

**Alameda County Development Standards
for Siting of Telecommunication Facilities**

Adopted by the Board of Supervisors October 2, 1997

**TENTATIVE ADMINISTRATIVE UPDATE – JUNE 15, 2009 – TO REFLECT AUTHORITY OF THE
COUNTY BOARDS OF ZONING ADJUSTMENTS
AND FORMAT CORRECTIONS**

TABLE OF CONTENTS

General	1
Siting Preferences	5
Land Use Compatibility	6
Visual	6
Public Safety	8
Design Guidelines for Facade Mounted Telecommunication Facilities	9
Design Guidelines for Roof Mounted Telecommunication Facilities	9
Design Guidelines for Ground Mounted Telecommunication Facilities	10
Design Guidelines for Free-Standing Telecommunications Towers	11
Design Guidelines for Radio and Television Towers	12
Co-location of Telecommunications Facilities	12
Design Guidelines for Satellite and Microwave Dishes	13
Glossary of Terms	14

Alameda County Development Standards for Siting of Telecommunication Facilities¹

These Development Standards begin by addressing general conditions that apply to all telecommunications facilities. Next, are the County's siting preferences by zoning district and types of antennae mountings, followed by siting of facilities to consider land use compatibility, visual, and public safety issues. Finally, they address specific types of telecommunications facilities, such as facade-mounted, ground-mounted, and free-standing towers.

General






- A-1 Telecommunications facilities shall mean facilities that transmit and/or receive electromagnetic signals for various technologies including, but not limited to: cellular technology, personal and commercial communications services, enhanced specialized mobile services and paging systems. It includes antennas and all other types of equipment used in the transmission or receipt of such signals; telecommunication towers or similar structures supporting said equipment; associated equipment cabinets and/or buildings; and all other accessory development. It includes radio towers, broadcasting towers, television towers, fixed point satellite dishes and receiving dishes. It does not include public safety networks or sizes less than one (1) meter in diameter.
- A-2 Telecommunications facilities may be allowed subject to a Conditional Use Permit in all areas except the H-1 (Highway Frontage) District, and in those PD (Planned Development) Districts, which specifically prohibit their use. The Conditional Use Permit application process shall provide for a public hearing at a regularly scheduled meeting of the applicable Board of Zoning Adjustments (East or West County), the date of which will be pre-determined within 30 days of the application. As provided for in Policy I-1 (below), the Board may delay hearings on free-standing telecommunications towers in order to group them together for joint hearings and the promotion of co-located facilities. Telecommunications facilities with significant visual impacts from a designated scenic route, as determined by the Planning Director, may be subject to a Site Development Review application, to be approved by the Planning Director. The Site Development Review application may be submitted simultaneously with the Conditional Use Permit.
- A-3 Minor modifications to existing wireless communications facilities shall be subject to the review and approval of the Board of Zoning Adjustments, and the Board shall make a determination on the level of review required.
- A-4 For all proposed telecommunication facilities, the applicant shall provide the following to the Board of Zoning Adjustments:
- ① Site and landscape plans drawn to scale;
 - ① Statement of ownership of the proposed site or authorization to use it;

¹ Please refer to the glossary at the end of this document for a definition of terms.

- Reference to any easements necessary;
- A USGS Topographic map or survey with existing topographic contours showing the proposed antennae, accessory structures, and new roads and an area extending a minimum of 150 feet beyond proposed towers and 50 feet beyond other proposed telecommunications facilities;
- The number, type and dimensions of antennas and equipment cabinets/structures proposed for use by the applicant; a map identifying all existing telecommunication facilities within a 3,000 foot radius (the Community Development Agency will develop and maintain an index and map of existing facilities); and
- A letter of intent indicating whether proposed telecommunications facility is intended to increase capacity within an existing covered area or extend service to an unserved area;
- For applications to extend service to an unserved area a map based on either radio frequency propagation maps (or similar engineering data) or drive tests at the proposed site and its vicinity showing estimated coverage of the proposed telecommunications facility;
- A map showing how the proposed antennas fit within the network of the applicant's existing and proposed antenna sites in the project vicinity;
- A statement of intent on whether the facility would be designed to allow for co-location;
- A letter explaining the site selection process including information about two other sites in the same search ring that were considered and reasons for their rejection
- A letter to the Board of Zoning Adjustments, stating: 1) the power rating for all antennas and back-up equipment proposed with first application, 2) that the system, including the antennas, and associated equipment cabinets/structures, conforms to the radio- frequency radiation emission standards adopted by the FCC, including operating within its frequency assigned by the FCC, and 3) verifying that operation of the facilities in addition to ambient radio frequency emission levels will not exceed adopted Federal Communications Commission (FCC) standards with regard to human exposure in “uncontrolled areas”, that is, areas subject to general public exposure, as defined by the National Council on Radiation Exposure Prevention or the then applicable FCC standard;
- Proposed means of establishing and maintaining maximum visual screening of unsightly public views of facilities, as needed, which may include submitting landscape and irrigation plans, and sample exterior materials and colors of towers, antennae, accessory structures such as equipment cabinets and structures, and security fences; and
- Visual impact demonstrations including before and after photo-simulations with all applications and elevations showing height and location of proposed facility as viewed from public places.

A-5 Applications for telecommunication towers, in addition to the above requirements, shall include the following:

- A report including a description of the tower with technical reasons for its design and size;

-  A report from an engineer regarding the number and type of antennas that the structure is designed to support;
-  A letter to the Board of Zoning Adjustments stating, wherever technically feasible, how the facilities have been designed to allow co-location of other carriers;
-  A letter stating very specifically the reasons for not co-locating on any of the existing monopoles and lattice towers identified in the area survey required by Policy A-4; this may include a letter from the telecommunications carrier with the existing facility stating reasons for not permitting co-location, or evidence that the carrier/owner has not responded, or if the reasons for refusal to co-locate are structural, a copy of the structural calculations for review by the County's Building Inspection Division of the Public Works Agency;
-  A letter indicating whether, and why, each site identified is essential for completion of the coverage objective; and
-  To the extent determined by the Board of Zoning Adjustments, a visual study depicting representative locations within a three mile or smaller radius from which any portion of the proposed tower would have a substantial, demonstrable negative aesthetic effect, such as from public and private viewpoints, streets, parks or scenic areas. The visual study shall not be required for co-locations on existing towers that do not result in an increase in height of the tower.

A-6 The County reserves the right to make final determination of filing requirements in all cases.

A-7 Conditional use permits for telecommunications towers located on other than Industrially-zoned property shall expire a maximum of ten years after project approval, with an optional five-year review to be noticed and heard by the Board of Zoning Adjustments.

Use permits for such facilities should be renewed for additional ten year periods if the approving agency finds that the telecommunications tower does not have a significant adverse visual impact or that replacement of the telecommunications tower with a facility or facilities having substantially less adverse visual impact are not feasible.

Use permits may also be renewed in cases where requiring a telecommunication tower removal would deprive the owner of the facility of a reasonable return on its investment or a significant loss in coverage that cannot reasonably be otherwise obtained. In making that determination, the approving agency shall balance any public detriment caused by adverse impacts of the telecommunications tower against the economic interest of the owner. If necessary to allow the owner a reasonable return on its investment or sustain coverage, the approving agency may renew for less than five years a conditional use permit whose renewal would otherwise be denied.

A-8 Temporary conditional use permits shall be issued for a period not to exceed one year, as determined by the Board of Zoning Adjustments.

- A-9 Telecommunications carriers with conditional use permits for facilities, which are approved after the date of this policy approval, shall submit an annual report approximately one year after the conditional use permit is approved and subsequent reports every five years thereafter. The report shall describe compliance with requirements for maintenance of equipment, antennae and landscaping, a photograph of the site and verification that the facility is in compliance with an active FCC license. One report may be submitted for more than one site but shall clearly identify and describe each site separately.
- A-10 The applicant shall provide written notification to the Board of Zoning Adjustments upon cessation of operations on the site. The applicant shall remove all obsolete or unused facilities from the site within six months of termination of its lease, cessation of operations or expiration of its permit, subject to the determination of the Board of Zoning Adjustments that the use of the site has ceased for a period of six months.
- A-11 Prior to erecting a telecommunication tower, or prior to renewing a use permit for an existing tower, the applicant shall provide a financial guarantee, which shall be indexed annually for inflation, satisfactory to the County Counsel, for the removal of the facility in the event that its use is abandoned or its use permit expires or is terminated. The amount of the guarantee per freestanding tower may be reduced or eliminated a) if the applicant has more than one freestanding tower in the County, and/or b) if the property owner and lessee of the tower sites provides for removal of unused towers through their lease agreements that are satisfactory to the County. If the owner or lessee does not remove any obsolete or unused facilities, as described in A-10, above, the financial guarantee shall be used by the County to remove any obsolete or unused facilities. Any unused financial guarantee shall be relinquished to the applicant upon termination of the use and removal of facility or transfer of the lease accompanied by a financial guarantee by the new lessee or owner in compliance with zoning requirements in effect at that time.
- A-12 If a consecutive period of six months have lapsed since cessation of operations, a new permit shall be required if the site is to be used again for the same purpose as permitted under the original permit.
- A-13 Any FCC licensed telecommunications carrier that is buying, leasing or transferring ownership of an already approved facility, shall submit a letter of notification to the Board of Zoning Adjustments within six months after such transaction.
- A-14 The applicant shall provide signage as required by the permitting authority, including phone numbers of the utility provider for use in case of an emergency. The signs shall be posted at the communications equipment/structure. The identification signs shall have a background color of matte-finish earth tone, the design and color subject to staff review and approval at the time of Planning/Zoning review.
- A-15 The facility, including power source, ventilation and cooling facility, shall be operated at all times within the limits of the County Noise Ordinance. The facility, including power source and cooling facility, shall not be operated so as to cause the generation of heat that adversely affects a building occupant.

- A-16 If the Board of Zoning Adjustments finds evidence that conditions of approval have not been fulfilled or that the use or uses has or have resulted in a substantial adverse effect on the general welfare of users of adjacent or proximate property, or have a substantial adverse impact on public facilities or services, the Board may, after a duly noticed and held public hearing, modify or revoke the permit.
- A-17 Thirty days from the date of approval of a telecommunications facility, the applicant shall pay a cash sum in an amount to be determined and periodically adjusted by the Alameda County Community Development Agency to help cover the Department's ongoing costs in administering its wireless communications regulatory program. This fee, which shall be separate from fees for processing individual antenna applications, shall be used for the Community Development Agency to keep informed of regulations, preemption and other relevant telecommunications issues in order to assist in processing all applications in an informed and timely manner.
- A-18 The project sponsor or its successors shall be responsible for the payment of all reasonable costs associated with the necessary inspections of the conditions of approval contained in the authorization of the facility, including costs incurred by the Community Development Agency, the County Fire Department, the Building Inspection Division of the Public Works Agency or any other appropriate County Department or agency.
- A-19 No additions, changes, or modifications shall be made to an antenna, unless the change is in conformance with the Uniform Building Code and Conditional Use Permit.
- A-20 Renewal of permits approved before adoption of these development standards shall be reviewed against these standards and, as a result, reasonable new development standards may be imposed.
- A-21 No telecommunications facility shall be constructed without first obtaining a building permit. All telecommunications facilities shall be constructed in accordance with applicable building codes, laws and regulations.

Siting Preferences

- B-1 With the exception of satellite dishes for personal use, the order of preference for siting of telecommunication facilities shall be: 1) industrial locations, 2) commercial, 3) agricultural, and then 4) residential locations, where feasible.
- B-2 With the exception of satellite and microwave dishes, the order of preference for telecommunications facility mountings, based on their potential adverse visual impacts, is 1) facade mounts, 2) roof mounts, 3) ground mounts and, 4) free standing monopoles.

Land Use Compatibility

- C-1 Wireless telecommunication facilities on any building that has been designated as a primary historic resource shall be subject to a conditional use permit, with the additional requirement of a prior review by the Parks, Recreation and Historical Commission (PRH).
- C-2 All ground mounted telecommunication facilities shall use existing access roads where available.
- C-3 Telecommunications facilities shall comply with all Federal Aviation Administration (FAA) requirements.

Visual

- D- 1 All proposed telecommunications facilities shall be located so as to minimize their visibility.
- D-2 In order to use any telecommunications facility type and placement (such as ground-mounted, facade-mounted, roof-mounted or towers), the applicant will be required to specify why a telecommunication type with a lesser adverse visual impact cannot be used.
- D-3 Subject to County approval, applicants are encouraged to consider providing architectural treatments and using camouflaging or screening techniques to reduce potential visual impacts for all telecommunication facilities, including equipment cabinets/structures, and especially for those proposed in areas easily visible from a major traffic corridor, public space, residential area or commercial center.
- D-4 In addition to the photo simulations showing before and after scenarios, applicants may be required to submit further visual analysis.
- D-5 Applicants may be required to construct a full scale "mock-up" of a proposed facility using materials and colors that resemble the actual facility for proposed ground mounted facilities and if required, roof mounted facilities, if the Board of Zoning Adjustments deems it necessary. This shall be installed 10 days prior to the scheduled public hearing date, and left in place for a period of 10 days from the date of any final action taken on the project application. Notice of public hearing shall contain information about the placement of the "mock" structure. Additionally, all "mock" structures shall be removed within one month from the date of final action on the project application, and the site restored to its original condition in cases of denial of application.
- D-6 The colors and materials of antennas, telecommunications towers, satellite and microwave dishes, supporting structures including guy wires, accessory equipment, such as equipment cabinets/structures and security fences, and identification signs shall be chosen to minimize the visibility of the telecommunication facilities. The applicant shall submit a sample of materials and colors to be approved by the Board of Zoning Adjustments. All roof-mounted facilities shall be painted a non-reflective, matte finish color to blend with the surroundings. Towers and monopoles shall also be painted using a non reflective, matte-finish, earth tone

color, unless otherwise indicated. The exact color shall be determined and finalized after an on-site inspection by staff. The bottom part of the tower or monopole may require additional camouflaging techniques, depending on the location. All ground mounted facilities that are primarily viewed against soils, trees or grasslands shall be painted using colors matching these elements.

Facade mounted antennas may be camouflaged by incorporating the antennas as part of the dominant design element of the building.

Antennas shall be painted and textured to match the existing structure, unless used as a design element consistently throughout the building, and which is found to add visual interest to the building. When used as a design element, dummy elements may be required to be installed in order to retain the architectural continuity of the building.

- D-7 Landscaping shall be used as screening wherever appropriate, to reduce the visual impacts of telecommunication facilities, including equipment cabinets/structures. Proposed telecommunication facilities shall use existing vegetation for screening, wherever possible. Any proposed landscaping shall be visually compatible with existing vegetation in the vicinity, drought tolerant, not a fire hazard, and deer resistant. Landscaping shall be subject to review and approval of the Planning Director.
- D-8 Telecommunication facilities shall be installed in such a manner as to maintain and enhance existing vegetation. Additional trees and other native or adapted vegetation shall be planted and maintained around the facility, in the vicinity of the project site, and along access roads in appropriate situations, where such vegetation is deemed necessary to provide screening for telecommunication facilities. Such landscaping shall be maintained, including irrigation, if necessary, as long as the permit is in effect. This may require installing an automated, mechanical irrigation system.
- D-9 Landscaping may be required in informal, natural looking clusters in the vicinity of any proposed telecommunication facility, in addition to providing screening to the facility.
- D-10 Any adjacent, existing landscaping shall be preserved, and restored to its original condition, at a minimum, if damaged during construction. Planting used for restoration shall be similar to the existing vegetation in the area.
- D-11 Applicants proposing to irrigate landscaping used for screening telecommunications facilities shall provide written proof of the availability of any required irrigation facilities on site to provide a water supply to sustain any landscaping required for visual screening prior to permit issuance. This may be in the form of a letter from the owner of the land allowing the applicant the use of required water facilities for landscaping for all facilities in the hill area.
- D-12 Proposed equipment cabinets/structures may require screening from public view. Screening techniques shall make such structures compatible with existing buildings, landscape and topography and/or partially burying the cabinets.

- D-13 All antennae, towers, equipment cabinets, structures and accessory structures shall be maintained in good condition over the term of the permit. This shall include keeping equipment cabinets and structures graffiti free and maintaining security fences in good condition.
- D-14 The antennas, towers, dishes or mountings shall not be used for advertising.
- D-15 The use of lighting shall not be allowed on telecommunication facilities unless required as a public safety measure and, if necessary, approved by the FAA.
- D-16 All proposed equipment cabinets/structures shall be the minimum size and number feasible for the coverage objective of the telecommunications facility as described in the Conditional Use Permit unless related to a plan approved by the Board of Zoning Adjustments to reduce the impact(s) of future installations.
- D-17 When lighting is required and is permitted by the Federal Aviation Administration or other federal or state authority, it shall be turned inward so as not to project onto surrounding property.

Public Safety

- E-1 The applicant shall comply with all the requirements of the County Fire Department and any other agency regarding fire safety. These requirements may include fire suppression measures such as installation of an automatic fire extinguishing system or installation of a remote monitoring system or both in compliance with the Uniform Fire Code. They may also include fire prevention measures, such as maintaining defensible space, managing vegetation and access roads, or such other compliance techniques, subject to the review and approval of the Fire Marshal prior to the issuance of building permits for the project.
- E-2 The applicant shall submit to the Planning Director a letter of approval by the County Fire Department prior to issuance of building permits.
- E-3 All equipment cabinets/structures, antennas and other associated equipment shall be "type-accepted" by the Federal Communications Commission (FCC), and the applicants may be required to provide a letter of certification from the FCC.
- E-4 The Community Development Agency will prepare and make available to the public, a list of telephone numbers to contact for public safety and health concerns related to telecommunications facilities.
- E-5 In addition to providing visual screening, each antenna site may require fencing, anti-climbing devices or electronic devices, or other techniques to achieve the same end, to control access to the facilities in order to prevent unauthorized access and vandalism. However, the use of fencing shall not unnecessarily add to the visual impact of the facility, and the design of the fencing shall be subject to Board of Zoning Adjustments review and approval.

- E-6 All security fencing/walls, if used, shall be designed to be graffiti-resistant. The applicant shall be responsible for graffiti-free maintenance of all telecommunication facilities and shall provide to the Board of Zoning Adjustments information on a maintenance program for the facilities.
- E-7 As a condition of approval for any new telecommunications facility, the applicant shall submit a letter to the County stating that the installations shall not interfere with any County emergency service telecommunications facilities.
- E-8 Each telecommunications carrier may be required to provide additional information to the public by means of community meetings and/or distribution of relevant literature.
- E-9 Antennas must be stable and structure must comply with the requirements of the Uniform Building Code and any conditions imposed as a condition of issuing a building permit.
- E-10 Transmission lines must be kept at least two feet clear of telephone or light wires.

Design Guidelines for Façade-Mounted Telecommunication Facilities

- F-1 Façade mounts should not be allowed within 300 feet of a residence on adjacent residential property, unless otherwise approved by the Board of Zoning Adjustments.
- F-2 Antennas and the associated mountings shall generally not project beyond a maximum of 18 inches from the face of the building.
- F-3 Wherever possible, the equipment cabinets/structures shall be located away from open spaces and required yard setbacks and shall be placed within the building envelope area (i.e., the locations where residential buildings could be placed).
- F-4 The equipment cabinets/structures shall be placed in areas so they are least visible from public places, and have minimal visual impacts. Any visible portion of the equipment cabinet shall be treated to be architecturally compatible with the surrounding structures, and/or screened using appropriate techniques to camouflage, disguise and/or blend it into the surrounding environment (stealth techniques).

Design Guidelines for Roof-Mounted Telecommunication Facilities

- G-1 Roof mounts should not be allowed within 300 feet of a residence on adjacent residential property, unless otherwise approved by the Board of Zoning Adjustments.
- G-2 Roof-mounted antennas shall not be allowed when they are placed in direct line of sight of significant view corridors or where they significantly affect scenic vistas, unless facilities incorporate appropriate techniques to camouflage, disguise and/or blend them into the surrounding environment (stealth techniques).

- G-3 The height of roof-mounted antennas, including the support structure, should generally not exceed 10 feet above the parapet line of the existing building on which they are placed. A conditional use permit for higher antennas should require additional screening as determined appropriate by the Board of Zoning Adjustments.
- G-4 All roof-mounted antennas shall be located in an area of the roof where the visual impact is minimized.
- G-5 The equipment cabinets/structures, if located on the rooftop of buildings, shall be so located as to be minimally visible from public places. If any portion of the equipment cabinet is visible, it shall be screened from view, to the fullest extent possible.

Design Guidelines for Ground-Mounted Telecommunication Facilities

- H-1 Telecommunication facilities visible on or above the ridgeline shall be prohibited unless accompanied by a rigorous demonstration by the applicant, and approved by the Board of Zoning Adjustments, that there is no feasible alternative.
- H-2 Ground mounted antennas should not be allowed within 300 feet of a residence on adjacent residential property, unless otherwise approved by the Board of Zoning Adjustments.
- H-3 Ground mounted telecommunications facilities by different carriers shall generally not be allowed within 1,000 feet of one another; unless the Board of Zoning Adjustments can make a determination that the cumulative visual or other impacts can be reduced by allowing facilities within 1,000 feet of one another.
- H-4 The Board of Zoning Adjustments shall determine the number of antennas allowed per site on a case by case basis, with the goal of minimizing visual impacts of the antenna from public viewpoints.
- H-5 Ground mounted antennas should be the minimum feasible height, but no taller than 15 feet, including the height of the antennas; the applicant shall demonstrate that ground mounted antennas over 10 feet in height are structurally required to meet the applicants' objectives and that visual impacts, if any, are mitigated.
- H-6 All proposed telecommunications facilities should be located within easy reach of existing access roads to the extent feasible. Unless visual impacts can be adequately mitigated, no new access roads on the ridgeline shall be allowed with any proposed telecommunication facility.
- H-7 All telecommunication facilities shall incorporate appropriate techniques to camouflage, disguise and/or blend them into the surrounding environment (stealth techniques) to minimize visual impacts. Please refer to I-2, below for sample list of such techniques.
- H-8 All associated equipment cabinets/structures for ground mounted facilities shall be designed and located so as to minimize visual impact and/or screened from public view. Screening

techniques may include landscape and/or architectural treatment to make it compatible with existing buildings and/or partially burying the cabinets.

Design Guidelines for Free-Standing Telecommunications Towers

- I-1 The purpose of this policy, consistent with the overall Siting Preferences of Policy B-2, is to 1) discourage separate free-standing towers that are not co-located by placing a potential time delay penalty on non-co-located towers, and 2) provide for simultaneous consideration of such towers so that the real prospects of implementing co-location solutions can be evaluated. All free-standing telecommunications towers shall require a conditional use permit review and public hearing by the Board of Zoning Adjustments. The Board shall reasonably attempt to group applications for free-standing towers that will not be co-located for consideration at a single public hearing. Such applications may be delayed from the normal application processing time for this grouping, but they may not be delayed more than three months. Such applications where the purpose of this Policy could not be achieved due to geographic or other factors need not be so grouped. Applications that are considered at such a grouped hearing may be continued from a grouped hearing to any other hearing. (For hearing procedures for co-located towers, see “Co-Location of Telecommunication Facilities”, below.)
- I-2 Freestanding telecommunications towers shall be located and designed to minimize visual impacts. Although not all towers will be required to do so, monopoles in areas where adverse visual impacts cannot be avoided (as in some commercial areas), shall incorporate appropriate techniques to camouflage, disguise and/or blend them into the surrounding environment, or disguise them as a pieces of art/sculpture, flag poles, telephone poles, light standards, or other interesting visual forms that would not be considered an adverse visual impact.
- I-3 Telecommunications towers may not be located within the required front yard setback of any property.
- I-4 Free standing telecommunications towers shall generally not be allowed within 1,000 feet of each other unless the Board of Zoning Adjustments can make a determination that the cumulative visual impacts can be reduced by allowing facilities within 1,000 feet of one another.
- I-5 All telecommunications towers shall be designed at the minimum functional height required for the coverage area unless related to an approved plan to reduce the impact(s) of future installations, but shall not exceed 90 feet in accordance with Zoning Ordinance General Requirements, 17.52.090.A.
- I-6 All telecommunications carriers proposing a telecommunications tower shall provide a written commitment to the Board of Zoning Adjustments demonstrating their willingness to allow other wireless carriers, using a compatible technology, to co-locate antennas on the towers.

- I-7 The smallest available and least visible antennas that provide the coverage objective shall be used when mounted on towers.
- I-8 Lightning arrestor rods and beacon lights shall not be included as part of the design of towers, unless the applicant can prove that it is absolutely necessary.
- I-9 Minor modifications to the communications equipment design, location, elevations, and other elements of the approved exhibit may be allowed, subject to the approval of the Board of Zoning Adjustments, if such modifications are in keeping with the architectural statement and layout design of the original approval.
- I-10 Telecommunications towers that are located on undeveloped sites, where allowed, shall be converted to roof or facade mounted facilities with the development of the site when feasible and technically possible.

Design Guidelines for Radio and Television Towers

- J-1 Radio and television towers shall be the minimal functional size, and shall not exceed 90 feet in accordance with Zoning Ordinance General Requirements, 17.52.090.A. Any proposed towers at or above 250 feet in height shall be subject to a demonstration by the applicant, and approved by the Board of Zoning Adjustments, that there are no other feasible alternatives.
- J-2 Radio and television towers shall be set back 110 percent of their height from adjacent residential buildings or building envelopes.
- J-3 Radio and television towers shall not be placed on or above the ridgeline unless accompanied by a rigorous demonstration by the applicant, and approved by the Board of Zoning Adjustments, that there is no feasible alternative.
- J-4 The applicant shall ensure that the tower does not cause interference with reception of television, radio or other systems. If, on review, the County Board of Zoning Adjustments finds that the tower interferes with such reception, the County may revoke or modify the conditional use permit.

Co-location of Telecommunications Facilities

- K-1 Processing proposals for co-location of facilities on existing or replaced towers that increase the height of the monopole by 20 feet or less, where the equipment cabinets/structures are adequately screened, and the facility does not impact existing parking facilities on site, shall be subject to a regularly scheduled hearing by the Board of Zoning Adjustments, which need not be one of the grouped hearings as provided in Policy I-1 above. However, such facilities may be Approved as to Zoning over the counter if the height of the monopole is not changed.
- K-2 Co-location on a proposed tower shall be subject to a regularly scheduled Board of Zoning Adjustments hearing, which need not be the grouped hearings, if it can be determined that the

visual impacts can be sufficiently mitigated, and the total height of the monopole does not exceed 75 feet.

- K-3 Although co-location as a concept is encouraged, there may be cases where two or smaller facilities may have less adverse visual impacts, and therefore preferred over a single co-located facility. The Board of Zoning Adjustments shall retain the authority to make such a determination.
- K-4 All proposals for towers using appropriate techniques to camouflage, disguise and/or blend them into the surrounding environment (stealth techniques) and slender structural supports with antennas flush with the support structure shall be exempt from a co-location requirement. The Board of Zoning Adjustments will make a determination what constitutes a pole that incorporates appropriate techniques to camouflage, disguise and/or blend it into the surrounding environment (stealth techniques).

Design Guidelines for Satellite and Microwave Dishes

- L-1 One ground-mounted satellite dish antenna may be located per lot in a residential district, accessory to a residence. It may not be located in the required front or side yard setback, nor may it exceed twelve feet in height above existing grade.
- L-2 Accessory satellite dishes less than one meter in diameter in residential zoning districts and less than two meters in diameter in commercial zoning districts (as per FCC policy) and those allowed by the Zoning Ordinance as accessory uses shall not require conditional use permits; a Conditional Use Permit is required for all other satellite dishes and Site Development Review is required in the following zoning districts: any R-S (Suburban Residence), R-4 (Multiple Residence), any C (Commercial) District, M-1 (Manufacturing) District.
- L-3 Satellite and microwave dishes must be the minimal functional size required. The size and materials shall be selected to minimize their view and glare from neighboring property or public places.
- L-4 Satellite and microwave dishes may not be placed on or above ridge-tops unless accompanied by a rigorous demonstration by the applicant, and approved by the Board of Zoning Adjustments, that there is no feasible alternative.
- L-5 Ground, roof and pole mounted satellite dish antennas must be screened by fencing, buildings or parapets that appear to be an integral part of the building or landscaping, so that not more than 25 percent of the antenna height is visible from grade level of adjacent property and adjacent public places.
- L-6 Satellite dish antennas shall be minimum light reflective. Dish antennas shall not have any sign copy on them nor shall they be illuminated.
- L-7 Satellite and microwave dishes must be constructed of non-combustible and non-corrosive materials and owners are responsible for maintaining them in good condition.

Glossary Of Terms

TERM	DEFINITION
Antenna	A device used in communications which transmits or receives radio, television or other electronic signals.
Coverage Area	A geographical area that is served by a transmitting and receiving antennae site. Many adjacent and overlapping coverage areas form a wireless communications system.
Co-Location	Multiple telecommunication facilities owned or used by more than one telecommunication carrier sited on a single building, telecommunication tower, monopole or other supporting structure.
Drive Test	A test in the field to demonstrate the coverage of a proposed antennae, in which one person holds a transmitter at the proposed site and another drives away from the site with a receiver to determine the outer perimeter of the radio signals that can be transmitted from the site.
Facade Mounted	An antenna that is directly attached or affixed to any facade of a building or other structures. Also known as building mounted antennae.
Ground Mounted	An antenna with its support structure placed directly on the ground, the total height of which does not exceed 15 feet including the height of the antennas.
Microwave Dish Antenna	A dish-like antenna manufactured in many sizes and shapes used to link communications sites together by wireless transmission of voice or data.
Monopole	A structure composed of a single spire used to support communications equipment.
Radio or Television Tower	A structure that transmits and/or receives electromagnetic signals for radio or television communications.
Roof Mounted	An antenna directly attached or affixed to the roof of an existing building, water tank, tower or structure other than a telecommunication tower.
Satellite Dish Antenna	A device or instrument designed or used for the reception of television or other electronic communications signal broadcast or relayed from an earth satellite. It may be a solid, open mesh, or bar-configured structure, typically up to 12 feet in diameter, in the shape of a shallow dish or parabola.
Search Ring	A geographic area in which antennas may be located to serve a particular coverage area.
Telecommunication Facility	Telecommunications facilities shall mean facilities that transmit and/or receive electromagnetic signals including, but not limited to, the following technologies: cellular technology, personal and commercial communications services, enhanced specialized mobile services and paging systems. It includes antennas and all other types of equipment used in the transmission or receipt of such signals; telecommunication towers or similar structures supporting said equipment; associated equipment cabinets and/or buildings; and all other accessory development. It includes radio towers, broadcasting towers, television towers, fixed point satellite dishes and receiving dishes. It does not include public safety networks.
Telecommunication Tower	A monopole, lattice tower, free standing tower or other structure designed to support antennas.

