower or other structure is infeasible.
- 23. [No change]
- 34. [No change]
- 45. Radio frequency emission levels. All existing and proposed radio or television broadcast Frequency Transmission Facilities are prohibited from exceeding or causing other facilities to exceed the radio frequency emission standards specified in Table 274-1, except as superseded by Part 1, Practice and Procedure, Title 47 of the Code of Federal Regulations, Section 1.1310, Radio Frequency Radiation Exposure Limits.
- 56. Antenna requirements. The antenna on any tower or support structure must meet the minimum siting distances to habitable areas of structures shown in Table 274-2. Measurements are made from points A and B on the antenna to the nearest habitable area of a structure normally occupied on a regular basis by someone other than the immediate family or employees of the owner/operator of the antenna. Point A is measured from the highest point of the antenna (not the tower) to the structure, and Point B is measured from the closest point of the antenna to the structure.

| Table 274-2 Distance Between Antenna and Habitable Portion of Structure | | | |
|--|-----------------|--|--|
| Effective Radiated Power | Frequency (MHz) | Point A: Minimum Distance From Highest Point of Antenna To Habitable Area of Structure (feet) | Point B: Minimum Distance From Closest Portion Of Antenna To Habitable Area of Structure (feet) |
| < 100 watts | | 10 | 3 |
| 100 watts to 999 watts | | 15 | 6 |
| 1,000 watts to 9.999 Kw | < 7 | 11 | 5 |
| | 7 - 30 | $f/0.67$ | $f/1.5$ |
| | 30 - 300 | 45 | 20 |
| | 300 - 1500 | $780/\sqrt{f}$ | $364/\sqrt{f}$ |
| | > 1500 | 20 | 10 |

33.274.040.C.7 Setbacks

This change increases the distance a tower must be set back from abutting residential or open space zones and, in combination with amendments to the landscaping standard, will minimize tower impact on residential property.

33.274.040.C.9 Landscaping and screening

Currently, the landscaping standard only applies to towers in residential zones. Planning Commission proposes to create a landscaping requirement for facilities in Commercial, Employment and Industrial zones and expand the landscaping requirement for facilities in or near residential and open space zones.

The proposed standard for Commercial, Employment and Industrial zones will require landscaping around the base of a tower and any accessory equipment. Planning Commission also proposes to allow some amount of flexibility in the Commercial, Employment and Industrial zones. The proposed standard will allow the required landscaping to be relocated to another appropriate place on the site if the base of the tower is already adequately screened by an existing building or fence.

The proposed standard for landscaping around the base of a tower in or near a residential or open space zone will require 15 feet of landscaping, including a 6 foot tall, totally sight obscuring hedge. In addition, the standard will require that a ring of trees be planted around the tower so that upon maturity, the trees and other landscaping create a vegetated area that hides most of the tower.

| | | | |
|------------|------------|-----------------|----------------|
| 10 Kw plus | < 7 | 17.5 | 8 |
| | 7 - 30 | $f/0.4$ | $f/0.91$ |
| | 30 - 300 | 75 | 33 |
| | 300 - 1500 | $1300/\sqrt{f}$ | $572/\sqrt{f}$ |
| | 1500 | 34 | 15 |

Where f is frequency in megahertz.

7. Setbacks. All towers must be set back at least a distance equal to 20 percent of the height of the tower or 15 feet, whichever is greater, from all abutting R and OS zoned property and public streets. Accessory equipment or structures must meet the base zone setback standards.
8. Guy anchor setback. Tower guy anchors must meet the main building setback requirements of the base zone.
9. Landscaping and screening. The base of a tower and all accessory equipment or structures located at grade must be fully screened from the street and any abutting sites as follows:
- a. In C, E and I zones. A tower and all accessory equipment or structures located in the C, E, and I zones must meet the following landscape standard:
- (1) Generally. Except as provided in (2), below, a landscaped area that is at least 10 feet deep and meets the L3 standard must be provided around the base of a tower and all accessory equipment or structures.
 - (2) Exception. If the base of the tower and any accessory equipment or structures are screened by an existing building or fence, then some or all of the required landscaping may be relocated subject to all of the following standards.
 - The building or fence must be on the site;
 - The fence must be at least six feet in height and be totally sight-obscuring;
 - The relocated landscaping must meet the L2 standard. The relocated landscaping cannot substitute for any other landscaping required by this Title; and
 - If any part of the base of the tower or accessory equipment is not screened by a building or fence, 10 feet of L3 landscaping must be provided.
- b. In OS and R zones and within 50 feet of an R zone. A tower and all accessory equipment or structures located in an OS or R zone or within 50 feet of an R zoned site must meet the following landscape standards:
- (1) Tower landscaping. A landscaped area that is at least 15 feet deep and meets the L3 standard must be provided around the base of the tower.

COMMENTARY

33.274.040.C.11 Mounting device

This standard is being proposed to ensure that wireless communication facilities that are mounted to an existing building, do not project more than 10 feet above the roof top.

33.274.040.C.12 Abandoned facilities

This standard will require towers that are no longer in service be removed from a site.

33.274.040.D Additional requirement in OS, R, C and EX zones and EG and I zones within 50 feet of an R zone

Planning Commission recommends adding three additional development standards to ensure that wireless communication facilities have few visual impacts. These additional standards will apply to wireless communication facilities locating in residential, open space, Commercial or Central Employment zones and facilities locating in General Employment or Industrial zones within 50 feet of a residentially zoned site.

The standards include a limitation on the kinds of devices used to mount antennas onto towers; a requirement that antennas mounted onto existing buildings be hidden from view; and a standard that does not allow lattice towers.

(2) Accessory equipment and structures. A landscaped area that is at least 10 feet deep and meets the L3 standard must be provided around the base of all accessory equipment or structures located at grade.

10. Tower design.

- a. For a tower accommodating a Radio Frequency Transmission Facility of 100,000 watts or more, the tower must be designed to support at least two additional transmitter/antenna systems of equal or greater power to that proposed by the applicant and one microwave facility, and at least three two-way antennas for every 40 feet of tower over 200 feet of height above ground.
- b. For any other tower, the design must accommodate at least three two-way antennas for every 40 feet of tower, or at least one two-way antenna for every 20 feet of tower and one microwave facility.
- c. The requirements of Subparagraphs a. and b. above may be modified by the City to provide the maximum number of compatible users within the radio frequency emission levels.

11. Mounting device. The device or structure used to mount facilities operating at 100 watts ERP or less to an existing building or other non-broadcast structure, may not project more than 10 feet above the roof of the building or other non-broadcast structure.

12. Abandoned facilities. A tower erected to support one or more Federal Communication Commission licensed Radio Frequency Transmission Facilities must be removed from a site if no facility on the tower has been in use for more than six months.

D. Additional requirements in OS, R, C, and EX zones and EG and I zones within 50 feet of an R residential zones.

- 1. Purpose. These additional regulations are intended to ensure that facilities operating at 100 watts ERP or less have few visual impacts. The requirements encourage facilities that look clean and uncluttered.
- 2. Standards. In addition to the regulations in Subsection C. above, applications facilities operating at 100 watts ERP or less located in OS, R, C, or EX residential zones or EG or I zones within 50 feet of an R zone, must meet all of the following standards:
 - a. Antennas mounted on towers. Triangular "top hat" style antenna mounts are prohibited. Antennas must be mounted to a tower either on davit arms that are no longer than 5 feet, flush with the tower, within a unicell style top cylinder, or other similar mounting technique that minimizes visual impact.
 - b. Antennas mounted on existing buildings or other non-broadcast structures. This standard only applies to facilities located in OS or R zones or C or EX zones within 50 feet of an R zone. Antennas that are mounted to existing buildings or other non-broadcast structures must be hidden from view. For example, on a pitched roof, an antenna may be hidden behind a false dormer, or the antenna may be mounted flush to the facade of the building and painted to match.

COMMENTARY

33.274.040.E Additional requirements in R zones

This standard is unchanged from the current code requirements. The other standards proposed to be deleted from this subsection have been moved to another subsection where they will apply to more situations.

33.274.050 Procedures for conditional use review

Currently, if a wireless communication facility meets the base zone height standard and is more than 500 feet from another facility, then it is exempt from a conditional use review. If the proposal is not exempt from a conditional use review, then a Type III review is required unless the proposal is to mount the facility to an existing building in which case a Type II review is required.

Planning Commission proposes to change this section in the following ways: First, create a Type I procedure for proposals to mount facilities to existing buildings in open space zones or in or within 50 feet of a residential zone. The Type I review will be designed to ensure that the facilities are hidden from view.

Second, require facilities with slightly higher power outputs than wireless communication facilities to go through a Type II review when proposing to locate on an existing building in open space or residential zones or in Commercial or Central Employment Zones within 50 feet of a residential zone.

Third, require a Type III review for all other proposals including towers proposing to locate in open space zones or in or within 50 feet of a residential zones

c. Lattice. Lattice towers are not allowed.

E. Additional requirements in R zones. The minimum site area required for a tower in an R zone is 40,000 square feet. This regulation must be met in addition to the regulations in Subsections C. and D. above.

1. Minimum site size. The minimum site area in all R zones is 40,000 square feet.
2. Tower setback. At a minimum, all towers must be set back a distance equal to 20 percent of the height of the tower from all abutting R-zoned property, public property, or public streets.
3. Guy anchor setback. Tower guy anchors must meet the main building setback requirements of the base zone.
4. Landscaped area. An area landscaped to at least the L3 standard must be provided. For towers up to 200 feet in height, the area must be 25 feet deep, and for towers over 200 feet in height, the area must be 40 feet deep. The L3 landscaping is to be provided on the side of the area closest to the tower. A row of coniferous trees is required in both the 25 and 40 foot areas. In addition, a row of deciduous trees is required in the 40 foot area. Sites may be exempted from the landscaped area requirements provided the Director finds that the vegetation or the topography of the site provides a natural buffer.
5. Tower design.
 - a. For a tower accommodating a radio and television broadcast facility of 100,000 watts or more, the tower must be designed to support at least two additional transmitter/antenna systems of equal or greater power to that proposed by the applicant and one microwave facility, and at least three two-way antennas for every 40 feet of tower over 200 feet of height above ground.
 - b. For any other tower, the design must accommodate at least three two-way antennas for every 40 feet of tower, or at least one two-way antenna for every 20 feet of tower and one microwave facility.
 - c. The requirements of Subparagraphs a. and b. above may be modified by the City to provide the maximum number of compatible users within the radio frequency emission levels.

33.274.050 Review Procedures for Conditional Use Review and Approval Criteria

Unless exempted by 33.274.030 or 33.274.035, above, all ~~r~~Radio and television broadcast Frequency Transmission ~~f~~Facilities subject to this chapter are reviewed through the procedures stated below. All approval criteria for these reviews are stated in Section 225 of Chapter 33.815, Conditional Uses.

A. Type I procedure. Requests for Radio Frequency Transmission Facilities operating at 100 watts ERP or less, to be located on an existing building or other non-broadcast structure in an OS or R zone or within 50 feet of an R zone are processed through a Type I procedure.

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COMMENTARY

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AB. Type II procedure. ~~Requests for Radio and television broadcast Frequency Transmission Facilities operating between 100 101 and with an effective radiated power (ERP) of 1,000 999 watts ERP or less, mounted to be located on an existing building or other non-broadcast tower structure in an OS or R zone or C or EX zone within 50 feet of an R zone, are reviewed through a Type II procedure.~~

BC. Type III procedure. ~~All other requests for Radio and television broadcast Frequency Transmission Facilities are reviewed through a Type III procedure.~~

33.274.060 Registration of Existing Facilities

~~All Radio and television broadcast Frequency Transmission Facilities subject to this chapter and existing as of September 19, 1987 must complete and submit the radio and television frequency transmission facility registration form available from the City.~~

33.274.070 Measurements [No change]

33.274.080 Review of Radio and Television Broadcast Frequency Transmission Facility Regulations

A. Review of City regulations. ~~The standards in this chapter and the Radio and television Frequency Transmission Facility conditional use requirements will be reviewed by the City of Portland in 2003 to determine their adequacy relative to public health.~~

B-C. [No change]

COMMENTARY

33.815.225 Radio Frequency Transmission Facilities

In addition to increasing the number of facilities that will be required to go through a conditional use review, Planning Commission recommends strengthening the approval criteria.

33.815.225.A Approval criteria for wireless communication facilities proposing to locate on an existing building in or near an Open Space or Residential zone

This approval criteria will be used for the new Type I review. It is designed to ensure that the antenna facility and any accessory equipment is hidden from view. For example, an antenna proposing to locate on a water tank in or near a residential zone will be required to be mounted flush to the tank and painted to match so that, for the most part, the antenna blends into the background of the water tank.

33.815.225.B Approval criteria for wireless communication towers in Open Space zones or in or within 50 feet of Residential zones

The emphasis of this new approval criteria is twofold: First, an application for a new tower in an open space zone or in or near a residential zone must prove that the tower is the only feasible way to provide service. This will ensure that a new tower in or near a residential zone will be considered when other service options (a tower somewhere else, or antennas mounted on buildings) have been exhausted. Second, if the application for a new tower in or near a residential zone is approved, then the height and design of the tower will take into consideration the visual impact on the surrounding area. And, the tower must look sleek, clean and uncluttered as well as be hidden by vegetation planted in such a way that, upon maturity, will screen most of the tower from view.

Amend Chapter 33.815, Conditional Uses, as follows.

33.815.225 ~~Radio And Television Broadcast Frequency Transmission Facilities~~

These approval criteria allow ~~Radio And Television Broadcast Frequency Transmission Facilities~~ in locations where there are few impacts on nearby properties. The approval criteria are:

A. Approval criteria for facilities operating at 100 watts ERP or less, proposing to locate on an existing building or other non-broadcast structure in an OS or R zone or within 50 feet of an R zone.

1. The antenna must be hidden from view. There are several ways to hide the antenna. For instance, it can be hidden behind a compatible building feature such as a dormer, mounted flush to the facade of the building and painted to match, or hidden by other method that minimizes visual impact;
2. Accessory equipment associated with the facility must be adequately screened. If a new structure will be built to store the accessory equipment, the new structure must be designed to be compatible with the desired character of the surrounding area and be adequately screened; and
3. The regulations of Chapter 33.274, Radio Frequency Transmission Facilities are met.

B. Approval criteria for facilities operating at 100 watts ERP or less, proposing to locate on a tower in an OS or R zone, or in a C, E, or I zone within 50 feet of an R zone.

1. The applicant must prove that a tower is the only feasible way to provide the service;
2. The tower, including mounting technique, must be sleek, clean and uncluttered;
3. The tower must be hidden by a ring of trees. The trees must be of a variety that has a mature tree height that is no less than 20 feet shorter than, and no taller than, the height of the proposed tower. The trees must be spaced in such a way that upon maturity the branches are touching so that they provide a visual screen around the middle portion of the tower;
4. Accessory equipment associated with the facility must be adequately screened. If a new structure will be built to store the accessory equipment, the new structure must be designed to be compatible with the desired character of the surrounding area;
5. The visual impact of the tower on the surrounding area must be minimized;
6. Public benefits of the use outweigh any impacts which cannot be mitigated; and
7. The regulations of Chapter 33.274, Radio Frequency Transmission Facilities are met.

COMMENTARY

33.815.22.C Approval criteria for wireless communication towers in Commercial or Central Employment zones more than 50 feet from Residential zones

In these situations (more than 50 feet from a residential zone), towers that meet the base zone height limit and are more than 2,000 feet from another tower are subject to a plan check review rather than a conditional use review. In cases when a conditional use review is required, the tower will be subject to these approval criteria. These criteria are the same criteria proposed for towers in or near residential zones except for the extra vegetation requirement. The Planning Commission feels that towers in Commercial and Central Employment zones should be judged against the same criteria as towers in other zones except for the criteria requiring a ring of trees as a visual screen.

33.815.225.D Approval criteria for all other facilities

These criteria are the existing approval criteria and will continue to apply to facilities other than the wireless telecommunication facilities.

C. Approval criteria for facilities operating at 100 watts ERP or less, proposing to locate on a tower in a C or EX zones more than 50 feet from an R zone.

1. The applicant must prove that a tower that is taller than the base zone height standard allows or is within 2,000 feet of another tower is the only feasible way to provide the service;
2. The tower, including mounting technique, must be sleek, clean and uncluttered;
3. Accessory equipment associated with the facility must be adequately screened. If a new structure will be built to store the accessory equipment, the new structure must be designed to be compatible with the desired character of the surrounding area;
4. The visual impact of the tower on the surrounding area must be minimized;
5. Public benefits of the use outweigh any impacts which cannot be mitigated; and
6. The regulations of Chapter 33.274, Radio Frequency Transmission Facilities are met.

D. Approval criteria for all other Radio Frequency Transmission Facilities.

- A1. Based on the number and proximity of other facilities in the area, the proposal will not significantly lessen the desired character and appearance of the area ;
- B2. Public benefits of the use outweigh any impacts which cannot be mitigated; and
- C3. The regulations of Chapter 33.274, Radio And Television Broadcast Frequency Transmission Facilities are met.

COMMENTARY

Table 266-2 Parking Requirements

This change sets a parking standard that is consistent with the extremely low number of trips generated by low-powered facilities such as wireless telecommunication antennas. The requirement for two parking spaces was originally intended for Radio Frequency Transmission Facilities that are staffed and have a much higher volume of trip generation than the unmanned wireless telecommunication facilities. Typically, wireless telecommunication facilities are visited by a technician once a month for one hour. Adjustments to this standard for wireless communication facilities are very common and are routinely approved since, in most cases, there is adequate on-site or on-street parking. Aside from reducing the number of adjustments currently being processed, this amendment will encourage a more efficient use of land.

Amend Chapter 33.266, Parking and Loading, as follows.

| Table 266-2 Minimum Required Parking Spaces in the OS, RF-RH, IR, CN2, CO1&2, CG, EG, and I Zones | | |
|--|---|--------------------------|
| Use Categories | Specific Uses | Minimum Required Parking |
| Residential Categories | | |
| Household Living | | |
| Group Living | | |
| Commercial Categories | | |
| Retail Sales And Service | | |
| Office | | |
| Quick Vehicle Servicing | | |
| Vehicle Repair | | |
| Commercial Parking | | |
| Self-Service Storage | | |
| Commercial Outdoor Recreation | | |
| Major Event Entertainment | | |
| Industrial Categories | | |
| Manufacturing And Production | | |
| Warehouse And Freight Movement | | [No Change] |
| Wholesale Sales, Industrial Service, Railroad Yards | | |
| Waste-Related | | |
| Institutional Categories | | |
| Basic Utilities | | |
| Community Service | | |
| Parks And Open Areas | | |
| Schools | | |
| Medical Centers | | |
| Colleges | | |
| Religious Institutions | | |
| Daycare | | |
| Other Categories | | |
| Agriculture | | |
| Aviation | | |
| Detention Facilities | | |
| Aggregate Extraction | | |
| Radio & TV Broadcast Frequency Transmission Facilities | Unmanned facilities operating at or below 1000 watts ERP. | None |
| | All Other Facilities | 2 per site |
| Rail Lines & Utility Corridors | | None |

Notes:

- [1] For uses in an EG or I zone, if the site size is 5,000 sq. ft. or less, no more than 4 spaces are required. Where the site size is between 5,001 and 10,000 sq. ft., no more than 7 spaces are required.
- [2] 1 per resident manager's facility, plus 3 per leasing office, plus 1 per 100 leasable storage spaces in multi-story buildings.

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COMMENTARY

33.410.075 Radio Frequency Transmission Facilities in the Buffer zone

This provision has been added in response to public testimony. The purpose of the Buffer zone is to provide additional buffering between nonresidential and residential zones and is used when the base zone standards do not provide adequate separation. Since the Buffer zone already prohibits signs, it should also restrict similar structures such as broadcast towers.

Amend Chapter 33.410, Buffer Zone, as follows.**CHAPTER 33.410
BUFFER ZONE**

(Amended by Ord. No. 170704, effective 1/1/97.)

Sections:

- 33.410.010 Purpose
- 33.410.020 Map Symbol
- 33.410.030 Applying the Buffer Zone
- 33.410.040 Landscaped Areas
- 33.410.050 Access
- 33.410.060 Exterior Work Activities
- 33.410.070 Signs
- 33.410.075 Radio Frequency Transmission Facilities
- 33.410.080 Off-Site Impacts

33.410.010 Purpose [No change]

33.410.020 Map Symbol [No change]

33.410.030 Applying the Buffer Zone [No change]

33.410.040 Landscaped Areas [No change]

33.410.050 Access [No change]

33.410.060 Exterior Work Activities [No change]

33.410.070 Signs [No change]

33.410.075 Radio Frequency Transmission Facilities

Radio Frequency Transmission Facilities that are supported by a tower are prohibited in the Buffer zone.

33.410.080 Off-Site Impacts [No change]

COMMENTARY

33.910 Definitions

Effective Radiated Power (ERP)

This change will correct the definition.

Tower

Planning Commission proposed to add this definition to the Zoning Code for clarification purposes

33.296 Temporary Activities

This language will be deleted from section 33.274.030.K and moved to the Temporary Activities chapter where it more logically fits. No change in the language is proposed.



CITY OF
PORTLAND, OREGON

BUREAU OF PLANNING

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September 29, 1997

To: Vera Katz, Mayor
From: Steve Gerber, Sr. Planner, Bureau of Planning 
Re: Wireless Telecommunication: Safety Issues

In response to your recent inquiry about the safety of wireless telecommunication, staff has found that almost five years after the initial wave of public concern, research has shown no positive correlation between wireless phone use and cancer. Studies linking wireless phone use to increased traffic accidents and to medical device interference were also reviewed. What follows is an analysis of this research.

1. Cancer Concerns

Most of the information addressing a possible correlation between cellular phones and cancer came about as a result of a 1993 lawsuit against a telecommunications company in which a Florida man claimed that his wife's brain tumor was caused by her frequent use of a cellular phone. His disclosure of this lawsuit on a national radio talk show prompted a wave of public fear causing cellular stocks to plummet. As a result, the industry was forced to prove to the public that cellular phones were safe. Industry representatives cited numerous studies showing that there was no link to cancer. The bulk of this research concluded that the low amount of energy generated by the phones radiofrequency (RF) signals appeared to have no impact on living cells. After hearing much legal and scientific evidence, the jury decided in favor of the company. At that time several agencies, including the Cellular Telecommunications Industry Association and the National Cancer Institute, decided to commit millions of dollars to further research. We have found no new results published to date.

In November of 1996 a group of European scientists, looking at research data from around the world, concluded that "there is no evidence of any health risk emerging from mobile phones." These same scientists, however, felt that existing research was "insufficient" and sought funds for further studies. To date, there is still no evidence of a link between wireless phone use and cancer.

2. Traffic Accidents

There is a growing body of research linking wireless telephone use to an increase in traffic accidents. Several studies recently concluded that driver attention is significantly reduced when using a mobile phone and, as a result, accidents have increased significantly. One Ontario study printed earlier this year by the New England Journal of Medicine concluded that the risk of a collision increased four times during "the brief period of a call."

The wireless phone carriers have funded an organization called National Cellular Safetalk Center. This Center contacts high schools and offers a "safetalk" program to be incorporated into the standard drivers education curriculum. The Center advises teens to try not to dial while in motion and to avoid making emotional calls.

3. Medical Device Interference

Another area of research includes the impact of RF signals on medical devices. A study outlined at a Seattle conference in May of 1996 revealed that digital phones carried near the heart interfered with or shut off pacemakers in over half of the patients tested. As a result, experts have recommended that wireless phones be carried at least 6 inches from the heart. Tests also found that digital phones within 6 feet will interfere with a telecoil commonly found in hearing aids. Many hospitals are developing internal operating procedures to ensure separation of wireless phones and pagers from sensitive electronic medical equipment.

Summary

Cellular phones have been in common use for more than a decade and radio telephony for much longer. While studies continue in the area of radiofrequency energy and disease (particularly cancer), there is still no proven link between the two. The ongoing fear of wireless phones causing cancer has been propagated by individual lawsuits and by the fact that studies can never disprove the connection. As one of many organizations worldwide that continue to examine this issue, the National Cellular Industry Association has recently committed \$25 million to further studies.

The more conclusive evidence to date reveals links between wireless phone use and driver inattention, and interference with some electronic medical devices. These are problems that can be remedied in part with public education. As it is in the best interest of the industry to keep their customers safe, they have already taken action to address these concerns.

Staff has followed this research since 1979, and we will continue to keep you apprised of any important new developments. Some of the more recent works reviewed are included in the attached bibliography. Please let me know if you would like to read any of these further or have additional questions about these issues.

Amend Chapter 33.910, Definitions, as follows.

Effective Radiated Power (ERP). A measurement calculation of the amount of power emitted from a radio frequency antenna.

Tower. A tall structure with the intended purpose of elevating a Radio Frequency Transmission Facility high above the ground. This definition includes but is not limited to a tower, pole, or mast over 20 feet tall.

Amend Chapter 33.296, Temporary Activities, as follows.**33.296.010 Purpose**

This chapter allows short-term and minor deviations from the requirements of the zoning code for uses which are truly temporary in nature, will not adversely impact the surrounding area and land uses, and which can be terminated and removed immediately. Temporary uses have no inherent rights within the zone in which they locate.

33.296.020 Description [No change]**33.296.030 Zone and Duration**

A. IR and RF through RH zones. The regulations for temporary uses in the IR and RF through RH zones are as follows:

1. through 7. [No change]

8. Radio Frequency Transmission Facilities. Temporary facilities, operating with less than 1,000 watts ERP, for a period of time not to exceed 30 days of consecutive operation, nor more than 120 days of operating in total.

B. RX, C, E, and I zones. The regulations for temporary uses in the RX, C, E, and I zones are as follows:

1. through 6. [No change]

7. Radio Frequency Transmission Facilities. Temporary facilities, operating with less than 1,000 watts ERP, for a period of time not to exceed 30 days of consecutive operation, nor more than 120 days of operating in total.

C. OS zone. The regulations for temporary uses in the OS zone as follows:

1. through 3. [No change]

4. Radio Frequency Transmission Facilities. Temporary facilities, operating with less than 1,000 watts ERP, for a period of time not to exceed 30 days of consecutive operation, nor more than 120 days of operating in total.

D. [No change]

COMMENTARY

33.100.100 Primary uses allowed in the Open Space Zone

The changes to this section reflect changes proposed for Chapter 33.274 and provide cross reference consistency. Facilities that are exempt from 33.274 are allowed by right. In addition, facilities that are exempt from conditional use review, but are subject to the development standards of 33.274, are also allowed by right. In either case, the proposal continues to be subject to the plan check review process for all other Zoning Code and Building Code regulations.

33.110.100 Primary uses allowed in the Single Dwelling Zone

The changes to this section reflect changes proposed for Chapter 33.274 and provide cross reference consistency. Facilities that are exempt from 33.274 are allowed by right. In addition, facilities that are exempt from conditional use review, but are subject to the development standards of 33.274, are also allowed by right. In either case, the proposal continues to be subject to the plan check review process for all other Zoning Code and Building Code regulations.

Amend Chapter 33.100, Open Space Zone, as follows.**Use Regulations****33.100.100 Primary Uses**

A. **Allowed uses.** [No change]

B. **Limited uses.** Uses allowed that are subject to limitations are listed in Table 100-1 with an "L". These uses are allowed if they comply with the limitations listed below and the development standards and other regulations of this Title. In addition, a use or development listed in the 200s series of chapters is also subject to the regulations of those chapters. The paragraphs listed below contain the limitations and correspond with the footnote numbers from Table 100-1.

1. through 3. [No change]

4. ~~Radio And Television Broadcast Frequency Transmission Facilities.~~ This regulation applies to all parts of Table 100-1 that have note [4]. ~~Some Radio And Television Broadcast Frequency Transmission Facilities which are exempt from the regulations of Chapter 33.274, Radio and Television Broadcast facilities~~ are allowed by right. See Chapter 33.274.

5. [No change]

Amend Chapter 33.110, Single Dwelling Zones, as follows.**Use Regulations****33.110.100 Primary Uses**

A. **Allowed uses.** [No change]

B. **Limited uses.** Uses allowed that are subject to limitations are listed in Table 110-1 with an "L". These uses are allowed if they comply with the limitations listed below and the development standards and other regulations of this Title. In addition, a use or development listed in the 200s series of chapters is also subject to the regulations of those chapters. The paragraphs listed below contain the limitations and correspond with the footnote numbers from Table 110-1.

1. through 3. [No change]

4. ~~Radio And Television Broadcast Frequency Transmission Facilities.~~ This regulation applies to all parts of Table 110-1 that have note [4]. ~~Some Radio And Television Broadcast Frequency Transmission Facilities which are exempt from the regulations of Chapter 33.274, Radio and Television Broadcast facilities~~ are allowed by right. See Chapter 33.274.

COMMENTARY

33.120.100 Primary uses allowed in the Multi-Dwelling Zone

The changes to this section reflect changes proposed for Chapter 33.274 and provide cross reference consistency. Facilities that are exempt from 33.274 are allowed by right. In addition, facilities that are exempt from conditional use review, but are subject to the development standards of 33.274, are also allowed by right. In either case, the proposal continues to be subject to the plan check review process for all other Zoning Code and Building Code regulations.

33.130.100 Primary uses allowed in the Commercial Zone

The changes to this section reflect changes proposed for Chapter 33.274 and provide cross reference consistency. Facilities that are exempt from 33.274 are allowed by right. In addition, facilities that are exempt from conditional use review, but are subject to the development standards of 33.274, are also allowed by right. In either case, the proposal continues to be subject to the plan check review process for all other Zoning Code and Building Code regulations.

Amend Chapter 33.120, Multi-Dwelling Zones, as follows.

Use Regulations

33.120.100 Primary Uses

(Amended by Ord. No. 167186, effective 12/31/93. Amended by Ord. No. 169535, effective 1/8/96.)

- A. **Allowed uses.** [No change]
- B. **Limited uses.** Uses allowed in these zones subject to limitations are listed in Table 120-1 with an "L". These uses are allowed if they comply with the limitations listed below and the development standards and other regulations of this Title. In addition, a use or development listed in the 200s series of chapters is also subject to the regulations of those chapters. The paragraphs listed below contain the limitations and correspond with the footnote numbers from Table 120-1.
 - 1. through 8. [No change]
 - 9. ~~Radio And Television Broadcast Frequency Transmission Facilities.~~ This regulation applies to all parts of Table 120-1 that have note [9]. ~~Some Radio And Television Broadcast Frequency Transmission Facilities which are exempt from the regulations of Chapter 33.274, Radio and Television Broadcast facilities~~ are allowed by right. See Chapter 33.274.
 - 10. through 13. [No change]

Amend Chapter 33.130, Commercial Zones, as follows.

Use Regulations

33.130.100 Primary Uses

(Amended by Ord. No. 167186, effective 12/31/93. Amended by Ord. No. 169535, effective 1/8/96.)

- A. **Allowed uses.** [No change]
- B. **Limited uses.** Uses allowed that are subject to limitations are listed in Table 130-1 with an "L". These uses are allowed if they comply with the limitations listed below and the development standards and other regulations of this Title. In addition, a use or development listed in the 200s series of chapters is also subject to the regulations of those chapters. The paragraphs listed below contain the limitations and correspond with the footnote numbers from Table 130-1.
 - 1. through 8. [No change]
 - 9. ~~Radio And Television Broadcast Frequency Transmission Facilities.~~ This regulation applies to all parts of Table 130-1 that have a [9]. ~~Some Radio And Television Broadcast Frequency Transmission Facilities which are exempt from the regulations of Chapter 33.274, Radio and Television Broadcast facilities~~ are allowed by right. See Chapter 33.274.
 - 10. and 11. [No change]

COMMENTARY

33.140.100 Primary uses allowed in the Commercial Zone

The changes to this section reflect changes proposed for Chapter 33.274 and provide cross reference consistency. Facilities that are exempt from 33.274 are allowed by right. In addition, facilities that are exempt from conditional use review, but are subject to the development standards of 33.274, are also allowed by right. In either case, the proposal continues to be subject to the plan check review process for all other Zoning Code and Building Code regulations.

Amend Chapter 33.140, Employment and Industrial Zones, as follows.

Use Regulations

33.140.100 Primary Uses

- A. [No change]
- B. **Limited uses.** Uses allowed that are subject to limitations are listed in Table 140-1 with an "L". These uses are allowed if they comply with the limitations listed below and the development standards and other regulations of this Title. In addition, a use or development listed in the 200s series of chapters is also subject to the regulations of those chapters. The paragraphs listed below contain the limitations and correspond with the footnote numbers from Table 140-1.
 1. through 11. [No change]
 12. ~~Radio and Television Broadcast Frequency Transmission Facilities.~~ This regulation applies to all parts of Table 140-1 that have a [12]. Some Radio and Television Broadcast Frequency Transmission Facilities which broadcast at less than 1,000 watts ERP are allowed by right . Towers in excess of the maximum allowed height, will be reviewed under the provisions of Chapter 33.805, Adjustments. See Chapter 33.274.
 13. [No change]
- C. and D. [No change]

REVISED

COMMENTARY

ORDINANCE

ORDINANCE

Ordinance No.

Amend Title 33, Planning and Zoning, to modify the regulations for radio and television broadcast facilities. (Ordinance)

The City of Portland ordains:

Section 1. The Council Finds:

General Findings

1. The City Council adopted a new Zoning Code on November 7, 1990, to be implemented on January 1, 1991.
2. During adoption of the new zoning code, the Council recognized that the new code would occasionally need "fine-tuning" to resolve unanticipated issues. The Council additionally recognized that minor amendments to the code will periodically be required in order to maintain compliance with existing policy.
3. In 1996, the Federal Telecommunications Act was adopted by the Federal Communication Commission (FCC). As a result, the FCC has auctioned off additional licenses for wireless telecommunication providers in the Portland area and will continue to do so in the future.
4. Since the FCC requires these new providers to meet a number of performance standards, including adequate signal coverage, entire telecommunications networks are being built in a short period of time.
5. On March 21, 1997, notice of the proposed action was mailed to the Department of Land Conservation and Development in compliance with the post-acknowledgment review process required by OAR 660-18-020.
6. On April 22, 1997, the Planning Commission held the first of three public hearing on amendments to the radio and television broadcast facilities regulations in the Zoning Code. The second hearing was held on May 27, 1997, and a third hearing was held on July 22, 1997. Planning Commission voted to recommend amendments to City Council on August 26, 1997. A discussion of the amendments can be found in the Planning Commission's report to the City Council titled, "Radio and Television Broadcast Facilities—Planning Commission Report and Recommendation."

Statewide Planning Goals

7. State planning statutes require cities and counties to adopt and amend comprehensive plans and land use regulations in compliance with the state land use goals. Because of the limited scope of the amendments in this ordinance, only some of the state goals apply.
8. **Goal 1, Citizen Involvement**, requires that opportunities for citizens to be involved in all phases of the planning process be assured. The preparation of these amendments has provided many opportunities for public involvement. The amendments are supportive of this goal in the following ways:
 - On November 8, 1996, the Bureau of Planning mailed a brochure announcing the beginning of the Code Language Improvement Project (CLIP). This project provides the opportunity for citizens to submit, in writing, suggestions for ways to improve the implementation of the Zoning Code. The brochure was also available to the public in the Permit Center.
 - The same brochure also served as Notice of a Planning Commission Hearing scheduled for December 17, 1996. Notice was sent to more than 400 people including neighborhood and business associations, and other interested persons.
 - On December 6, 1996, the Bureau of Planning published a staff report, titled "Code Language Improvement Project—Report to Planning Commission," which included code implementation improvement suggestions submitted in writing by the public and City staff. The suggestions included amendments to the regulations for radio and television broadcast facilities.
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 - On February 20, 1997, a subcommittee of the Planning Commission met to review proposed amendments and select those to be considered as part of CLIP package #1. The subcommittee selected several amendments to the regulations for radio and television broadcast facilities and recommended that the radio and television broadcast facility amendments be considered separate from the other CLIP amendments.
 - On March 21, 1997, the Bureau of Planning published a Proposed Draft Report outlining the radio and television broadcast facility amendments.

The draft was made available to the public and mailed to all those requesting copies.

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 - On April 22, 1997, the Planning Commission held a public hearing during which citizens discussed and commented on the Proposed Draft for radio and television broadcast facilities.
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 - On October 15, 1997, City Council held a public hearing.
 - In total, five public hearings took place to receive comment on amendments to the Radio and Television Broadcast Facilities chapter of the Zoning Code. The project also provided notification of the proposed amendments, hearing dates, and comment opportunities to all persons interested.
9. **Goal 2, Land Use Planning**, requires the development of a process and policy framework which acts as a basis for all land use decisions and assures that

decisions and actions are based on an understanding of the facts relevant to the decision. The Portland Comprehensive Plan is consistent with Statewide Planning Goal 2. Since these amendments provide specific standards to guide the siting and development of land uses to meet the public policy objectives of the Portland Comprehensive Plan, they also comply with the statewide goal.

10. **Goal 5, Open Space, Scenic and Historic Areas, and Natural Resources**, call for the conservation of open space and protection of natural, historical, and scenic resources. The amendments are supportive of this goal by adding a requirement that towers in open space zones go through a Type III land use review and meet strict approval criteria designed to limit the number of towers in or near open space and residential zones.
11. **Goal 6, Air, Water, and Land Resources Quality**, calls for maintenance and improvement of the quality of these resources. These amendments support this goal by encouraging broadcast facilities to co-locate on existing towers or mount to existing building and other non-broadcast structures thereby reducing the number of new towers that will be built, which in turn reduces the amount of land taken up by tower facilities. In addition, reducing the parking requirement for unmanned facilities promotes a more efficient use of land.
12. **Goal 9, Economy of the State**, calls for diversification and improvement of the economy of the state. These amendments support this goal by creating objective standards that will allow some low-powered broadcast facilities to be sited through a faster, less expensive process while continuing to achieve other state and city goals.
13. **Goal 10, Housing**, calls for providing for the housing needs of citizens of Oregon. The amendments are supportive of this goal because they add approval criteria to more strictly evaluate an application for a tower in or near residential zones, thereby limiting the number of towers built in or near residential zones. In addition, the amendments add standards specifically written to reduce the visual impact of towers on neighboring residential zones, thus mitigating the impact of towers on existing neighborhoods.
14. **Goal 11, Public Facilities and Services**, calls for planning and development of timely, orderly and efficient public service facilities that can serve as a framework for the urban development of the City. The amendments do not affect this goal because wireless telecommunication facilities are not public services.
15. **Goal 12, Transportation**, calls for a safe, convenient and economic transportation system. The amendments support this goal by eliminating

the parking requirement for broadcast facilities that are low-powered and unmanned, thereby allowing development that is more consistent with actual transportation needs.

16. The amendments do not affect **Goal 3, Agricultural Lands; Goal 4, Forest Lands; Goal 7, Areas Subject to Natural Disasters; Goal 8, Recreational Needs; Goal 13, Energy Conservation; Goal 14, Urbanization; and Goal 15 Greenway** because they are limited to minimizing the impact of wireless telecommunication facilities.
17. **Goals 16, 17, 18, and 19** deal with **Estuarine Resources, Coastal Shorelines, Beaches and Dunes, and Ocean Resources**, respectively, and are not applicable to Portland as none of these resources are present within the city limits.

Metro Urban Growth Management Functional Plan Findings

18. **Title 1** of the Functional Plan addresses the requirements for Housing and Employment Accommodation for local jurisdictions in the Metro region. This requirement will be implemented through city-wide analysis based on calculated capacities from land use designations. This title does not apply to these amendments, because they do not affect or change overall development potential or permitted uses.
19. **Title 2** of the Functional Plan regulates the amount of parking permitted by use for jurisdictions in the region. The one minor change related to parking proposed in these amendments is consistent with Title 2 because the change to the parking requirement for unmanned wireless telecommunication facilities more accurately reflects the actual use of the site. However, the City will be updating city-wide parking regulations in order to fully implement this Title.
20. **Title 3** of the Functional Plan protects the beneficial uses and functional values of resources within the Water Quality and Flood Management Areas by limiting or mitigating the impact of development in these areas. These amendments do not apply to this title because they are limited to reducing the visual impact of wireless telecommunication facilities on residential and open space zones. The City will be reviewing and updating local regulations to implement this Title city-wide.
21. **Title 4** of the Functional Plan ensures that there is supportive retail development in Employment and Industrial areas, but it protects these areas from having retail that serves a larger market area. This title does not apply to these amendments because they do not deal with retail development.

22. Title 5 of the Functional Plan defines Metro's policy regarding areas outside of the Urban Growth Boundary. These amendments are not inconsistent with Metro's policies regarding protection of rural reserves and green corridors. The areas of the City of Portland that are outside of the Urban Growth Boundary are generally zoned low density residential farming (RF). The approval criteria for wireless telecommunication facilities in RF zones is designed to protect and maintain the rural nature of the zone.
23. Title 6 of the Functional Plan addresses Regional Accessibility. It recognizes the link between mode split, levels of congestion, street design and connectivity in creating a transportation system that works and supports the desired land use concept. This title does not apply to these amendments because they are limited to reducing the visual impact of wireless telecommunication facilities on residential and open space zones.
24. Title 7 of the Functional Plan relates to affordable Housing and recommends that local jurisdictions implement tools to facilitate development of affordable housing. This title does not apply to these amendments because they are limited to reducing the visual impact of wireless telecommunications facilities on residential and open space zones.
25. Title 8 of the Functional Plan requires cities and counties to document compliance with Title 1-7. This title does not apply to these amendments.

Portland Comprehensive Plan Goal Findings

26. The City's Comprehensive Plan was adopted by the Portland City Council on October 16, 1980, and was acknowledged as being in conformance with the statewide planning goals by the Land Conservation and Development Commission (LCDC) on May 1, 1981. On May 26, 1995, the LCDC completed its review of the City's final local periodic review order and periodic review work program.
27. **Goal 1, Metropolitan Coordination**, states that the Comprehensive Plan shall be coordinated with federal and state law and support regional goals, objectives and plans to promote a regional planning framework. By creating a more efficient development process for some broadcast facilities, these amendments are consistent with the regulations of the Federal Communications Commission's Telecommunications Act of 1996, which allowed for more wireless communication service in the Portland area and established performance standards for adequate signal coverage.
28. **Goal 2, Urban Development**, calls for maintaining Portland's role as the major regional employment and population center by increasing opportunities for housing and jobs, while retaining the character of

established residential neighborhoods and business centers. The amendments respond to the recent rapid growth in the wireless communication industry by allowing some facilities to meet objective standards instead of requiring a more expensive and time-consuming land use review process. At the same time, the regulations and standards protect the character of established residential neighborhoods by encouraging co-location of facilities on existing towers and buildings, discouraging new towers in or near residential neighborhoods, requiring additional landscaping to screen towers, and requiring facility design that is sleek, clean and uncluttered.

29. **Goal 3, Neighborhoods**, calls for reinforcing and preserving the diversity and stability of the city's neighborhoods while allowing for increasing density. These amendments support this goal through standards that encourage co-location of broadcast facilities on existing towers, discourage new towers in or near residential zones, require additional setbacks and landscaping intended to screen towers from view, require tower design that is sleek, clean and uncluttered, and eliminate the parking requirement for facilities that are low-powered and unmanned. Together, the amendments promote an efficient use of land while preserving the character and stability of existing neighborhoods.
30. **Goal 4, Housing**, encourages a diversity in the type, density and location of housing within the city in order to provide an adequate supply of safe and sanitary housing affordable to people of different means. The amendments do not affect this goal.
31. **Goal 5, Economic Development**, strives to foster a strong and diverse economy which provides a full range of employment and economic choices for individuals and families in all parts of the city. Compliance with this goal is stated in the finding for Statewide Planning Goal 9, Economy of the State.
32. **Goal 6, Transportation System**, promotes a multi-modal transportation system that encourages economic development. Compliance with this goal is stated in the finding for Statewide Planning Goal 12, Transportation.
33. **Policy 6.16, Off-Street Parking**, calls for the provision of adequate, but not excessive, off-street parking for all land uses. The amendment to eliminate the parking requirement for broadcast facilities that are low-powered and unmanned is supportive of this policy. These facilities have virtually no need for parking since they are typically visited by a service technician only once a month for one hour.

34. **Goal 7, Energy**, promotes a sustainable energy future by increasing energy efficiency in all sectors of the city by ten percent by the year 2000. The amendments do not affect this goal.
35. **Goal 8, Environment**, provides for maintaining and improving the quality of Portland's air, water, and land resources. Compliance with this goal is stated in the finding for Statewide Planning Goal 6, Air, Water, and Land Resources Quality.
36. **8.25, Visual Impacts (of Radio Frequency Emission Facilities)**, calls for reducing the visual impact of radio and television broadcast facilities in close proximity to residential areas. All of the amendments support this goal. By encouraging facilities to co-locate on existing towers and buildings and discouraging new towers in or near residential zones, the visual impact of towers will be minimized throughout the city. In addition, the standards for landscaping and screening, and tower design and placement will mitigate the visual impact of towers on neighboring properties. Eliminating the parking requirement for low-powered facilities that are unmanned will also help to preserve land for more efficient uses, such as another building or more landscaping.
37. **8.26, Health and Safety (of Radio Frequency Emission Facilities)**, calls for protecting the health and safety of the citizens from the adverse impact of radio and television broadcast emissions. The amendments are supportive of this goal because they maintain emissions standards that are consistent with FCC regulations. In addition, the setback standard for towers in all zones further protects the health and safety of citizens by ensuring adequate separation between facilities and habitable areas of structures.
38. **Goal 9, Citizen Involvement**, calls for improved methods and ongoing opportunities for citizen involvement in the land use decision-making process. Compliance with this goal is stated in the finding for Statewide Planning Goal 1.
39. **Policy 9.1, Citizen Involvement Coordination**, encourages citizen involvement in land use planning project by actively coordinating the planning process with relevant community organizations, through the availability of planning reports to city residents and businesses, and notice of official public hearings to neighborhoods associations, business groups, affected individuals and the general public. Compliance with this goal is stated in the finding for Statewide Planning Goal 1.
40. **Policy 10.10, Amendments to the Zoning and Subdivision Regulations**, states that amendments to the zoning and subdivision regulations should be clear, concise, and applicable to the broad range of development situations faced by a growing, urban city. The amendments support this

goal because they propose regulations for wireless telecommunication facilities that are clear and concise while at the same time minimize the visual impact of facilities on residential and open space zones.

41. **Goal 11, Public Facilities and Services**, calls for a timely, orderly and efficient arrangement of public facilities and services that support existing and planned land use patterns and densities. The amendments do not affect this goal.
42. **Goal 12, Urban Design**, calls for promoting Portland as a livable city, attractive in its setting and dynamic in its urban character by preserving its history and building a substantial legacy of quality private developments and public improvements for future generations. The amendments support this goal because the regulations that encourage co-location of broadcast facilities and the regulations that discourage new towers in or near residential zones will result in fewer towers overall. In addition, the standards for landscaping and screening, tower design and placement will apply in all zones, thus reducing the visual impact of towers throughout the city.

NOW, THEREFORE, the Council Directs:

- a. The Planning Commission Report and Recommendation on Radio and Television Broadcast Facilities dated September 26, 1997 and shown as Exhibit A (Planning Commission Report) is hereby adopted;
- b. Based on the Planning Commission Report, Title 33, Planning and Zoning is amended as shown in Exhibit A;
- c. The commentary in the Planning Commission Report is adopted as legislative intent and as further findings; and
- d. The term "Radio and Television Broadcast Facilities" is changed to "Radio Frequency Transmission Facilities" wherever it appears in Title 33, Planning and Zoning and other city titles.

Passed by the Council,

Commissioner Charlie Hales
S. Buono
September 26, 1997

BARBARA CLARK
Auditor of the City of Portland

By

Deputy

APPENDIX

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References in each section listed in chronological order.

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171718

Ordinance No.

As Amended

Amend Title 33, Planning and Zoning, to modify the regulations for radio and television broadcast facilities. (Ordinance, amend Code Title 33)

The City of Portland ordains:

Section 1. The Council Finds:

General Findings

1. The City Council adopted a new Zoning Code on November 7, 1990, to be implemented on January 1, 1991.
2. During adoption of the new zoning code, the Council recognized that the new code would occasionally need "fine-tuning" to resolve unanticipated issues. The Council additionally recognized that minor amendments to the code will periodically be required in order to maintain compliance with existing policy.
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requirement that towers in open space zones go through a Type III land use review and meet strict approval criteria designed to limit the number of towers in or near open space and residential zones.

11. **Goal 6, Air, Water, and Land Resources Quality**, calls for maintenance and improvement of the quality of these resources. These amendments support this goal by encouraging broadcast facilities to co-locate on existing towers or mount to existing building and other non-broadcast structures thereby reducing the number of new towers that will be built, which in turn reduces the amount of land taken up by tower facilities. In addition, reducing the parking requirement for unmanned facilities promotes a more efficient use of land.
12. **Goal 9, Economy of the State**, calls for diversification and improvement of the economy of the state. These amendments support this goal by creating objective standards that will allow some low-powered broadcast facilities to be sited through a faster, less expensive process while continuing to achieve other state and city goals.
13. **Goal 10, Housing**, calls for providing for the housing needs of citizens of Oregon. The amendments are supportive of this goal because they add approval criteria to more strictly evaluate an application for a tower in or near residential zones, thereby limiting the number of towers built in or near residential zones. In addition, the amendments add standards specifically written to reduce the visual impact of towers on neighboring residential zones, thus mitigating the impact of towers on existing neighborhoods.
14. **Goal 11, Public Facilities and Services**, calls for planning and development of timely, orderly and efficient public service facilities that can serve as a framework for the urban development of the City. The amendments do not affect this goal because wireless telecommunication facilities are not public services.
15. **Goal 12, Transportation**, calls for a safe, convenient and economic transportation system. The amendments support this goal by eliminating the parking requirement for broadcast facilities that are low-powered and unmanned, thereby allowing development that is more consistent with actual transportation needs.
16. The amendments do not affect **Goal 3, Agricultural Lands; Goal 4, Forest Lands; Goal 7, Areas Subject to Natural Disasters; Goal 8, Recreational Needs; Goal 13, Energy Conservation; Goal 14, Urbanization; and Goal 15 Greenway** because they are limited to minimizing the impact of wireless telecommunication facilities.

17. **Goals 16, 17, 18, and 19** deal with **Estuarine Resources, Coastal Shorelines, Beaches and Dunes, and Ocean Resources**, respectively, and are not applicable to Portland as none of these resources are present within the city limits.

Metro Urban Growth Management Functional Plan Findings

18. **Title 1** of the Functional Plan addresses the requirements for Housing and Employment Accommodation for local jurisdictions in the Metro region. This requirement will be implemented through city-wide analysis based on calculated capacities from land use designations. This title does not apply to these amendments, because they do not affect or change overall development potential or permitted uses.
19. **Title 2** of the Functional Plan regulates the amount of parking permitted by use for jurisdictions in the region. The one minor change related to parking proposed in these amendments is consistent with Title 2 because the change to the parking requirement for unmanned wireless telecommunication facilities more accurately reflects the actual use of the site. However, the City will be updating city-wide parking regulations in order to fully implement this Title.
20. **Title 3** of the Functional Plan protects the beneficial uses and functional values of resources within the Water Quality and Flood Management Areas by limiting or mitigating the impact of development in these areas. These amendments do not apply to this title because they are limited to reducing the visual impact of wireless telecommunication facilities on residential and open space zones. The City will be reviewing and updating local regulations to implement this Title city-wide.
21. **Title 4** of the Functional Plan ensures that there is supportive retail development in Employment and Industrial areas, but it protects these areas from having retail that serves a larger market area. This title does not apply to these amendments because they do not deal with retail development.
22. **Title 5** of the Functional Plan defines Metro's policy regarding areas outside of the Urban Growth Boundary. These amendments are not inconsistent with Metro's policies regarding protection of rural reserves and green corridors. The areas of the City of Portland that are outside of the Urban Growth Boundary are generally zoned low density residential farming (RF). The approval criteria for wireless telecommunication facilities in RF zones is designed to protect and maintain the rural nature of the zone.
23. **Title 6** of the Functional Plan addresses Regional Accessibility. It recognizes the link between mode split, levels of congestion, street design and connectivity in creating a transportation system that works and supports the desired land use concept. This title does not apply to these amendments because they are

limited to reducing the visual impact of wireless telecommunication facilities on residential and open space zones.

24. **Title 7** of the Functional Plan relates to affordable Housing and recommends that local jurisdictions implement tools to facilitate development of affordable housing. This title does not apply to these amendments because they are limited to reducing the visual impact of wireless telecommunications facilities on residential and open space zones.
25. **Title 8** of the Functional Plan requires cities and counties to document compliance with Title 1-7. This title does not apply to these amendments.

Portland Comprehensive Plan Goal Findings

26. The City's Comprehensive Plan was adopted by the Portland City Council on October 16, 1980, and was acknowledged as being in conformance with the statewide planning goals by the Land Conservation and Development Commission (LCDC) on May 1, 1981. On May 26, 1995, the LCDC completed its review of the City's final local periodic review order and periodic review work program.
27. **Goal 1, Metropolitan Coordination**, states that the Comprehensive Plan shall be coordinated with federal and state law and support regional goals, objectives and plans to promote a regional planning framework. By creating a more efficient development process for some broadcast facilities, these amendments are consistent with the regulations of the Federal Communications Commission's Telecommunications Act of 1996, which allowed for more wireless communication service in the Portland area and established performance standards for adequate signal coverage.
28. **Goal 2, Urban Development**, calls for maintaining Portland's role as the major regional employment and population center by increasing opportunities for housing and jobs, while retaining the character of established residential neighborhoods and business centers. The amendments respond to the recent rapid growth in the wireless communication industry by allowing some facilities to meet objective standards instead of requiring a more expensive and time-consuming land use review process. At the same time, the regulations and standards protect the character of established residential neighborhoods by encouraging co-location of facilities on existing towers and buildings, discouraging new towers in or near residential neighborhoods, requiring additional landscaping to screen towers, and requiring facility design that is sleek, clean and uncluttered.
29. **Goal 3, Neighborhoods**, calls for reinforcing and preserving the diversity and stability of the city's neighborhoods while allowing for increasing density. These amendments support this goal through standards that encourage co-

- location of broadcast facilities on existing towers, discourage new towers in or near residential zones, require additional setbacks and landscaping intended to screen towers from view, require tower design that is sleek, clean and uncluttered, and eliminate the parking requirement for facilities that are low-powered and unmanned. Together, the amendments promote an efficient use of land while preserving the character and stability of existing neighborhoods.
30. **Goal 4, Housing**, encourages a diversity in the type, density and location of housing within the city in order to provide an adequate supply of safe and sanitary housing affordable to people of different means. The amendments do not affect this goal.
 31. **Goal 5, Economic Development**, strives to foster a strong and diverse economy which provides a full range of employment and economic choices for individuals and families in all parts of the city. Compliance with this goal is stated in the finding for Statewide Planning Goal 9, Economy of the State.
 32. **Goal 6, Transportation System**, promotes a multi-modal transportation system that encourages economic development. Compliance with this goal is stated in the finding for Statewide Planning Goal 12, Transportation.
 33. **Policy 6.16, Off-Street Parking**, calls for the provision of adequate, but not excessive, off-street parking for all land uses. The amendment to eliminate the parking requirement for broadcast facilities that are low-powered and unmanned is supportive of this policy. These facilities have virtually no need for parking since they are typically visited by a service technician only once a month for one hour.
 34. **Goal 7, Energy**, promotes a sustainable energy future by increasing energy efficiency in all sectors of the city by ten percent by the year 2000. The amendments do not affect this goal.
 35. **Goal 8, Environment**, provides for maintaining and improving the quality of Portland's air, water, and land resources. Compliance with this goal is stated in the finding for Statewide Planning Goal 6, Air, Water, and Land Resources Quality.
 36. **8.25, Visual Impacts (of Radio Frequency Emission Facilities)**, calls for reducing the visual impact of radio and television broadcast facilities in close proximity to residential areas. All of the amendments support this goal. By encouraging facilities to co-locate on existing towers and buildings and discouraging new towers in or near residential zones, the visual impact of towers will be minimized throughout the city. In addition, the standards for landscaping and screening, and tower design and placement will mitigate the visual impact of towers on neighboring properties. Eliminating the parking requirement for

low-powered facilities that are unmanned will also help to preserve land for more efficient uses, such as another building or more landscaping.

37. **8.26, Health and Safety (of Radio Frequency Emission Facilities)**, calls for protecting the health and safety of the citizens from the adverse impact of radio and television broadcast emissions. The amendments are supportive of this goal because they maintain emissions standards that are consistent with FCC regulations. In addition, the setback standard for towers in all zones further protects the health and safety of citizens by ensuring adequate separation between facilities and habitable areas of structures.
38. **Goal 9, Citizen Involvement**, calls for improved methods and ongoing opportunities for citizen involvement in the land use decision-making process. Compliance with this goal is stated in the finding for Statewide Planning Goal 1.
39. **Policy 9.1, Citizen Involvement Coordination**, encourages citizen involvement in land use planning project by actively coordinating the planning process with relevant community organizations, through the availability of planning reports to city residents and businesses, and notice of official public hearings to neighborhoods associations, business groups, affected individuals and the general public. Compliance with this goal is stated in the finding for Statewide Planning Goal 1.
40. **Policy 10.10, Amendments to the Zoning and Subdivision Regulations**, states that amendments to the zoning and subdivision regulations should be clear, concise, and applicable to the broad range of development situations faced by a growing, urban city. The amendments support this goal because they propose regulations for wireless telecommunication facilities that are clear and concise while at the same time minimize the visual impact of facilities on residential and open space zones.
41. **Goal 11, Public Facilities and Services**, calls for a timely, orderly and efficient arrangement of public facilities and services that support existing and planned land use patterns and densities. The amendments do not affect this goal.
42. **Goal 12, Urban Design**, calls for promoting Portland as a livable city, attractive in its setting and dynamic in its urban character by preserving its history and building a substantial legacy of quality private developments and public improvements for future generations. The amendments support this goal because the regulations that encourage co-location of broadcast facilities and the regulations that discourage new towers in or near residential zones will result in fewer towers overall. In addition, the standards for landscaping and screening, tower design and placement will apply in all zones, thus reducing the visual impact of towers throughout the city.

NOW, THEREFORE, the Council Directs:

- a. The Planning Commission Report and Recommendation on Radio and Television Broadcast Facilities dated September 26, 1997 and shown as Exhibit A (Planning Commission Report) is hereby adopted;
- b. Based on the Planning Commission Report, Title 33, Planning and Zoning is amended as shown in Exhibit A;
- c. The commentary in the Planning Commission Report is adopted as legislative intent and as further findings; and
- d. The term "Radio and Television Broadcast Facilities" is changed to "Radio Frequency Transmission Facilities" wherever it appears in Title 33, Planning and Zoning and other city titles.

Passed by the Council, **OCT 30 1997**

Commissioner Charlie Hales
S. Buono
September 26, 1997
Deputy

BARBARA CLARK
Auditor of the City of Portland

By

Britta Olson
Deputy

1646

~~1604~~

~~1610~~

Agenda No.

171718

ORDINANCE NO.

As Amended

Title

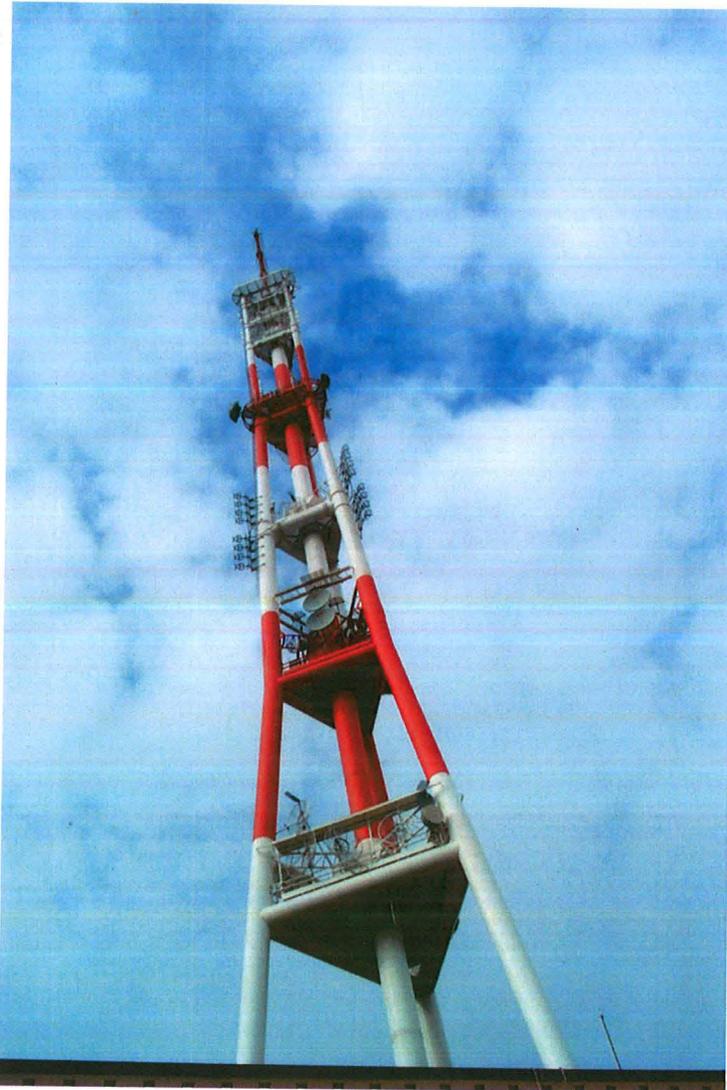
Amend Title 33, Planning and Zoning, to modify the regulations for radio and television broadcast facilities. (Ordinance ; amend Code Title 33)

| | |
|--|---|
| INTRODUCED BY Commissioner Charlie Hales | Filed: OCT 9 1997 |
| | Barbara Clark Auditor of the City of Portland |
| NOTED BY COMMISSIONER | |
| Affairs | By: <u>Cay Kershner</u> Deputy |
| Finance and Administration | |
| Safety <u>Charlie Hales</u> | |
| Utilities | For Meeting of: |
| Works | |
| BUREAU APPROVAL | |
| Bureau: Planning | |
| Prepared by: S. Buono Date: 10-8-97 | Action Taken: OCT 16 1997 Amended OCT 22 1997 Passed to 2nd Reading OCT 22 1997 Continued TO SECOND READING As Amended OCT 30 1997 2 P.M. |
| Budget Impact Review: <input type="checkbox"/> Completed <input checked="" type="checkbox"/> Not Required | |
| Bureau Head: David Knowles, <u>David Knowles</u> Planning Director | |

| AGENDA | | FOUR-FIFTHS AGENDA | COMMISSIONERS VOTED AS FOLLOWS: | |
|----------------------------------|---|--------------------|---------------------------------|------|
| | | | YEAS | NAYS |
| Consent | Regular <input checked="" type="checkbox"/> | Francesconi | Francesconi | |
| NOTED BY | | Hales | Hales | ✓ |
| City Attorney <u>KS Beaumont</u> | | Kafoury | Kafoury | ✓ |
| City Auditor | | Sten | Sten | ✓ |
| City Engineer | | Katz | Katz | ✓ |

EXAMPLES OF RF FACILITIES LOCATED IN PORTLAND, OREGON

There are both broadcast radio and broadcast television facilities located in Portland.



The most prominent broadcast tower on the City's skyline of the west hills is the main tower located in the Healy Heights Plan District. At 600 feet in height, located at an elevation of 1,020 feet, painted with the red and white aviation hazard scheme required by the FAA, as well as operating aviation hazard lighting 24/7, this tower is particularly noticeable from many vantage points around the City. The proposed tower received a Conditional Use approval circa 1985. The master antenna at the top of the tower simultaneously broadcasts multiple local FM radio stations, including:
90.7 **KBOO** 25,500 Watts;
92.3 **KGON** 100,000 Watts;
93.1 **KRYP** 1,550 Watts;
93.9 **KPDQ-FM** 50,000 Watts;
95.5 **KXL-FM** 100,000 Watts;
97.1 **KYCH** 100,000 Watts;
99.5 **KWJJ** 50,000 Watts; and
104.1 **KFIS** 6,900 Watts

A number of additional RF facilities are collocated on this tower.

Land Use Review History:

CU 107-87

CU 025-90

LUR 95-00897 CU

LUR 00-00786 CU

LUR 01-00117 CU

LUR 02-120381 CU

LUR 02-143414 CU AD

LUR 03-105238 CU

Approval criteria applied since 1997: "33.815.225. D"

EXAMPLES OF RF FACILITIES LOCATED IN PORTLAND, OREGON

Television Broadcast facilities



The tower farms along the Northwest Hills near Skyline Boulevard primarily broadcast digital television signals. These towers are generally 900+ feet in height and are classified as 'lattice style' supported by guy lines. Because of their height, they are required to have both the red and white aviation hazard paint scheme, as well as aviation hazard lighting.

Land Use Review History:

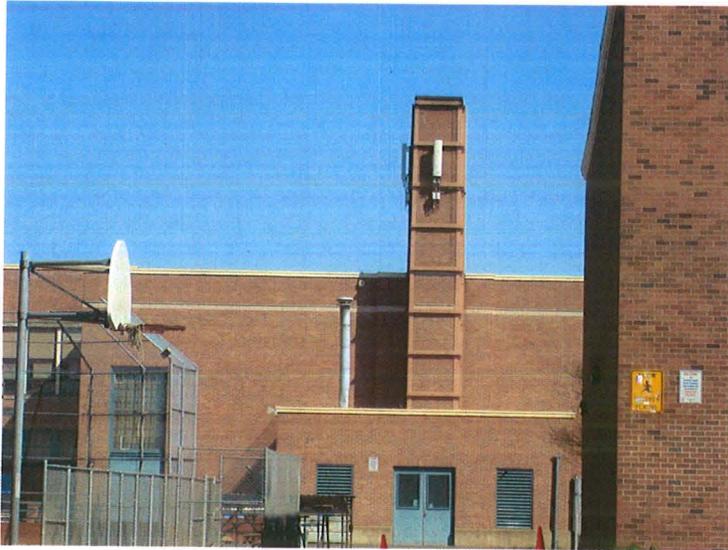
These towers are located in a Multnomah County Urban Pocket area. The most recent City LUR review is LU 06-144011 CU for the King Broadcasting tower site. The Conditional Use criteria applied were 33.815.225.D.



This is a detail image of the top of the King Broadcasting Tower broadcasting digital television signal.

EXAMPLES OF RF FACILITIES LOCATED IN PORTLAND, OREGON

Wireless Telecommunications Facilities mounted on a building

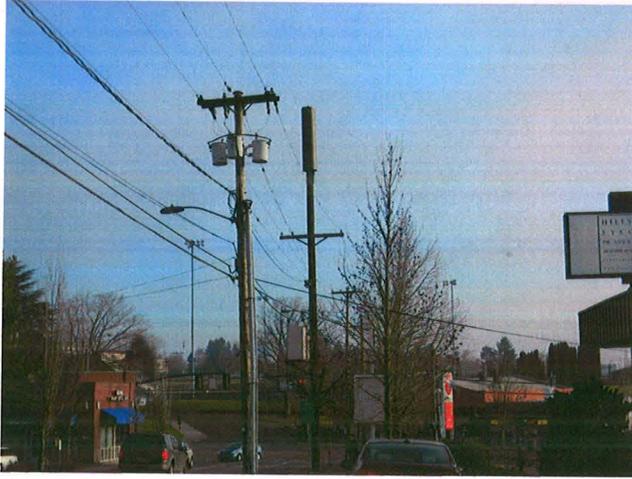


Wireless Telecommunications Facilities mounted to 'non-broadcast' structures [roof tops, building facades, water tanks, industrial silos and similar] require a Conditional Use review when the facility is located in an R or OS zone or proposed for any base zone, but within 50 feet of a residential zone.

When a Conditional Use review is triggered, the proposed facility is subject to 33.815.225.A.1-3.

EXAMPLES OF RF FACILITIES LOCATED IN PORTLAND, OREGON

Wireless Telecommunications Facilities in public Rights of Way



This is an example of a 'micro-cell' located in the SW Sunset Drive right of way near SW Capitol Highway. Please note the wireless facility is behind, and to the right of, the utility pole with three transformers mounted below the top cross arm. This facility provides voice and data telecom services to customers of a major telecommunications provider.



This is another example of a wireless facility located in the SW Vermont right of way. This facility provides wireless internet access, among other services.

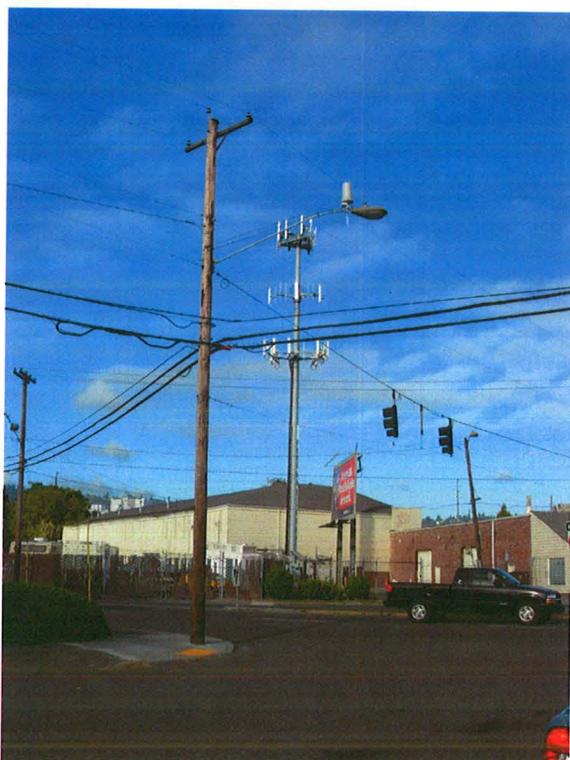
These facilities are managed by the Office of Community Technology, and do not require a Conditional Use review unless associated equipment cabinets will not fit in the ROW and must be placed on adjacent private property.

EXAMPLES OF RF FACILITIES LOCATED IN PORTLAND, OREGON

Wireless Telecommunications Facilities mounted on monopoles



This is an example of a 45-foot monopole located on CS, Storefront Commercial zoned property located near 6245 SW Capitol Hwy. This facility is allowed by right under the current zoning code thresholds.



This photograph shows an approximately 100-foot tall monopole with three wireless telecommunications facilities collocated at three different levels on the monopole.

The small canister mounted above the street light in this photograph is a small canister RF facility that at one time provided 'WiFi' services; that ROW based network and associated telecom provider no longer provides services in the City.