



LAND DEVELOPMENT CODE (LDC) AMENDMENT

PETITION

PL20190001312

SUMMARY OF AMENDMENT

This Land Development Code Amendment (LDCA) changes the time between required inspections for guyed and self-supporting towers.

ORIGIN

Growth Management
Department (GMD)

LDC SECTIONS TO BE AMENDED

HEARING DATES

Board	06-09-2020	5.05.09	Communication Towers
	03-10-2020		
CCPC	11-21-2019		
DSAC	08-07-2019		
DSAC-LDR	06-18-2019		

ADVISORY BOARD RECOMMENDATIONS

DSAC-LDR
Approval

DSAC
Approval

CCPC
Approval (5-1)

BACKGROUND: The South Florida Water Management District (District), which manages water resources throughout 16 counties in Florida, recently suggested that Collier County update the telecommunications towers (towers) ordinance so that the ongoing inspection cycle for their self-supporting tower is less frequent. According to the LDC, all guyed and self-supporting towers that exceed 185 feet in height require ongoing inspection reports. At minimum, these inspection reports must include an evaluation of the 1) tower structure, 2) guy wires and fittings, 3) guy anchors and foundations, 4) condition of antennas, transmission lines, etc., and 5) vertical alignment and guy wire tension (for guyed towers). As specified in the LDC, guyed towers require ongoing inspections every two years—self-supporting towers every four years. This LDCA will change these timeframes by making them less frequent, but still consistent with industry standards. The District owns one tower, located at Faka Union within the Picayune Strand. The District provides inspection reports on five-year cycles in all counties within their jurisdiction, except for in Collier County, which requires a four-year rotation.

The Telecommunication Industry Association (TIA), an advocacy organization for the tower industry, published *Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures ANSI/TIA-222-H*. This publication recommends that inspections occur every three years for guyed towers, five years for self-supporting towers, and seven years for monopoles.

Staff researched a small sample of codes from other counties in Florida—Broward, Miami-Dade, Lee, Sarasota, and St. Johns. None of them have specific regulations pertaining to the ongoing inspections of towers. The Code of Federal Regulations (CFR), which is used by the Federal Communications Commission, contains inspection regulations, but its scope is very narrow and does not address ongoing inspections.

In 1991, Collier County adopted Ordinance 1991-84, which represented a comprehensive update to the LDC as it relates to towers. This ordinance included the ongoing inspection periods for guyed and self-



supporting towers, which are still in effect today. The inspection periods were discussed at the two Board of County Commissioners (Board) hearings leading up to its adoption. During the first hearing, Mr. Leroy Pate, representing the tower industry, proposed an inspection period of every three years for guyed towers and five years for self-supporting towers (see Exhibit B). However, staff recommended more frequent timeframes, citing concerns “that there are presently towers that are overloaded not only by antennas and equipment, but are not technically built to support what was placed on them initially.” At the second Board hearing (see Exhibit C), another tower industry representative, Mr. Robert Kersteen, recommended that the inspection periods be the two- and four-year timeframes. Later during the same hearing, Mr. Pate recommended the inspections be required every three years. However, staff continued to recommend the two- and four-year inspection cycles, which were ultimately adopted by the Board and currently enforced today.

Staff concurs with the District regarding the inspection timeframes specified by ANSI/TIA-222. However, because Collier County (and Florida in general) is vulnerable to hurricanes and other inclement weather, rather than eliminating the mandatory inspections and relying on the industry to regulate itself, staff proposes updating the language so that inspections are consistent with ANSI/TIA-222 standards.

Collier County Planning Commission (CCPC) Recommendation:

The CCPC recommended approval of the amendment by a vote of 5-1. The dissenter (Mr. Fryer) had concerns about relaxing a safety requirement.

FISCAL & OPERATIONAL IMPACTS

The less frequent inspection reports will reduce costs for the tower industry.

GMP CONSISTENCY

No Element of the GMP addresses towers inspections; therefore, there are no GMP consistency issues or concerns. This LDCA may be deemed consistent with the GMP.

EXHIBITS: A – Ordinance 91-84; B – Board Minutes 08-21-1991; C – Board Minutes 09-09-1991; D – PAN ANSI_TIA-222-H; and E – 47 CFR 17.47

DRAFT

Text underlined is new text to be added

~~Text strikethrough is current text to be deleted~~

Amend the LDC as follows:

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5.05.09 - Communications Towers

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G. Development standards for communication towers.

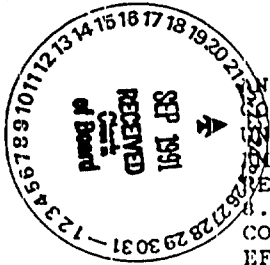
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14. ~~Effective January 1, 1992, all guyed~~ All guyed towers, ~~including old towers,~~ exceeding 185 feet in height shall be inspected every three (3) ~~two (2)~~ years. Self-supporting ~~Such self-supporting~~ towers shall be inspected every ~~four (4)~~ five (5) years. Each inspection shall be conducted by a qualified professional engineer or other qualified professional inspector, and any inspector-recommended repairs and/or maintenance should be completed without unnecessary delay. At a minimum, each inspection shall include the following:

- a. Tower structure: Including bolts, loose or damaged members, and signs of unusual stress or vibration.
- b. Guy wires and fittings: Check for age, strength, rust, wear, general condition, and any other signs of possible failure.
- c. Guy anchors and foundations: Assess for cracks in concrete, signs of corrosion, erosion, movement, secure hardware, and general site condition.
- d. Condition of antennas, transmission lines, lighting, painting, insulators, fencing, grounding, and elevator, if any.
- e. For guyed towers: Tower vertical alignment and guy wire tension (both required tension and present tension).

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ORDINANCE 91- 84



FILED
SEP 19 10 04 AM '91
SECRETARY OF STATE

AN ORDINANCE AMENDING ORDINANCE 82-2, THE COMPREHENSIVE ZONING REGULATIONS FOR THE UNINCORPORATED AREA OF COLLIER COUNTY BY AMENDING SECTION 8, SUPPLEMENTARY DISTRICT REGULATIONS BY ADDING THERETO SUBSECTION 8.10A, COMMUNICATION TOWERS, PROVIDING FOR CONFLICT AND SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, on January 5, 1982, the Board of County Commissioners approved Ordinance Number 82-2, which established the Comprehensive Zoning Regulations for the Unincorporated Area of Collier County; and

WHEREAS, under the standards of the Electronic Industries Association Publication EIA/TIA 222-E, Collier County is within 100 miles from hurricane oceanline, is a coastal saltwater environment, and has a basic wind speed of 110 mile per hour; and

WHEREAS, Community Development Services Division petitioned the Board of County Commissioners of Collier County, Florida, to amend Ordinance Number 82-2, Section 8, Supplementary District Regulations by adding thereto Subsection 8.10A, Communication Towers.

NOW, THEREFORE BE IT ORDAINED by the Board of County Commissioners of Collier County, Florida:

SECTION ONE:

Section 8, Supplementary District Regulations of Ordinance 82-2, the Zoning Ordinance of Collier County, Florida is hereby amended by adding Subsection 8.10A, to read as follows:

8.10A Communication Towers:

- a. Intent and Purpose: This ordinance applies to specified communication towers that support any antenna designed to receive or transmit electromagnetic energy, such as but not limited to telephone, television, radio or microwave transmissions. This ordinance sets standards for construction and facilities siting; is to minimize where applicable adverse visual impacts of towers and antennas through careful design, siting and vegetation screening; to avoid potential damage to adjacent properties from tower failure; to maximize the use of specified new communication towers and thereby to minimize need to construct new towers; to maximize the shared use of specified tower sites to minimize the need for additional tower sites; and to consider the concerns of the Collier County Mosquito Control District as to aircraft safety.

Subject to general law, provisions in deed restrictions

and private restrictive covenants supersede this ordinance to the extent they are more restrictive.

Definitions. As used herein "antenna" does not include wire antennas. A "tower" is a structure for the primary purpose to raise the height of an antenna. An "antenna structure" is a base, stand, or other method of stabilizing an antenna but the primary purpose is other than raising the height of an antenna. "Effective radius" means a radius of 6 miles from the respective tower unless a lesser radius is approved. "Lesser effective radius" means an approved radius of less than 6 miles. "Zoning district" includes areas within Planned Unit Developments (PUD) that have density requirements similar to those specified in this ordinance. "All", "any", and "each" means exempt and non-exempt towers, structures, and owners unless the context clearly indicates otherwise, but does not include old towers or old sites except in Subsection e.13) related to inspections. An "old" tower or site means a tower or site that was approved prior to the effective date of this ordinance. A "new" tower or site means a tower or site that requires approval under this ordinance. An "approved" tower or site is a tower or site that has been approved under this ordinance. "Owner" refers to a sole owner or any co-owner. "Rent" means to rent, lease, or otherwise provide tower or site space. "Monopole communications tower" means a commercial vertical single tubular self supporting tower for non parabolic antennas with small effective radii. "Unavailable to the applicant" means a tower that cannot accommodate the applicant's proposed antenna or a site that cannot accommodate the applicant's tower, antenna, and related facilities. "Unavailable" means that no additional tower or site capacity is available to anyone. "County Manager" includes designees of the County Manager. The singular includes the plural and vice versa unless the context clearly indicates otherwise. "Government" means the United States government and any agency thereof, the State of Florida and any agency thereof, any municipal corporation and any agency thereof, Collier County and any agency thereof, and any District. Except as to monopole communications towers, and structures and antennas that are limited to twenty (20) feet or less in height without provisional use approval, heights of towers and structures specified herein are exclusive of any antennas affixed thereto and are exclusive of the respective ground elevation.

b. **Shared Use of Towers:** A tower with a height in excess of 185 feet above natural grade shall not be approved in Collier County unless the applicant demonstrates that no old or approved tower of equal or greater height (or of lesser height) within the effective radius can accommodate the applicant's proposed antenna and ancillary equipment. Towers owned by or leased to any government are exempt from these shared use provisions except as to sharing with other governments.

1) For the purpose of discovering availability for use of towers within the effective radius, the applicant shall contact the owner of all old and approved towers, within the effective radius, of a height equal to or greater than the height of the proposed tower, or a tower of lesser height, that can possibly accommodate the needs of the applicant. The County Manager may pre-approve the minimum allowable height to determine which towers may be available for use by the applicant. A list of all owners contacted, the date of each contact,

the form and content of each contact, and all responses shall be a part of the provisional use application. As an accommodation to applicants, the County Manager shall retain all shared use plans, records of past responses and a list of old and approved towers. If the owner of an old tower does not respond to applicant's inquiry within a reasonable time, generally 30 days or less, or the owner of an old tower will not rent space to the applicant at a reasonable rental for a reasonable time period, such old tower shall be deemed unavailable to that applicant. If the old tower is a non-conforming structure, additional antennas may be installed thereon in accordance with an approved shared use plan, provided however, no structural alterations may be made to the tower, and the height of the tower inclusive of its antennas may not be increased.

- 2) Lesser Effective Radius: If the applicant asserts that the effective radius for the intended use is less than 6 miles, the applicant shall provide evidence that the asserted lesser effective radius is based on physical and/or electrical characteristics. Based on the evidence submitted by the applicant, the County Manager may establish a lesser effective radius. If a radius can be increased by signal amplification or other means, such means must be considered in determining the lesser effective radius. The antenna manufacturer's specifications shall be conclusive unless the applicant can prove they are incorrect in the specific case.
- 3) If an approved tower within the applicant's approved effective radius may have capacity available for the antenna proposed by the applicant, the application for a new tower shall not be complete without the following information regarding each such possibly available approved tower. Such information shall also be provided for old towers to the extent it can be obtained.
 - (a) Identification of the site of each possibly available tower by coordinates, street address or legal description, existing uses, and tower height.
 - (b) Whether shared use by the applicant of the tower is prohibited (or is not feasible) for any reason.
 - (c) If it has been determined that the tower owner will allow structural changes, whether a tower can accommodate the proposed antenna if reasonable structural changes are made. If so, the applicant shall specify what structural changes would be required and an approximation of the costs of such changes. If the costs of the required changes are financially impracticable, such tower shall be deemed unavailable to the applicant.
- 4) The applicant shall contact the owner of each possibly available approved tower to request the needed information. To enable the tower owner to respond, the applicant shall provide the following information regarding applicant's proposed antenna and equipment:

- (a) All output frequencies of transmitter.
- (b) Type of modulation, polarization of radiation, and proposed use of antenna.
- (c) Manufacturer, type, manufacturer's model number, a diagram of the antenna's radiation pattern, and the manufacturer's specifications.
- (d) Power input to antenna and gain of antenna in decibels with respect to an isotropic radiator.
- (e) Range in feet of maximum and minimum height of antenna above base of tower.
- (f) A list of necessary ancillary equipment and description of type of transmission cable to be used.
- (g) Any other pertinent information needed to enable the owner to respond in full to the inquiry.

c. Shared Use of Tower Sites: A tower with a height in excess of 185 feet above natural grade shall not be approved in Collier County on a new tower site unless the applicant demonstrates that the proposed tower, antennas and accessory structures or uses cannot be located on any conforming old site or approved site situated within the effective radius. Sites owned by any government or leased to any government are exempt from these shared use provisions except to other governments.

- 1) Except as to each old site or approved site determined by the County Manager or in a shared use plan to be unavailable to the applicant, the applicant shall contact the owner of all other conforming old sites and approved tower sites within the effective radius, containing sufficient land area to possibly accommodate the needs of the applicant.
- 2) For each such possibly available tower site the application for a new tower site shall not be complete without the following information:
 - (a) Identification of the proposed new tower site by coordinates, street address or legal description, area, existing uses, topography, and significant natural features.
 - (b) Evidence that no old and no approved tower site within the effective radius can accommodate the applicant's needs.
 - (c) If the owner of an old tower site does not respond to applicant's simple letter of interest inquiry within 30 days, or the owner of an old tower site will not rent land to accommodate applicants needs for a reasonable period of time at reasonable rentals, such old tower site shall be deemed unavailable to the applicant.
- 3) The applicant is not required to supply this information to owners of conforming old sites unless the old site appears to be available to the applicant by a shared use plan or the site's owner

has responded positively to the applicant's initial letter of inquiry. To enable the site owner to respond, the applicant shall provide the site owner (and the owner of any tower on the site) with the dimensional characteristics and other relevant data about the tower, and a report from a professional engineer licensed in the State of Florida, or other qualified expert, documenting the following:

- (a) Tower height and design, including technical, engineering and other pertinent factors governing the intended uses and selection of the proposed design. An elevation and a cross-section of the tower structure shall be included.
 - (b) Total anticipated capacity of the tower, including number and types of antennas and needed transmission lines, accessory use needs including specification of all required ancillary equipment, and required building and parking space to accommodate same.
 - (c) Evidence of structural integrity of the proposed tower as required by the Building Official and, for metal towers, a statement promising full compliance with the then latest edition of the standards published by the Electronic Industries Association (currently EIA/TIA 222-E), or its successor functional equivalent, as may be amended for local application.
- (4) If the site owner, or owner of a tower on the respective site, asserts that the site cannot accommodate the applicant's needs, the respective owner shall specify in meaningful detail reasons why the site cannot accommodate the applicant. To the extent information is current and correct in the respective tower site's approved shared use plan, the site owner or tower owner can refer the applicant to the respective shared use plan. If the shared use plan is not then up-to-date, the plan shall be brought up-to-date immediately by the owner and the written reply to the applicant shall specify to what extent the shared use plan is incorrect, incomplete, or otherwise not up-to-date.
 - (5) No provision in a shared use plan, land lease, mortgage, option to purchase, lease-option, contract for deed, or other controlling document shall provide or have the effect that the site is exclusive to one tower unless there is good reason for such restriction other than the prevention of competition or a desire or inclination not to cooperate in good faith. If the site size is physically and electrically compatible with the installation on site of any other tower, no such document shall prevent other towers except for reasons approved by the County Manager. An unapproved document provision of tower exclusivity shall be grounds to disapprove an application for tower site approval.
- d. Required Sharing: Each new tower in excess of 185 feet in height (shared use tower), except towers that are approved to be perpetually unavailable, shall be designed to structurally accommodate the maximum amount of additional antenna capacity reasonably practicable. Although it is not required that a new tower be

constructed at additional expense to accommodate antennas owned by others, no new tower shall be designed to accommodate only the tower owner's proposed antennas when, without additional expense, antenna space for other owners can be made available on the tower.

- 1) Shared Use Plans: Each shared use plan shall be in a standard format that has been approved by the County Manager. Each shared use plan shall specify in detail to what extent there exists tower and/or site capacity to accommodate additional antennas and/or additional towers, ancillary equipment and accessory uses. Available antenna capacity on a tower shall be stated in detailed clearly understandable terms, and may be stated in equivalent flat plate area and total additional available transmission line capacity. The tower owner (as to tower shared use plans) and the land owner (as to site shared use plans) shall update its respective approved shared use plan by promptly filing pertinent update information with the County Manager. Owners of old towers and/or old sites may file shared use plans in accord with this ordinance.
 - a) Reservation of Capacity. If an applicant for a shared use tower does not plan to install all of its proposed antennas during initial construction of the tower, the applicant must specify the planned schedule of installing such later added antennas as part of the shared use plan. An applicant cannot indefinitely prevent the use of unused available antenna space on a tower by reserving to itself such unused space. No available space can be reserved for the owner or anyone else unless approved in the shared use plan. If an antenna is not installed by the scheduled deadline, the reserved space shall automatically be rendered available for use by others unless the shared use plan has by the deadline been amended with the approval of the County Manager. Deadlines may be extended even if the tower is a non-conforming structure. If space has been reserved in a shared use plan for future additional antenna use by the tower owner and it becomes clear that such space will not be utilized by the owner, the shared use plan shall be amended promptly to reflect the availability of such space.
 - (b) Reservation of Site Capacity. The policy stated above applies also to additional tower space on an approved tower site to prevent indefinite reservation of available site space.
 - (c) Protection of Non-Conformity. As an incentive to promote the filing of shared use plans, old towers, whether or not conforming and new towers and/or tower sites that are conforming at the date of approval of the initial shared use plan and/or any amendment thereto may proceed in accord with the approved plan irrespective of the fact that the tower and/or tower site is then non-conforming. The intent of this provision is to grandfather towers and/or new tower sites against a non-conforming status to the extent that

future capacity, including accessory structures, is provided for in the shared use plan. If the initial shared use plan or amendment to a shared use plan requires approval of the Board of County Commissioners and it appears that the site is threatened to become non-conforming for the intended use, the pending non-conformity will be a material element in deciding whether to approve or deny the application for the shared use plan or amendment.

Notwithstanding anything to the contrary in any Collier County Ordinance, any then non-conforming tower that is destroyed by any means to an extent of more than fifty (50) percent of its actual replacement cost at the time of destruction, as determined by a cost estimate submitted to the Zoning Director, shall not be reconstructed or repaired without prior approval of the Board of County Commissioners.

- (d) Filing Shared Use Plans. Each approved shared use plan shall be filed and recorded in the office of the Collier County Clerk of Courts prior to any site development plan approval. A copy of the initial shared use plan shall be filed with and approved by the County Manager prior to Provisional Use approval.
 - (e) Shared Use Plans for Old towers and Old Tower Sites. Initial shared use plans and amendments for old towers require approval of the County Manager. Initial shared use plans and amendments for old tower sites require approval of the Board of County Commissioners, except where an amendment reduces site and/or antenna capacity.
- 2) Transmitting and receiving equipment serving similar kinds of uses shall, to the extent reasonable and commercially practicable, be placed on a shared use tower in such a manner that any of the users in a group can operate approximately equal to other users in the group utilizing substantially similar equipment.
 - 3) Once a shared use plan for a tower is approved, additional antennas may be added to that tower in accord with the approved shared use plan without additional provisional use approval even if the tower is then a non-conforming structure. The shared use plan shall be immediately updated to reflect each such change. Likewise, once a new shared use plan for a tower site is approved, additional towers and accessory buildings and uses may be added to that site in accord with the plan without additional provisional use approval even if the site is then non-conforming. The shared use plan shall be immediately up-dated to reflect each change.
 - 4) For each tower with a height in excess of 185 feet that is approved, the tower owner shall be required, as a condition of approval, to file an approved shared use plan except when a government tower is approved to be perpetually unavailable. To the extent that there is capacity for other antennas on the tower, the plan shall commit the

tower owner and all successor owners to allow shared use of the tower in accord with the shared use plan for antennas of others at reasonable rates. The initial proposed rates (or a range of reasonable rates) shall be specified in the shared use plan and shall be amended each time the rates are changed. When antenna space on a tower is rented to others, each rental agreement shall be filed with the shared use plan. Any agreement that purports to reserve antenna space for future use must be approved by the County Manager.

- 5) For each new shared use tower site that is approved, the owner shall be required, as a condition of approval, to file an approved shared use plan except as to a government site that is approved to be perpetually unavailable. If there is land available on the site to accommodate additional towers and accessory facilities the plan shall commit the land owner and successor owners to accommodate such additional facilities on the site at reasonable rents. To the extent practicable, the proposed rents (or a range of reasonable rents) shall be specified in the shared use plan. When land is rented for facilities on the site, the rental agreement shall be filed with the shared use plan. Any agreement that purports to reserve land for future use of tower and other facility space must be approved by the County Manager.
- 6) Each new tower owner or site owner, as the case may be, shall agree as a condition of approval to respond in writing in a comprehensive manner within 30 days to each request for information from a potential shared use applicant. Government owners need to reply only to requests from another government. To the extent that correct and up-to-date information is contained in an approved shared use plan, the owner may refer the applicant to the shared use plan for the information. If the shared use plan is incorrect, incomplete, or otherwise not up-to-date, the respective owner shall in the response specify in detail such information and shall immediately bring the shared use plan up-to-date.
- 7) The tower owner or site owner, as the case may be, shall as a condition of approval negotiate in good faith for shared use of tower space and/or site space by applicants in accord with its shared use plan.
- 8) All conditions of approval regarding a tower shall run with the ownership of the tower and be binding on all subsequent owners of the tower. All conditions of approval regarding an approved tower site shall run with the land and be binding on all subsequent owners of the tower site.

e. Development Standards for Communication Towers:

- 1) Except to the extent that amateur radio towers, and ground mounted antennas with a height not to exceed twenty (20) feet, are exempted by paragraph 25 herein, no new tower of any height shall be permitted in the RSF-1 thru RSF-6, RMF-6, and E-Estate zoning districts. However, notwithstanding other provisions of this ordinance, including the separation requirements of paragraph 6 below, towers may be allowed to any height as a

provisional use in the E-Estate zoning district only on sites approved for a specified essential service listed in paragraph 3, below. There shall be no variances to this paragraph except for variance applications by a government for a governmental use.

- 2) Permitted Ground Mounted Towers. Towers not exceeding the stated maximum heights are a permitted use subject to other applicable provisions of this ordinance, including separation requirements and shared use provisions. Towers that exceed these specified maximum heights require provisional use approval.
 - a) All commercial and industrial zoning districts: Towers not exceeding two hundred (200) feet.
 - b) Agricultural zoning districts within the Urban designated area: Towers not exceeding two hundred (200) feet.
 - c) Agricultural zoning districts within the Rural designated area: Towers not exceeding two hundred and eighty (280) feet.
 - d) All agricultural zoning districts: No tower shall be allowed on any site comprising less than twenty (20) acres under common ownership or control except on essential services-specified provisional use sites, where towers can be approved as a provisional use on sites of less than 20 acres.
- 3) Essential Services - Specified Provisional Uses: Except in the RSF-1 through RSF-6, and RMF-6 zoning districts, towers may be allowed to any height as a provisional use on sites approved for a provisional use - essential service for any of the following provisional uses: safety service facilities including, but not necessarily limited to, fire stations, sheriff's sub-station or facility, emergency medical services facility, and all other similar uses where a communications tower could be considered an accessory or logically associated use with the safety service provisional use on the site.
- 4) New towers shall be installed only on rooftops in the RMF-12, RMF-16, RT, VR, MHSD, MHRP and TTRVC zoning districts. Except, however, that ground mounted monopole communication towers up to 150 feet in height above the natural grade, including antennas affixed thereto, may be allowed as a provisional use within these zoning districts. The height of each monopole communication tower shall be limited to the height necessary for its use at its location.
- 5) Rooftop towers, antenna structures and antennas.
 - a) Rooftop towers, antenna structures and antennas are allowed in all zoning districts except the RSF-1 thru RSF-6, RMF-6, and E-Estate zoning districts.
 - b) Rooftop towers, antenna structures and

antennas are, as specified, subject to the following:

- (1) Permitted Uses: Rooftop antenna structures and antennas are a permitted use up to a height of 20 feet above the maximum roofline provided the height of the maximum roofline is 20 feet or more above the average natural grade. If the maximum roofline is less than 20 feet above the average natural grade, an antenna structure or antenna is a permitted use up to a height that equals the distance from the average natural grade to the maximum roofline. For example, if the distance from the average natural grade to the maximum point of the roofline is 15 feet, an antenna structure and/or antenna is a permitted use up to a height of 15 feet above the maximum roofline. Any antenna structure, tower or antenna that exceeds its permitted use height as provided herein shall require provisional use approval and the maximum allowable height of the structure, tower, and all antennas shall be determined in each specific case. Distance from RSF-1 thru RSF-6, and RMF-6 zoning districts shall be a major consideration in determining the allowable height of rooftop facilities.
- (2) Towers and antenna structures shall be set back from the closest outer edge of the roof a distance not less than ten (10) percent of the rooftop length and width, but not less than 5 feet, if the antenna can function at the resulting location.
- (3) Antenna structures and dish type antennas shall be painted to make them unobtrusive.
- (4) Except for antennas that cannot be seen from street level, such as panel antennas on parapet walls, antennas shall not extend out beyond the vertical plane of any exterior wall.
- (5) Where technically feasible dish type antennas shall be constructed of open mesh design.
- (6) Where feasible, the design elements of the building (i.e., parapet wall, screen enclosures, other mechanical equipment) shall be used to screen the communications tower, structure, and antennas.
- (7) The building and roof shall be capable of supporting the roof mounted antenna, structure and tower.
- (8) No rooftop shall be considered a tower site. This ordinance does not require any sharing of any rooftop, rooftop tower or antenna structure.

- 6) With the exception of rooftop towers, each new communication tower exceeding 185 feet in height shall be located at least 1,000 feet from RSF-1 thru RSF-6, and RMF-6 zoning districts including Planned Unit Developments where predominant use is consistent with RSF-1 thru RSF-6 and RMF-6 zoning districts. If a part of a PUD is not developed and it is inconclusive whether the part of a PUD area within 1,000 feet of the proposed tower site may be developed with a density of 6 units per acre or less, it shall be presumed that the PUD area nearest to the proposed site will be developed at the lowest density possible under the respective PUD.
- 7) All owners of approved towers are jointly and severally liable and responsible for any damage caused to off-site property as a result of a collapse of any tower owned by them.
- 8) Placement of more than one tower on a land site is preferred and encouraged, and may be permitted provided, however, that all setbacks, design and landscape requirements are met as to each tower. Structures may be located as close to each other as technically feasible provided tower failure characteristics of the towers on the site will not likely result in multiple tower failures in the event that one tower fails, or will not otherwise present an unacceptable risk to any other tower on the site. It shall be the policy of the County to make suitable county owned land available for towers and ancillary facilities at reasonable rents.
- 9) Any accessory buildings or structures shall meet the minimum yard requirements for the respective zoning district. Accessory uses shall not include offices, long-term vehicle storage, outdoor storage, broadcast studios except for temporary emergency purposes, other structures or uses that are not needed to send or receive transmissions, and in no event shall such uses exceed 25 percent of the floor area used for transmission or reception equipment and functions. Transmission equipment shall be automated to the greatest extent economically feasible to reduce traffic and congestion. Where the site abuts or has access to a collector street, access for motor vehicles shall be limited to the collector street. All equipment shall comply with then applicable noise standards.
- 10) For new commercial towers exceeding 185 feet in height, a minimum of two parking spaces shall be provided on each site; an additional parking space for each two employees shall be provided at facilities which require on-site personnel. Facilities which do not require on-site personnel may utilize impervious parking.
- 11) All new tower bases, guy anchors, outdoor equipment, accessory buildings and accessory structures shall be fenced. This provision does not apply to amateur radio towers, or to ground mounted antennas that do not exceed 20 feet above grade.
- 12) No tower shall be artificially lighted except as required by the Federal Aviation Administration, the Federal Communications Commission, or other

applicable laws, ordinances or regulations.

- 13) Effective January 1, 1992, all guyed towers, including old towers, exceeding 185 feet in height shall be inspected every two (2) years. Such self supporting towers shall be inspected every four (4) years. Each inspection shall be by a qualified professional engineer or other qualified professional inspector, and any inspector recommended repairs and/or maintenance should be completed without unnecessary delay. At a minimum each inspection shall include the following:
 - (a) Tower Structure - including bolts, loose or damaged members, signs of unusual stress or vibration.
 - (b) Guy Wires and Fittings - check for age, strength, rust, wear, general condition and any other signs of possible failure.
 - (c) Guy Anchors and Foundations - assess for cracks in concrete, signs of corrosion, erosion, movement, secure hardware, and general site condition.
 - (d) Condition of antennas, transmission lines, lighting, painting, insulators, fencing, grounding, and elevator, if any.
 - (e) For guyed towers: Tower vertical alignment and guy wire tension - (both required tension and present tension).
- 14) A copy of each inspection report shall be filed with the County Manager not later than December 1st of the respective inspection year. If the report recommends that repairs or maintenance are required, a letter shall be submitted to the County Manager to verify that such repairs and/or maintenance have been completed. The County shall have no responsibility under this ordinance regarding such repairs and/or maintenance.
- 15) Any tower that is voluntarily not used for communications for a period of one year shall be removed at the tower owner's expense. If a tower is not removed within three (3) months after one year of such voluntary non-use, the County may obtain authorization to remove the tower and accessory items from a court of competent jurisdiction, and after removal shall place a lien on the subject property for all direct and indirect costs incurred in dismantling and disposal of the tower and accessory items, plus court costs and attorney fees.
- 16) For all ground mounted guyed towers in excess of 75 feet in height, the site shall be of a size and shape sufficient to provide the minimum yard requirements of that zoning district between each guy anchor and all property lines.
- 17) All new towers shall require a site plan in accordance with Section 10.5 as part of the building permit application except:
 - (a) Ground mounted amateur radio towers that do not exceed a height of 75 feet excluding antennas;

- (b) Monopole towers that do not exceed a height of 75 feet including antennas; or
- (c) Ground mounted antennas that do not exceed a height of twenty (20) feet above natural grade.
- 18) All new metal towers including rooftop towers, except amateur radio towers, shall comply with the standards of the then latest edition published by the Electric Industries Association (currently EIA/TIA 222-E) or the publication's successor functional equivalent unless amended for local application by resolution of the Board of County Commissioners. Each new amateur radio tower with a height of 75 feet or less shall require a building permit specifying the exact location and the height of the tower exclusive of antennas. Each new ground mounted dish type antenna that does not exceed a height of twenty (20) feet shall require a building permit.
- 19) Within the proposed tower's effective radius, information that specifies the tower's physical location in respect to public parks, designated historic buildings or districts, areas of critical concern, and conservation areas, shall be submitted as part of the provisional use application. This shall also apply to site plan applications and/or permit applications for rooftop installations that do not require provisional use approval.
- 20) No communication tower shall be located on any land or water if such location thereon creates or has the potential to create harm to the site as a source of biological productivity, as indispensable components of various hydrologic regimes, or as irreplaceable and critical habitat for native species of flora or fauna.
- 21) A landscaped buffer area no less than 10 feet wide shall be developed around the perimeter of each new tower that requires security fencing. This buffer shall encompass all new structures including the tower base. At least one row of native vegetation shall be planted within the buffer to form a continuous hedge at least three feet in height at planting. This hedge shall also be planted around any ground level guy anchors. The buffer must be maintained in good condition.
- 22) Native vegetation on the site shall be preserved to the greatest practical extent. The site plan shall show existing significant vegetation to be removed and vegetation to be replanted to replace that lost. Native vegetation may constitute part or all of the required buffer area if its opacity exceeds eighty percent (80%).
- 23) All new towers (including amateur radio towers) and all antennas affixed thereto shall be in compliance with Section 9.9, Ordinance No. 82-2, "Special Regulations for Specified Areas in and around airports in Collier County". There shall be no variances to this provision.
- 24) For all new towers, a statement from the applicant or an official document that specifies that the

tower and its antennas will comply with all applicable regulations of the Federal Communications Commission shall be filed with the County Manager.

- 25) New towers and antennas affixed thereto, new roof mounted towers, structures and antennas, and new accessory structures are exempt from provisional use approval:
 - (a) To the extent exempted by federal law or regulation, or Florida law or regulation, at the time of the application.
 - (b) Ground mounted amateur radio towers that do not exceed a height of seventy-five (75) feet above natural grade, exclusive of all antennas.
 - (c) Stations in the amateur radio service licensed by the Federal Communications Commission.
 - (d) Ground mounted antennas that do not exceed a height of twenty (20) feet above natural grade, including dish type antennas.
 - (e) Rooftop antennas, antenna structure and towers that do not exceed the applicable permitted use height specified in subsection e.5)b(1) herein.
- 26) All new non-ionizing electromagnetic radiation (NIER) sources shall comply with the then current applicable standards adopted by the Federal Government. The County shall not be required by this ordinance to enforce such standards.
- 27) A copy of each application for a tower in excess of two hundred (200) feet in height shall be supplied by the applicant to the Collier County Mosquito Control District or its successor in function.
- 28) As to communications towers and antennas, including rooftop towers, antenna structures and antennas, the height provisions of this ordinance supersede all other height limitations specified in County Ordinance 82-2.
- 29) Willful, knowing failure of any owner to comply with any of the provisions herein shall be a violation of this ordinance and shall be subject to general penalty provisions of Ordinance 82-2, and shall be grounds for revocation of provisional use approval.

SECTION TWO: CONFLICT AND SEVERABILITY

In the event this Ordinance conflicts with any other Ordinance of Collier County or other applicable law, the more restrictive shall apply. If any phrase or portion of this Ordinance is held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the

remaining portion.

SECTION THREE: EFFECTIVE DATE

This Ordinance shall become effective upon receipt of notice from the Secretary of State that this Ordinance has been filed with the Secretary of State.

PASSED AND DULY ADOPTED by the Board of County Commissioners of Collier County, Florida this 9th day of September, 1991.

DATE: September 9, 1991

BOARD OF COUNTY COMMISSIONERS
COLLIER COUNTY, FLORIDA

ATTEST:
JAMES C. GILES, CLERK

BY: Patricia Anne Goodnight
PATRICIA ANNE GOODNIGHT, CHAIRMAN

James C. Giles
JAMES C. GILES, CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

Thomas C. Palmer
THOMAS C. PALMER
ASSISTANT COUNTY ATTORNEY

ZO-91-4 ORDINANCE
nb/6243
TCP/mmd/982 (9/16/91)

This ordinance filed with the Secretary of State's Office the 19th day of Sept., 1991 and acknowledgement of that filing received this 23rd day of Sept., 1991

By Jessie Cheonan
Deputy Clerk

STATE OF FLORIDA)
COUNTY OF COLLIER)


I, JAMES C. GILES, Clerk of Courts in and for the Twentieth Judicial Circuit, Collier County, Florida, do hereby certify that the foregoing is a true copy of:

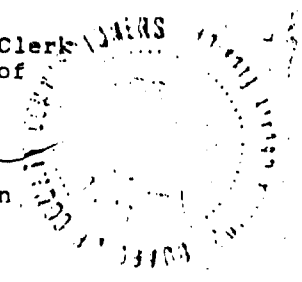
Ordinance No. 91-84

which was adopted by the Board of County Commissioners on the 9th day of September, 1991, during Special Session.

WITNESS my hand and the official seal of the Board of County Commissioners of Collier County, Florida, this 18th day of September, 1991.

JAMES C. GILES
Clerk of Courts and Clerk
Ex-officio to Board of
County Commissioners


By: /s/Maureen Kenyon
Deputy Clerk



WHERE ALCOHOLIC BEVERAGES ARE OFFERED FOR SALE FOR CONSUMPTION ON THE PREMISES; DECLARING NUDITY AT SEXUALLY ORIENTED BUSINESSES NOT OFFERING FOR SALE ALCOHOLIC BEVERAGES TO BE SUBJECT TO PROHIBITION PURSUANT TO SECTION 800.03, FLORIDA STATUTES, AND THE U.S. SUPREME COURT DECISION IN BARNES V. GLEN THEATRE, INC.; PROHIBITING "STRADDLE DANCING" AND OTHER SEXUAL ACTIVITIES AT SEXUALLY ORIENTED BUSINESSES; PROVIDING FOR ADDITIONAL CRIMINAL PROHIBITIONS; PROVIDING ADDITIONAL OPERATIONAL PROVISIONS FOR SEXUALLY ORIENTED BUSINESSES; PROVIDING FOR EXEMPTIONS; PROVIDING FOR CRIMINAL PENALTIES AND ADDITIONAL LEGAL, EQUITABLE AND INJUNCTIVE RELIEF; PROVIDING FOR CONSENT BY PERMITTEES TO THE PROVISIONS OF THIS ORDINANCE AND TO COUNTY, FEDERAL, STATE AND MUNICIPAL REGULATIONS; PROVIDING FOR IMMUNITY FROM PROSECUTION; PROVIDING FOR NOTICE REQUIREMENTS UNDER THIS ORDINANCE; PROVIDING FOR CONFLICT AND SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

Recess: 8:10 P.M. - Reconvened: 8:20 P.M.

Item #3B

PETITION ZO-91-4, COMMUNITY DEVELOPMENT DIVISION REQUESTING AMENDMENT TO THE COLLIER COUNTY ZONING ORDINANCE 82-2, THE COMPREHENSIVE ZONING REGULATIONS FOR THE UNINCORPORATED AREA OF COLLIER COUNTY BY AMENDING SECTION 8, SUPPLEMENTARY DISTRICT REGULATIONS BY ADDING SUBSECTION 8.10A, COMMUNICATION TOWERS - SECOND HEARING TO BE HELD SEPTEMBER 4, 1991

Legal notice having been published in the Naples Daily News on August 13, 1991, as evidenced by Affidavit of Publication filed with the Clerk, public hearing was opened to consider Petition ZO-91-4.

Planner Milk provided a brief history of this Petition and recited the information contained on the Executive Summary dated August 21, 1991. He relayed that the Collier County Planning Commission (CCPC) recommended approval of the Ordinance on August 1, 1991 by a vote of 4 to 2. He reported receipt of numerous documents during the past week from GTE as well as personnel in the public and private entities. He proposed one recommendation to the Ordinance to allow communication towers with a maximum height of 150 feet, including antennas affixed thereto, in the Estates Zoning Districts, and limited in design to monopole construction. He reported that GTE has information for tonight's meeting; that Mr. Gene Wayne, Director of Division of Communications, submitted a letter; that Deena Quinn of Real Property Management submitted some suggestions; and Mr. R. L. Brill submitted a criteria he thought pertinent for modification and inclusion in the proposed Ordinance.

Page 02

August 21, 1991

Dr. Frank Van Essen, Director of the Collier Mosquito Control District, stated that the Board of County Commissioners should be in receipt of a one page memo dated August 12, 1991, summarizing their position, copy not provided for the record. He confirmed that his department's primary method for controlling mosquitos is night flying at 300' altitudes and, therefore, any tower over 200' in height could be a potential hazard. He displayed a map outlining their flight paths as well as existing towers. He reiterated the suggestions listed in his memo alluded to previously, i.e. strict control for placement of towers to prevent exclusion of areas from receiving mosquito control; number of towers over 200' should be limited; and towers and cranes over 100' should be lit.

Robert A. Kersteen, of GTE Mobilnet, referred to a handout, complete with cover letter as well as a quote from Dr. Lee, copy not provided for the record. He expressed a need for towers up to 150' in the remaining urban areas of Collier County as well as in the E-Districts, as proposed by staff. He inferred that vegetation such as Australian pines and grape plants interfere with the transmission of signals. He referred to page 6, lines 1 through 10 of Sub A of the handout alluded to previously. He expounded a scenario thereby alleging that leasing out tower space is not cost effective. He referred to three handouts, one of which is a green covered book, placed before the Board of County Commissioners earlier, copies not provided for the record. He read from one of the handouts, whereby it suggested admissions from cellular transmission facilities do not pose any threat to the health of the general population, and is borne out by letters from Dr. Balzono (phonetic). He referred to a blue handout, copy not provided the recorder, addressing the degradation of property values, stating that it is a myth that his facilities degrade property values. He provided the locations where his organization shares tower sites with others.

In answer to Commissioner Volpe, Mr. Kersteen stated that there is one case in Lee County where a study was performed showing that a

tower site does not promote degradation of a neighborhood.

In response to Commissioner Shanahan questioning whether staff had reviewed the changes suggested by Mr. Kersteen, Planner Milk answered in the affirmative. Regarding the issue of reservation of space for additional antennas, he stated that the Ordinance does an adequate job addressing this. He referred to page 6 of the Ordinance, which is page 14 of the Executive Summary, titled "Reservation of Capacity", and read a portion of same. He reflected that this section gives staff the ability to examine the justification for prolonging the reservation of towers, etc.

Steve Mathues, Attorney representing the Department of General Services in Tallahassee, referred to a letter dated August 14th from Glenn Maine (phonetic), Director of the Division of Communications, copy not provided for the record. He acknowledged their belief that they can live within the Ordinance and fulfill their mission.

Paul Rodinsky submitted photographs to the Board of County Commissioners which were not presented to the Clerk for the record, alleged to be photographs of a tower with its pedestals below the water line as well as pictures where an attempt is being made to fill in and hide the pedestals of the tower. He reported that a cellular building was built next to the tower with its pedestal underwater after the meeting where standards were set by the Board of County Commissioners to prohibit construction of additional towers. He stated that the width of the towers is not currently addressed.

Pat Rodinsky read a prepared statement, copy not provided for the record, wherein it is implied that the Ordinance prepared for approval by the Board of County Commissioners outlines standards for tower erection throughout Collier County based on standards submitted by and on behalf of communication companies from other counties in other states totally unlike Collier County. She stated the towers, monopoles and microcells planned to be erected will have a detrimental impact on everyone. She raised questions regarding the health and safety issues from radiation emissions, the potential of lightning being drawn to

the cone areas of towers and, especially, the tower sitting underwater located behind her backyard, and visual pollution caused by the towers. She requested that single family A-2 zoned property containing less than 20 acres be added to the protective arm of the new Ordinance. She stated that she has submitted many documents, photographs and petitions against the towers and, specifically, the one sitting in her backyard, to every commission and every staff requesting that they stop the proliferation of same in Collier County.

Planner Milk stated that in the Southern Building Code there is no maximum height limit above the crown level of the road or the natural grade for the actual foundation of the tower leg, and the County engineers do not have a problem with that fact. He stated that the standards implied in the Ordinance were taken from a multitude of different Ordinances and modified to apply to the uniqueness of Collier County. He stated that, as long as a tower structure is built within the development standards for setbacks, etc. there are no limitations on the width of the towers or the type of platform utilized.

Leroy Pate, Professional Engineer specializing in tower design and analysis, referred to page 5 of the Ordinance, paragraph (c)3(d), indicating that this statement poses a problem. He stated that paragraph (c) above alludes to standards in accordance with EIA/TIA 222-E which is the industry standard for design of steel communications towers. He reflected that it is unfair to the tower industry and designers to state what the failure characteristics of a tower might be when an engineer designing a building such as Building "F" is not required to give a report or definition for characteristics of failure of this building. He concurred that the Board of County Commissioners has a right to require that a tower or any structure be designed and constructed in accordance with whatever standard is in place, but questioned whether the Board of County Commissioners has the need to know or ability to understand the failure characteristics.

In answer to Commissioner Shanahan, Planner Milk stated that staff is looking for tower failure characteristics, i.e. how a tower might

collapse. He remarked that the standards for EIA/TIA are subject to steel towers only. He added that should he recommend modification to item (d) "Failure characteristics of the Tower", he would include any other towers not under the EIA/TIA 222-E standards.

Community Development Services Administrator Brutt reflected that staff is seeking answers to such questions as when a 500' tower breaks apart will it fall within the arc of 500', will it break apart and be carried by the wind or will it collapse in pieces?

Mr. Pate stated there are numerous ways of failure which will be different, depending upon what the event is which causes the failure.

In reply to Commissioner Hasse, Mr. Pate agreed that he can give Mr. Milk some generalized failure characteristics. He added, however, that he feels that item (d) should be taken out. He referred to paragraph 6 stating that, if properly designed, the tower will not fail and, therefore, this is an unusual and unnecessary requirement. He reflected that separation of towers will require much more land in the tower area and will somewhat defeat the purpose of shared sites. Referring to page 10, paragraph 11, he commented that EIA 222-E has an extensive inspection section and suggests three year inspections for guide towers and five year inspections for self-supporting towers. He confirmed his agreement with this with the exception that for existing towers in place, they should be given one year after enactment of the Ordinance to have an initial inspection and, thereafter, be inspected at either three year or five year intervals, depending on the type of tower.

Planner Milk agreed that three and five years is appropriate for towers in most areas, but added that Collier County is a unique coastal habitat area and recommended two and four year inspections.

In answer to Commissioner Shanahan, Planner Milk reported that the reference to annual inspections contained in the Ordinance refers to an annual inspection for every tower for certain items, but the items which take an engineer to analyze he still recommends the two and four year inspections. He stated that there are presently towers that are

overloaded not only by antennas and equipment, but are not technically built to support what was placed on them initially.

Mr. Pate stated that what is being suggested is a physical inspection of the tower and will not do anything as far as the antenna or wind overloading of same. He verified that he can make an analysis regarding the design of the tower, but questioned whether the owner will pay for the analysis and do anything about it should the report identify problems.

Commissioner Volpe questioned the need to amend the Ordinance to include further inspection with respect to old towers.

***** Deputy Clerk Guevin replaced Deputy Clerk Farris *****

Attorney Bruce Anderson, representing Cellular One Collier/Hendry, stated many of his client's towers are not yet constructed and if this ordinance is adopted as proposed, it will severely cripple the cellular communication business. He said Cellular One represents a \$50-million investment in the future of Collier County. He indicated the ordinance puts all its emphasis on aesthetics to the detriment of public safety considerations. He reported communication towers are defined in the current Zoning Ordinance as an essential public service and are permitted as a Provisional Use in every zoning district in the County. He said with the proposed ordinance, communication towers will no longer be permitted as a principle use in the industrial district and will be prohibited in many zoning districts. He further stated that the height restrictions will result in many more towers being built, yet one of the purposes of the proposed ordinance is to prevent a proliferation of towers.

In response to Commissioner Shanahan, Mr. Anderson suggested that communication towers continue to be allowed as Provisional Uses in all zoning districts. He also recommended an incentive for the tower sharing requirements in the ordinance so if a company is willing to build a bigger tower in order to accommodate potential other users, there be some way to speed up the approval process. He noted there should also be criteria established within the ordinance to allow

towers as principal uses in some zoning districts, i.e., in an agricultural district with locational restrictions concerning distances from residential neighborhoods.

Jay Miller, General Manager of Cellular One, indicated he fields questions on a daily basis from citizens of the County wanting to know when the communications network will be complete, primarily from those in the eastern part of the County who must drive into Naples to do their business.

Mark Lamoureux submitted a packet of material to the Board of County Commissioners. (Copy not provided to the Clerk to the Board.) He commented that the County and the citizens in general do not recognize communication towers as an essential service. He noted *Zoning News*, a publication put out by the American Planning Association, states that in many communities, cellular sites are classified as public utility distribution systems or as public utility stations, not as land use issues. He said many zoning codes allow towers to be built by right in almost every zone and without public hearing. He read a letter from the East Naples Fire Department in support of a cellular telephone network that provides complete coverage to Collier County.

Frank Heaton with Cellular One, indicated his intention is to bring high quality, low cost alternative form of communication service to the community. He said if an ordinance is passed which causes an increase in the number of broadcast sites, substantial additional costs will be incurred which will have to be paid by the rate payers of the system.

In response to Commissioner Volpe, Mr. Heaton said at 150 feet, a minimum of five additional towers would be needed to supplement what he has currently proposed in order to attain the same coverage.

Tape #3

Mr. Heaton stated in his opinion the entire tower sharing provision should be stricken from the ordinance, however, if left in place it should include guidelines in which to do that sharing and a govern-

mental body should be in place to referee disputed intended uses.

*** Deputy Clerk Farris replaced Deputy Clerk Guevin at this time ***

Robert Carothers, representing Palmer Communications, Inc., expressed concern over the Intent and Purpose Section of the Tower Ordinance. He proposed amending the Ordinance in such a way as to allow upgrading of the towers to comply with possible future EIA specification changes without penalty under the new Ordinance, but with normal permitting procedures, if required, still applying.

Chief Vince Doerr of Ochopee Fire Control predicted that for fire service there will be more and more calls coming in on 911 through the use of cellular phones in rural areas. He stated that most of the fire chiefs are looking forward to use of the cellular phones and hope that some towers are allowed for the rural areas.

In response to Commissioner Shanahan regarding the challenge that the proposed Ordinance is in conflict with the Growth Management Plan, Planner Milk stated that he and Assistant County Attorney Palmer will look into the matter. He summarized the manner in which staff proceeded to comply with the Board of County Commissioners' directive to prepare the proposed Ordinance, adding that he fails to see how the proposed Ordinance will require Mr. Heaton of Cellular One to provide more towers than he had planned for originally. He pointed out there is a potential need for redesign and relocation of the towers, however. He reported that on March 26, 1991 there were two site development plans at the County, one for the Shirley Street tower and one at the site near Mr. and Mrs. Rodinsky on Trinity Place, the latter incurring platting problems and probably never being built. He reflected that Mr. Heaton has since submitted six applications for towers, all with the full knowledge that staff had been directed to prepare a new tower Ordinance. He guaranteed that in review of each of the six plans it was pointed out that staff was in the process of proposing a new tower Ordinance, and that the potential of conflict with the site in lieu of the new Ordinance existed. He confirmed that the Corkscrew site, at the time of review, was considered an

appropriate location for a tower of 290 feet as there were no height restrictions in the Estate Zoning District at that time. He indicated, however, that staff has since decided there should be a height restriction of 150 feet in the Estates Zoning District. He suggested that Mr. Heaton has looked at potential sites for location of towers using different criteria than that utilized by staff in complying with zoning districts, etc. He reiterated that when staff was directed to look at towers there was not a single public hearing Provisional Use filed and six have since been filed.

In reply to Commissioner Volpe questioning whether consideration has been given to the possibility of a variance being granted, Planner Milk stated he does not have a problem with that scenario at all.

In answer to Commissioner Shanahan, Planner Milk relayed his feelings that the shared use aspects of the proposed Ordinance will work for the industry.

In response to Commissioner Shanahan's comments regarding the concerns of Mosquito Control, Planner Milk provided the current FCC and FAA requirements regarding towers 200 feet or more in height. He suggested that Mosquito Control attend Provisional Use hearings and voice their concerns with towers that pose a potential hazard to their operations.

Commissioner Volpe requested staff to provide incentives to allow for tower sharing.

Planner Milk countered that once a shared use plan has been provided and the Provisional Use process has been followed through, one is approved for more antennas, more towers, etc. as long as the regulations of the Ordinance are met.

Commissioner Volpe pointed out that engineers have addressed the issue of tower failures, and he suggested the need for clarification on this issue exists.

Commissioner Hesse moved, seconded by Commissioner Shanahan and carried 8/0, to close the public hearing.

County Attorney Cuyler pointed out the need to announce the date

August 21, 1991

and time for the next public hearing on this item.

Following discussion regarding the date for the next hearing, Commissioner Goodnight acknowledged that this is the first of two public hearings and reported that the next hearing will be held September 9, 1991 at 5:05 P.M.

There being no further business for the Good of the County, the meeting was adjourned by Order of the Chair - Time: 10:24 P.M.

BOARD OF COUNTY COMMISSIONERS
BOARD OF ZONING APPEALS/EX
OFFICIO GOVERNING BOARD(S) OF
SPECIAL DISTRICTS UNDER ITS
CONTROL

Patricia Anne Goodnight
PATRICIA ANNE GOODNIGHT, CHAIRMAN

ATTEST:
JAMES C. GILES, CLERK

James C. Giles, D.C.

These minutes approved by the Board on 11/5/91
as presented or as corrected _____

Naples, Florida, September 9, 1991

LET IT BE REMEMBERED, that the Board of County Commissioners in and for the County of Collier, and also acting as the Board of Zoning Appeals and as the governing board(s) of such special districts as have been created according to law and having conducted business herein, met on this date at 5:05 P.M. in **SPECIAL SESSION** in Building "F" of the Government Complex, East Naples, Florida, with the following members present:

CHAIRMAN: Patricia Anne Goodnight

VICE-CHAIRMAN: Michael J. Volpe

Richard S. Shanahan
Max A. Hasse, Jr.
Burt L. Saunders

ALSO PRESENT: Annette Guevin and Wanda Arrighi, Deputy Clerks; Neil Dorrill, County Manager; Tom Olliff, Assistant to the County Manager; Ken Cuyler, County Attorney; Marjorie Student, Assistant County Attorney; Frank Brutt, Community Development Services Administrator; Ken Baginski, Planning Services Manager; Bryan Milk, Planner; and Sue Filson, Administrative Assistant to the Board.

000 PAGE 01

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Tape #1
Item #3A

ORDINANCE 91-84 RE PETITION ZO-91-4, COMMUNITY DEVELOPMENT DIVISION REQUESTING AN AMENDMENT TO THE COLLIER COUNTY ZONING ORDINANCE 82-2, THE COMPREHENSIVE ZONING REGULATIONS FOR THE UNINCORPORATED AREA OF COLLIER COUNTY BY AMENDING SECTION 8, SUPPLEMENTARY DISTRICT REGULATIONS BY ADDING SUBSECTION 8.10A, COMMUNICATION TOWERS - ADOPTED WITH CHANGES

Legal notice having been published in the Naples Daily News on September 3, 1991, as evidenced by Affidavit of Publication filed with the Clerk, public hearing was opened to consider Petition ZO-91-4, filed by the Community Development Division, requesting an amendment to the Collier County Zoning Ordinance 82-2, the Comprehensive Zoning Regulations for the Unincorporated Area of Collier County by amending Section 8, Supplementary District Regulations by adding Subsection 8.10A, Communication Towers.

Commissioner Goodnight noted this is the second public hearing in consideration of Petition ZO-91-4.

Planner Milk recalled on August 21st, the Board of County Commissioners suggested minor revisions and clarification of certain issues raised during the public hearing. He advised the revisions are illustrated and summarized in the Executive Summary. He provided the Board with an updated ordinance containing further revisions to pages 2 and 9 being requested by Staff. (Copy on file with the Clerk to the Board.) He indicated the changes on pages 2 and 9 eliminate the term "microcell" from the ordinance. He explained Staff has provided the opportunity to build monopole communication towers within residential zoning districts and finds it unnecessary to define in any ordinance, two of the same tower structure types, given the development regulations as set forth in the Communication Tower Ordinance. He mentioned Staff has also provided changes to the Urban Land Use area within the ordinance to specify that for towers in the RSF-1 through RSF-6, RMF-6 and E-Estates zoning districts, only certain development regulations apply.

In answer to Commissioner Hasse, Planner Milk advised only a monopole tower can be built and cannot exceed 75 feet in height including

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attached antenna. He said that restriction applies to RSF-1 through RSF-6, RMF-6 and E-Estate zoning districts. He indicated a monopole communication tower may be requested up to 150 feet in RMF-12, RMF-16, RT, VR, MHSD, MHRP and TTRVC zoning districts. He added in agricultural, commercial and industrial zoning districts, there are no height maximums, however, setbacks are required if the tower exceeds 185 feet in height.

Commissioner Hasse referred to the concerns of the Collier Mosquito Control District regarding the height of communications towers.

Planner Milk pointed out the District is concerned with the proliferation of towers in and around the urban area and not so much within the industrial or tower farm sites in existence this date. He said this ordinance does not address a prohibition on towers over 200 feet in the urban area, rather, it directs towers of certain heights to certain residential, industrial or commercial districts.

In answer to Commissioner Shanahan, Planner Milk indicated the Mosquito District continues to have concerns, however, they are more comfortable with the proposed ordinance.

Commissioner Volpe inquired under what circumstances would an applicant be required to apply for a Provisional Use (PU) for a communications tower? Planner Milk replied under all circumstances, if the intended tower exceeds 20 feet above the ground or is not a ham radio tower, a PU must be applied for in every residential zoning district. He said if the request is for a tower higher than 185 feet, the applicant must show that all possibilities have been researched of sharing either a tower or a tower site within a six mile radius.

Frank Van Essen, Director of the Collier Mosquito Control District, pointed out he is not concerned about towers under 200 feet or if new towers are clustered either in the industrial areas or areas where a number of towers already exist. He said if there will be a proliferation of towers in areas in addition to where they already exist, they should be limited to 200 feet in height. He requested

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the following language be added to the intent and purpose section of the ordinance, "and to allow for the safe operation of night flying aircraft for mosquito control missions".

In answer to Commissioner Hasse, Planner Milk explained there are no distance requirements from one tower to the next. He said if a self-supporting tower is requested on the same site where one already exists, it would be allowed as long as the engineering integrity of each tower is provided and it is designed to certain wind loads.

Ray Brill stated having been in the tower business for many years, he has installed towers all over the United States. He said there is no justification for allowing towers of any height in any of the residential areas for any reason. He advised towers should not be allowed on agricultural property of less than 20 acres. He also recommended that tower bases be installed at least 18 inches above the road, the flood plain or the ground elevation, whichever is higher. He said this will prevent the towers from standing in water.

Commissioner Shanahan asked if consideration was given to excluding towers from residential areas?

Planner Milk responded in the affirmative, adding the first four or five drafts of the ordinance excluded towers in all residential districts. He said based on the workshops conducted, information was provided indicating towers are needed in the residential areas to pick up the capacity to transmit to larger towers. He explained Staff is proposing to be flexible and limit it to the monopole and certain heights to accommodate that requirement.

Pat Rodinsky, representing Trinity Place, commented regarding the 330-foot GTE tower in that residential area. She said they have submitted many photographs, petitions and documentation regarding that tower. She reported having attended every meeting and listened to all the information presented with regard to the safety of the tower and lack of any danger associated with it, and she does not believe any of it. She said she has been verbally promised by Staff that due to the negative siting problems at the GTE site behind Trinity Place and the

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fact that this 330-foot tower sits in and is covered by water, that there will be no new towers at this location. She stated, in fact, more towers are planned for this area 400 feet closer to the residents of Trinity Place. She urged the Board of County Commissioners to include the addition of single-family residences zoned A-2 consisting of less than 20 acres for the same reasons the Estates zoning was added.

Paul Rodinsky reiterated comments made by the previous speaker.

In response to Commissioner Volpe, Planner Milk stated the justification for the 1,000-foot restriction in residential areas is primarily for aesthetics rather than safety.

Frank Heaton, with Cellular One, stated the Collier Mosquito Control District has indicated it does not have a problem with all six of his firm's proposed 280-foot towers that have PU applications on file with the County. With respect to the lightning safety of a tower, he said, he has built towers within 100 feet of residences and has never yet had any adverse consequences. He noted there is no guaranty with regard to lightning, however, his firm takes every known precaution to prevent lightning from damaging their own property and in the context of that, it should prevent effects on any other property. He disagreed with the proposed ordinance and suggested that it be started over.

Commissioner Saunders questioned if limiting towers to a maximum of 200 feet in height presents a problem to the communications industry?

Mr. Heaton indicated his belief that reliable radio propagation would be reduced if the height is reduced and it will lead to the communications industry requiring additional tower sites in Collier County that would otherwise not be required.

Commissioner Saunders asked what problems would be created for the communications industry if future towers were prohibited in residential areas?

Mr. Heaton advised generally speaking, they can usually find an

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area that meets their need that is not residential.

Mark Lamoureux suggested the ordinance be revised to incorporate more clarifying language on those towers already in existence that may be considered non-conforming once the new ordinance is in place. He requested language be included that deals with a situation where existing structures are blown down during a hurricane and whether they can be rebuilt afterwards on the same site. He indicated concerns with the shared use provision which forces an applicant to overdesign his structure in order to rent space to a future tenant, as well as publishing the rents in advance.

Bruce Anderson, Attorney for Cellular One Collier/Hendry, distributed a memorandum containing proposed amendments to the ordinance. (Copy on file with the Clerk to the Board.) He requested the Board either vest the pending PU applications on file or consider the amendments referred to in the memorandum. With regard to tower sharing, he said, there needs to be an incentive to spend the extra money to create additional capacity when it is uncertain whether or not the space will be rented. He stated the proposed amendments offer that incentive, which would authorize towers not to exceed 185 feet as a principal use in certain districts. He added if a tower will be subject to 500-foot locational restrictions, and if the tower is in excess of 185 feet up to a maximum of 300 feet, it would still be eligible to come in as a PU application. He requested analysis be done to determine the locations affected and how many sites would remain available given the 1000-foot restriction.

Commissioner Volpe commented the County is trying to enact a general law and Mr. Anderson's client has designed a specific system. He said the Board cannot enact an ordinance designed around that client's communications system.

Mr. Anderson agreed, but requested some consideration be given to recognizing the applications which were filed based on the current law.

**** Deputy Clerk Arrighi replaced Deputy Clerk Guevin at this time ****

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In response to Commissioner Saunders, Mr. Palmer informed that in surveying other County's for this type of ordinance, he has found none that address the specifics that this ordinance does. He advised that the proposed ordinance has been changed numerous times in order to accommodate the Industry to allow it to function properly. He advised that staff is satisfied that the proposed ordinance will not be unduly restrictive, and he added that Industry should be able to function sufficiently within the constitutional constraints.

Commissioner Hasse questioned whether the proposed ordinance will protect the citizens of the County? Mr. Palmer affirmed that it does.

Mr. Palmer explained that the proposed ordinance will allow only monopole tower in residential areas of up to a height of 75 feet in a six unit acre or less area and up to 150 feet in other designated areas. He pointed out that the height limitations for industrial towers is the same as for amateur radio towers.

In response to comments by Commissioner Volpe, Mr. Palmer cited that the Federal Communications Commission has passed federal and State statutes that prohibit local governments from unduly restricting amateur radio antennas, and they make no distinction whether the antennas are accessory or primary use. He related that the restrictions for the residential areas were included for the purpose of aesthetics. He added that the proposed ordinance also provides that a tower can be constructed in a residential area only if it can be proven that as a matter of engineering necessity it must be placed in that location. He affirmed that testimony has been presented that a communications system could be designed which would eliminate the need of placing any tower in a residential area; however, it was also noted that it would require more tower to be constructed throughout the County.

Robert Kersteen, with GTE Mobilnet, referred to a handout he presented to the Commissioners (not provided for the record) which suggest a few minor changes to the proposed ordinance. He specified that two of the suggested changes can be found on pages 9 and 12 which

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recommend a maximum height for the towers of 125 feet rather than 75 feet. He noted another change, found on page 5, is to delete the failure characteristics of the tower. On page 11 he recommended that a structural analysis of the guide towers be provided every two years and of the self-supported towers every four years. He commented that the last change is found on page 12 which recommends a copy of each inspection report be filed rather than each annual inspection report.

In reference to their structure which is located in the "Old Marco" area, Mr. Kersteen advised that rather than build a new tower the Company opted to buy an existing one; however, they only own the tower not the property which prevents them from draining the water the tower is standing in. He added that there is no plan to construct another tower at this site. Regarding the comments on lightning strikes, Mr. Kersteen advised that they have had no equipment failures at the "Old Marco" site due to lightning.

Mr. Kersteen explained that with the coming of the personal communication system which will replace the portable phones in the future, it will be necessary to place monopoles within residential areas.

Leroy Pate, a registered professional engineer in the State of Florida with a specialty in tower design and construction, explained the wind design loads on a tower and stated that if a tower is designed and constructed with the proper codes and standards there is a considerable factor of safety involved. He asserted that with these safety factors the failure characteristics provided in the proposed ordinance are superfluous.

Mr. Pate also emphasized that contrary to what is indicated in the proposed ordinance on page 6, a 185 foot to 300 foot tower cannot be designed and constructed to support additional antennae without additional costs, and suggested that the capacity of the tower should be left to the owner of the tower.

Mr. Pate suggested one last change which is in reference to the frequency of inspections. He recommended that on page 11, paragraph

11)(e), the tension requirement be every three years and on page 12, paragraph 12, the inspections be required every three years also.

Steve Mathues, representing the Department of General Services of Tallahassee, expressed his concern regarding the implication that the proposed ordinance will prohibit any tower over 200 feet. He explained that by limiting towers to this height it would become difficult to provide communication coverage seaward as well as throughout the Everglades. He suggested the continual use of provisional uses for towers.

Frank Van Essen of the Mosquito Control District clarified that he is only concerned about the height of the towers that will be in the District, and requested that if the proposed ordinance is adopted and does allow towers over 200 feet, Mosquito Control would appreciate the opportunity to review the locations of the proposed towers.

Commissioner Goodnight questioned what is permitted in the agricultural areas? Planner Milk explained that the proposed ordinance does not specify criteria for agricultural, commercial or industrial areas because there are no regulations regarding the height of a tower in those districts.

In response to Commissioner Shanahan, Mr. Milk affirmed that staff agrees with the two and four year inspection restriction. In regards to the allocation that the Corkscrew site would not allow a 280 foot tower, Mr. Milk asserted that this is a false statement because the E-Estates area does provide for a provisional use for an essential service.

Commissioner Volpe moved, seconded by Commissioner Saunders and carried unanimously, to close the public hearing.

Commissioner Goodnight commented that it is important that the Board review the locations in the rural areas where the subscribers are planning to build their communication towers. She indicated that in regards to the agricultural area there needs to be more than a 1000 foot setback criteria established as well as criteria created that would allow a tower as a permitted use in A-2 and commercial areas.

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She related that she sees no reason for a tower to be constructed over 200 feet in urban areas; however, she does understand that in the rural areas there is a need for higher towers.

Commissioner Shanahan noted that there should be an appeal process available for people who wish to challenge the decision.

Commissioner Saunders suggested that he review the recommended changes of the proposed ordinance for the benefit of the Board. He reported the first change to be on page one under the Intent and Purpose section to provide some recognition for the necessity to promote and protect the safety of the Mosquito Control operations. The consensus of the Board was to include this provision in the ordinance.

Commissioner Saunders continued to the suggestion found on page five, and indicated that he did not find it necessary to provide for failure characteristics of the tower. Assistant County Attorney Palmer related that the failure characteristics are an important criteria in order to promote sharing of towers for antennas. Commissioner Saunders pointed out that sections 3)(a), (b), and (c) appear to require the same vital information for potential problems created by the failure of a tower. Mr. Palmer disagreed and added that the burden of impacts would be shifted to the site owner. The consensus of the Board was to delete Section 3)(d) which provides for failure characteristics.

Commissioner Saunders referred to page 8, subpart 5) and questioned who would determine what is practicable as mentioned in the sentence, "To the extent practicable, the proposed rents ..." Planner Milk explained that the intent of this terminology is to allow staff the ability to analyze what is fare based on the market. The consensus of the Board was to leave the wording as it currently appears.

Commissioner Saunders commented that in reference to page 11, paragraph 11), he has no problem with changing the inspection period to two years for guide structures and four years for others. The consensus of the Board was in approval of this change.

Commissioner Saunders added that on page 12, paragraph 12), he

agrees to strike the word annual in the first line to which the Board concurred.

Commissioner Saunders stated that a major suggestion is to eliminate all towers in the residential properties zoned up to RSF-6.

Commissioner Volpe suggested that tower should be prohibited in all residential areas and limit them to commercial and industrial zoning and agricultural areas of more than 20 acres with a maximum height of 200 feet in the three areas. He noted that there are variance procedures in the ordinance which will address the concerns of the public communication systems.

Planner Milk questioned what this means to the ham radio operators because the ordinance does provide for them and allows up to a 75 foot tower for ham radio operators. Commissioner Volpe explained that the accessory use provision would address this concern. Mr. Milk concurred.

Commissioner Volpe recommended that when there is a previously approved provisional use for an essential service, then a communication tower should be permitted even if it does not meet the other criteria.

Commissioner Saunders commented that a limit of 200 feet for a tower in the urban areas is too restrictive. Commissioner Shanahan countered by stating that there is the opportunity for appeal, therefore, sees no reason for not limiting the towers to 200 feet.

Commissioner Goodnight argued that for permitted use zoning in the urban area there should be a 200 foot height limitation on towers; however, no restriction is needed for provisional uses in the urban area because these provisional uses are reviewed by the Board prior to any construction. The consensus of the Board was in approval of this suggestion.

In response to the question by Commissioner Saunders as to whether existing towers or damaged towers should be grandfathered into the ordinance, Mr. Milk advised that with the adoption of the proposed ordinance there will be towers and tower sites that will become non-

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conforming, and a non-conforming tower and/or site cannot be increased or expanded upon without going through the non-conforming use application variance which will allow the Board to determine if a tower can be rebuilt or added to. Commissioner Goodnight affirmed that the Board wants the ability to review the non-conforming use applications for towers where 51% or more of it has been destroyed.

Commissioner Saunders questioned what the feeling of the Board is in regards to the separation of tower from various zoning districts being restricted to 500 feet rather than 1000 feet? The consensus of the Board was to leave the separation at 1000 feet.

Commissioner Goodnight recommended that in agricultural rural areas the height of the towers could be constructed as high as 280 feet as a principle permitted use on a 20 acre site; however, any tower proposed higher than 280 feet would need to be brought before the Board as a provisional use.

In response to Commissioner Volpe, Mr. Milk affirmed that towers in the rural estates area could be provided through a provisional use with a restricted height of 75 feet. He requested to correct for the record that the proposed site for a tower at Corkscrew would be subject to the Estates residential restrictions.

Jean Burkner of Mosquito Control expressed her concern for safety regarding allowing towers over 200 feet and requested that a provision be made in the ordinance requiring that Mosquito Control have the opportunity to review all application for requests of towers over 200 feet. Commissioner Saunders concurred that this request be made part of the ordinance.

Mr. Milk asked for clarification of the permitted uses for commercial and industrial areas. Commissioner Saunders responded that in the commercial and industrial areas towers of 200 feet or less will be a permitted use and over 200 feet will be a provisional use.

County Attorney Cuyler asserted that in regards to the suggested provisional use language, it should be clarified that the term, essential services, is limited to a communication facility as a normal use

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for the property. The Board agreed to have County Attorney Cuyler make this change.

Commissioner Saunders moved, seconded by Commissioner Shanahan and carried unanimously, that the Ordinance as numbered and titled below be adopted with the noted changes and entered into Ordinance Book No. 46:

ORDINANCE 91-84

AND ORDINANCE AMENDING ORDINANCE 82-2, THE COMPREHENSIVE ZONING REGULATIONS FOR THE UNINCORPORATED AREA OF COLLIER COUNTY BY AMENDING SECTION 8, SUPPLEMENTARY DISTRICT REGULATIONS BY ADDING THERETO SUBSECTION 8.10A, COMMUNICATION TOWERS, PROVIDING FOR CONFLICT AND SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

There being no further business for the Good of the County, the meeting was adjourned by Order of the Chair - Time: 7:45 P.M.

BOARD OF COUNTY COMMISSIONERS
BOARD OF ZONING APPEALS/EX
OFFICIO GOVERNING BOARD(S) OF
SPECIAL DISTRICTS UNDER ITS
CONTROL

Patricia Anne Goodnight
PATRICIA ANNE GOODNIGHT, CHAIRMAN

ATTEST:
JAMES C. GILES, CLERK

William Shanahan, D.C.

These minutes approved by the Board on 12/17/91
as presented or as corrected _____



ANSI/TIA-222 Maintenance and Condition Assessment of Telecommunication Towers

What is ANSI/TIA-222 and why is it important for the telecommunications industry? ANSI/TIA-222 is the “Structural Standard for Antenna Supporting Structures and Antennas”. ANSI/TIA-222 is critically important to the telecommunications industry for many reasons. Some of which are as follows:

- Direct link to the International Building Code (IBC);
- Provides guidelines for the procurement of structures;
- Establishes design parameters for structures; and
- Provides criteria for Maintenance and Condition Assessment of these structures.

This Planning Advisory Notice (PAN) focuses primarily on Section 14 of the ANSI/TIA-222 Standard. Section 14 covers minimum criteria for a proper Maintenance and Condition Assessment of antenna supporting structures. The current version of ANSI/TIA-222 is G-2, however, throughout this PAN, we will also be referencing the draft version of ANSI/TIA-222-H to communicate upcoming changes in Section 14. In addition to Section 14, Annex J (**Normative**) provides checklists for maintenance and condition assessment, field mapping of appurtenances and structural components as well as charts for determining twist and out of plumb on guyed towers. We will also touch on Annex K, as it brings tension, twist, and plumb together. To add clarity, a

CONTINUED ON NEXT PAGE

Authors: **Scott Kisting** (EVP – Proactive Telecommunications Solutions) and **John Erichsen** (Principal EET PE, Chairman TIA committee TR 14). The members of the PAN Advisory Group who are involved in the writing and researching of each PAN topic include: **John Erichsen** (Principal EET PE, Chairman TIA committee TR 14), **Scott Kisting** (EVP – Proactive Telecommunications Solutions), **Richard Cullum** (Program Manager – Crown Castle), **Jeremy Buckles** (Safety and Compliance Officer – International, SBA Communications Corporation), **Craig Snyder** (President, Sioux Falls Tower & Communications), and **Stephanie Brewer** (Compliance Coordinator – MUTI-Sabre Industries Telecom Services).

Normative designation simply means that Annex J carries the same weight and merit as the body of the Standard. An annex allows the Committee to provide information as a narrative or list when it is more effective than using the language limitations placed upon the body of the standard such as the scope, requirements, and the maintenance and condition assessment cycles.

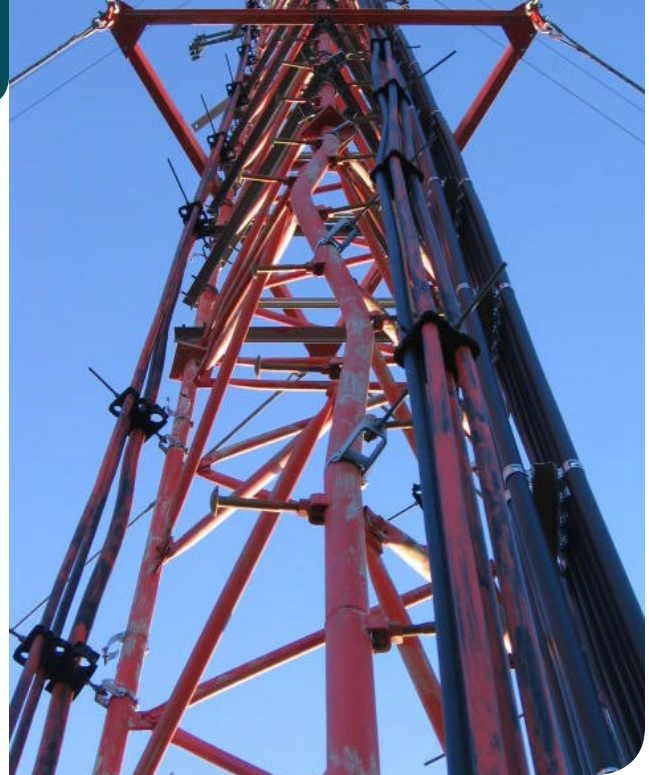
Revision H clarifies issues around safety climbs and inspection. ANSI/TIA-222-G Section 14 (**Scope**) states “This section addresses the maintenance and condition assessment of structures.” The following note is included in ANSI/TIA-222-H – “Maintenance and condition assessment requirements for safety climb systems are not within the scope of the Standard.” The safety climb system is an appurtenance while on the structure and does not become a safety climb system until a competent person uses it as part of a fall protection plan. So, while the safety climb may be assessed as a part of a maintenance and condition assessment of the structure it should not be considered usable as fall protection until inspected by a competent person as part of a complete fall protection plan. This logic also applies to any structural member (tower leg, diagonal, etc.) or connection considered for fall protection use by the competent person as part of their fall protection plan.

Proposed language in Revision H helps clarify recommended Intervals in section 14.4:

Maintenance and condition assessment recommendations are as follows:

1. Three-year intervals for guyed masts and five-year intervals for self-supporting structures.

Note: The intervals recommended are based on industry experience for communication structures designed and installed per EIA or ANSI/TIA-222 Standards. More frequent inspection intervals were found to be unwarranted.



2. After severe wind and/or ice storms or other extreme conditions.
3. Shorter inspection intervals may be required for Risk Category III or IV structures and structures in coastal regions, in corrosive environments, and in areas subject to frequent vandalism.

It is important to note that these are recommended intervals that tower owners or engineers use to formulate a site-specific maintenance and condition assessment plan. The recommended intervals can change based on factors such as age of the structure and/or how often they are assessed and maintained. There are cases, based on the location and type of structure, as well as other factors that the maintenance and assessment cycle may be extended beyond five years. The inverse is also true. For example, a guyed tower located in corrosive environment may require intervals that are more frequent. It is up to the owner and their engineering professionals to use the TIA recommendations to create a program that incorporates site-specific information such as the structure type, location and the environment.

Note two (2), in Section 14.4 (Rev H) recommends that assessments after extreme weather events could be warranted. For example, in the event of a category five (V) hurricane, tower owners and carriers typically choose to deploy teams to determine the extent of damage to their wireless infrastructure.

Maintenance is emphasized by being the first word of the title for this section as it is a critical component. Typically, references are made to TIA maintenance and condition assessments as inspections only. This is a misinterpretation of Section 14, as it is very important

to understand the critical nature of the word “Maintenance” as it is an actionable item. Depending on the types of maintenance issues discovered during a condition assessment, it is the expectation that the structure will be maintained in accordance with the owner’s maintenance plan to assure structural integrity. Items discovered, that could adversely affect the structure, should be brought to the tower owners attention immediately so its engineers and operations teams can determine what maintenance or repairs, if any, are required. To perform a condition assessment (inspection) without performing a proper maintenance review is contrary to the intent of the Standard.

Annex J is a guideline and checklist for the maintenance and condition assessment.

ANSI/TIA-222-G-2 Annex J: Maintenance and Condition Assessment **(Normative)** – The preamble reads as follows:

“This annex provides checklists for: (a) maintenance and condition assessment and (b) field mapping of structures and appurtenances.

Note: This annex does not provide means and methods for RF protection.”

Tower owners and their engineering support team(s) typically use Annex J as the baseline when creating site-specific maintenance and condition programs. ANSI/TIA-222 is a consensus standard based on best practices and comprised of committees, such as TIA TR-14. These individuals are subject matter experts voluntarily contributing their time and talent to the industry. Each subsequent ANSI/TIA Standard has been an improvement over the last. ANSI/TIA-222-H is no exception and TIA expects that earlier revisions will be superseded, except for the purposes outlined in the current published Standard. It is the TR-14 member’s expectation that the development of ANSI/TIA-222-H will help the entire industry.

Some of the critical areas covered in ANSI/TIA-222-H Annex J:



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J.1 – Maintenance and Condition Assessment

- A. Structure Condition
- B. Finish
- C. Lighting
- D. Grounding
- E. Appurtenances such as Mounts, Antennas and Lines
- F. Other Appurtenances (walkways, platforms, sensors, floodlights, etc.)
- G. Base Insulator Condition for AM Towers (AM detuning kits, fiberglass rods on broadcast towers, Phillystran, etc.)
- H. Guys
- I. Concrete Foundations
- J. Structure Alignment
- K. Previous Modifications to Structure

Annex J provides an excellent guide for tower owners and engineers to establish a site-specific condition and maintenance program. A properly managed maintenance and condition assessment program ensures that the structure is maintained in accordance with the manufacturer's recommendations and helps with the long-term performance of the structure. The annex also provides some base line information on mapping that should be considered by engineers when a mapping is required. The following is an overview of some of the subject area covered and in an upcoming PAN we will go into further detail on section J.2.

Section J.2 Provides guidelines for following:

- A. Mapping of Appurtenances
 - 1. Mounting Systems
- B. Mapping of Structural Members and Connections
 - 1. Self-Supporting Latticed Structures
 - 2. Guyed Masts
 - 3. Pole Structures
 - 4. Connections
- C. Tolerances
- D. Twist and Out-of-Plumb determination for Towers

Understanding Annex K (**Informative**) is recommended because it addresses the measurement of the guy wire tensions. Any adjustment to the tensions of the guy wires can also have an impact on the twist and plumb on the tower. Annex K provides the engineering equations and content related to measuring guy tensions, however it does not address the means and methods related to this type of work. As discussed in other PANs, ANSI/ASSE A10.48 should be considered for the means and methods. Annex K provides two basic methods for measuring guy wire tensions:

- A. Direct Method (load cell)
- B. Indirect Methods
 - 1. Pulse Method
 - 2. Tangent Intercept Method

Note that the approval of shunt dynamometers is a new addition as a method for measuring guy tensions for Revision H.

Once ANSI/TIA-222-H is approved (see process below), the PAN committee will delve further into these two annexes. Currently the TR-14 task group is finalizing the draft. Once the draft is finalized, the full committee will vote to approve. Once approved by the full committee there will be a public ANSI ballot/vote that will ultimately lead to the publication of ANSI/TIA-222-H - *Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Structures*. ■

Exhibit E

Federal Communications Commission

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with the FAA Advisory Circulars referenced in §17.23. If an antenna installation is of such a nature that its painting and lighting in accordance with these specifications are confusing, or endanger rather than assist airmen, or are otherwise inadequate, the Commission will specify the type of painting and lighting or other marking to be used in the individual situation.

[32 FR 11269, Aug. 3, 1967, as amended at 61 FR 4363, Feb. 6, 1996]

§ 17.23 Specifications for painting and lighting antenna structures.

Unless otherwise specified by the Commission, each new or altered antenna structure to be registered on or after January 1, 1996, must conform to the FAA's painting and lighting recommendations set forth on the structure's FAA determination of "no hazard," as referenced in the following FAA Advisory Circulars: AC 70/7460-1J, "Obstruction Marking and Lighting," effective January 1, 1996, and AC 150/5345-43E, "Specification for Obstruction Lighting Equipment," dated October 19, 1995. These documents are incorporated by reference in accordance with 5 U.S.C. 552(a). The documents contain FAA recommendations for painting and lighting structures which pose a potential hazard to air navigation. For purposes of this part, the specifications, standards, and general requirements stated in these documents are mandatory. The Advisory Circulars listed are available for inspection at the Commission Headquarters in Washington, DC, or may be obtained from Department of Transportation, Property Use and Storage Section, Subsequent Distribution Office, M483.6, Ardmore East Business Center, 3341 Q 75th Avenue, Landover, MD 20785, telephone (301) 322-4961, facsimile (301) 386-5394. Copies are also available for public inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

[64 FR 27474, May 20, 1999, as amended at 69 FR 18803, Apr. 9, 2004]

AVIATION RED OBSTRUCTION LIGHTING
[RESERVED]

§§ 17.24-17.43 [Reserved]

§ 17.45 Temporary warning lights.

During construction of an antenna structure, for which red obstruction lighting is required, at least two 116- or 125-watt lamps (A21/TS) enclosed in aviation red obstruction light globes, shall be installed at the uppermost point of the structure. The intensity of each lamp shall not be less than 32.5 candelas. In addition, as the height of the structure exceeds each level at which permanent obstruction lights will be required, two similar lights shall be installed at each such level. These temporary warning lights shall be displayed nightly from sunset to sunrise until the permanent obstruction lights have been installed and placed in operation, and shall be positioned so as to insure unobstructed visibility of at least one of the lights at any normal angle of approach. If practical, the permanent obstruction lights may be installed and operated at each required level as construction progresses.

[32 FR 11273, Aug. 3, 1967, as amended at 39 FR 26157, July 17, 1974; 42 FR 54826, Oct. 11, 1977]

§ 17.47 Inspection of antenna structure lights and associated control equipment.

The owner of any antenna structure which is registered with the Commission and has been assigned lighting specifications referenced in this part:

(a)(1) Shall make an observation of the antenna structure's lights at least once each 24 hours either visually or by observing an automatic properly maintained indicator designed to register any failure of such lights, to insure that all such lights are functioning properly as required; or alternatively,

(2) Shall provide and properly maintain an automatic alarm system designed to detect any failure of such lights and to provide indication of such failure to the owner.

(b) Shall inspect at intervals not to exceed 3 months all automatic or mechanical control devices, indicators, and alarm systems associated with the

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antenna structure lighting to insure that such apparatus is functioning properly.

[61 FR 4363, Feb. 6, 1996]

§ 17.48 Notification of extinguishment or improper functioning of lights.

The owner of any antenna structure which is registered with the Commission and has been assigned lighting specifications referenced in this part:

(a) Shall report immediately by telephone or telegraph to the nearest Flight Service Station or office of the Federal Aviation Administration any observed or otherwise known extinguishment or improper functioning of any top steady burning light or any flashing obstruction light, regardless of its position on the antenna structure, not corrected within 30 minutes. Such reports shall set forth the condition of the light or lights, the circumstances which caused the failure, the probable date for restoration of service, the FCC Antenna Structure Registration Number, the height of the structure (AGL and AMSL if known) and the name, title, address, and telephone number of the person making the report. Further notification by telephone or telegraph shall be given immediately upon resumption of normal operation of the light or lights.

(b) An extinguishment or improper functioning of a steady burning side intermediate light or lights, shall be corrected as soon as possible, but notification to the FAA of such extinguishment or improper functioning is not required.

[32 FR 11273, Aug. 3, 1967, as amended at 39 FR 26157, July 17, 1974; 40 FR 30267, July 18, 1975; 61 FR 4364, Feb. 6, 1996]

§ 17.49 Recording of antenna structure light inspections in the owner record.

The owner of each antenna structure which is registered with the Commission and has been assigned lighting specifications referenced in this part must maintain a record of any observed or otherwise known extinguishment or improper functioning of a structure light and include the following information for each such event:

47 CFR Ch. I (10-1-09 Edition)

(a) The nature of such extinguishment or improper functioning.

(b) The date and time the extinguishment or improper operation was observed or otherwise noted.

(c) Date and time of FAA notification, if applicable.

(d) The date, time and nature of adjustments, repairs, or replacements made.

[48 FR 38477, Aug. 24, 1983, as amended at 61 FR 4364, Feb. 6, 1996]

§ 17.50 Cleaning and repainting.

Antenna structures requiring painting under this part shall be cleaned or repainted as often as necessary to maintain good visibility.

[61 FR 4364, Feb. 6, 1996]

§ 17.51 Time when lights should be exhibited.

(a) All red obstruction lighting shall be exhibited from sunset to sunrise unless otherwise specified.

(b) All high intensity and medium intensity obstruction lighting shall be exhibited continuously unless otherwise specified.

[40 FR 30267, July 18, 1975, as amended at 61 FR 4364, Feb. 6, 1996]

§ 17.53 Lighting equipment and paint.

The lighting equipment, color or filters, and shade of paint referred to in the specifications are further defined in the following government and/or Army-Navy aeronautical specifications, bulletins, and drawings (lamps are referred to by standard numbers):

Outside white	TT-P-102 ¹ (Color No. 17875, FS-595).
Aviation surface orange	TT-P-59 ¹ (Color No. 12197, FS-595).
Aviation surface orange, enamel.	TT-E-489 ¹ (Color No. 12197, FS-595).
Aviation red obstruction light—color.	MIL-C-25050 ² .
Flashing beacons	CAA-446 ³ Code Beacons, 300 mm.
Do	MIL-6273 ² .
Double and single obstruction light.	L-810 ³ (FAA AC No. 150/5345-2 ⁴).
Do	MIL-L-7830 ² .
High intensity white obstruction light.	FAA/DOD L-856 (FAA AC No. 150/5345-43B ⁴).
116-Watt lamp	No. 116 A21/TS (6,000 h).
125-Watt lamp	No. 125 A21/TS (6,000 h).
620-Watt lamp	No. 620 PS-40 (3,000 h).