CITY OF ELK GROVE
CITY COUNCIL STAFF REPORT

AGENDA TITLE:	**A public hearing to consider amendments to Chapter 23.26 (Use Classification System), Chapter 23.27 (Allowed Uses and Required Entitlements), and Chapter 23.94 (Wireless Communications Facilities) of the Elk Grove Municipal Code; and a resolution approving a Master License Agreement between the City of Elk Grove and New Cingular Wireless PCS, LLC (EG-18-006) (No Further CEQA Review Required)**
MEETING DATE:	**August 28, 2019**
PREPARED BY:	**Antonio Ablog, AICP, Planning Manager**
DEPARTMENT HEAD:	**Darren Wilson, P.E., Development Services Director**

RECOMMENDED ACTION:

Staff and the Planning Commission recommend that the City Council:

1. Introduce and waive the full reading, by substitution of title only, an Ordinance finding that no further environmental review is required pursuant to State CEQA Guidelines Section 15183, 15301, and 15303 for the Cingular Wireless PCS Code Amendment (EG-18-006) and approving amendments to the Elk Grove Municipal Code Title 23 (Zoning), as described and shown at Exhibits 1 and 2 of the Ordinance; and

2. Adopt a Resolution finding no further environmental review is necessary for the Master License Agreement (the “MLA”) between the City of Elk Grove and New Cingular Wireless PCS, LLC (“Applicant”) for Small Cell Wireless Communications Facilities pursuant to CEQA Section 15183 15301, and 15303 and approving the MLA in substantially the form presented as Exhibit A to the Resolution.

PROJECT INFORMATION:

Location:	City-wide
Planner:	Antonio Ablog, AICP, Planning Manager
Applicant:	Vinculums Services, LLC For New Cingular Wireless PCS, LLC (by AT&T Mobility) Matthew Yergovich (Representative) 1200 Del Paso Road, Ste. 150 Sacramento, CA 95834

PLANNING COMMISSION REVIEW:

The Planning Commission ("Commission") considered this matter on July 18, 2019. Staff presented the attached draft amendments to Elk Grove Municipal Code (EGMC) Title 23 and the draft MLA.

After staff's presentation, the Commission heard from 17 speakers. Of those who spoke on the matter, 15 speakers were opposed to the Project and voiced concerns related to:

- The potential for small cell wireless telecommunication facilities and the associated emission of Electromagnetic Radiation from such facilities to cause negative health effects;
- The potential for small cell wireless telecommunications facilities to have a negative effect on property values;
- The aesthetic impact of the installation of small cell wireless telecommunications facilities across the City; and
- Amending the EGMC to facilitate small cell installation with litigation and legislation pending related to the September 2018 Federal Communications Commission ("FCC") Declaratory Ruling and Order.

In addition to those who spoke against the project, two speakers voiced their support for the proposed amendments to the Zoning Code.

At the conclusion of the public hearing, the Commission requested that the code amendments add clarification that the total volume of all equipment and antennas from all carriers not exceed 28 square feet on any single facility or property. Those requested changes have been made to the proposed ordinance.

The Commission also requested that staff provide the ability for any interested community members to sign-up to receive hearing agendas for the Zoning Administrator, which will be the approving body for small cell telecommunications facilities should the Zoning Code amendments be approved. The Zoning Administrator's online hearing page already provides the ability for any member of the public to submit an e-mail address in order to receive agendas; however, staff will work on improvements to the page layout to simplify the sign-up process for interested parties.

Based on the incorporation of these comments, the Planning Commission voted 4-0 (Commission Chair Wieser absent) to forward the requested Zoning Code amendments and MLA to the City Council with a recommendation for their approval.

BACKGROUND INFORMATION:

Title 23 of the EGMC (Zoning) currently contains the following definition:

> "Telecommunications facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "telecommunications facilities." ((23.26.050) (T)(1).)

This definition covers all telecommunications facilities, but it is most commonly applied to cellular antennas and their associated equipment. Pursuant to Table 23.27-1, the installation of any cellular antenna is subject to the approval of a Conditional Use Permit (CUP). This is true for all zones, except for the Industrial Zones [Light industrial (LI), Light Industrial/Flex (LI/FX) and Heavy Industrial (HI)], where cellular antennas are permitted uses allowed by-right.

On January 3, 2018, the Applicant submitted a request to amend Title 23 of the EGMC to define, address, and streamline the installation of small cell wireless communications facilities within public rights-of-way. The application has generated community discussion amongst interested parties concerning wireless facility placement and regulation.

Since the submittal of the Project application in early 2018, staff has received written comments from approximately 200 individuals opposing the proposed Zoning Code amendments and MLA. A number of the written comments received are provided in the attached Planning Commission Staff Report. In response to the community interest related to this Project, the City Council held a community workshop in November of 2018 to receive community and stakeholder input on the topic of wireless facility regulation.

Much of the concern of commenters has focused on the perceived health impacts of radio-frequency emissions from wireless facilities. Additionally, as detailed in the summary of comments made at the July 18, 2019 Planning Commission hearing, community members have also voiced concerns related to litigation and legislation pending related to the September 2018 Federal Communications Commission ("FCC") Declaratory Ruling and Order, the potential for small cell telecommunications facilities to negatively affect property values, and the potential for small cell telecommunications facilities to negatively the aesthetics of the community.

Taking into account the views and goals of the Applicant and other non-Applicant stakeholders, and in order to reach compromise amongst the various viewpoints, staff has prepared draft code amendments related to the definition, differentiation, required entitlements, and development standards for telecommunications facilities, and specifically the newly defined small cell telecommunications facilities. Concurrent with the amendments to the Zoning Code, staff has prepared a draft MLA for the Applicant's placement of small cell wireless communications facilities that would allow the Applicant to install small wireless antennas on City infrastructure such as streetlight and/or traffic signal poles adjacent to City streets through subsequent administrative applications, all consistent with the MLA. A further discussion of the code amendments and the MLA is set forth below.

ANALYSIS:

This report summarizes federal and state law concerning the local regulatory authority of wireless telecommunications facilities, the proposed Zoning Code amendments, and the MLA. Further analysis of these items is provided in the Planning Commission Staff Report included as Attachment 3 to this report.

Overview of Federal and State Law

Though there are notable restrictions, cities retain some regulatory control under federal and state law over the deployment of wireless communications facilities in their communities. Among perhaps the more significant restrictions, under federal law is that cities may not "regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions." (47 U.S.C. § 332(c)(7)(B)(iv).) However, the City may, and does, require wireless carriers to comply with FCC regulations, which would be a federal requirement regardless of the City's actions. The City still retains some regulatory authority under federal and state law over aesthetics, fees, and facility spacing, subject to the limitations set forth in the FCC Order, discussed briefly below.

In September of 2018, the FCC issued a Declaratory Ruling and Order, further clarifying the scope of a city's authority over wireless facilities (see FCC Order 18-133, hereafter referred to as the "FCC Order"). The FCC Order became operative in January of 2019. It provides further restrictions on a city's ability to regulate small cell wireless facilities, including an affirmation against regulating based on environmental health effects. The FCC Order also imposes limitations on permissible fees, time-lines for approval of small cell wireless facility applications (commonly known as "shot-clocks"), and the scope of permissible aesthetic and other local regulation. The FCC Order is currently the subject of federal litigation through which various municipalities are seeking to invalidate the FCC Order. (City of San Jose et al. v. Federal Communications Commission, United States Court of Appeals, Ninth Circuit, Case No. 19-70144). The City of Elk Grove is not a party to that case. The case is pending in the federal Ninth Circuit Court of Appeals, and the outcome of the case remains unknown. There have also been bills introduced in Congress that either seek to set aside the FCC Order, or seek to codify some of its terms into federal statute.

A more detailed discussion of the federal and state law, pending litigation, and pending legislation is contained at pages 2-4 of the attached Planning Commission Staff Report. With the scope of the regulatory parameters in mind, the City has crafted a code amendment seeking to accommodate various interested persons' and entities' diverse viewpoints, as further discussed in the "Zoning" section below.

General Plan

The City's General Plan does not directly address the installation or ongoing operation of cellular facilities. It does, however, provide goals and policies related to the installation and modernization of utility facilities, including telecommunications. The General Plan includes the following goals and Policies that specifically relate to technology infrastructure:

> *Goal CIF-2: COORDINATED UTILITY INFRASTRUCTURE AND IMPROVEMENTS:* The purpose of this goal is to maximize the efficiency of utility infrastructure improvements, allowing facilities to be upgraded or installed at the same time to minimize service disruptions and impacts to surrounding properties during construction which can result in financial savings.
>
> > *Policy-CIF-2-2:* Require that new utility infrastructure for electrical, telecommunication, natural gas and other services avoid sensitive resources, be located so as to not be visually obtrusive, and, if possible, be located within roadway rights-of-way or existing utility easements.
> >
> > *Policy-CIF-2-4:* Maintain, improve, and modernize existing facilities and services when necessary to meet the needs of Elk Grove residents and businesses.
>
> *Goal CIF-3:* ELK GROVE IS A LEADER IN INNOVATIVE TECHNOLOGY INFRASTRUCTURE: The purpose of this goal is to ensure Elk Grove's competitiveness for businesses and technologically focused residents by partnering with service providers to encourage advanced technologies that can be an incentive to companies and potential residents looking to relocate to Elk Grove.
>
> > *Policy CIF-3-2:* Encourage and coordinate with service providers to utilize advanced technologies such as fiber optic internet and Citywide information services.
> >
> > *Policy CIF-3-4:* Acknowledge and adapt to innovations in technology to facilitate infrastructure investments as appropriate.

The proposed code amendments, and associated MLA, are consistent with the General Plan. The Project will streamline the installation of small cell facilities on existing infrastructure within the public right-of-way which is consistent with General Plans goals related to maximizing the efficiency of infrastructure improvements and encouraging advanced technologies.

Zoning

The proposed text amendments will affect Chapters 23.26, 23.27 and 23.94 of the EGMC. Chapter 23.26 provides definitions of terms. Chapter 23.27 establishes allowed land uses and the requirements for planning entitlements within each of the City's zoning districts. Chapter 23.94 regulates the installation of antennas and other wireless communications facilities consistent with federal law.

The proposed amendments will delete the existing "Telecommunications facility" definition and create two new allowed use categories: the "Wireless communications facility" category, and the "Wireless communications facility, small cell" category. The category to be deleted and new categories are as follows:

- "Telecommunications facility" deleted:

  ~~1. "Telecommunications facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "telecommunications facilities." Additional definitions can be found in EGMC Chapter 23.94.~~ (23.26.050) (T)(1)

- "Wireless communications facility" and "Wireless communications facility, small cell" land uses added:

  3. "Wireless communications facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "wireless communications facilities." Additional definitions can be found in EGMC Chapter 23.94.

4. "Wireless communications facility, small cell" means any small cell antennas and other wireless communications equipment, including facilities that operate on unlicensed frequencies and FCC-approved frequencies in the bands authorized for commercial wireless communication services by the FCC pursuant to FCC licenses issued to Licensee, and all associated equipment, meeting the following size criteria: (i) the total volume of all small cell antennas on a single facility or property shall not exceed six (6) cubic feet; (ii) any individual piece of associated equipment on a single facility or property shall not exceed nine (9) cubic feet in volume; and (iii) the cumulative total of all associated equipment from all wireless communications providers, including antennas, for a single facility or property shall not exceed twenty-eight (28) cubic feet in volume.

The new "Wireless communications facility" land use classification will apply to cellular antennas placed on new and existing towers. The new "Wireless communications facility, small cell" creates a new land use category that addresses the small-scale antennas that the Applicant proposes to have installed on City facilities, specifically existing streetlight and/or traffic signal poles within City rights-of-way. As provided in the definition above, small cell antennas and their associated equipment must meet the defined criteria (total combined volume of no more than 28 cubic feet) to be considered for the proposed entitlement processes described below.

Table 23.27-1 of the EGMC identifies allowed uses and corresponding requirements for land use permits and entitlements for zoning districts within the City. This table, and its associated footnotes, are proposed to be amended as depicted in Exhibit B of Attachment 1 of this report. The proposed permitting requirements for small cell facilities for the base zoning districts throughout the City are summarized as follows:

- **Permitted by right**
  - Industrial Districts: Light Industrial (LI), Light Industrial/Flex (LI/FX), and Heavy Industrial (HI)

- **Permitted with the approval of a Minor Conditional Use Permit (MUP) (Zoning Administrator Approval)**
  - Agricultural Residential Districts: AR-1, AR-2, and AR-5/10;
  - Residential Districts: Very Low Density Residential (RD-1, RD-2, RD-3); Low Density Residential (RD-4, RD-5, RD-6, RD-7); Medium Density Residential (RD-10, RD15); and High Density Residential Zones (RD-20, RD-25, RD-30); and

- Public/Quasi Public Districts: Any Small Cell facility located on a public park or a school (unless the school is in a zoning district requiring a CUP, in which case a CUP shall be required)

- **Permitted with the approval of a Conditional Use Permit (CUP) (Planning Commission Approval) or administratively with a City Council-approved MLA**
  - Agricultural Districts: AG-20, AG-80;
  - Commercial Districts: Limited Commercial (LC), General Commercial (GC), Shopping Center (SC), Auto Center (AC), Commercial Recreation (C-O);
  - Mixed-Use Districts: Village Center Mixed-Use (VCMU), and Residential Mixed-Use (RMU); and
  - Office: Business and Professional Office (BP), Industrial-Office Park (MP).

There are two key differences between the proposed entitlement requirements for large-scale wireless facilities and small cell wireless facilities:

1) Small cell facilities are allowed in certain districts (Residential districts and Agricultural Residential) with the approval of an MUP versus a CUP; and,

2) Small cell facilities will be permitted by right in the non-residential zones such as Agricultural, Commercial, Mixed-Use, Office, and some Public/Quasi-Public districts (except parks and schools) when consistent with a City Council-approved master license agreement (MLA).

Thus, for small cell facilities in non-residential districts, an applicant could forego the traditional entitlement requirement of obtaining a CUP for each facility by seeking approval of an MLA by the City Council. The MLA would authorize a streamlined permitting approach for sites identified in the agreement and any future permit in a non-residential zone. With an approved MLA, small cell facilities in these districts may be installed via an administratively-approved permit issued by the Public Works Department, provided the proposed facility meets the criteria of the MLA. This will provide an applicant with the opportunity to pursue a streamlined process for non-residential zones, while ensuring that the proposed agreement allowing streamlining is vetted publicly before the City Council.

The MLA option is not available for Residential or Agricultural-Residential zones for sites not approved by the City Council. Thus, except for sites specifically approved at a Council meeting with the City Council-approved MLA, no additional small cell facilities will be allowed in Residential zones or

Agricultural-Residential zones (including the RD-1 though RD-30 and AR-1 through AR-10 zoning districts) without the approval of an MUP. Requests for MUPs will still require a public hearing with mailed notices to residents and property owners within 500 feet of the proposed installation. The approval authority for these MUPs, however, is the Zoning Administrator instead of the Planning Commission.

Amendments to Chapter 23.94 of the EGMC (Wireless Communications Facilities) are also proposed. These changes address the placement of small cell facilities within the City and also update Chapter 23.94 to reflect current federal law related to the processing of collocated wireless communications facilities where a use permit has previously been granted.

Overall, the code amendments to Chapter 23.94 recognize and reconcile the changes proposed to Chapter 23.27 described above. The key changes are outlined below:

- The amendments create *Section 23.94.035 Small Cell Wireless Communications Facilities* which states as follows:

  Any small cell wireless communications facility, as defined in Section 23.26.050, shall require a permit as required by Table 23.27-1 of the EGMC. To the extent provided by Table 23.27-1, a small cell wireless communications facility use shall be a permitted use if such use is consistent with an agreement between the applicant and the City, approved by the Elk Grove City Council, and such installation and operation of the small cell wireless communications facility or facilities is in conformance with the agreement. To the extent there is a conflict between the provisions of the agreement for a small cell wireless communications facility or facilities and this chapter, the terms of the agreement shall prevail.

  This text outlines the permit requirements as provided in the amended land use table and footnotes.

- The amendments create Section *23.94.050(A)(6)*, providing development standards related to the placement of small cell facilities in residential zones.

  6. In a residential zoning district, the following standards shall apply, unless the applicant can demonstrate with substantial evidence satisfactory to the approving authority that such siting

limitation will materially inhibit personal wireless service as to a particular small cell wireless communication facility.

a. No small cell wireless communication facility shall be placed within five-hundred (500' 0") feet of another small cell wireless communication facility.

b. No small cell wireless communication facility shall be located immediately adjacent to a front yard of any residential dwelling.

c. The cumulative total of all associated equipment from all wireless communications providers, including antennas, for a single facility or property shall not exceed twenty-eight (28) cubic feet in volume.

- Section 23.94.030(A) – Permit Requirements by zoning district

To be consistent with federal law, staff is proposing to amend Section 23.94.030(A) of the EGMC and add a new subsection allowing eligible collocation facilities (as defined by the FCC) to be permitted via a MUP, for which the Zoning Administrator would be the final approval authority. This proposed process reflects the limited scope of staff review of such requests given the FCC's definition of eligible facilities and would also allow staff to meet the 60-day processing time on such requests.

The modifications to Section 23.94.030 are as follows:

23.94.030 Permit requirements by zoning district.

A. Permit Requirements.

1. New Facilities. ~~Permit Required.~~ In an attempt to protect scenic, historic, natural, or cultural resources of the City; to assure land use compatibility with properties adjacent to such facilities; to minimize negative visual, noise and aesthetic impacts; and to protect the general safety, welfare, and quality of life of the community, unless exempt from permit requirements pursuant to EGMC Section 23.94.040, Exemptions, and except as set forth herein or at EGMC Section 23.94.040, Small Cell Wireless Communications

Facilities, all wireless communications facilities require a conditional use permit pursuant to EGMC Section 23.16.070, Conditional use permit and minor conditional use permit~~, except for co-location facilities that have been granted a valid conditional use permit from the designated approving authority. Such co-locations shall not increase the height of the tower as previously approved, nor shall they include any new equipment beyond the physical enclosure(s) of the prior approval(s). Additionally, improvements to existing wireless facilities that deviate from the prior conditional use permit approval or result in new visual or noise impacts as determined by the Development Services Director shall require amendments to the conditional use permit~~. Development of the facility may be phased without being required to obtain additional conditional use permit(s) for each antenna or service located on the structure; provided, that the maximum height of the structure(s), the location of the structure(s), and design of the structure(s) are consistent with the approved conditional use permit.

2. Collocations. Any collocation of any wireless communications facility on a tower or base station at a site for which a conditional use permit or minor conditional use permit has previously been issued shall require a minor conditional use permit approved by the Zoning Administrator. The Zoning Administrator shall not deny, and shall approve, any request for collocation at an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

- 23.94.060 - Operation and maintenance standards

This section provides the operations and maintenance standards for all wireless communications. Subsection (B) addresses Nonionizing Electromagnetic Radiation (NEIR). As discussed above, federal law provides that “No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission’s regulations concerning such emissions.” (47 U.S.C. § 332(c)(7)(B)(iv).) This

federal law preempts the City's authority to enforce these operational standards as long as a given facility complies with FCC regulations. Given the City's limited authority related to radio frequency emissions, Section 23.94.060 (B) is proposed to be revised as follows:

> Nonionizing Electromagnetic Radiation (NIER) Exposure. No wireless communications facility ~~shall be sited or operated in such a manner that it poses, either by itself or in combination with other such facilities, a potential threat to public health. To this end, no facility~~ or combination of facilities shall produce, at any time, power densities in any inhabited area that exceed the FCC's maximum permissible exposure (MPE) limits for electric and magnetic field strength and power density for transmitters ~~or any more restrictive standard subsequently adopted or promulgated by the City, County, State, or the Federal government~~.

Master Licensing Agreement

As stated above, small cell wireless facilities will be permitted uses in non-residential base zoning districts as specified in the proposed amendments to land use Table 23.27-1 when such facilities are consistent with a Master Licensing Agreement (MLA) between the applicant and the City, approved by the City Council. Small cell facilities will continue to require a MUP in Residential and Agricultural Residential zoning districts. Exhibit A to Attachment 2 is the draft Agreement between the City of Elk Grove and the Applicant.

The draft MLA addresses:

- Permit processes;
- Small cell locations;
- Small cell designs;
- Operations and maintenance;
- Payments to the City of Elk Grove; and
- MLA Term.

Approval of the MLA would allow the Applicant to submit subsequent small cell permit applications for administrative approval by the Public Works Director. These subsequent applications will be reviewed against the approved locations and designs specified within the MLA (MLA Exhibits A and B respectively) and must be approved within 45 days of submittal if found

to be consistent with the MLA. In addition to the City processing requirements, the MLA requires that all small cell facilities will have all applicable licenses (including those required by the FCC), permits, qualifications and approvals prior to installation.

The draft MLA designates the locations (MLA Exhibit A) for each small cell facility location and also contains the structural, design, and technical standards that each facility will be reviewed against when future permits are requested pursuant to the proposed agreement. With the MLA, the Applicant proposes an initial deployment of 15 small cell facilities throughout Elk Grove with 12 facilities located west of State Route 99. The City Manager may approve amendments that provide additional non-residential locations proposed by the Applicant for small cell facilities.

STAFF REPORT CONTINUES NEXT PAGE

There are four proposed designs included in the draft MLA consisting of Micro and Pico designs for both the typical cobra head light pole and decorative light poles. The four designs are depicted in Figure 1 below.

Figure 1

Cobra head – Micro

Cobra head – Pico

Decorative – Micro

Decorative – Pico

The MLA includes provisions related to the operations, maintenance, and removal of small cell facilities. Section 5.2(a) of the MLA requires that the operator of the facility comply with all FCC regulations regarding radio frequency emission and exposure limitation. As an ongoing operational standard, any small cell facilities installed subject to the agreement would need to comply with all applicable FCC regulations and would have to comply with any changes to these regulations.

Exhibit C to the MLA sets forth the fees associated with the Agreement including the MLA fee ($10,000), subsequent application fee for each associated site permit ($500 for up to five permits per application), and annual rent for each small cell facility ($270). These fees and rent are consistent with the FCC Order. The MLA contains a contingency for an increased fee should the FCC Order be invalidated. If so, the annual rent for each facility would be $1,500 for the first 20 facilities, $1,000 for facilities 21 through 100, and $500 for facilities 101 and beyond.

The term of the proposed MLA is 10 years and, by agreement of the parties, may be extended for two successive five-year terms for a total period of 20 years. All facilities subject to the MLA must be removed within 180 days of the termination of the Agreement.

Correspondence from Interested Parties

The City received a number of written and verbal comments from community members in response to the proposed Zoning Code amendments and MLA. A number of the written comments received are provided in the attached Planning Commission Staff Report. In response to the community interest related to this Project, the City Council held a community workshop in November of 2018 to receive community and stakeholder input on the topic of wireless facility regulation.

The main concern of commenters has focused on the perceived health impacts of radio-frequency emissions from wireless facilities; however, as detailed in the summary of comments made at the July 18, 2019 Planning Commission hearing, community members have also voiced concerns related to litigation and legislation pending related to the September 2018 Federal Communications Commission ("FCC") Declaratory Ruling and Order, the potential for small cell telecommunications facilities to negatively affect property values, and the potential for small cell telecommunications facilities to negatively the aesthetics of the community.

ALTERNATIVE ACTIONS:

The City Council could agree with the recommendation of staff and the Planning Commission and approve the proposed Zoning Code amendments and MLA. Alternatively, the City Council could decline to adopt the changes to the Zoning Code and/or the MLA. If the City Council elects not to support the proposed Zoning Code amendments and/or the MLA, small cell telecommunications facilities would require the approval of a Conditional Use Permit. The City Council may also provide alternative direction as it deems appropriate.

ENVIRONMENTAL ANALYSIS:

The California Environmental Quality Act (CEQA) requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" (State CEQA Guidelines Section 15378). The proposed Project is a project under CEQA.

Staff has analyzed the proposed Zoning Code amendments and MLA and has determined that no further environmental review is necessary pursuant to State CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning for which an EIR was certified), Section 15301 (CEQA exemption for minor alteration to existing facilities), and Section 15303 (CEQA exemption for new construction or conversion of small structure). The proposed Project consists of amendments to the text of the EGMC to facilitate the deployment of small cell antennas and associated equipment throughout the City, along with an MLA that addresses the processing of permits individual small cell facilities; their operation and maintenance; and their location, design and technical specifications.

Chapter 23.27 of the EGMC currently defines wireless telecommunications facilities and specifies the zoning districts where these wireless facilities are allowed, as well as the permit processes to which these facilities are subject. The proposed amendments define "Wireless Telecommunications Facilities, Small Cell" which are a specific subset of those wireless facilities that are currently allowed but fall within particular size criteria. Wireless Communications Facilities are allowed in all zoning districts throughout the City. Small cell facilities will also be allowed in all zoning districts; however, the proposed code amendments prescribe entitlements that differ from the

traditional, large scale facilities. These amendments and the associated MLA are consistent with General Plan policies related to community infrastructure and development density. An EIR was certified by the City Council in conjunction with the approval of the General Plan (SCH# 2017062058). The zoning amendments and the MLA will not create a significant new impact inconsistent with the General Plan EIR. Pursuant to CEQA Guidelines Section 15183, no further CEQA review is required for the approval of the proposed approvals of the amendments and the agreement.

Approval of the proposed amendments, and the small cell wireless facilities that would be approved by the MLA, are also exempt from CEQA under CEQA Guidelines Sections 15301 and 15303. Section 15301 exempts from CEQA minor alteration to existing public or private structures. Similarly, Section 15303 exempts from CEQA the construction of small facilities, including the installation of small new equipment and facilities. Here, the zoning code amendments and the MLA authorize the installation of facilities at various sites within the City. The new facilities are to be installed on existing City light poles, and the new facilities will be less than 28 cubic feet, with the specifically proposed facilities being much less than half the size of the existing poles (See Figure 1). Therefore, the approval of the proposed amendments and MLA are exempt from CEQA review pursuant to CEQA Guidelines Sections 15301 and 15303.

FISCAL IMPACT:

The MLA sets forth the fees associated with the Agreement including an initial MLA fee ($10,000), subsequent application fee for each associated site permit ($500 for up to five permits per application), and annual rent for each small cell facility ($270). The MLA contains a contingency for an increased fee should the FCC Order be invalidated. If so, the annual rent for each facility would be $1,500 for the first 20 facilities, $1,000 for facilities 21 through 100, and $500 for 101 facilities and beyond.

ATTACHMENTS:

1. Elk Grove Municipal Code Amendment Ordinance
    - Exhibit A – Project Description
    - Exhibit B – Zoning Code Amendments
2. Master License Agreement Resolution
    - Exhibit A – Master License Agreement
3. Planning Commission Staff Report - July 18, 2019

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ELK GROVE FINDING NO FURTHER ENVIRONMENTAL REVIEW IS REQUIRED PURSUANT TO STATE CEQA GUIDELINES SECTION 15183, 15301, AND 15303 FOR THE CINGULAR WIRELESS PCS CODE AMENDMENT (EG-18-006) AND APPROVING AMENDMENTS TO ELK GROVE MUNICIPAL CODE TITLE 23 (ZONING)

WHEREAS, New Cingular Wireless PCS, LLC (by AT&T Mobility) (the "Applicant") seeks an amendment to Title 23 (Zoning) of the Elk Grove Municipal Code ("EGMC") concerning small cell wireless facilities and approval of a master license agreement (the "MLA") for such small cell wireless facilities, as generally described at Exhibit 1 (collectively, the "Project"); and

WHEREAS, the Planning Commission held a duly-noticed public hearing on July 18, 2019 as required by law, to consider all information presented by staff, interested persons, and the Applicant concerning the Project; and

WHEREAS, the Planning Commission voted 4-0 to recommend that the City Council approve the Project; and

WHEREAS, the City Council held a duly-noticed public hearing on August 28, 2019, as required by law, to consider all information presented by staff, interested persons, and the Applicant concerning the Project.

NOW, THEREFORE, the City Council of the City of Elk Grove does hereby ordain as follows:

Section 1: Purpose

The purpose of this Ordinance is to facilitate the deployment of small cell communications facilities throughout the City.

Section 2: Findings

This Ordinance is adopted based upon the following findings:

California Environmental Quality Act (CEQA)

Finding: No further environmental review is required under the California Environmental Quality Act pursuant to State CEQA Guidelines Sections 15183, 15301, and 15303.

Evidence: CEQA requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" (State CEQA Guidelines Section 15378). The proposed Project is a project under CEQA.

> Staff has analyzed the proposed Zoning Code Text Amendment and MLA and has determined that no further environmental review is necessary pursuant to State CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning), Section 15301 (CEQA exemption for minor alteration to existing facilities), and Section 15303 (CEQA exemption for new construction or

conversion of small structure). The proposed Project consists of amendments to the text of the EGMC to facilitate the deployment of small cell antennas and associated equipment throughout the City, along with an MLA that addresses the processing of permits individual small cell facilities; their operation and maintenance; and their location, design and technical specifications.

Chapter 23.27 of the EGMC currently defines wireless telecommunications facilities and specifies the zoning districts where these wireless facilities are allowed, as well as the permit processes to which these facilities are subject. The proposed amendments define "Wireless Telecommunications Facilities, Small Cell" which are a specific subset of those wireless facilities that are currently allowed but fall within particular size criteria. Wireless Communications Facilities are allowed in all zoning districts throughout the City. Small cell facilities will also be allowed in all zoning districts; however, the proposed EGMC text amendments prescribe entitlements that differ from the traditional, large scale facilities. These amendments and the associated MLA are consistent with General Plan policies related to community infrastructure and development density. An EIR was certified in conjunction with the approval of the General Plan (SCH# 2017062058). The EGMC text amendments and the MLA will not create a significant new impact inconsistent with the General Plan EIR. Pursuant to CEQA Guidelines Section 15183, no further CEQA review is required for the approval of the proposed EGMC text amendments and MLA.

Approval of the EGMC text amendments and the small cell wireless facilities that would be approved by the MLA, are also exempt from CEQA under CEQA Guidelines Sections 15301 and 15303. Section 15301 exempts from CEQA minor alteration to existing public or private structures. Section 15303 exempts from CEQA the construction of small facilities, including the installation of small new equipment and facilities. Here, the EGMC text amendments and the MLA authorize the installation of facilities at various sites within the City. The new facilities are to be installed on existing City facilities such as streetlight and/or traffic signal poles, and the new facilities will be less than 28 cubic feet, with the specifically proposed facilities being much less than half the size of the existing poles. Therefore, the approval of the proposed EGMC text amendments and MLA are exempt from CEQA review pursuant to CEQA Guidelines Section 15301 and 15303.

General Plan Consistency

Finding: The proposed amendments to the Elk Grove Municipal Code are consistent with the General Plan goals, policies, and implementation programs.

Evidence: The proposed EGMC text amendments and associated MLA are consistent with the General Plan. The Project will streamline the installation of small cell facilities on existing infrastructure within the public right-of-way which is consistent with General Plan policies related to community infrastructure, specifically, goals related to maximizing the efficiency of infrastructure improvements and encouraging advanced technologies.

Section 3: Action

The City Council hereby approves and adopts the EGMC text amendments as shown in Exhibit 2, incorporated herein by this reference.

Section 4: No Mandatory Duty of Care.

This ordinance is not intended to and shall not be construed or given effect in a manner that imposes upon the City or any officer or employee thereof a mandatory duty of care towards persons and property within or without the City, so as to provide a basis of civil liability for damages, except as otherwise imposed by law.

Section 5: Severability

If any provision of this ordinance or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are severable. This City Council hereby declares that it would have adopted this ordinance irrespective of the invalidity of any particular portion thereof and intends that the invalid portions should be severed and the balance of the ordinance be enforced.

Section 6: Savings Clause

The provisions of this ordinance shall not affect or impair an act done or right vested or approved or any proceeding, suit or prosecution had or commenced in any cause before such repeal shall take affect; but every such act done, or right vested or accrued, or proceeding, suit or prosecution shall remain in full force and affect to all intents and purposes as if such ordinance or part thereof so repealed had remained in force. No offense committed and no liability, penalty or forfeiture, either civilly or criminally incurred prior to the time when any such ordinance or part thereof shall be repealed or altered by said Code shall be discharged or affected by such repeal or alteration; but prosecutions and suits for such offenses, liabilities, penalties or forfeitures shall be instituted and proceeded with in all respects as if such prior ordinance or part thereof had not been repealed or altered.

Section 7: Effective Date and Publication

This ordinance shall take effect thirty (30) days after its adoption. In lieu of publication of the full text of the ordinance within fifteen (15) days after its passage, a summary of the ordinance may be published at least five (5) days prior to and fifteen (15) days after adoption by the City Council and a certified copy shall be posted in the office of the City Clerk, pursuant to GC 36933(c)(1).

INTRODUCED:
ADOPTED:
EFFECTIVE:

_____
STEVE LY, MAYOR of the
CITY OF ELK GROVE

ATTEST:

APPROVED AS TO FORM:

_____
JASON LINDGREN, CITY CLERK

_____
JONATHAN P. HOBBS,
CITY ATTORNEY

Date signed: _____

Exhibit A – Project Description

The proposed Project consists of a Zoning Code Text Amendment to amend Chapters 23.27 and 23.94 of the Elk Grove Municipal Code (EGMC) to facilitate the deployment of small cell communications facilities throughout the City. The Project also includes a Master License Agreement for Small Cell Wireless Communications Facilities between the City of Elk Grove and New Cingular Wireless PCS, LLC.

EXHIBIT B
Zoning Code Amendments

Elk Grove Municipal Code to be amended as follows.

New text is underlined. Deleted text is shown as ~~strikeout.~~

Amend 23.26.050 Description of land use classifications as follows.

T. "T" Allowed Use Descriptions.

~~1. "Telecommunications facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "telecommunications facilities." Additional definitions can be found in EGMC Chapter 23.94.~~

1. "Theaters and auditoriums" means indoor facilities for public assembly and group entertainment, other than sporting events, including civic theaters and facilities for "live" theater and concerts, exhibition and convention halls, motion picture theaters, public and semi-public auditoriums, and similar public assembly uses. Does not include outdoor theaters, concert and similar entertainment facilities, and indoor and outdoor facilities for sporting events (see "outdoor commercial recreation").

2. "Thrift store" means a retail establishment selling secondhand goods donated by members of the public.

3. "Transit facilities" means maintenance and service centers for the vehicles operated in a mass transportation system. Includes buses, taxis, railways, etc.

4. "Transit stations and terminals" means passenger stations for vehicular and rail mass transit systems; also terminal facilities providing maintenance and service for the vehicles operated in the transit system. Includes buses, taxis, railways, etc.

5. "Transitional housing" means buildings configured as rental housing developments but operated under program requirements that require the termination of assistance and recirculating of the assisted unit to another eligible program recipient at a predetermined future point in time that shall be no less than six (6) months from the beginning of the assistance.

W. "W" Allowed Use Descriptions.

1. "Wholesaling and distribution" means establishments engaged in selling merchandise to retailers; to industrial, commercial, institutional, farm, or professional business users; or to other wholesalers; or acting as agents or brokers in buying merchandise for or selling merchandise to such persons or companies. Includes such establishments as agents, merchandise or commodity brokers, and

commission merchants, assemblers, buyers and associations engaged in the cooperative marketing of farm products, merchant wholesalers, and stores primarily selling electrical, plumbing, heating and air conditioning supplies and equipment.

2. “Wineries, distilleries, and brewery” means manufacturing facilities where raw materials (e.g., grapes, hops, barley) are processed and fermented into wine, beer, and other alcoholic drinks. May include tasting and accessory retail sales of products produced on site. Processing of the products, without fermentation, is considered “agricultural products processing” as defined in this section.

3. “Wireless Communications Facility” means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not “wireless communications facilities.” Additional definitions can be found in EGMC Chapter 23.94.

4. “Wireless Communications Facility, Small Cell” means any small cell antennas and other wireless communications equipment, including facilities that operate on unlicensed frequencies and FCC-approved frequencies in the bands authorized for commercial wireless communication services by the FCC pursuant to FCC licenses issued to Licensee, and all associated equipment, meeting the following size criteria: (i) the total volume of all small cell antennas on a single facility or property shall not exceed six (6) cubic feet; (ii) any individual piece of associated equipment on a single facility or property shall not exceed nine (9) cubic feet in volume; and (iii) the cumulative total of all associated equipment from all wireless communications providers, including antennas, for a single facility or property shall not exceed twenty-eight (28) cubic feet in volume.

[Amend Table 23.27-1 as follows]

Allowed Uses and Required Entitlements for Base Zoning Districts

Land Use/Zoning District	Zoning Districts																									Specific Use Regulations
	Agricultural					Residential					Commercial					Mixed Use		Office		Industrial			Public/Quasi-Public			
	AG-80	AG-20	AR-5/10	AR-2	AR-1	RD-1/2/3	RD-4/5/6	RD-7	RD-10/15	RD-20/25/30	LC	GC	SC	AC	C-O	VCMU	RMU	BP	MP	LI	LI/FX	HI	PR	PS	O	
Residential Uses																										
~~Telecommunication Facility~~ Wireless Communication Facility	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	P	P	P	CUP	CUP	CUP	EGMC Chapter 23.94
Wireless Communication Facility, Small Cell[1]	CUP[7]	CUP[7]	MUP	MUP	MUP	MUP	MUP	MUP	MUP	MUP	CUP[21]	CUP[21]	CUP[21]	CUP[21]	CUP[21]	CUP[6]	CUP[6]	CUP[10]	CUP[10]	P	P	P	MUP[4]	CUP/ MUP[4]	CUP/ MUP[4]	

Notes to Table 23.27-1

Notes that pertain to all zoning districts concerning any Small Cell Wireless Communication Facility:

1. Notwithstanding any other provision of this Title, any small cell wireless facility located at or within any school shall require an MUP, unless the school is in a zoning district requiring a CUP, in which case a CUP shall be required.

Notes that pertain to the agricultural zoning districts:

7. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use.

Notes that pertain to the commercial zoning districts:

21. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use.

Notes pertaining to the mixed-use zoning districts:

6. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use.

Notes pertaining to the office zoning districts:

10. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use.

Notes that pertain to the public/quasi-public zoning districts:

4. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use, provided, however, that any small cell wireless facility located within a public park shall require an MUP.

Amend Chapter 23.94 as follows

23.94.010 Purpose and intent.

The purpose of this chapter is to regulate the installation of antennas and other wireless communications facilities consistent with Federal law. The City acknowledges the community benefit associated with the provision of wireless communication service and potential public benefit from leasing of publicly owned properties. It is also recognized that unrestricted installations are contrary to the City's efforts to promote safety and aesthetic considerations. It is not the intent of this section to unreasonably limit the reception or transmission of signals or to add excessive permit costs. Rather, it is the intent of this chapter to permit antennas and wireless communications facilities where they can be installed without creating adverse safety and aesthetic impacts on abutting and nearby properties and the overall community. [Ord. 8-2011 §39(A), eff. 6-24-2011]

23.94.020 Definitions.

Terms unique to this chapter are listed in EGMC Chapter 23.100 (General Definitions). [Ord. 8-2011 §39(B), eff. 6-24-2011]

23.94.030 Permit requirements by zoning district.

A. Permit Requirements.

1. New Facilities. ~~Permit Required.~~ In an attempt to protect scenic, historic, natural, or cultural resources of the City; to assure land use compatibility with properties adjacent to such facilities; to minimize negative visual, noise and aesthetic impacts; and to protect the general safety, welfare, and quality of life of the community, unless exempt from permit requirements pursuant to EGMC Section 23.94.040, Exemptions, and except as set forth herein or at EGMC Section 23.94.040, Small Cell Wireless Communications Facilities, all wireless communications facilities in non-industrial zoning districts shall require a conditional use permit or a minor conditional use permit pursuant to EGMC Section 23.16.070, Conditional use permit and minor conditional use permit~~, except for co-location facilities that have been granted a valid conditional use permit from the designated approving authority. Such co-locations shall not increase the height of the tower as previously approved, nor shall they include any new equipment beyond the physical enclosure(s) of the prior approval(s). Additionally, improvements to existing wireless facilities that deviate from the prior conditional use permit approval or result in new visual or noise impacts as determined by the Development Services Director shall require amendments to the conditional use permit~~. Development of the facility may be phased without being required to obtain additional conditional use permit(s) for each antenna or service located on the structure; provided, that the maximum height of the structure(s), the location of the structure(s), and design of the structure(s) are consistent with the approved conditional use permit.

2. Colocations. Any colocation of any wireless communications facility on a tower or base station at a site for which a conditional use permit or minor conditional use permit has previously been issued shall require a minor conditional use permit approved by the Zoning Administrator. The Zoning Administrator shall not deny, and shall approve, any request for colocation at an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

B. Permit Processing. Permits shall be processed in accordance with the applicable provisions of Division II of this title.

C. Conditions. The designated approving authority may impose conditions on wireless communications facility permits ~~applications~~ to ensure compliance with all provisions and purposes of this chapter.

D. Findings for Approval. The approving authority may approve or conditionally approve a conditional use permit or minor conditional use permit for a wireless communications facility, where such permit is required, only upon making the following written findings, in addition to the required findings for conditional use permits as provided in EGMC Section 23.16.070, Conditional use permit, based on substantial evidence in the record.

1. All of the following findings are required for the approval of a conditional use permit for any wireless communications facility:

a. The establishment or expansion of the facility demonstrates a reasonable attempt by the applicant to minimize stand-alone facilities.

b. All applicable development standards in EGMC Section 23.94.050 have been met; or, if the application includes a request for an exception to those standards, then the approving body finds that lack of compliance with the development standards would not create adverse visual, noise, or aesthetic impacts to adjacent property.

2. Findings for the establishment of a wireless communications facility that is not co-located with other existing or proposed facilities or a new freestanding pole or tower (at least one (1) finding required):

a. Co-location is not reasonably feasible;

b. Co-location would have greater adverse effects on views, noise or aesthetics as compared with a stand-alone installation; or

c. Co-location is not permitted by the property owner.

E. Findings for Denial. Findings to deny any permit for a wireless communications facility as regulated herein shall be done in writing and supported by substantial evidence contained in the written record. Denial shall not be based on the environmental effects of radio frequency emissions that comply with the Federal Communications Commission emission regulations. [Ord. 24-2015 §11 (Exh. I), eff. 2-12-2016; Ord. 8-2011 §39(C), eff. 6-24-2011]

23.94.035 Small Cell Wireless Communications Facilities

Any small cell wireless communications facility, as defined in Section 23.26.050, shall require a permit as required by Table 23.27-1 of the EGMC. To the extent provided by Table 23.27-1, a small cell wireless communications facility use shall be a permitted use if such use is consistent with an agreement between the applicant and the City, approved by the Elk Grove City Council, and such installation and operation of the small cell wireless communications facility or facilities is in conformance with the agreement. To the extent there is a conflict between the provisions of the agreement for a small cell wireless communications facility or facilities and this chapter, the terms of the agreement shall prevail.

23.94.040 Exemptions.

The following wireless communications facilities are exempt from the requirements of this chapter as specified below and are subject to compliance with other provisions of this title:

A. A wireless communications facility shall be exempt from the provisions of this section if and to the extent that a permit issued by the California Public Utilities Commission (CPUC) or the rules and regulations of the Federal Communications Commission (FCC) specifically provide that the antenna is exempt from local regulation.

B. Satellite earth station (SES) antennas which are two (2) meters (6.5616 feet) or less in diameter or in diagonal measurement, located in any nonresidential zoning district. In order to avoid the creation of an attractive public nuisance, reduce accidental tripping hazards and maximize stability of the structure, such antennas shall be placed whenever possible on top of buildings and as far away as possible from the edges of rooftops.

C. Parabolic antennas, direct broadcast satellite (DBS) antennas and multipoint distribution service (MDS) antennas which are one (1) meter (3.2808 feet) or less in diameter or diagonal measurement and Television Broadcast Service (TVBS) antennas, so long as said antennas are located entirely on private property and are not located within the required front yard setback area. This locational requirement is necessary to ensure that such antenna installations do not become attractive nuisances and/or result in accidental tripping hazards if located adjacent to a street or other public right-of-way.

D. Amateur radio antenna structures provide a valuable and essential telecommunication service during periods of natural disasters and other emergency conditions and are therefore exempt from permit provisions of this chapter in compliance with the following standards:

1. Height Limits. In residential zoning districts the height limit is forty-five (45' 0") feet and in nonresidential zoning districts the height limit is sixty (60' 0") feet. However, amateur radio antennas in any district may extend to a maximum height of seventy-five (75' 0") feet; provided, that the tower is equipped with a lowering device (motorized and/or mechanical) capable of lowering the antenna to the maximum permitted height when not in operation.

2. Location Parameters. All antenna structures shall be located outside of required front and street side yard areas. Antenna structures shall also be set back a minimum distance of five (5' 0") feet from interior property lines. If any portion of the antenna overhangs any property line, a design review permit is required to obtain the authorized signature of all affected property owners on the required application form.

3. Tower Safety. All antennas shall be located within an enclosed fenced area or have a minimum five (5' 0") foot high tower shield at the tower base to prevent climbing. All active elements of antennas shall have a minimum vertical clearance of eight (8' 0") feet.

4. Minor modifications (emergency or routine), provided there is little or no change in the visual appearance as determined by the Development Services Director. [Ord. 24-2015 §11 (Exh. I), eff. 2-12-2016; Ord. 26-2006 §3, eff. 8-11-2006]

23.94.050 Development standards.

A. General Development Standards. Unless otherwise exempt pursuant to EGMC Section 23.94.040, Exemptions, or as otherwise provided in an agreement approved by the Elk Grove City Council pursuant to EGMC Section 23.94.035, Small Cell Wireless Communications Facilities, the following general development standards shall apply to all wireless communications facilities:

1. All wireless communications facilities shall comply with all applicable requirements of the current uniform codes as adopted by the City and shall be consistent with the General Plan and this title, as well as other standards and guidelines adopted by the City.

2. All wireless communications facilities shall be designed, screened and/or camouflaged from the view of surrounding properties and the public view to the greatest extent possible in one (1) or more of the following ways:

a. Co-located with existing facilities or structures so as not to create substantial visual, noise, or aesthetic impacts. To facilitate co-location when deemed appropriate, conditions of approval for conditional use permits shall require all service providers to cooperate in the siting of equipment and antennas to accommodate the maximum number of operators at a given site when found to be feasible and aesthetically desirable;

b. Sited within areas with substantial screening by existing vegetation;

c. Designed to appear as natural features found in the immediate area, such as trees or rocks, so as to be unnoticeable (camouflaged facilities); or

d. Screened with additional trees and other native or adapted vegetation which shall be planted and maintained around the wireless communications facility, in the vicinity of the project site, and along access roads, where such vegetation is appropriate and deemed necessary to screen the facilities. Such landscaping, including irrigation, shall be installed and maintained by the applicant, as long as the permit is in effect.

3. All wireless communications facilities, including on-site generators, shall be designed, located, and operated to have little to no noise impact on the surrounding area or neighborhood, including interference from adverse noise and aesthetic impacts, and at a minimum shall be subject to the City-adopted noise standards contained in EGMC Chapter 6.32 and the General Plan. Failure to comply with the City's adopted noise standard after written notice and opportunity to cure have been given shall be grounds for the City to conduct a revocation hearing regarding the permit granted pursuant to this section.

4. All ~~conditional use~~ permit applications for wireless communications facilities shall include a description of services proposed and documentation certifying applicable licenses or other approvals required by the Federal Communications Commission to provide services proposed in connection with the application.

5. All ~~conditional use~~ permit applications for wireless communications facilities shall include a map and narrative description of all telecommunication sites existing, proposed or planned by the applicant in the City and within a one (1) mile radius of the City border. Such applications shall also include an analysis of all reasonable and technically feasible alternative locations and/or facilities (including co-locations) which could provide the proposed communication service.

6. In a residential zoning district, the following development standards shall apply, unless the applicant can demonstrate with substantial evidence satisfactory to the approving authority that such siting limitation will materially inhibit personal wireless service as to a particular small cell wireless communication facility.

a. No small cell wireless communication facility shall be placed within five-hundred (500' 0") feet of another small cell wireless communications facility.

b. No small cell wireless communication facility shall be located immediately adjacent to a front yard of any residential dwelling.

c. The cumulative total of all associated equipment from all wireless communications providers, including antennas, for a single facility or property shall not exceed twenty-eight (28) cubic feet in volume.

~~6.~~7. At least ten (10' 0") feet of horizontal clearance shall be maintained between any part of the antenna and any power lines unless the antenna is installed to be an integral part of a utility tower or facility.

~~7.~~8. Development Standards for Antennas (Excluding Amateur Radio Antennas). Unless otherwise exempt pursuant to EGMC Section 23.94.040, Exemptions, the following development standards shall apply to receive-only antennas (ground- and building-mounted), parabolic antennas, and satellite earth stations as defined in this section:

a. Maximum Number. One (1) wireless facility per parcel, unless the applicant can demonstrate the service need for additional antenna.

b. Antenna Location. Parabolic antenna and satellite earth stations shall be ground-mounted in residential zoning districts. In all nonresidential zoning districts, the preference is for building-mounted antennas. No antenna shall be located in the required front or street side yard of any parcel unless entirely screened from pedestrian view of the abutting street rights-of-way (excluding alleys). In all zoning districts, ground-mounted antennas shall be situated as close to the ground as possible to reduce visual impact without compromising their function and all portions of the structure/antenna shall be set back a minimum of five (5' 0") feet from any property line.

c. Height Limit. The height limit for ground-mounted antennas is six (6' 0") feet. However, the height may be increased to a maximum of twelve (12' 0") feet if the setback distance from all property lines is at least equal to the height of the antenna and if the structure is screened in accordance with subsection (A)(7)(d) of this section, Screening. Building-mounted antennas shall not extend above the roofline, parapet wall, or other roof screen or project beyond a maximum of eighteen (18") inches from the face of the building or other support structure.

d. Screening. Ground-mounted antennas shall be screened with a fence, wall or dense landscaping so that the antenna is not visible from the public right-of-way and to minimize the visual impact on abutting properties. Building-mounted antennas shall be screened as follows:

i. Wall-mounted equipment shall be flush-mounted and painted or finished to match the building with concealed cables.

ii. Roof-mounted equipment shall be screened from view of public rights-of-way by locating the antenna below the roofline, parapet wall, or other roof screen and by locating the antenna as far away as physically feasible and aesthetically desirable from the edge of the building.

e. Color. Antennas shall have subdued colors and nonreflective materials which blend with the materials and colors of the surrounding area or building.

B. Development Standards for Amateur Radio Antennas. As part of a minor design review, amateur radio antennas as defined in EGMC Chapter 23.100 may exceed the height limit and/or amend the setback provisions of the exempt amateur radio antenna structures (EGMC Section 23.94.040, Exemptions) only when said regulation will result in unreasonable limitations on, or prevent, reception or transmission of signals. The designated approving authority may issue the design review permit subject to any conditions necessary or appropriate to minimize the safety or aesthetic impacts of antenna installations, provided the conditions do not unreasonably prevent or limit transmission or reception of signals.

C. Development Standards for Towers. The following development standards shall apply to towers (including co-location facilities) as defined in EGMC Section 23.94.020, Definitions:

1. Site Design. All facilities (including related equipment) shall be designed to minimize the visual impact to the greatest extent feasible, considering technological requirements, by means of placement, screening, and camouflage, to be compatible with existing architectural elements, landscape elements, and other site characteristics. The applicant shall use the smallest and least visible antennas possible to accomplish the owner/operator's coverage objective. A visual impact analysis is required to demonstrate how the proposed facility will appear from public rights-of-way (including public trails).

2. Safety Design. All facilities shall be designed so as to be resistant to and minimize opportunities for unauthorized access, climbing, vandalism, graffiti, and other conditions which would result in hazardous conditions, visual blight, or attractive nuisances.

3. Location. Towers shall not be located in any required front or street side yard in any zoning district. The setback distance from any abutting street right-of-way, residential property line, or public trail shall be equal to the height of the facility (tower and related equipment). Otherwise, the minimum setback distance from all other property lines shall be at least equal to twenty (20%) percent of the height of the tower. Existing towers may be allowed to increase the height without requiring the tower to be relocated as part of the conditional use permit approval, provided the overall maximum height of the tower does not exceed the height limit listed in subsection (C)(4) of this section, unless an exception is approved by the designated approving authority.

4. Height Limit. The height limit for towers shall be as listed in Table 23.94-1 based on the underlying zoning district of the site. Exceptions to the height limit may be granted when the designated approving authority finds that reasonable alternatives do not exist to provide the necessary service. There is no height limit specified for co-locations on existing structures, provided facilities are screened from view of abutting street rights-of-way or camouflaged by matching the color(s) and/or material(s) of the structure to which it is attached.

Table 23.94-1
Height Limit for Wireless Towers

Zoning District	**Height Limit**
AG, AR, RD, PR, PS, O~~S~~, C-O, ~~RM,~~ RMU, VCMU	55 ft.
LC, GC, SC, AC, BP	65 ft.
MP, LI, LI/FX, HI	80 ft.

5. Lighting. Towers and related equipment shall be unlit except as provided below:

a. A manually operated or motion-detector-controlled light above the equipment shed door may be provided, except that the light shall remain off except when personnel are present at night and shall be shielded or directed downward to the greatest extent possible to ensure that light shall not spill over onto abutting properties, especially residential zoning districts or uses; and

b. Tower lighting required by FAA regulation.

6. Landscape. Where appropriate, wireless facilities shall be landscaped so as to maintain and enhance the aesthetic quality of the community and generally screen the ground equipment from public view. The perimeter of the facility, as well as any portion of the leasable area directly adjacent to a public right-of-way, a residential use, or a public trail shall be landscaped with trees, foliage, and shrubs. Trees shall

be fast-growing evergreen species, twenty-four (24") inch box in size. Shrubs shall be a minimum fifteen (15) gallon size covering a minimum planter area depth of five (5' 0") feet around the facility. Trees and shrubs shall be planted no further apart on center than the mature diameter of the proposed species.

7. Design/Finish. The tower and related equipment shall have subdued colors and nonreflective materials that blend with the colors and materials of surrounding areas.

8. Advertising. The tower and related equipment shall not bear any signs or advertising devices other than certification, warning or other required seals or signs.

9. Parking. The off-street parking for wireless communications facilities shall be determined by the designated approving authority in conjunction with required development permits. All required parking shall be provided in accordance with EGMC Chapter 23.58 EGMC, Parking. [Ord. 31-2014 §3 (Exh. A), eff. 2-13-2015; Ord. 27-2013 §15, eff. 2-7-2014; Ord. 8-2011 §39(D), eff. 6-24-2011]

23.94.060 Operation and maintenance standards.

A. Noise. All wireless communications facilities shall comply with EGMC Chapter 6.32, Noise Control, at all times. Back-up generators shall only be operated during power outages and for testing and maintenance purposes.

B. Nonionizing Electromagnetic Radiation (NIER) Exposure. No wireless communications facility ~~shall be sited or operated in such a manner that it poses, either by itself or in combination with other such facilities, a potential threat to public health. To this end, no facility~~ or combination of facilities shall produce, at any time, power densities in any inhabited area that exceed the FCC's maximum permissible exposure (MPE) limits for electric and magnetic field strength and power density for transmitters~~ or any more restrictive standard subsequently adopted or promulgated by the City, County, State, or the Federal government~~. [Ord. 8-2011 §39(E), eff. 6-24-2011; Ord. 26-2006 §3, eff. 8-11-2006]

23.94.070 Removal provisions.

In the event one or more antennas, towers, or related equipment are not operated for the provision of wireless telecommunication services for a continuous period of three (3) months or more, such antenna, tower, and/or related equipment shall be deemed abandoned. The owner of same shall remove all such items within thirty (30) days following the mailing of written notice that removal is required. If two (2) or more providers of wireless telecommunication services use the antenna support structure or related equipment, the period of nonuse under this section shall be measured from the cessation of operation at the location by all such providers. Failure to remove shall constitute a public nuisance and shall be enforced as such. [Ord. 26-2006 §3, eff. 8-11-2006]

23.94.080 Transfer of operation.

Any carrier/service provider authorized by the City to operate a specific wireless communications facility may assign the operation of the facility to another carrier licensed by the FCC for that radio frequency; provided, that such transfer is made known to the Development Services Director in writing prior to the transfer and all conditions of approval for the subject installation are carried out by the new carrier/service provider. However, the carrier/service provider may, without written notification, transfer operations of the facility to its general partner or any party controlling, controlled by or under common control with the carrier/service provider. [Ord. 24-2015 §11 (Exh. I), eff. 2-12-2016; Ord. 26-2006 §3, eff. 8-11-2006]

23.94.090 Effects of development.

The City shall not be liable if development within the City, after installation of the antenna, impairs antenna reception. [Ord. 26-2006 §3, eff. 8-11-2006]

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ELK GROVE FINDING NO FURTHER ENVIRONMENTAL REVIEW IS REQUIRED UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) PURSUANT TO STATE CEQA GUIDELINES SECTIONS 15183, 15301, AND 15303 AND APPROVING A MASTER LICENSE AGREEMENT WITH NEW CINGULAR WIRELESS PCS, LLC

WHEREAS, New Cingular Wireless PCS, LLC (by AT&T Mobility) (the "Applicant") seeks approval of a Master License Agreement (the "MLA") for small cell wireless facilities to be constructed in the City; and

WHEREAS, the Planning Commission held a duly-noticed public hearing on July 18, 2019 to consider all information presented by staff, interested persons, and the Applicant concerning approval of the MLA and related amendments to Title 23 (Zoning) of the Elk Grove Municipal Code; and

WHEREAS, the Planning Commission voted 4-0 to recommend that the City Council approve the MLA and related amendments to Title 23 (Zoning) of the Elk Grove Municipal Code ("EGMC"); and

WHEREAS, the City Council held a duly-noticed public hearing on August 28, 2019, to consider all information presented by staff, interested persons, and the Applicant concerning approval of the MLA and related amendments to Title 23 (Zoning) of the Elk Grove Municipal Code.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Elk Grove finds that no further environmental review is required under the California Environmental Quality Act (CEQA) for approval of the MLA pursuant to State CEQA Guidelines Sections 15183, 15301, and 15303 based upon the following finding:

California Environmental Quality Act (CEQA)

Finding: No further environmental review is required for approval of the MLA under CEQA pursuant to State CEQA Guidelines Sections 15183, 15301, and 15303.

Evidence: CEQA requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" (State CEQA Guidelines Section 15378). The proposed Project is a project under CEQA.

Staff has analyzed the MLA and related EGMC text amendments and has determined that no further environmental review is necessary for their approval pursuant to State CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning), Section 15301 (CEQA exemption for minor alteration to existing facilities), and Section 15303 (CEQA exemption for new construction or conversion of small structure). The MLA facilitates the deployment of small cell antennas and associated equipment throughout the City, and it addresses the processing of permits individual small cell facilities; their operation and maintenance; and their location, design and technical specifications.

Chapter 23.27 of the EGMC currently defines wireless telecommunications facilities and specifies the zoning districts where these wireless facilities are allowed, as well as the permit processes to which these facilities are subject. The proposed EGMC text amendments and MLA define "Wireless Telecommunications Facilities, Small Cell" which are a specific subset of those wireless facilities that are currently allowed but fall within particular size criteria. Wireless Communications Facilities are allowed in all zoning districts throughout the City. Small cell facilities will also be allowed in all zoning districts; however, the MLA allows facilities that differ from the traditional, large scale facilities. The approval of the MLA is consistent with General Plan policies related to community infrastructure and development density. An EIR was certified in conjunction with the approval of the General Plan (SCH# 2017062058). Approval of the MLA will not create a significant new impact inconsistent with the General Plan EIR. Therefore, pursuant to CEQA Guidelines Section 15183, no further CEQA review is required for the approval of the proposed MLA.

Approval of the MLA and the small cell wireless facilities that would be subject to the MLA, are also exempt from CEQA under CEQA Guidelines Sections 15301 and 15303. Section 15301 exempts from CEQA minor alteration to existing public or private structures. Section 15303 exempts from CEQA the construction of small facilities, including the installation of small new equipment and facilities. Here, the associated EGMC text amendments and the MLA authorize the installation of facilities at various sites within the City. The new facilities are to be installed on existing City facilities such as streetlight and/or traffic signal poles, and the new facilities will be less than 28 cubic feet, with the specifically proposed facilities being much less than half the size of the existing poles. Therefore, the approval of the proposed EGMC text amendments and MLA are exempt from CEQA review pursuant to CEQA Guidelines Sections 15301 and 15303.

AND BE IT FURTHER RESOLVED that the City Council of the City of Elk Grove hereby approves the Master License Agreement with New Cingular Wireless PCS, LLC in substantially the form attached hereto as Exhibit 1. This resolution shall be effective as of the effective date of the related text amendments to Title 23 (Zoning) of the Elk Grove Municipal Code (Ordinance No. _____).

PASSED AND ADOPTED by the City Council of the City of Elk Grove this 28th day of August 2019

_____
STEVE LY, MAYOR of the
CITY OF ELK GROVE

ATTEST:

_____
JASON LINDGREN, CITY CLERK

APPROVED AS TO FORM:

_____
JONATHAN P. HOBBS,
CITY ATTORNEY

EXHIBIT A

MASTER LICENSE AGREEMENT FOR SMALL CELL WIRELESS COMMUNICATIONS FACILITIES BETWEEN THE CITY OF ELK GROVE AND NEW CINGULAR WIRELESS PCS, LLC

This License Agreement for Small Cell Wireless Communications Facilities on Municipal Facilities (the "Agreement") is made and entered into as of _____, 2019 ("Effective Date") by and between the City of Elk Grove, a municipal corporation ("Licensor" or "City") and New Cingular Wireless PCS, LLC, a Delaware limited liability company ("Licensee"). Licensor and Licensee shall sometimes be referred to hereafter individually as a "Party" and collectively as the "Parties."

RECITALS

A. Licensor is the owner of certain Municipal Facilities located in the City's right-of-way situated within the City of Elk Grove;

B. Licensee seeks to affix Small Cell Wireless Communication Facilities to certain of Licensor's Municipal Facilities, as set forth herein;

C. Licensee is willing to compensate Licensor in exchange for a grant and right to use and physically occupy portions of the Municipal Facilities as provided herein;

D. Licensor is willing to accommodate Licensee's non-exclusive use of such Municipal Facilities for Small Cell Wireless Communication Facilities in accordance with all applicable law and the terms of this Agreement;

NOW, THEREFORE, in consideration of the mutual covenants, terms, and conditions set forth in this Agreement, the Parties hereby agree as follows:

1. DEFINITIONS

As used herein, the following capitalized terms have the meaning ascribed to them below:

1.1 "EGMC" means the City of Elk Grove Municipal Code.

1.2 "Emergency" means an event that severely impairs public health, safety, and/or welfare.

1.2 "FCC" means the Federal Communications Commission.

1.3 "Individual Site Permit" means a permit for a single Small Cell Wireless Communications Facility at a specified location on a Municipal Facility.

1.4 "Municipal Facilities" or "Municipal Facility" means those Licensor-owned streetlights, traffic signals, flags, banners and/or signage, refuse receptacle(s); bus stop(s); poles; fixtures, or any other similar structure(s) capable of accommodating a Small Cell

Wireless Communications Facility located within the Licensor's Right of Way ("ROW") that are designated or approved by Licensor as being suitable for placement of Small Cell Wireless Communication Facilities.

1.5 "Person" or "Persons" means any natural person or other legal entity including, without limitation a corporation, partnership, or government agency.

1.6 "Small Cell Wireless Communication Facilities" or "Small Cell Wireless Communication Facility" means any small cell antennas and other wireless communications equipment, including facilities that operate on unlicensed frequencies and FCC-approved frequencies in the bands authorized for commercial wireless communication services by the FCC pursuant to FCC licenses issued to Licensee, and all associated equipment, affixed by Licensee to a Licensor's Municipal Facility and meeting the following size criteria: (i) the small cell antenna on a single Municipal Facility shall not exceed six (6) cubic feet in volume; (ii) any individual piece of associated equipment on a single Municipal Facility shall not exceed nine (9) cubic feet in volume; and (iii) the cumulative total of all associated equipment for a single Municipal Facility shall not exceed twenty-eight (28) cubic feet in volume.

2. SCOPE OF AGREEMENT

2.1 Scope of Agreement. Licensor, acting in its proprietary capacity as the owner of Municipal Facilities, and subject to the terms and condition of this Agreement, does hereby grant to Licensee a nonexclusive license to use the Municipal Facilities to attach, install, operate, maintain, upgrade, remove, reattach, reinstall, relocate and replace the Small Cell Wireless Communication Facilities at the locations identified in Exhibit A, attached hereto. Licensee shall provide geographic information system ("GIS") information to the City identifying such sites in an electronic or other form acceptable to the City allowing the City to modify or layer such GIS information on an on-going basis, as needed. The list of Small Cell Wireless Communication Facilities locations set forth at Exhibit A may be amended or supplemented from time to time by the City Manager in order to update the applicable Small Cell Wireless Communication Facilities locations. Nothing in this Agreement grants Licensee the right to make any installation, or to install any other facilities or equipment not addressed in this Agreement and/or that do not conform to this Agreement. Nothing in this Agreement grants Licensee the right to make any installation, or to install any other facilities or equipment on private property. The rights and obligations set forth in this Agreement are contractual only, and no use of Licensee's Municipal Facilities under this Agreement shall create or vest in Licensee any ownership, property, or other similar legal interest in such Municipal Facilities. No permit shall be issued for any Small Cell Wireless Communications Facility for a location not identified on the map contained at Exhibit A, as it may be amended from time to time.

2.2 Interference with Small Cell Wireless Communication Facilities. As of the Effective Date of this Agreement and the installation of Small Cell Wireless Communication Facilities by Licensee pursuant to this Agreement, Licensor shall not materially and adversely affect or interfere with the Licensee's existing Small Cell Wireless Communication Facilities

or Licensee's ability to comply with the terms and conditions of this Agreement, all as determined by Licensee in consultation with Licensor, including, without limitation, Licensor's granting of rights to third-parties that would materially and adversely affect or interfere with the Licensee's existing Small Cell Wireless Communication Facilities or Licensee's ability to comply with the terms and conditions of this Agreement. Notwithstanding the foregoing, nothing herein shall prevent Licensor from granting rights to third-parties to allow co-location of facilities or equipment on Municipal Facilities occupied by Licensee, provided that such co-location does not materially and adversely affect or interfere with the Licensee's existing Small Cell Wireless Communication Facilities or Licensee's ability to comply with the terms and conditions of this Agreement in conflict with this section 2.2.

3. GENERAL OBLIGATIONS

3.1 Technical Requirements and Specifications.

(a) All Small Cell Wireless Communication Facilities must be constructed, erected, installed at Licensee's sole expense and in compliance with all applicable laws. Licensee shall maintain and repair all Small Cell Wireless Communication Facilities at its expense in safe condition and good repair including, without limitations, in compliance with the following:

(i) The requirements and specifications of the National Electrical Safety Code ("NESC"), the National Electrical Code ("NEC") and any and all other applicable regulatory codes for safe practices when performing work on or near Municipal Facilities (collectively, "Safety Codes"); and

(ii) Any current or future rules or orders of the FCC, the State public utility commission, or any other federal, state or local authority having jurisdiction.

(iii) All requirements of the EGMC and other applicable law.

(iv) Changes to the requirements, specifications, rules and orders in subsections (i), (ii) and (iii) shall not apply retroactively unless required by law.

3.2 No Liens Permitted. Licensee will not, directly or indirectly, create, incur, assume or suffer to exist any lien with respect to any Municipal Facilities or other Licensor property resulting from any work performed by Licensee or on its behalf pursuant to this Agreement or any act or claim against it or any of its contractors, agents, or customers and will, at its sole expense, promptly take any action as may be necessary to discharge any such lien within thirty (30) days of first being notified in writing of its existence.

3.3 Worker Qualifications; Responsibility for Agents and Contractors. Licensee shall ensure that its workers and, to the extent that it may employ agents or contractors, their workers, are adequately trained and skilled to access the Municipal Facilities in accordance with all applicable laws and industry standards. Licensor may deny access to its Municipal Facilities to any such worker who is not so qualified, or does not act in a safe and

professional manner when accessing any Municipal Facility, all as determined in Licensor's reasonable discretion. In such event, Licensee shall take such reasonable and necessary action so as to ensure that such worker does not continue to access the Municipal Facilities on Licensee's behalf unless such worker is qualified to Licensor's reasonable satisfaction. For installation of all Small Cell Wireless Communications Facilities, Licensee shall designate a project manager who at all times shall represent the Licensee before the Licensor on all matters relating to installation of the Small Cell Wireless Communications Facilities. The project manager shall continue in such capacity unless and until he or she is removed at the request of City, is no longer employed by Licensee, or is replaced with the written approval of City, which approval shall not be unreasonably withheld.

3.4 Training of City Staff. Licensee, at its sole expense, shall provide technical educational materials to City staff and any City contractor, on an ongoing basis and/or as new City staff or City contractors are added, as to the operation of each of its Small Cell Wireless Communication Facilities to ensure safe and efficient operation and maintenance of the Small Cell Wireless Communication Facilities, all in accordance with all applicable laws and industry standards.

3.5 Utilities. Licensee shall be solely responsible for arrangement and payment for electric service necessary in connection with installation of any Small Cell Wireless Communication Facilities. Notwithstanding the foregoing, Licensor, if feasible and subject to Licensor's reasonable discretion, shall provide use and access to Licensor's existing power supply, conduit or other form of infrastructure for the delivery of power and fiber access to a Municipal Facility to allow Licensee to obtain electricity for the operation of Licensee's Small Cell Wireless Communication Facilities with such electricity being paid for by Licensee.

4. PERMITS

4.1 City Use Permits. Prior to the installation of any Small Cell Wireless Communications Facility, Licensee shall obtain all necessary permits as required by EGMC Chapter 23.94 and this Agreement, and Licensee shall obtain all other City permits and/or entitlements necessary for the Small Cell Wireless Communication Facility required by any government agency. In securing permits pursuant to this section and the EGMC, Licensee shall comply with all applicable environmental laws including, without limitation, the California Environmental Quality Act ("CEQA").

4.2 Nonresidential Zoning Districts – Administrative Approval of Individual Site Permits.

(a) Individual Site Permits for Small Cell Wireless Communication Facilities in nonresidential zoning districts within the City shall be subject to the provisions of this section 4.2. The structure, design, and technical standards of the Small Cell Wireless Communication Facilities, as identified at Exhibit B, are hereby preapproved by the City. This preapproved list of Small Cell Wireless Communication Facilities may be amended or supplemented from time to time by the City Manager in the City Manager's discretion. Provided that Licensee

submits an application for an Individual Site Permit at a designated location, accompanied by the Individual Site Permit Application Fee as set forth at Exhibit C, that substantially complies with the Small Cell Wireless Communication Facilities identified at Exhibit B, the Public Works Director or his/her designee shall ministerially approve the permit application within forty-five (45) days of submission of the application. During the pendency of the Individual Site Permit application, which "pendency" shall include the time for filing and prosecuting an administrative appeal, if filed, the City shall not approve another Individual Site Permit at the location identified in the application for a Small Cell Wireless Communications Facility other than the Small Cell Wireless Communications Facility identified in the application. Should the Public Works Director affirmatively deny an application, he/she shall set forth in writing the basis for the denial. Any denial of a permit application pursuant to this section, whether by inaction or affirmative denial, shall be subject to administrative appeal to the City Manager or his/her designee, which appeal shall be submitted in writing within ninety (90) days of denial. If no appeal is timely filed, the pendency of the application for the Individual Site Permit shall terminate upon the expiration of the ninety (90) day appeal period. If an appeal is filed and prosecuted to completion, the determination of the City Manager shall be final, shall terminate the pendency of the application for the Individual Site Permit, whether approved or denied, and there shall be no further right of administrative appeal from the City Manager's determination; provided, however, Licensee shall have the right to pursue other appeals and/or remedies available at law.

(b) The administrative approval process set forth at section 4.2(a) shall have no application to Individual Site Permits in any residential zoning district or agricultural-residential zoning district in the City. Notwithstanding any other provision of this Agreement, such Individual Site Permits in any residential zoning district or agricultural-residential zoning district in the City shall be governed by the terms of Chapter 23.94 of the City's Municipal Code, as now existing or hereafter lawfully amended. Notwithstanding the foregoing, those Small Cell Wireless Communication Facilities identified on the initial Exhibit A, attached hereto, which may be in a residential zoning or an agricultural-residential zoning district are hereby approved by this Agreement, but any additional or further Individual Site Permits in in any residential zoning district or any agricultural-residential zoning district in the City shall be governed by the terms of Chapter 23.94 of the City's Municipal Code, as now existing or hereafter lawfully amended.

4.3. Other permits. In addition to any permits required by sections 4.1 through 4.2, Licensee represents and warrants to Licensor that it has (or will have at the time of installation of any Small Cell Wireless Communications Facilities) all licenses, permits, qualifications and approvals of whatsoever nature legally required for Licensee to conduct such installations. Licensee represents and warrants to City that it shall, at its sole cost and expense, obtain and/or keep in effect at all times during the term of this Agreement any licenses, permits, and approvals which are legally required for Licensee to conduct such installations.

5. OPERATION AND MAINTENANCE; RESERVATION OF RIGHTS

5.1 Reservation of Rights. Licensor reserves all rights to operate and maintain its Municipal Facilities, to discontinue such maintenance, and to remove its Municipal Facilities, in the best manner required to fulfill its own service requirements, and to maintain public, employee, and worker safety and welfare.

5.2. Radio Frequency ("RF") Emissions.

(a) Licensee shall comply with all FCC regulations regarding RF emissions and exposure limitations. Licensee shall install signage and other mitigation, such as a power cut-off switch on Municipal Facilities, to allow workers and third parties to avoid excess exposure to RF emissions. Licensor's authorized field personnel will contact Licensee's designated point of contact not less than 24 hours in advance to inform Licensee of the need for a temporary power-shut-down. In the event of an unplanned outage or cut-off of power or an Emergency, the power-down will be with such advance notice as practicable. Once the work has been completed and the worker(s) have departed the exposure area, the party who accomplished the power-down shall restore power and inform Licensee as soon as possible that power has been restored. The Parties acknowledge that they understand the vital nature of Licensee's Small Cell Wireless Communications Facilities and agree to limit the frequency of power-downs and restore power as promptly as much as reasonably possible.

(b) Licensee and other users of the Municipal Facilities which emit RF on Licensor's Municipal Facilities are under an obligation to operate their own existing or future facilities to protect against RF interference to RF signals of Licensor, Licensee, and such other users of the Municipal Facilities, as applicable, as may emanate or arise. Licensor and Licensee and all others on Licensor's Municipal Facilities shall endeavor to correct any interference to other networks created by its RF emissions promptly and shall coordinate and cooperate with each other relating to the same.

5.3 FCC Antenna Registrations, Federal Aviation Administration ("FAA") Compliance. Licensee is solely responsible for ensuring compliance with any and all FCC antenna registration, FAA, or similar requirements with respect to the location of the Licensee's antennas or other facilities. Without limitation, Licensee acknowledges and agrees that Licensor's Municipal Facilities are not "antenna structures" under the FCC's rules and that, accordingly, Licensor has no obligation of its own in this regard to register them with the FCC, the FAA, or other agency.

5.4 Small Cell Wireless Communication Facilities Modification and Replacements. Subsequent to the original installation of Licensee's Small Cell Wireless Communication Facilities, Licensee may modify or replace a Small Cell Wireless Communication Facility without Licensor approval so long as such modification or replacement looks the same aesthetically as the existing Small Cell Wireless Communication Facility and is substantially similar in size, weight, and configuration, complies with all other terms of this Agreement, and does not increase the load on the applicable Municipal Facility beyond the loading, if any, that was established at the time of Licensor's approval of the

placement of the Small Cell Wireless Communication Facility, unless otherwise expressly approved by Licensor.

5.5 Access. At all times throughout the Term of this Agreement, and at no additional charge to Licensee, Licensee and its employees, agents, and subcontractors, will have reasonable pedestrian and vehicular access ("Access") to, in and on any Municipal Facility used so that Licensee may install, operate, maintain, repair, replace, remove, or modify its Small Cell Wireless Communications Facilities, provided, however, that such Access shall not unreasonably interfere with any operations of the City including, without limitation, pedestrian or vehicular access on City property or rights-of-way. To the extent Licensee seeks to temporarily encroach on any roadway or other City right-of-way not expressly addressed in this Agreement in order to install, operate, maintain, repair, replace, remove, or modify its Small Cell Wireless Communications Facilities, Licensee shall obtain an encroachment permit from the City, including payment of all applicable encroachment permit fees.

5.6. No Hazardous Substances. Licensee agrees that Licensee, its contractors, subcontractors and agents, will not use, generate, store, produce, transport or dispose any Hazardous Substance on, under, about or within the area of a Municipal Facility or the ROW in which it is located in violation of any applicable federal, state, county, or local law or regulation. For purposes of this Agreement, "Hazardous Substance" means any substance, chemical or waste that is identified as hazardous or toxic in any applicable federal, state or local law or regulation, including but not limited to petroleum products and asbestos.

6. CHARGES, BILLING AND PAYMENT

6.1 Master License Agreement Fee. Upon execution of this Agreement by Licensee, Licensee shall pay Licensor the Master License Agreement Fee set forth at Exhibit C to defray the cost of Licensor's preparation of this Agreement.

6.2 Annual Rent for Small Cell Wireless Communications Facilities. Licensee shall pay Licensor the annual rental fee ("Rent") for each Small Cell Wireless Communications Facility subject to this Agreement in the amounts set forth in Exhibit C for each year (or partial year) that this Agreement remains in effect. Rent is per Municipal Facility and includes all appurtenant Small Cell Wireless Communication Facilities and facilities used in connection with Small Cell Wireless Communications Facilities. The Rent shall automatically escalate on January 1 of each year that this Agreement is in effect by 2%.

6.3 Timing of Payment and Calculation of Number of Small Cell Wireless Communication Facility.

(a) The Rent shall be payable annually on or before January 1 of each year for each Individual Site Permit issued as of October 1 of the prior calendar year.

(b) If Licensee's records show a different number of Small Cell Wireless Communication Facility for which a Rent payment is required, Licensee shall so notify Licensor. Licensor will then, following receipt of Licensee's notification, either accept in

writing Licensee's revised count/information or notify Licensee in writing that a dispute exists about such count, in which event the parties shall comply with the dispute resolutions provisions of the Agreement.

6.4 Surety Bond. Licensee shall furnish a Performance Bond ("Surety Bond") in the amount specified in Exhibit C, attached hereto, and maintain such Bond during the Term of this Agreement. The Bond shall be in a form satisfactory to the City and shall be obtained from a responsible corporate surety acceptable to the City, which is licensed by the State of California to act as surety upon bonds and undertakings and which maintains in this State at least one office for the conduct of its business. The surety shall furnish reports as to its financial condition from time to time as requested by the City. The premiums for said Bond shall be paid by Licensee. The Bond shall be furnished by a company who is authorized and licensed by the Insurance Commissioner as an "admitted surety insurer." The surety shall provide the City with the documentation required by Section 995.660 of the California Code of Civil Procedure. If any surety becomes unacceptable to the City or fails to furnish reports as to its financial condition as requested by the City, Licensee shall promptly furnish such additional security as may be required from time to time to protect the interests of the City and of persons supplying labor or materials in the prosecution of the work contemplated by this Agreement. In the event of any conflict between the terms of the Agreement and the terms of the Bond, the terms of the Agreement shall control and the Bond shall be deemed to be amended thereby. Without limiting the foregoing, the City shall be entitled to exercise all rights granted to it by the Agreement in the event of default, without control thereof by the surety, provided that the City gives the surety notice of such default at the time or before the exercise of any such right by the City, and, regardless of the terms of said Bond, the exercise of any such right by the City shall in no manner affect the liability of the surety under said Bond.

6.5 Unauthorized Small Cell Wireless Communications Facilities. Upon discovery of Small Cell Wireless Communications Equipment of Licensee that has not been approved by Licensor ("Unauthorized Equipment"), Licensee shall remove such Unauthorized Equipment upon thirty (30) days' notice from Licensor unless Licensee has submitted the Small Cell Wireless Communications Equipment for approval under this Agreement. Licensee shall also pay liquidated damages to Licensor in the amount of three (3) times the then current Rent multiplied by the number of Licensee's unauthorized Small Cell Wireless Communications Equipment in addition to any actual damages provable by Licensor.

6.6 Billing and Payment Generally.

(a) Except as otherwise provided herein, all bills and invoices and other requests for payment rendered under this Agreement shall be paid by Licensee within sixty (60) days from the receipt of invoice. Interest of one and one-half percent (1.5%) per month (or the highest amount permitted by law, whichever is less) of the total amount due and unpaid will apply to any unpaid amount after ten (10) days from the receipt of written notice of late payment.

(b) Licensee shall notify Licensor within thirty (30) days of the date of invoice of any dispute, with sufficient particularity to identify the amounts in, and grounds for, dispute.

7. AUDITS AND INSPECTIONS

7.1 Audits.

(a) Licensee and Licensor shall reasonably cooperate in determining the total number of Small Cell Wireless Communication Facilities within the City. This determination shall be based on an on-going inventory as shown on the Individual Site Permits issued to Licensee. Licensor has the right to require a jointly conducted physical audit of Small Cell Wireless Communications Facilities at least once per calendar year, or more often as deemed reasonable by Licensor. Licensee shall pay all expenses associated with such audit, if requested by Licensor. Any audit by Licensor that is more frequently than once a calendar year shall be at Licensor's expense. Licensor must provide at least ninety (90) days' written notice of any audit.

(b) Licensee and Licensor may mutually agree that in lieu of such a jointly conducted physical audit, the number of Small Cell Wireless Communication Facilities may be determined from existing maps and attachment records, in which case, each Party shall make all relevant maps and records available to the other Party and the number of Small Cell Wireless Communications Facilities shall be cooperatively determined.

(c) The audit conducted pursuant to the foregoing sections shall also confirm operation of each Small Cell Wireless Communication Facilities on a Municipal Facility. Any such Small Cell Wireless Communication Facility that has not operated for a continuous period of three (3) months or more shall be deemed abandoned and shall be removed by Licensee in accordance with the EGMC and this Agreement. Licensee shall have one-hundred eighty (180) days from the issuance of an Individual Site Permit to commence operation of a Small Cell Wireless Communication Facility or the site shall be deemed abandoned.

7.2 Safety Inspections. Licensor may conduct, at its sole expense, inspections of Small Cell Wireless Communications Facilities on Licensor's Municipal Facilities and to conduct inspections in the vicinity of Small Cell Wireless Communications Facilities. Licensor shall give Licensee twenty-one (21) days' prior written notice of such inspections and Licensee shall have the right to be present at and observe any such inspections, at Licensee's sole expense. However, in the event of an Emergency, as determined in Licensor's discretion, Licensor may conduct such inspections immediately and without prior notice to Licensee.

8. MUNICIPAL FACILITY REPLACEMENT AND ABANDONMENT AND REMOVAL OF WIRELESS COMMUNICATIONS FACILITIES

8.1 Replacement or Abandonment of Municipal Facility.

(a) If for safety, reliability, operational reasons, or due to government requirements Licensor desires to replace a Municipal Facility to which a Small Cell Wireless Communications Facility is affixed, Licensee shall remove all Small Cell Wireless Communications Facilities upon ninety days (90) days' written notice from Licensor, unless a shorter period is required pursuant to a regulatory or governmental order or judicial decision. In the event the removed Small Cell Wireless Communications Facility cannot be reinstalled at any replacement Municipal Facility at the same location, Licensor shall make best and reasonable efforts to identify a relocation site for the Small Cell Wireless Communications Facility located on the original Municipal Facility and transfer it to a replacement Municipal Facility. If Licensor cannot identify a relocation site, after having made best and reasonable attempts to do so, Licensee has the right to terminate the Individual Site Permit for that Municipal Facility, at which point Licensee must promptly remove the Small Cell Wireless Communications Facility at that location. Notwithstanding the foregoing, in the case of an Emergency, as determined in Licensor's reasonable discretion, Licensor may require Licensee to immediately remove and/or replace the Small Cell Wireless Communications Facilities and/or transfer them to replacement Municipal Facilities, or perform any other work in connection with said Small Cell Wireless Communications Facilities that may reasonably be required to maintain, replace, remove or relocate the Municipal Facility. Any removal, replacement, and/or transfer of Small Cell Wireless Communications Facilities pursuant to this section shall be at Licensee's sole expense, and Licensee shall reimburse Licensor for any and all expenses incurred by Licensor as a result of such replacement, removal, and/or transfer. In the event of an Emergency, Licensor shall notify Licensee as soon as reasonably practicable. If Licensor is unable to accommodate a transfer of the Small Cell Wireless Communications Facilities to another Municipal Facility pursuant to this section, Licensee shall be relieved of its obligation to pay Rent for that Small Cell Wireless Communications Facilities.

(b) If Licensor desires to abandon any Municipal Facility, it shall give Licensee ninety (90) days' written notice of the date of the abandonment. Upon abandonment of the Municipal Facility, Licensee shall remove or otherwise dispose of the Small Cell Wireless Communications Facilities installed on such Municipal Facility, unless otherwise agreed in writing.

(c) If a Licensor's Municipal Facility needs to be repaired or replaced in order to accommodate an existing or proposed Small Cell Wireless Communications Facility, Licensee may request of Licensor that Licensee be permitted to undertake such repair and/or replacement work, which may be approved or denied in Licensor's discretion. Any such work will be at Licensee's sole expense, and Licensee shall reimburse Licensor for any and all expenses incurred by Licensor related thereto. Licensor may, at its discretion, require prepayment by Licensee for the estimated costs of such repair or replacement before any such work commences; any unused funds shall be returned to Licensee upon Licensor's

acceptance of the work and any additional expenses exceeding the deposit shall be paid by Licensee within thirty (30) days of an invoice by Licensor.

(d) If, upon expiration of any required notice period for removal, any such Small Cell Wireless Communications Facilities have not been removed, Licensor may at Licensee's sole expense, remove and dispose of the Small Cell Wireless Communications Facilities, without any liability to Licensee for such removal and disposition.

(e) Nothing herein shall obligate the City to replace any Municipal Facility to accommodate any Small Cell Wireless Communications Facility proposed by Licensee.

8.2 Removal of Small Cell Wireless Communications Facilities by Licensee. Licensee may at any time, whether for convenience, damage to the Small Cell Wireless Communications Facilities, or other reason, remove Small Cell Wireless Communications Facilities from Licensor's Municipal Facilities and terminate the applicable Individual Site Permit(s), and shall give Licensor notice of such removal and termination within thirty (30) days prior to removal. Notwithstanding the foregoing, in the case of an Emergency, as determined in Licensee's discretion, Licensee may remove the Small Cell Wireless Communications Facilities and terminate the applicable Individual Site Permit(s) without prior notice to Licensor, provided, however, that Licensee shall provide such notice of removal and termination to Licensor as soon as reasonably practical. No refund of any Rent paid will be due on account of such removal and termination, unless such removal and termination arises from a Default of Licensor, as provided for in section 13.3.

8.3 Licensee Safety or Other Violations. If Licensor discovers any regulatory, safety or other violation of this Agreement with respect to Small Cell Wireless Communications Facilities, it may notify Licensee and Licensee shall have sixty (60) days in which to remedy such violations, except that Licensor may require shorter cure period in the event of an Emergency, as determined by Licensor.

9. INSURANCE

Licensee shall at its sole cost and expense maintain the insurance coverage and limits as set forth at Exhibit D, attached hereto, during the entire Term of this Agreement, and shall deliver the required proof of insurance compliance to City or City's insurance certificate processor as City directs. Licensee shall also certify its compliance with Labor Code Section 3700 in the form attached hereto as Exhibit E.

10. LIMITATION ON DAMAGES

Notwithstanding any provision of this Agreement to the contrary, in no event shall either Party be liable in law or equity to the other Party for consequential, incidental, punitive, exemplary, or indirect damages suffered by the other Party, nor for any lost profits or other business interruption damages, whether pursued under statute, tort, contract or other legal or equitable theory. Nothing herein shall relieve either Party from any liability for damages or

injury injuries suffered by third Persons or any third Person's property proximately caused by a Party's act or omission.

11. INDEMNIFICATION

To the fullest extent permitted by law, Licensee shall indemnify, protect, defend, and hold harmless City, its officers, officials, agents, employees and volunteers (together "Licensor Indemnitees") from and against any and all liabilities, damages or claims for damage, including but not limited to all actual and reasonable costs, attorneys' fees, and other charges and expenditures that Licensor Indemnitees may incur, arising out of any failure by Licensee to comply with applicable law, any injury to or death of any person(s), damage to property, loss of use of property, economic loss or otherwise arising out of the performance of the work described herein, to the extent caused by a negligent act or negligent failure to act, errors, omissions, recklessness or willful misconduct incident to the performance of this Agreement on the part of Licensee, except such loss or damage which was caused by the negligence or willful misconduct of the City, as determined by a Court of competent jurisdiction. Unless and until such judicial determination is made, or as otherwise agreed by the parties, Licensee shall remain obligated to defend, indemnify, and hold harmless the City, its officers, officials, employees, volunteers, and agents pursuant to this Agreement.

To the fullest extent permitted by law, Licensor shall indemnify, protect, hold harmless and, at Licensee's sole option, defend Licensee, its principals, parents, affiliates, officers, directors, contractors, subcontractors, suppliers, licensees, invitees, agents, attorneys, employees, successors and assigns (together "Licensee Indemnitees") from and against any and all liabilities, damages or claims for damage, including but not limited to all actual and reasonable costs, attorneys' fees, and other charges and expenditures that Licensee Indemnitees may incur, arising out of any failure by Licensor to comply with applicable law, or the negligent installation, operation, use, repair, or removal of Licensor's Municipal Facilities or breach of the terms of this Agreement by Licensor, including acts or omissions by its agents, contractors, or subcontractors except to the extent that such liabilities, damages or claims are a result of the negligence or willful misconduct of Licensee, as determined by a Court of competent jurisdiction. Unless and until such judicial determination is made, or as otherwise agreed by the parties, Licensor shall remain obligated to indemnify, hold harmless, and, at Licensee's sole option, defend Licensee Indemnitees pursuant to this Agreement. To the extent permitted by law, Licensor shall purchase liability insurance in an amount adequate to fulfill its obligations to indemnify and protect Licensee under this Agreement.

The provisions of this section shall survive termination or suspension of this Agreement.

12. TERM

The Effective Date of this Agreement shall be the date it was executed by all Parties and approved as to form by the City Attorney. In the event that the Parties do not execute the Agreement on the same date, the Effective Date of the Agreement shall be the latest date on which one of the Parties executes the Agreement. This Agreement shall commence as of the

Effective Date, and, if not lawfully terminated sooner, shall remain in full force and effect for a term of ten (10) years. Upon mutual written agreement of the Parties, the Agreement may be extended for two (2) successive five (5) year terms, or as otherwise agreed by the Parties in writing. The parties will negotiate in good faith the terms of a successor agreement during the ninth year of the initial term and/or during the final year of any subsequent extension of the Agreement; provided, however, that nothing herein shall obligate either party to enter into any such successor agreement. Upon termination of this Agreement, Licensee shall remove all Small Cell Wireless Communications Equipment from all Licensor's Municipal Facilities within one hundred and eighty (180) days. If not so removed within one hundred and eighty (180) days following such termination, Licensor shall have the right to remove such Small Cell Wireless Communications Facilities, and to dispose of same, at Licensee's sole expense and without any liability to Licensee for such removal and disposition.

13. DEFAULT AND TERMINATION

13.1 Default. If either Party fails to perform or observe any material term or condition of this Agreement within sixty (60) days after receipt of written notice of such failure from the other Party, then such Party will be in default of the Agreement ("Default"). No such failure, however, will be deemed to exist if a Party has commenced to cure such Default within such period and provided that such efforts are prosecuted to completion with reasonable diligence.

13.2 Licensee's Default and Licensor's Remedies. If Licensee does not cure its Default within the allotted time period, Licensor may, at its reasonable discretion, take any one or more of the following actions:

(a) Suspend Licensee's access to any of Licensor's Municipal Facilities to which the Default relates;

(b) Revoke any permits issued to Licensee to which the Default relates;

(c) Require the obligation to be fulfilled;

(d) Remove, relocate, or rearrange Small Cell Wireless Communications Facilities to which such Default relates (all at Licensee's sole expense);

(e) Decline to permit additional Small Cell Wireless Communications Facilities under this Agreement until all such Defaults are cured;

(f) Exercise its rights with respect to the Surety Bond; and/or

(g) Terminate this Agreement if the Default relates to all of Licensee's Small Cell Wireless Communications Facilities.

13.3 Licensor's Default and Licensee's Remedies.

(a) If Licensor does not cure its Default within the allotted time period, Licensee may, at its reasonable discretion, either terminate this Agreement, terminate the Individual Site Permit to which the Default relates, or demand that the terms of this Agreement be complied with.

(b) If Licensor Defaults and Licensee elects to terminate the Agreement, Licensor shall refund any portion of advanced, prepaid Rent actually paid by Licensee pro-rated for any period of the Term remaining following the date of the termination of this Agreement. Licensor shall make such refund within ninety (90) days of the effective date of such termination.

13.4 Date of Termination. Any termination under this section 13 shall be effective upon written notice from the terminating Party to the other Party. Such notice will identify the date of the termination, which date may be as early as the date of the notice under section 15.1.

13.5 Cumulative Remedies. The remedies provided by this section 13 are cumulative and in addition to any other remedies available under this Agreement or otherwise.

14. DISPUTE RESOLUTION PROCEDURES

14.1 Prior to either Party commencing any legal action under this Agreement, the Parties agree to try in good faith, to settle any dispute amicably between them. If a dispute has not been settled after forty-five (45) days of good-faith negotiations or as may be otherwise provided herein, then either party may commence legal action against the other. Notwithstanding the foregoing, either Party may commence legal action sooner than this forty-five (45) day period to the extent necessary to obtain specific performance and/or injunctive, equitable, or other relief necessary to protect the interests of the Party seeking such relief.

15. GENERAL PROVISIONS

15.1 Notices. Except as provided below, all written notices shall be effective upon actual delivery addressed to the other party as follows:

To City/Licensor:
City of Elk Grove
Attn: City Manager
8401 Laguna Palms Way
Elk Grove, California 95758

To Licensee:
New Cingular Wireless PCS, LLC
Attn: Tower Asset Group – Lease Administration
Re: Wireless Installation on Public Structures
(City of Elk Grove, CA)
FA No.: _____
1025 Lenox Park Blvd NE
3rd Floor

Atlanta, GA 303219

with a copy to:

New Cingular Wireless PCS, LLC
Attn: AT&T Legal Dept. - Network Operations
Re: Wireless Installation on Public Structures
(City of Elk Grove, CA)
FA No: _____
208 S. Akard Street
Dallas, TX 75202-4206

Any Party may change its address or other contact information at any time by giving the other Party, and Persons named above, written notice of said change.

15.2 Force Majeure. If an event beyond the reasonable control of either Party, including, but not limited to, hurricane, flood, earthquake or other natural disaster, war or insurrection, fires, natural calamities, riots, significant changes in law, regulation or governmental policy precludes either Party from performing the obligations under this Agreement, then the Agreement shall be suspended as of the date of such event and until such time as such event has subsided, if ever, provided that the Party claiming an inability to perform provides written notice to the other Party within five (5) days of the event justifying the suspension or termination of operations. If the event is not reasonably likely to subside in the foreseeable future and renders the Parties' performance of the Agreement impossible, the Party claiming an inability to perform may terminate this contract upon not less than ten (10) days' written notice. Each Party reserves the right to contest the other Party's claim of inability to perform under this section.

15.3 Time. All times stated herein are of the essence.

15.4 Assignment and Transfer. This Agreement shall be binding upon, and inure to the benefit of, the successors and assigns of the Parties. Except as otherwise provided in this Agreement, neither Party shall assign this Agreement or its rights or obligations to any firm, corporation, individual, or other entity, without the written consent of the other Party, which consent shall not be unreasonably withheld. Notwithstanding the foregoing, either party may assign its rights and obligations to an affiliate without consent. Affiliate for purposes of this provision is any entity that controls, is controlled by, or is under common control with assigning party. Licensee may also assign this Agreement or Individual Site Permit without City's consent to an entity that acquires all or substantially all of Licensee's assets in the market in which the Municipal Facility is located or an entity that acquires Licensee by a change of stock ownership or partnership interest and such assignee entity operates the Small Cell Wireless Facilities subject to this Agreement in the same manner as Licensee.

15.5 No Third Party Beneficiary. It is expressly understood and agreed that the enforcement of these terms and conditions shall be reserved to the Licensor and Licensee. Nothing contained in the Agreement shall give or allow any claim or right of action whatsoever by any third party. It is the express intent of the Licensor and Licensee that any

such person or entity, other than the Licensor and Licensee, receiving benefits or services under this agreement shall be deemed as incidental beneficiary and shall have no standing under this Agreement.

15.6 Non-Discrimination/Non-Preferential Treatment Statement. In performing this Agreement, the parties shall not discriminate or grant preferential treatment on the basis of race, sex, color, age, religion, sexual orientation, disability, ethnicity, or national origin, and shall comply to the fullest extent allowed by law, with all applicable local, state, and federal laws relating to nondiscrimination

15.7 Applicable Law. This Agreement shall be interpreted, construed, and enforced, in accordance with the laws of the State of California, without regard to its conflict of laws principles, and, where applicable, federal law.

15.8 Venue. Should any legal proceeding be brought relating to this Agreement, venue shall lie exclusively in a court of competent jurisdiction located in the County of Sacramento, State of California.

15.9 Exhibits. In the event of any inconsistency between the provisions of this Agreement and any Exhibits attached hereto, the provisions of this Agreement shall supersede the provisions of any such incorporated Exhibits unless such Exhibit specifies otherwise.

15.10 Execution in Counterparts. This Agreement may be executed in several counterparts, including by counterpart facsimiles or emails, each of which shall be deemed an original, and all such counterparts together shall constitute one and the same instrument.

15.11 Waiver. The failure of either Party to insist on the strict enforcement of any provision of this Agreement shall not constitute a waiver of any provision.

15.12 Severability. If any portion of this Agreement is found to be unenforceable, the remaining portions shall remain in effect and the Parties shall begin negotiations for a replacement of the invalid or unenforceable portion.

15.13 Survival. The terms and provisions of this Agreement that by their nature require performance by either Party after the termination or expiration of this Agreement, shall be and remain enforceable notwithstanding such termination or expiration of this Agreement for any reason whatsoever.

15.14 Construction and Interpretation. Licensee and Licensor agree and acknowledge that the provisions of this Agreement have been arrived at through negotiation and that each Party has had a full and fair opportunity to revise the provisions of this Agreement and to have such provisions reviewed by legal counsel. Therefore, any ambiguities in construing or interpreting this Agreement shall not be resolved against the drafting party. The titles of the various sections are merely informational and shall not be construed as a substantive portion of this Agreement.

15.15 Entire Agreement; Amendments. This Agreement (including the Exhibits hereto) embodies the entire agreement between Licensee and Licensor with respect to the subject matter of this Agreement and supersedes all prior agreements and understandings, oral or written, with respect thereto. Each Party acknowledges that the other Party has not made any representations other than those contained herein. This Agreement may not be amended or modified orally, but only by an agreement in writing signed by the Party or Parties against whom any waiver, change, amendment, modification, or discharge may be sought to be enforced.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed as of the Effective Date.

CITY OF ELK GROVE

Dated: _____, 2019

By: _____
Jason Berhmann,
City Manager, City of Elk Grove

APPROVED AS TO FORM:

_____
Jonathan P. Hobbs,
City Attorney, City of Elk Grove

ATTEST:

_____
Jason Lindgren,
City Clerk, City of Elk Grove

LICENSEE

Dated: _____, 2019

NEW CINGULAR WIRELESS PCS, LLC

By: AT&T Mobility Corporation
Its: Manager

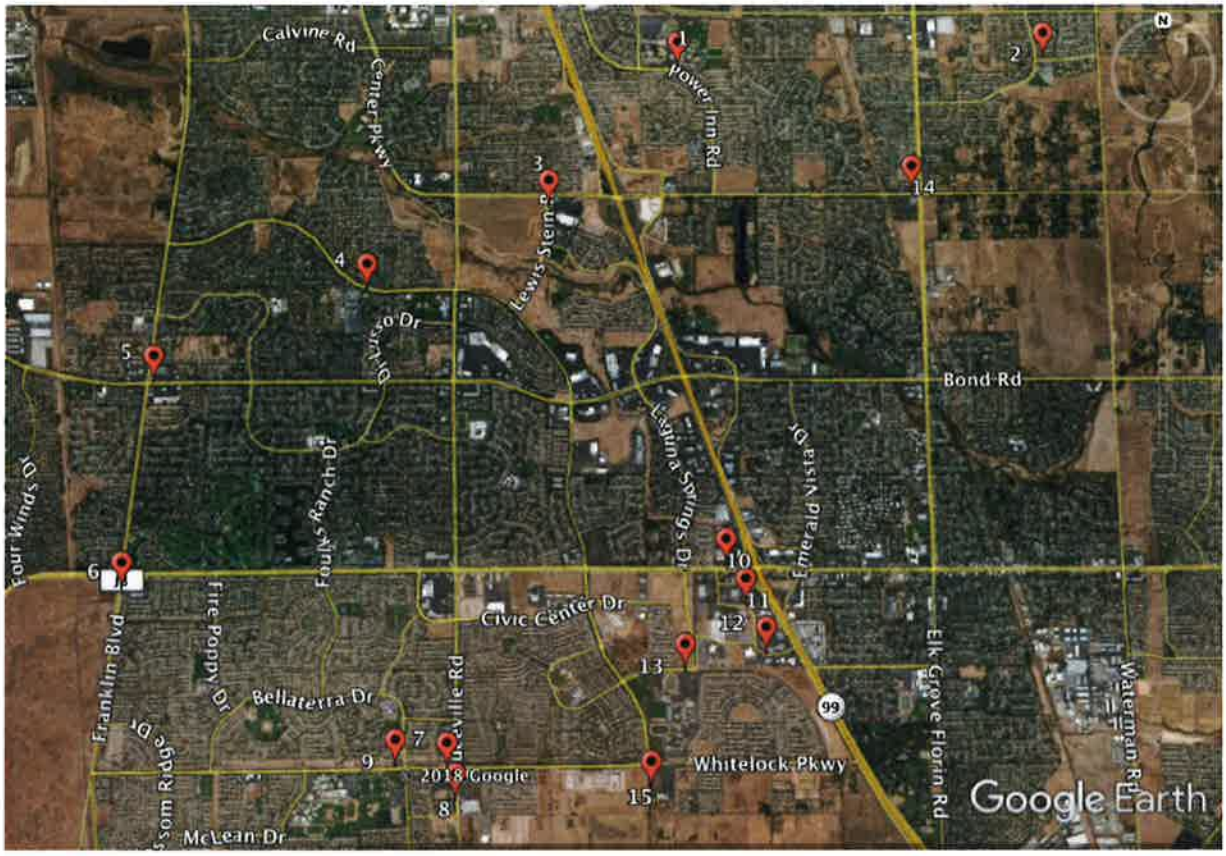
By: _____ 8-20-19
Its: Michael Guibord
Director
Construction & Engineering

APPROVED AS TO FORM:

_____
Licensee's Attorney

Exhibit A

AT&T-Elk Grove: Small Cell Wireless Communication Facility Map



* Node locations depicted on map correspond with row numbers listed on the following page.

Exhibit A (Continued)

AT&T-Elk Grove: Small Cell Wireless Communication Facility List

ROW #	LATITUDE	LONGITUDE	AT&T SITE NAME	CITY POLE #
1	38.4481190	-121.3956090	CRAN_RSFR_SAC01_017	35222L
2	38.4488169	-121.3589061	CRAN_RSFR_SAC01_018	29750
3	38.4370580	-121.4085530	CRAN_RSFR_SAC01_020	33345
4	38.4304740	-121.4265140	CRAN_RSFR_SAC01_021	30041
5	38.4233200	-121.4473410	CRAN_RSFR_SAC01_022	28918
6	38.4074800	-121.4499200	CRAN_RSFR_SAC01_023	8002574
7	38.3939900	-121.4185300	CRAN_RSFR_SAC01_024	28051D
8	38.3916960	-121.4176840	CRAN_RSFR_SAC01_025	8001958
9	38.3942200	-121.4234300	CRAN_RSFR_SAC01_026	260510P
10	38.4092600	-121.3915800	CRAN_RSFR_SAC01_027	27717
11	38.4062700	-121.3897800	CRAN_RSFR_SAC01_028	31713
12	38.4026200	-121.3879200	CRAN_RSFR_SAC01_029	8002244
13	38.4013440	-121.3956920	CRAN_RSFR_SAC01_030	8001847
14	38.4381800	-121.3725200	CRAN_RSFR_SAC05_005	8000824
15	38.3926100	-121.3990800	CRAN_RSFR_SAC05_006	TBD

* Row numbers correspond with node locations shown on map on preceding page.

EXHIBIT B
Approved Small Cell Wireless Communication Facilities Structure, Design, and Technical Standards

Overview of Pole Types and Designs

(1) Pole Type One: Cobra Head Light Pole

(A) Micro Design

(B) Pico Design

(2) Pole Type Two: Decorative Light Pole

(A) Micro Design

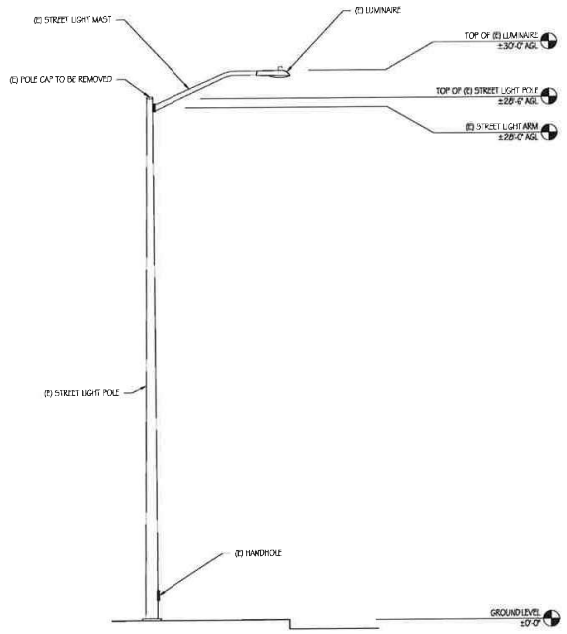
(B) Pico Design

(1) Pole Type One: Cobra Head Light Pole

(A) Micro Design

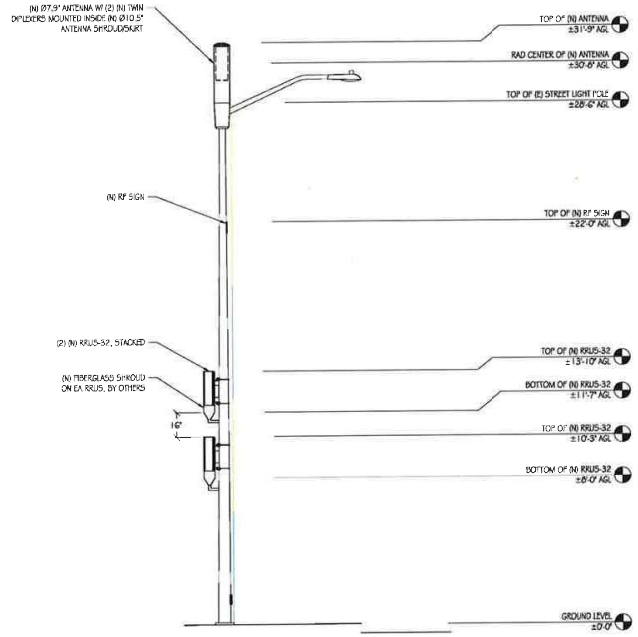
NOTES

1. PAINT RRU SOLAR SHIELD, MOUNTING COMPONENTS & CABLE SWEEP TO MATCH POLE
2. FINISH RF CONCEALMENT SHROUD & SKIRT TO MATCH POLE
3. REMOVE (E) ABANDONED VACANT BAND MOUNTS ON POLE
4. NOTICE/CAUTION SIGNAGE DECAL SHALL FACE OUT TO STREET
5. INSPECT POLE FOR RUST AND CORROSION. REMOVE ALL RUST AND CORROSION BY MECHANICAL/ABRASIVE METHODS ACCEPTABLE TO THE CITY. PREPARE, PRIME, AND PAINT ALL AREAS
6. DESIGN AND HEIGHTS MAY VARY ON A SITE BY SITE BASIS DEPENDING ON EXISTING SITE/POLE CONDITIONS AND EXISTING POLE MOUNTED APPURTENANCES
7. EXISTING TRAFFIC SIGN(S) TO BE RELOCATED AS REQUIRED TO SCREEN RRUS



EXISTING NORTH ELEVATION

3/8" = 1'-0"



NEW NORTH ELEVATION

3/8" = 1'-0"

AT&T

CITY NO:SJ17
PROJECT: PG-WALNUT
5001 PACIFIC HIGHWAY
SAN RAMON, CA 94583

Vinculums

PRECISION DESIGN & Associates, INC.
Phone: (530) 823-8546 www.pdai.com
11138 Avenue Rd. Suite 20 Auburn, CA 95603

ISSUE STATUS

△	DATE	DESCRIPTION
	04/24/18	ZD 90%
	07/24/18	ZD 100%

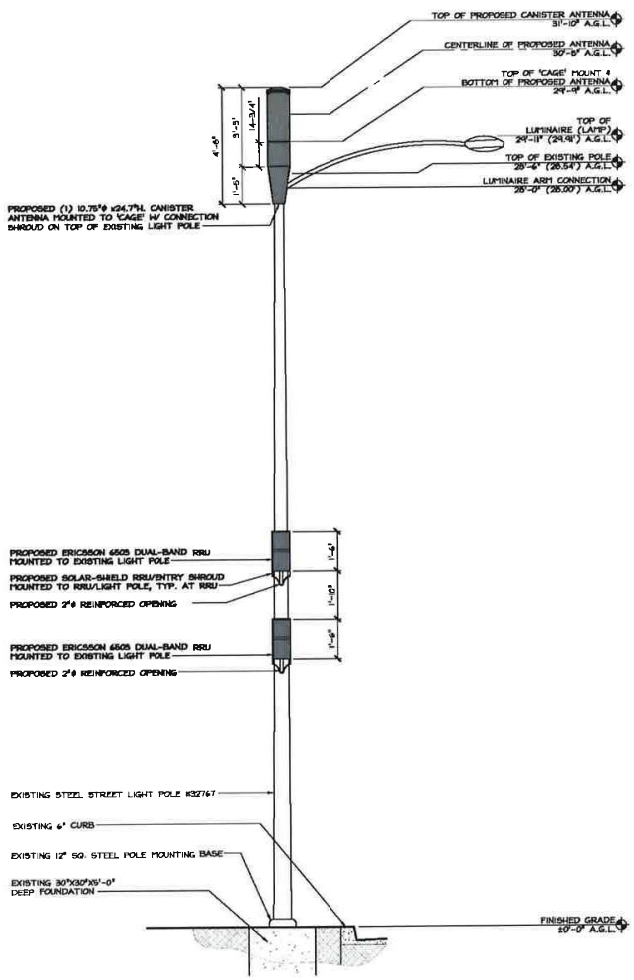
DRAWN BY: KVBL
CHECKED BY: T. DiCARLO
APPROVED BY: B. McCOMB
DATE: 07/24/18

SHEET TITLE:
ELEVATIONS

SHEET NUMBER
A-3

(1) Pole Type One: Cobra Head Light Pole

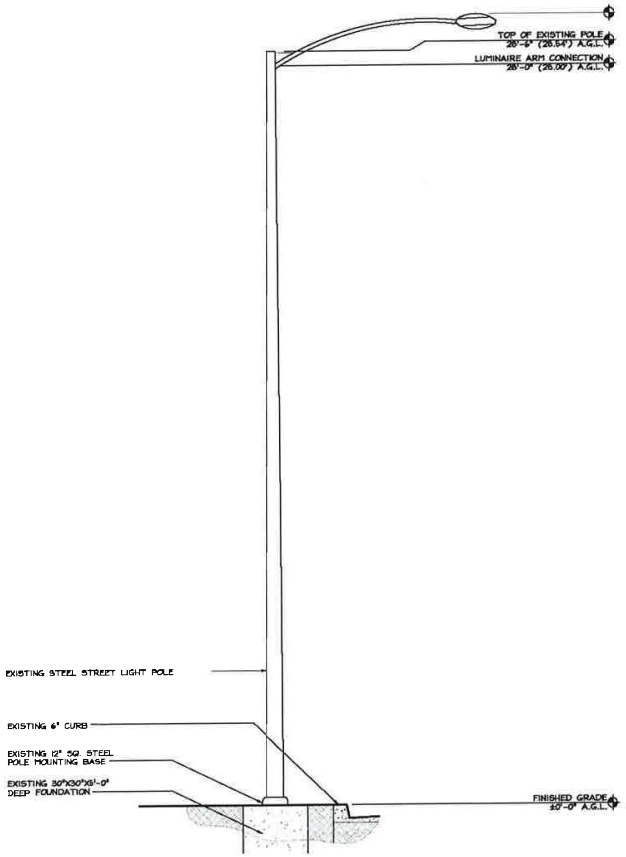
(B) Pico Design



PROPOSED NORTHEAST ELEVATION

24"x36" SCALE: 1/2" = 1'-0"
11"x17" SCALE: 1/4" = 1'-0"

2



EXISTING NORTHEAST ELEVATION

24"x36" SCALE: 1/2" = 1'-0"
11"x17" SCALE: 1/4" = 1'-0"

1

AT&T
AT&T MOBILITY
5001 EXECUTIVE PARKWAY
SAN RAMON, CA 94583

Vinculums
575 LEBANON LANE #125
WALNUT CREEK, CA 94596
OFF.CE: (925) 482-0500

MACRO HUB LOCATION:
PACE ID:
DRAWN BY:
CHECKED BY:

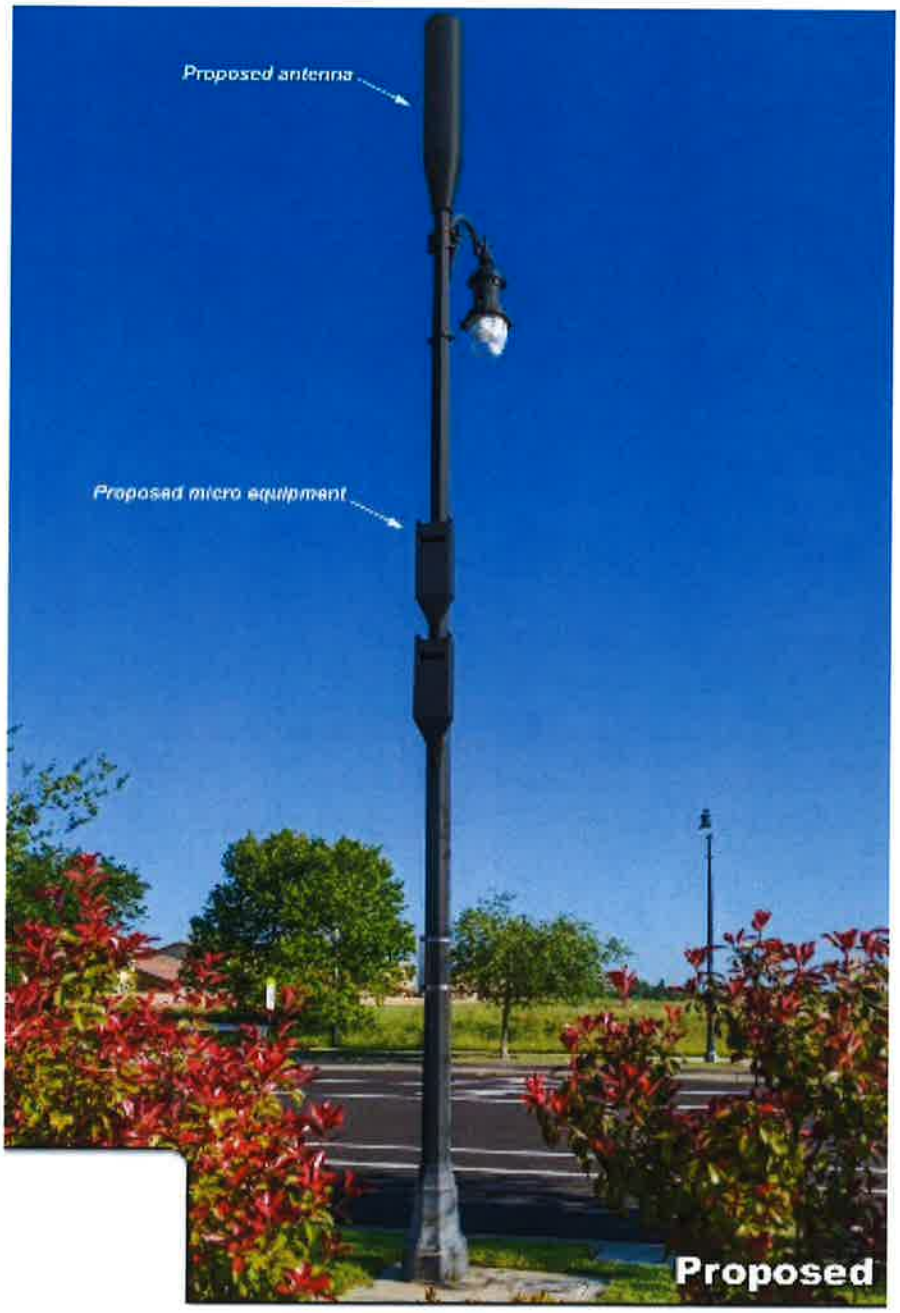
SITE INFORMATION

SHEET TITLE
ELEVATIONS

SHEET NUMBER
A-2

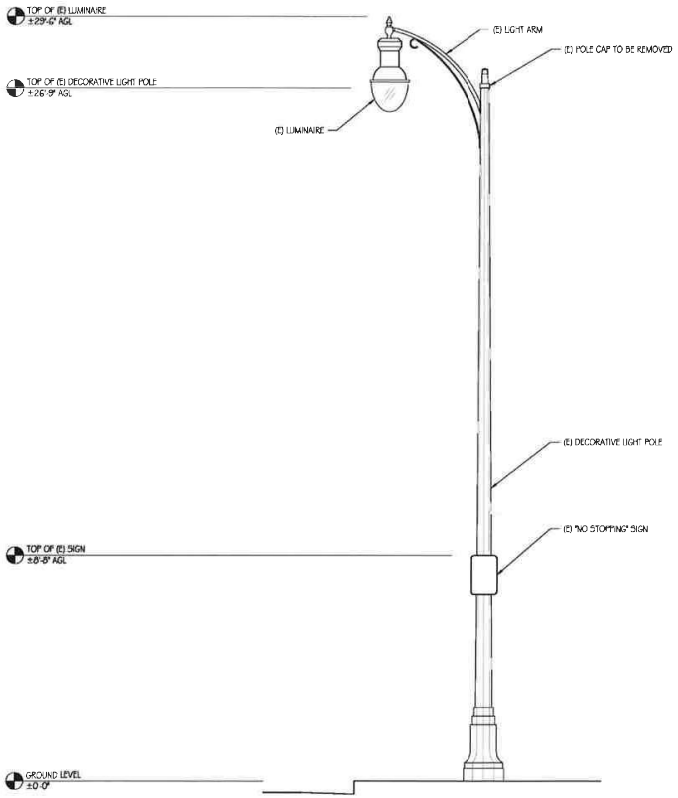
(2) Pole Type Two: Decorative Light Pole

(A) Micro Design



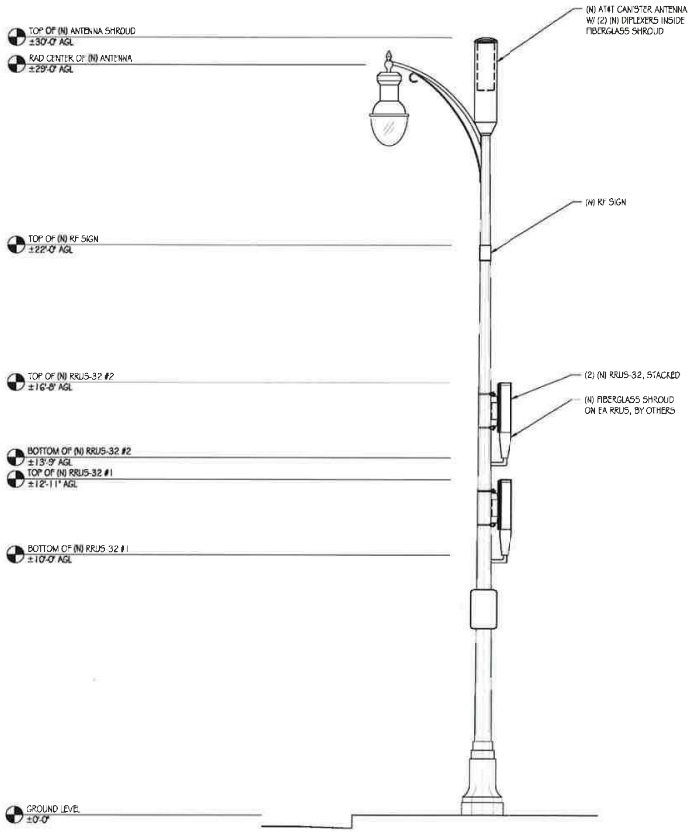
NOTES

1. PAINT RRU SOLAR SHIELD, MOUNTING COMPONENTS & CABLE SWEEP TO MATCH POLE
2. FINISH RFS CONCEALMENT SHROUD & SKIRT TO MATCH POLE
3. REMOVE (E) ABANDONED VACANT BAND MOUNTS ON POLE
4. NOTICE/CAUTION SIGNAGE DECAL SHALL FACE OUT TO STREET
5. INSPECT POLE FOR RUST AND CORROSION. REMOVE ALL RUST AND CORROSION BY MECHANICAL/ABRASIVE METHODS ACCEPTABLE TO THE CITY. PREPARE, PRIME, AND PAINT ALL AREAS
6. DESIGN AND HEIGHTS MAY VARY ON A SITE BY SITE BASIS DEPENDING ON EXISTING SITE/POLE CONDITIONS AND EXISTING POLE MOUNTED APPURTENANCES
7. EXISTING TRAFFIC SIGN(S) TO BE RELOCATED AS REQUIRED TO SCREEN RRUS



EXISTING WEST ELEVATION

1/2" = 1'-0"



NEW WEST ELEVATION

1/2" = 1'-0"

AT&T

ATF MORAITY
5001 EXECUTIVE PARKWAY
SAN RAMON, CA 94583

Vinculums

PRECISION DESIGN & Drafting, INC.
Phone: (530) 823-6546 www.3rrd.com
11758 Atwood Rd, Suite 2D Auburn CA 95603

ISSUE STATUS

△	DATE	DESCRIPTION
	07/20/16	ZD 80%

DRAWN BY: T. DICARLO
CHECKED BY: B. McCOMB
APPROVED BY: B. McCOMB
DATE: 07/20/16

SHEET TITLE:

ELEVATIONS

SHEET NUMBER

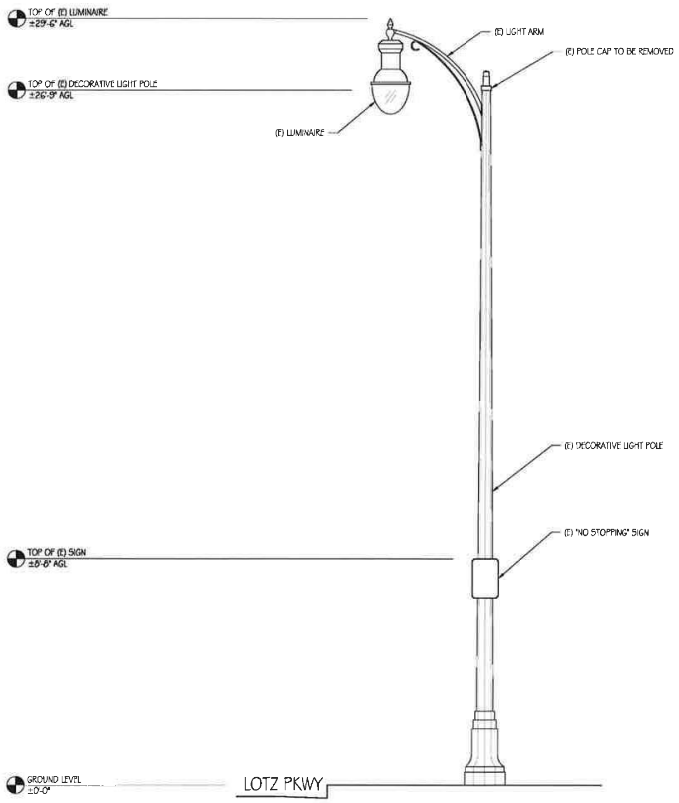
A-3

(2) Pole Type Two: Decorative Light Pole

(B) Pico Design

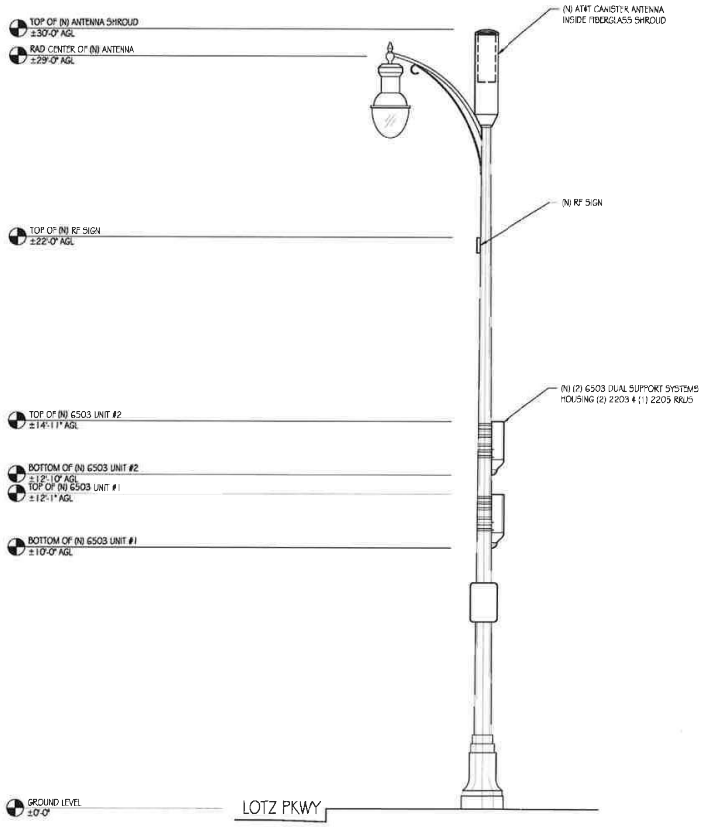
NOTES

1. PAINT RRU SOLAR SHIELD, MOUNTING COMPONENTS & CABLE SWEEP TO MATCH POLE
2. FINISH FRP CONCEALMENT SHROUD & SKIRT TO MATCH POLE
3. REMOVE (E) ABANDONED VACANT BAND MOUNTS ON POLE
4. NOTICE/CAUTION SIGNAGE DECAL SHALL FACE OUT TO STREET
5. INSPECT POLE FOR RUST AND CORROSION. REMOVE ALL RUST AND CORROSION BY MECHANICAL/ABRASIVE METHODS ACCEPTABLE TO THE CITY. PREPARE, PRIME, AND PAINT ALL AREAS



EXISTING WEST ELEVATION

1/2"=1'-0"



NEW WEST ELEVATION

1/2"=1'-0"

AT&T

AT&T MOBILITY
5001 EXECUTIVE PARKWAY
SAN RAMON, CA 94583

Vinculums

PRECISION DESIGN & Drafting, INC.
11169 Atwood Rd, Suite 20 Auburn, CA 95603
Phone: (530) 823-6646 www.pdrd.com

PROFESSIONAL ENGINEER
BRENT A. MCCOMB
C 69891
EXP 09-30-18
CIVIL
STATE OF CALIFORNIA

CRAN_RSFR_SACO1_030

ADJACENT TO 10 WOLFPACK LANE
ELK GROVE, CA 95757

ISSUE STATUS

Δ	DATE	DESCRIPTION
	08/20/18	ZD 90%

DRAWN BY:	T.D./T.J.
CHECKED BY:	B. McCOMB
APPROVED BY:	B. McCOMB
DATE:	08/20/18

SHEET TITLE:

ELEVATIONS

SHEET NUMBER

A-3

EXHIBIT C
Fees and Bonds

Master License Agreement Fee: $10,000

Individual Site Permit Application Fee: $500 (up to five (5) permits per application)

Annual Rent for each Small Cell Wireless Communication Facility shall be paid as follows:

> Licensee shall pay to the City the Annual Rent for each year in the amount of Two Hundred Seventy and 00/100 Dollars ($270.00) per year. In the event the FCC's Declaratory Ruling and Third Report and Order, FCC 18-133, Released September 27, 2018 ("FCC 2018 Order") is either: (1) reversed and/or set aside by a final and unappealable order of the FCC, a court of competent jurisdiction, or by settlement; or (2) repealed or otherwise set-aside or rendered ineffective by legislative action, and provided that there is no other legal or regulatory requirement that would constrain or otherwise limit the amount of money that City may charge Licensee for the right to place small cells on City's property in the public rights of way in substantially the same manner as the FCC 2018 Order, then the Annual Rent payable for all of Licensee's Small Cell Wireless Communication Facility(ies) located in City's right-of-way shall be as follows: $1,500 for Small Cell Wireless Communication Facilities 1 through 20; $1,000 for Small Cell Wireless Communication Facilities 21 through 100; $500 for Small Cell Wireless Communication Facilities 101 and beyond (collectively, the "New Rate"). The New Rate shall apply prospectively as of the Annual Rent due after the date the relevant judgment, order, settlement, and/or legislative action is effective. Nothing herein shall preclude the Parties from agreeing to an alternative rate structure not set forth herein by a writing singed by all Parties.

The amount of the Performance Bonds shall be $50,000.

EXHIBIT D

Insurance Requirements

Prior to installation of any Small Cell Wireless Communication Facilities under this Agreement, Licensee shall provide to the City proof of, and maintain in full force and effect at all times during the term of the Agreement, at its sole cost and expense, policies of insurance as set forth herein:

1. General Liability:
   a. Commercial general liability insurance including, but not limited to, protection for claims of bodily injury and property damage liability, personal and advertising injury liability and product and completed operations liability.
   b. Coverage shall be at least as broad as Insurance Services Office Commercial General Liability coverage form CG 0001 (occurrence) including contractual liability coverage.
   c. Claims-made coverage is not acceptable.
   d. The limits of liability shall be:

Each occurrence:	One Million Dollars ($1,000,000)
Products & Completed Operations:	One Million Dollars ($1,000,000)
Personal & Advertising Injury:	One Million Dollars ($1,000,000)
General Aggregate:	One Million Dollars ($1,000,000)

   e. If a products and completed operations aggregate limit of liability is used, the products and completed operation aggregate shall be twice the each occurrence limit or the policy shall contain an endorsement stating that the products and completed operations aggregate limit shall apply separately to the project which is the subject of the contract.
2. Automobile Liability:
   a. Automobile liability insurance providing protection against claims of bodily injury and property damage arising out of ownership, operation, maintenance, or use of hired and non-owned automobiles.
   b. Coverage for owned, hired, and non-owned.
   c. The limits of liability per accident shall be:

Combined Single Limit	One Million Dollars ($1,000,000)

   d. Coverage shall include contractual liability coverage.

   The City, its officials, employees, and volunteers shall be included as additional insured as their interests may appear under this Agreement as respects liability caused, in whole or in party, by activities performed by or on behalf of the Licensee, products and completed operations of the Licensee, premises owned, occupied, or used by the Licensee, or

automobiles owned, leased, hired, or borrowed by the Licensee on a separate blanket additional insured endorsement as respects this Agreement reasonably acceptable to the City.

3. Worker's Compensation
   a. Worker's Compensation Insurance, with coverage as required by the State of California (unless the Licensee is a qualified self-insurer with the State of California), and Employers Liability coverage. The Licensee shall execute a certificate in compliance with Labor Code Section 1861, on the form provided in Exhibit E.
   b. Employer's Liability Coverage limits of One Million Dollars ($1,000,000) per accident/disease/policy limit.
   c. If an injury occurs to any employee of the Licensee for which the employee or his dependents, in the event of his death, may be entitled to compensation from the City under the provisions of the Acts, for which compensation is claimed from the City, there will be retained out of the sums due the Licensee under this Agreement, an amount sufficient to cover such compensation as fixed by the Acts, until such compensation is paid or it is determined that no compensation is due.
   d. If the City is required to pay such compensation, the amount so paid will be deducted and retained from such sums due, or to become due to the Licensee.
   e. The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, and employees for losses arising from work performed by the Licensee.

4. Other Insurance Provisions: The required general liability coverage shall contain the following provisions and endorsements:
   a. The City, its officials, employees, and volunteers shall be included as additional insured as their interests may appear under this Agreement as respects liability caused, in whole or in part, by activities performed by the Licensee, products and completed operations of the Licensee, premises owned, occupied, or used by the Licensee as respects this Agreement, or automobiles owned, leased, hired, or borrowed by the Licensee on a separate blanket endorsement reasonably acceptable to the City.
   b. Coverage shall contain a provision or endorsement that waives any rights of subrogation against the City, its officers, officials, employees, agents, and volunteers.
   c. The policy shall contain no special limitations impairing the scope of coverage afforded to the City, its officials, employees, or volunteers herein other than for claims solely caused by the additional insureds or by the gross negligence of the additional insured.
   d. Provision or endorsement stating that for any claims related to this project, the Licensee's required insurance coverage shall be primary

insurance as respects the City, its officers, officials, employees and volunteers to the extent the City is an additional insured. Any insurance or self-insurance maintained by the City, its officers, officials, employees or volunteers shall be in excess of the Licensee's required insurance and shall not contribute with it, to the payment or satisfaction of any defense expenses, loss or judgment.

e. Any failure to comply with reporting or other provisions of the policies on the part of the Licensee, including breaches of warranties, shall not affect Licensee's requirement to provide coverage to the City, its officers, officials, employees, or volunteers.

5. Acceptability of Insurers: Insurance is to be placed with insurers with **a Bests' rating of no less than A minus:VII**.

6. The Licensee shall furnish the City with certificates of insurance and original blanket additional insured endorsements, signed by a person authorized by the insurer to bind coverage on its behalf, evidencing the coverage required by this Agreement.

7. The City, at its discretion, may increase the amounts and types of insurance coverage required hereunder once per three years by giving 30 days written notice, all subject to Licensee's review and acceptance.

8. The Licensee shall provide the City at least thirty (30) days' prior written notice of cancellation or non-renewal of any required coverage that is not replaced.

9. If the Licensee fails to procure or maintain insurance as required by this section, and any Supplementary Conditions, or fails to furnish the City with proof of such insurance, the City, at its discretion, may procure any or all such insurance. Reasonable premiums paid for such insurance procured by the City shall be deducted and retained from any sums due the Licensee under the contract.

10. Failure of the City to obtain such insurance shall in no way relieve the Licensee from any of its responsibilities under the contract.

11. The making of progress payments to the Licensee shall not be construed as relieving the Licensee or its Subcontractors or agents of responsibility for loss or direct physical loss, damage, or destruction occurring prior to final acceptance by the City.

12. The failure of the City to enforce in a timely manner any of the provisions

of this section shall not act as a waiver to enforcement of any of these provisions at any time during the term of the contract.

13. The requirement as to types and limits of insurance coverage to be maintained by Licensee are not intended to, and shall not in any manner, limit or qualify the liabilities and obligations assumed by Licensee under the Agreement.

14. Self-Insurance. Notwithstanding the foregoing, Licensee shall have the right to self-insure the coverages required in this section as long as Licensee or its affiliated parent maintains a net worth of at least $100 million as evidenced in publicly available certified financials. In the event Licensee elects to self-insure its obligation to include City as an additional insured, the following additional provisions shall apply (in addition to those set forth in section):

    (i) Licensor shall promptly and no later than thirty (30) days after notice thereof provide Licensee with written notice of any claim, demand, lawsuit, or the like for which it seeks coverage pursuant to this Section and provide Licensee with copies of any demands, notices, summonses, or legal papers received in connection with such claim, demand, lawsuit, or the like;

    (ii) Licensor shall not settle any such claim, demand, lawsuit, or the like without the prior written consent of Licensee; and

    (iii) Licensor shall fully cooperate with Licensee in the defense of the claim, demand, lawsuit, or the like.

EXHIBIT E

Certificate of Compliance With Labor Code § 3700, Release and Indemnification

The undersigned, on behalf of and as the duly certified representative of Licensee, certifies as follows:

1. Licensee is aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and Licensee has complied or will comply with such provisions before commencing the performance of the work of this contract. (Cal. Labor Code §§1860, 1861.)

2. Should Licensee fail to secure Workers' Compensation coverage as required by the State of California, Licensee shall release, hold harmless, defend and indemnify the City of Elk Grove from and against any damage, liability, claim, cause of action and any other loss, including without limitation, court costs, reasonable attorney's fees and costs resulting from any failure to take and/or maintain Workers' Compensation insurance as required by law. The provisions of this Exhibit shall survive termination, suspension and/or completion of this Agreement. It is further understood and agreed that this release and assumption of risk is to be binding on Licensee's successors, heirs and assigns.

LICENSEE

By:_____

Date: _____

Name: _____

Title: _____

Planning Commission Staff Report

July 18, 2019

PROJECT: **Cingular Wireless PCS Code Amendment**
FILE: EG-18-006
REQUEST: Amend Chapters 23.27 (Allowed Uses and Required Entitlements) and 23.94 (Wireless Communication Facilities) of the Elk Grove Municipal Code in order to facilitate the deployment of small cell communications facilities throughout the City
LOCATION: City-wide
STAFF: Antonio Ablog, Planning Manager

APPLICANT:
Vinculums Services, LLC
For New Cingular Wireless PCS, LLC (dba AT&T Mobility)
Matthew Yergovich (Representative)
1200 Del Paso Road, Ste. 150
Sacramento, CA 95834

Staff Recommendation

Staff recommends that the Planning Commission adopt a Resolution (Attachment 1) recommending that the City Council:

1. Find that no further environmental review is necessary under the California Environmental Quality Act ("CEQA") for the proposed amendments and related agreement, and that approval of the proposed amendments and related agreement are exempt from further environmental review under CEQA, pursuant to Sections 15183, 15301, and 15303 of Title 14 of the California Code of Regulations (State CEQA Guidelines); and

2. Adopt an Ordinance amending Title 23 of the Elk Grove Municipal Code (EGMC) as described in Exhibit A to the proposed Planning Commission Resolution subject to the findings in the draft Resolution; and

3. Approve a Master License Agreement for Small Cell Wireless Communications Facilities between the City of Elk Grove and New Cingular Wireless PCS, LLC (dba AT&T Mobility) (hereinafter referred to as "AT&T") in substantially the form presented, as set forth in Exhibit C to the proposed Planning Commission Resolution.

Project Description

The proposed Project consists of a Zoning Code Text Amendment to amend Chapters 23.27 and 23.94 of the Elk Grove Municipal Code (EGMC) to facilitate the deployment of small cell communications facilities throughout the City. While the request by the Applicant is specifically related to small cell facilities on City infrastructure within the public right-of-way (public streets), the recommended text amendments have been drafted to address the placement of any small cell facility, whether on public or private property. As it is pertinent to small cell facility code amendments, staff has included and provided an analysis of the draft small cell Master Licensing Agreement (MLA) for the consideration of the Commission for its recommendation. While the MLA is subject to Council approval, the requested text amendments rely on the MLA for streamlined permit requirements in certain situations.

Background

Title 23 of the EGMC (Zoning) currently contains the following definition:

> "Telecommunications facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "telecommunications facilities." (23.26.050) (T)(1)

This definition covers all telecommunications facilities but is most commonly applied to cellular antennas and their associated equipment. Pursuant to Table 23.27-1, the installation of any cellular antenna is subject to the approval of a Conditional Use Permit (CUP). This is true for all zones, except for the Industrial Zones (Light industrial [LI], Light Industrial/Flex [LI/FX], Heavy Industrial [HI]), where cellular antennas are allowed by-right.

On January 3, 2018, the Applicant submitted a request on behalf of AT&T to amend Title 23 of the EGMC to define, address, and streamline the installation of small cell wireless communications facilities within public rights-of-way. The AT&T application has generated community discussion amongst interested parties concerning wireless facility placement and regulation. The City Council hosted a workshop on November 28, 2018, to solicit public input on this matter.

Taking into account the views and goals of the Applicant and other non-applicant stakeholders, and in order to reach compromise amongst the various viewpoints, staff has prepared draft code amendments related to the definition, differentiation, required entitlements, and development standards for telecommunications facilities, and specifically the newly defined small cell telecommunications facilities. Concurrent with the amendments to the Zoning Code, staff has prepared a draft Master License Agreement (MLA) for AT&T's placement of small cell wireless communications facilities that would allow the AT&T to install small wireless antennas on City infrastructure such as light poles adjacent to City streets through subsequent administrative applications, all consistent with the MLA. A further discussion of the code amendments and the MLA is set forth below.

Analysis

Summary of Federal and State Law concerning telecommunications facility regulation

Before addressing the specifics of AT&T's proposal, staff feels an overview of federal and state law concerning local regulatory authority of wireless telecommunication facilities would be useful.

Federal Law

Under federal law, cities have the authority to regulate the "placement, construction, and modification" of wireless service facilities, subject to certain limitations. (47 U.S.C. § 332(c)(7)(A).) Among those limitations, a city's regulations may not "unreasonably discriminate among providers of functionally equivalent services" and may not "prohibit or have the effect of prohibiting the provision of personal wireless services." (47 U.S.C. § 332(c)(7)(B)(i)(I), II).) Any denial of an application to place, construct, or modify a personal wireless facility must be based on "substantial evidence contained in a written record." (47 U.S.C. § 332(c)(7)(B)(iii).) Any such

denial cannot be based on environmental or health impacts of the facility. Specifically, federal law provides that a city may not "regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions." (47 U.S.C. § 332(c)(7)(B)(iv).)

The Federal Communications Commission (FCC) has regulatory jurisdiction over transmission of radio frequencies (RF), including impacts of radio frequency radiation from cell phones. In 1996, the FCC issued guidelines to limit the Specific Absorption Rate (SAR) of radio-frequency radiation from FCC-regulated transmitters, including cell phones. (See e.g., 61 Fed. Reg. 41006-01 (1996) [Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation].) The FCC found that the adopted guidelines "will protect the public and workers from exposure to potentially harmful RF fields." (61 Fed. Reg. 41006-01, ¶ 1.) In 2013, the FCC reviewed its guidelines, and it did not substantively revise the SAR limits. (28 FCC Rcd. 3498 (F.C.C.) (2013) [In the Matter of Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies].) Staff expresses no opinion as to the soundness or correctness of the FCC's conclusions. Rather, the above discussion is included simply to illustrate that regulation of environmental health impacts is a matter of federal jurisdiction, and the City is without regulatory authority in this area as matter of federal law.

In September of 2018, the FCC issued a Declaratory Ruling and Order, further clarifying the scope of a city's authority over wireless facilities. (See FCC Order 18-133, hereafter referred to as the "FCC Order"). The FCC Order became effective in January 2019. By the order, the FCC affirmed its authority to prescribe rules regarding the environmental effects of radio frequency emissions, to the exclusion of local agencies, but noted that the FCC Order did not change any previously established FCC exposure limits. (FCC Order, at fn. 72.)

The FCC order set presumptive limits on application fees and license fees for local governments for wireless facilities, including a presumptively appropriate annual right- of-way rental amount of $270 per year. These amounts can be exceeded on an appropriate showing of costs by the local agency.

The FCC Order also recognized that cities retain discretion to regulate aesthetics attributes of wireless facilities, so long as the regulations are (1) reasonable; (2) no more burdensome than those applied to other types of infrastructure deployments; and (3) based on published, objective standards. The FCC noted that a city may be able to impose spacing requirements under these standards, but did not provide precise guidance for cites in this regard.

The FCC Order also imposed "shot-clock" standards for a local agencies' action on applications for wireless facilities. A city must act on the application within 60 days of an application for co-located facility, and within 90 days for a new structure.

State Law

Under California State law, cities retain authority to regulate telecommunications facilities, including wireless facilities, in public rights-of-way so as not to "incommode" (or interfere with) the public use. (Pub. Util. Code §§ 2802, 7901, 7901.1.) In April of 2019, the California Supreme Court issued a ruling that confirmed that California cities retain a degree of regulatory authority over the placement of cellular telecommunications facilities in public rights of way, including aesthetic concerns, under California state law. (*T-Mobile West, LLC v. City and County of San Francisco*

(2019) 6 Cal.5th 1107.) Note that the California Supreme Court case concerned an interpretation of state law, and it did not address the regulatory scope of federal law.

Pending Litigation and Legislation

Several municipalities and municipal advocacy organizations have filed suit in federal court challenging the FCC Order, seeking its invalidation. The case is currently pending in the United States Court of Appeals for the Ninth Circuit (*City of San Jose v. Federal Communications Commission*, Case No. 19-70144.) The City is not a party to that case. The date when a decision will be made in the federal litigation, and the outcome of the case, are currently unknown. Pending the outcome of the litigation, the FCC Order is enforceable.

There have also been efforts in the United States Congress to either overturn and codify the FCC Order. In January of 2019, H.R. 530 (known as the "Accelerating Broadband Development by Empowering Local Communities Act") was introduced in the House of Representatives seeking to invalidate the FCC Order. Conversely, In June of 2019, S. 1699 (known as the STREAMLINE Small Cell Deployment Act) was introduced in the United States Senate, seeking to codify into federal statute components of the FCC Order limiting local authority over small cell wireless facilities. The fate of these pieces of federal legislation is unknown, and the FCC Order currently remains in place.

Summary of Current Law

While there are notable restrictions, cities still retain some regulatory control over the deployment of wireless communications facilities in their communities. Among perhaps the more significant restrictions is the prohibition against cities regulating wireless facilities based on environmental or health impacts. This subject is a matter left to federal regulation, and the City is preempted from regulating in this area. The City may, and does, require wireless carriers to comply with FCC regulations, which would be a federal requirements regardless of the City's actions. The City still retains some regulatory authority over aesthetics, fees, and facility spacing, subject to the limitations set forth in the FCC Order, which currently remains in effect. With these regulatory parameters in mind, the City has crafted a code amendment seeking to accommodate various interested persons' and entities' diverse viewpoints, as further discuss below.

General Plan

The City's General Plan does not directly address the installation or ongoing operation of cellular facilities. It does, however, provide goals and policies related to the installation and modernization of utilities facilities, including telecommunications. The General Plan includes the following goals and Policies that specifically relate to technology infrastructure.

> *Goal CIF-2: COORDINATED UTILITY INFRASTRUCTURE AND IMPROVEMENTS:* The purpose of this goal is to maximize the efficiency of utility infrastructure improvements, allowing facilities to be upgraded or installed at the same time to minimize service disruptions and impacts to surrounding properties during construction which can result in financial savings.
>
> > *Policy-CIF-2-2:* Require that new utility infrastructure for electrical, telecommunication, natural gas and other services avoid sensitive resources, be located so as to not be visually obtrusive, and, if possible, be located within roadway rights-of-way or existing utility easements.

Policy-CIF-2-4: Maintain, improve, and modernize existing facilities and services when necessary to meet the needs of Elk Grove residents and businesses.

Goal CIF-3: ELK GROVE IS A LEADER IN INNOVATIVE TECHNOLOGY INFRASTRUCTURE: The purpose of this goal is to ensure Elk Grove's competitiveness for businesses and technologically focused residents by partnering with service provides to encourage advanced technologies that can be an incentive to companies and potential residents looking to relocate to Elk Grove.

Policy CIF-3-2: Encourage and coordinate with service providers to utilize advanced technologies such as fiber optic internet and Citywide information services.

Policy CIF-3-4: Acknowledge and adapt to innovations in technology to facilitate infrastructure investments as appropriate.

The proposed code amendments, and associated MLA, are consistent with the General Plan. The Project will streamline the installation of small cell facilities on existing infrastructure within the public right-of-way which is consistent with General Plans goals related to maximizing the efficiency of infrastructure improvements and encouraging advanced technologies.

Zoning

The proposed text amendments will affect Chapters 23.27 and 23.94 of the EGMC. Chapter 23.27 establishes allowed land uses and the requirements for planning entitlements within each of the City's zoning districts. Chapter 23.94 regulates the installation of antennas and other wireless communications facilities consistent with federal law.

As noted above, cellular antennas and facilities currently fall within the general "telecommunications facility" use definition. This land use category is inconsistent with the terminology of Chapter 23.94 which refers to cellular antennas and related equipment as wireless communications facilities. Furthermore, the "telecommunications facility" definition does not differentiate between various types of cellular antenna installations such as new towers and small cell collocations. To address these inconsistencies, the proposed code amendments will delete the existing "Telecommunications facility" definition and create two new allowed use categories; the "Wireless communications facility" category, and the "Wireless communications facility, small cell" category. The category to be deleted and new categories are as follows:

- "Telecommunications facility" deleted

  ~~1. "Telecommunications facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "telecommunications facilities." Additional definitions can be found in EGMC Chapter 23.94.~~ (23.26.050) (T)(1)

- "Wireless communications facility" and "Wireless communications facility, small cell" land uses added.

  3. "Wireless communications facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "wireless communications facilities." Additional definitions can be found in EGMC Chapter 23.94.

  4. "Wireless communications facility, small cell" means any small cell antennas and other wireless communications equipment, including facilities that operate on unlicensed frequencies and FCC-approved frequencies in the bands authorized for commercial wireless communication services by the FCC pursuant to FCC licenses issued to Licensee, and all associated equipment, meeting the following size criteria: (i) the total volume of all small cell antennas on a single facility or property shall not exceed six (6) cubic feet; (ii) any individual piece of associated equipment on a single facility or property shall not exceed nine (9) cubic feet in volume; and (iii) the cumulative total of all associated equipment, including antennas, for a single facility or property shall not exceed twenty-eight (28) cubic feet in volume.

The new "Wireless communications facility" land use classification maintains the use definition of the "Telecommunications facility" definition to be deleted and will continue to apply to cellular antennas placed on new and existing towers. The new "Wireless communications facility, small cell" creates a new land use category that addresses the small-scale antennas that the Applicant and AT&T propose to install on City facilities, specifically existing light poles within City rights-of-way. As provided in the definition above, small cell antennas and their associated equipment must meet the defined criteria to be considered for the proposed entitlement processes described below.

Table 23.27-1 of the EGMC identifies allowed uses and corresponding requirements for land use permits and entitlements for zoning districts within the City. In conjunction with the land use category amendments described above, this table, and its associated footnotes are proposed to be amended as depicted in Exhibit B of Attachment 1 of this report.

The existing "Telecommunications facility" category on the table will be renamed "Wireless communication facility" and will continue to require CUPs in all zones except for the LI, LI/FX and HI zones. A new row on the table will be created for the "Wireless communications facility, small cell"

The proposed entitlements for Small Cell Wireless Communications facilities are provided on the table in Exhibit B of Attachment 1 (the proposed Planning Commission Resolution). The proposed permitting requirements for such small cell facilities for the base zoning districts throughout the City are summarized as follows:

- **Permitted by right**
  - Industrial Districts: Light Industrial (LI), Light Industrial/Flex (LI/FX), and Heavy Industrial (HI)

- **Permitted with the approval of a Minor Conditional Use Permit (MUP) (Zoning Administrator Approval)**
  - Agricultural Residential Districts: AR-1, AR-2, and AR-5/10
  - Residential Districts: Very Low Density Residential (RD-1, RD-2, RD-3); Low Density Residential (RD-4, RD-5, RD-6, RD-7); Medium Density Residential (RD-10, RD15); and High Density Residential Zones (RD-20, RD-25, RD-30)
  - Public/Quasi Public Districts: Any Small Cell facility located on a public park or a school (unless the school is in a zoning district requiring a CUP, in which case a CUP shall be required)

- **Permitted with the approval of a Conditional Use Permit (CUP) (Planning Commission Approval) or administratively with a City Council-approved MLA**
  - Agricultural Districts: AG-20, AG-80
  - Commercial Districts: Limited Commercial (LC), General Commercial (GC), Shopping Center (SC), Auto Center (AC), Commercial Recreation (C-O)
  - Mixed-Use Districts: Village Center Mixed-Use (VCMU), and Residential Mixed-Use (RMU)
  - Office: Business and Professional Office (BP), Industrial-Office Park (MP)

There are two key differences between the proposed entitlement requirements for large-scale wireless facilities, and small cell wireless facilities:

1) Small cell facilities are allowed in certain districts (Residential districts and Agricultural Residential) with the approval of an MUP versus a CUP; and,

2) Small cell facilities will be permitted by right in the non-residential zones such as Agricultural, Commercial, Mixed-Use, Office, and some Public/Quasi-Public districts (except parks and schools) when consistent with a City Council-approved master license agreement (MLA).

Thus, for small cell facilities in non-residential districts, an applicant could forego the traditional entitlement requirement of obtaining a CUP for each facility by seeking approval of an MLA by the City Council. The MLA would authorize a streamlined permitting approach for sites identified in the agreement and any future permit in a non-residential zone. With an approved MLA, small cell facilities in these districts may be installed via an administratively-approved permit issued by the Public Works Department, provided the proposed facility meets the criteria of the MLA. This will allow an applicant with the opportunity to pursue a streamlined process for non-residential zones, while ensuring that the proposed agreement allowing streamlining is vetted publicly before the City Council.

Note that this MLA option is not available for Residential or Agricultural-Residential zones for sites not approved by the City Council. Thus, except for sites specifically approved at a Council meeting with the City Council-approved MLA, no additional small cell facilities will be allowed in Residential zones or Agricultural-Residential zones (including the RD-1 though RD-30 and AR-1 through AR-10 zoning districts) without the approval of an MUP, irrespective of whether an MLA exists between the applicant and the City. Additionally, small cell facilities would not be allowed at a park or school without an MUP.

In addition to these changes to land use description and required entitlements, Amendments to Chapter 23.94 of the EGMC (Wireless Communications Facilities) are also proposed. These changes address the placement of small cell facilities within the City and also update Chapter 23.94 to reflect current federal regulations related to the processing of collocated wireless communications facilities where a use permit has previously been granted.

Overall, the code amendments to Chapter 23.94 recognize and reconcile the changes proposed to Chapter 23.27 described above. The key changes are as outlined below:

- The amendments create *Section 23.94.035 Small Cell Wireless Communications Facilities* which states as follows:

  Any small cell wireless communications facility, as defined in Section 23.26.050, shall require a permit as required by Table 23.27-1 of the EGMC. To the extent provided by Table 23.27-1, a small cell wireless communications facility use shall be a permitted use if such use is consistent with an agreement between the applicant and the City, approved by the Elk Grove City Council, and such installation and operation of the small cell wireless communications facility or facilities is in conformance with the agreement. To the extent there is a conflict between the provisions of the agreement for a small cell wireless communications facility or facilities and this chapter, the terms of the agreement shall prevail.

  This text outlines the permit requirements as provided in the amended land use table and footnotes. Small cell facilities will require either CUP or MUP in the base zoning districts except in cases where such facilities are located in the LI, LI/FX, or HI zones, or are allowed by right based on an agreement (MLA) existing between an applicant and the City.

- The amendments create Section *23.94.050 (A)(6)*, relating to the placement of small cell facilities in residential zones by placing siting restrictions.

  6. In a residential zoning district, the following standards shall apply, unless the applicant can demonstrate with substantial evidence satisfactory to the approving authority that such siting limitation will materially inhibit personal wireless service as to a particular small cell wireless communication facility.

  a. No small cell wireless communication facility shall be placed within five-hundred (500' 0") feet of another small cell wireless carrier.

  b. No small cell wireless communication facility shall be located immediately adjacent to a front yard of any residential dwelling.

  For wireless communications facilities in general, Section 23.94.050 provides development standards including those related to screening or camouflaging of such facilities from the view of surrounding properties and the public view, reducing noise impacts on the surrounding area or neighborhood, the submittal of information related to Federal Communications Commission (FCC) approvals, and the submittal of existing or proposed telecommunications sites from the respective applicant.

Small cell facilities, due to their size and operations, are able to be located anywhere that the appropriate infrastructure exists (e.g. existing light poles or existing buildings). This can lead to close spacing between small cell antennas, resulting in visual clutter. To address this possibility, the code amendments propose spacing and location requirements that require a minimum 500' separation between small cell antennas. The proposed amendments also prohibit the installation of small cell antennas in locations that are directly in front of a residential dwelling; side yard adjacent is acceptable.

- Section 23.94.030 (A) – Permit Requirements by zoning district

Currently, Section 23.94.030 (A) of the EGMC requires the collocation of new antennas on existing facilities to obtain approval of a CUP and prohibits such collocations when they increase the height or include any equipment beyond the physical enclosure of prior approvals.

In 2012, Congress enacted Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012 (codified at 47 U.S.C. §1455) which states that a local government "may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station." Pursuant to Section 1.6100(b)(7) of Title 47 of the Code of Federal Regulations, a modification substantially changes the physical dimensions of an existing tower if it meets any of the following criteria:

a. Increases the height of the tower by more than 10% or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater;
b. Proposes collocation equipment to the tower that would protrude from the edge of the tower by more than 20', or more than the width of the tower structure at the level of the appurtenance, whichever is greater;
c. Involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets;
d. Entails any excavation or deployment outside the current site;
e. Includes modifications that would defeat any existing concealment elements (antenna stealthing) of the existing facility; or it does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in Section 1.40001(b)(7)(i) through (iv) of Title 47 of the Code of Federal Regulations.

In addition to the above criteria, as noted above, the FCC has established that local government must act on eligible facilities meeting these criteria within 60 days of an application.

In light of the new federal regulations, staff is proposing to amend Section 23.94.030 (A) of the EGMC and add a new subsection allowing eligible collocation facilities to be permitted via an MUP wherein the Zoning Administrator would be the final approval authority. This proposed process reflects the limited scope of staff review of such requests given the FCC's definition of eligible facilities and would also allow

staff to meet the 60-day processing time on such requests. The proposal to modify this section of the code was discussed at the May 16, 2019 Planning Commission hearing and the Commission concurred that the Zoning Administrator was the appropriate hearing body for such eligible collocation requests.

The modifications to Section 23.94.030 as follows:

23.94.030 Permit requirements by zoning district.

A. Permit Requirements.

1.New Facilities. ~~Permit Required.~~ In an attempt to protect scenic, historic, natural, or cultural resources of the City; to assure land use compatibility with properties adjacent to such facilities; to minimize negative visual, noise and aesthetic impacts; and to protect the general safety, welfare, and quality of life of the community, unless exempt from permit requirements pursuant to EGMC Section 23.94.040, Exemptions, and except as set forth herein or at EGMC Section 23.94.040, Small Cell Wireless Communications Facilities, all wireless communications facilities require a conditional use permit pursuant to EGMC Section 23.16.070, Conditional use permit and minor conditional use permit~~, except for co-location facilities that have been granted a valid conditional use permit from the designated approving authority. Such co-locations shall not increase the height of the tower as previously approved, nor shall they include any new equipment beyond the physical enclosure(s) of the prior approval(s). Additionally, improvements to existing wireless facilities that deviate from the prior conditional use permit approval or result in new visual or noise impacts as determined by the Development Services Director shall require amendments to the conditional use permit~~. Development of the facility may be phased without being required to obtain additional conditional use permit(s) for each antenna or service located on the structure; provided, that the maximum height of the structure(s), the location of the structure(s), and design of the structure(s) are consistent with the approved conditional use permit.

2. Colocations. Any colocation of any wireless communications facility on a tower or base station at a site for which a conditional use permit or minor conditional use permit has previously been issued shall require a minor conditional use permit approved by the Zoning Administrator. The Zoning Administrator shall not deny, and shall approve, any request for colocation at an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

- 23.94.060 Operation and maintenance standards

This section provides the operations and maintenance standards for all wireless communications. Subsection (B) addresses Nonionizing Electromagnetic Radiation (NEIR) exposure and states "No wireless communications facility shall be sited or operated in such a manner that it poses, either by itself or in combination with other such facilities, a potential threat to public health." As discussed above, federal law provides that "No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless

service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions." (47 U.S.C. § 332(c)(7)(B)(iv).) This federal law preempts the City's authority to enforce these operational standards as long as a given facility complies with FCC regulations, which the city would require. Given the City's limited authority related to radio frequency emissions, Section 23.94.060 (B) is proposed to be revised as follows:

> Nonionizing Electromagnetic Radiation (NIER) Exposure. No wireless communications facility ~~shall be sited or operated in such a manner that it poses, either by itself or in combination with other such facilities, a potential threat to public health. To this end, no facility~~ or combination of facilities shall produce, at any time, power densities in any inhabited area that exceed the FCC's maximum permissible exposure (MPE) limits for electric and magnetic field strength and power density for transmitters ~~or any more restrictive standard subsequently adopted or promulgated by the City, County, State, or the Federal government~~.

Master Licensing Agreement

As stated above, small cell wireless facilities will be permitted uses in non-residential base zoning districts as specified in the proposed amendments to land use Table 23.27-1 when such facilities are consistent with an agreement between the applicant and the City, approved by the Elk Grove City Council. Small cell facilities will continue to require an MUP in Residential and Agricultural Residential zoning districts. Exhibit C to Attachment 1 is the draft agreement between the City of Elk Grove and Cingular Wireless.

The draft MLA addresses:

- Permit processes;
- Small cell locations;
- Small cell designs;
- Operations and maintenance;
- Payments to the City of Elk Grove;
- MLA Term.

Approval of the MLA would allow cellular service providers to submit subsequent small cell permit applications for administrative approval by the Public Works Director. These subsequent applications will be reviewed against the approved locations and designs specified within the MLA (MLA Exhibits A and B respectively) and must be approved within 45 days of submittal if found to be consistent with the MLA. In addition to the City processing requirements, the MLA requires that all small cell facilities will have all applicable licenses (including those required by the FCC), permits, qualifications and approvals prior to installation.

The draft MLA designates the locations (MLA Exhibit A) for each small cell facility location and also contains the structural, design, and technical standards that each facility will be reviewed against when future permits are requested pursuant to the proposed agreement. With the MLA proposed with this Project, AT&T proposes an initial deployment of 15 small cell facilities throughout Elk Grove with 12 facilities located west of State Route 99. The City Manager may approve amendments that provide additional non-residential locations for small cell facilities.

There are four proposed designs included in the draft MLA consisting of Micro and Pico designs for both the typical cobra head light pole and decorative light poles. The four designs are depicted in Figure 1 below. All four designs are comparable in size; however, the two designs proposed for decorative light poles feature a dark finish to match the City's decorative light poles. Each facility will consist of an antenna enclosure that extends approximately three feet above the light pole, and two 18-inch radio repeater units (RRUs) place at a height of approximately 10 feet. The pico designs are distinguished by the smaller RRUs mounted to the pole.

Figure 1

Cobra head – Micro

Cobra head – Pico

Decorative – Micro

Decorative – Pico

The MLA includes provisions related to the operations, maintenance, and removal of small cell facilities. Section 5.2(a) of the MLA requires that the operator of the facility comply with all FCC regulations regarding radio frequency emission and exposure limitation. As an ongoing operational standard, any small cell facilities installed subject to the agreement would need to comply with all applicable FCC regulations and would have to comply with any changes to these regulations. Cellular facility operators would be responsible for removing any installed equipment should the subject light pole need repair, replacement or removal.

Exhibit C to the MLA sets forth the fees associated with the Agreement including the MLA fee ($10,000), subsequent application fee for each associated site permit ($500 for up to five permits per application), and annual rent for each small cell facility ($270). These fees and rent are consistent with the FCC Order. The MLA contains a contingency for an increased fee should the FCC Order be invalidated. If so, the annual rent for each facility would be $1,500 for the first 20 facilities, $1,000 for facilities 21 through 100, and $500 for facilities 101 and beyond.

The term of the proposed MLA is 10 years, but may be extended for two successive five-year terms for a total period of 20 years. All facilities subject to the MLA must be removed within 180 days of the termination of the Agreement.

Letters from Commenting Agencies/Interested Parties

In March of 2018, the Project application was distributed to other government agencies and all homeowners/neighborhood associations within the City. The City has not received comments from other government agencies or any homeowners/neighborhood association. The City has, however, received a number of written and verbal comments from individual community members. A number of the written comments received are provided in Attachment 2 to this report. The City Council also held a community workshop in November of 2018 to receive community and stakeholder input on the topic of wireless facility regulation. Many of the comments focused on the perceived health impacts of radio-frequency emissions from wireless facilities. As noted above, the City is preempted by federal law from regulating in this area. The wireless providers would, however, be required to comply with FCC regulations. Other comments concerned wireless facility aesthetics and spacing. The proposed zoning code amendments are intended to address these concerns.

Environmental Analysis

The California Environmental Quality Act (CEQA) requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" (State CEQA Guidelines Section 15378).

Staff has analyzed the proposed Zoning Code Text Amendment and MLA and has determined that no further environmental review is necessary pursuant to State CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning for which an EIR was certified), Section 15301 (Existing Facilities), and Section 15303 (New Construction or Conversion of Small Structures). The proposed Project consists of amendments to the text of the EGMC to facilitate the deployment of small cell antennas and associated equipment throughout the City, along with an MLA that addresses the processing of permits individual small cell facilities; their operation and maintenance; and their location, design and technical specifications.

Chapter 23.27 of the EGMC currently defines wireless telecommunications facilities and specifies the zoning districts where these wireless facilities are allowed, as well as the permit processes to which these facilities are subject. The proposed amendments define "Wireless Telecommunications Facilities, Small Cell" which are a specific subset of those wireless facilities that are currently allowed but fall within particular size criteria. Wireless Communications Facilities are allowed in all zoning districts throughout the City. Small cell facilities will also be allowed in all zoning districts; however, the proposed code amendments prescribe entitlements that differ from the traditional, large scale facilities. These amendments and the associated MLA are consistent with General Plan policies related to community infrastructure and development density. An EIR was certified by the City Council in conjunction with the approval of the General Plan (SCH# 2017062058). The zoning amendments and the MLA will not create a significant new impact inconsistent with the General Plan EIR. Pursuant to CEQA Guidelines Section 15183, no further CEQA review is required for the approval of the proposed approvals of the amendments and the agreement.

Approval of the proposed amendments, and the small cell wireless facilities that would be approved by the MLA, are also exempt from CEQA under CEQA Guidelines Sections 15301 and 15303. Section 15301 exempts from CEQA minor alteration to existing public or private structures. Similarly, Section 15303 exempts from CEQA the construction of small facilities, including the installation of small new equipment and facilities. Here, the zoning code amendments and the

MLA authorize the installation of facilities at various sites within the City. The new facilities are to be installed on existing City light poles, and the new facilities will be less than 28 cubic feet, with the specifically proposed facilities being much less than half the size of the existing poles. (See Figure 1.) Therefore, the approval of the proposed amendments and MLA are exempt from CEQA review pursuant to CEQA Guidelines Sections 15301 and 15303.

Recommended Motion

Should the Planning Commission agree with staff's recommendation, the following motion is suggested:

> *"I move that the Planning Commission adopt a Resolution recommending that the City Council f*ind that no further environmental review is necessary under the California Environmental Quality Act ("CEQA") Sections 15183, 15301, and 15303 of Title 14 of the California Code of Regulations (State CEQA Guidelines); and Adopt an Ordinance amending Title 23 of the Elk Grove Municipal Code (EGMC) as described in Exhibit A to the proposed Planning Commission Resolution subject to the findings in the draft Resolution; and approve a Master License Agreement for Small Cell Wireless Communications Facilities between the City of Elk Grove and New Cingular Wireless PCS,. LLC (dba AT&T Mobility) (hereinafter referred to as "AT&T") in substantially the form presented, as set forth in Exhibit C to the proposed Planning Commission Resolution"

Attachments:

1. Planning Commission Draft Resolution
   Exhibit A- Project Description
   Exhibit B- Proposed Amendments to Title 23 (Zoning)
   Exhibit C- Draft Master Licensing Agreement
2. Written Comments

RESOLUTION NO. 2019-XX

JULY 18, 2019

A RESOLUTION OF THE CITY OF ELK GROVE PLANNING COMMISSION RECOMMENDING THAT THE ELK GROVE CITY COUNCIL FIND NO FURTHER ENVIRONMENTAL REVIEW IS NECESSARY PURSUANT TO STATE CEQA GUIDELINES SECTIONS 15183, 15301, AND 15303; ADOPT AN ORDINANCE AMENDING TITLE 23 (ZONING) OF THE ELK GROVE MUNICIPAL CODE FOR THE CINGULAR WIRELESS PCS CODE AMENDMENT PROJECT; AND APPROVE A MASTER LICENSE AGREEMENT WITH NEW CINGULAR WIRELESS PCS, LLC, DOING BUSINESS AS AT&T MOBILITY

WHEREAS, New Cingular Wireless PCS, LLC (dba AT&T Mobility) (the "Applicant") seeks an amendment to the City's zoning code concerning small cell wireless facilities and approval of a master license agreement (MLA) for such small cell wireless facilities (collectively, the "Project"); and

WHEREAS, the Project is exempt from environmental review under California Environmental Quality Act (CEQA) Guidelines Sections 15183, 15301, and 15303; and

WHEREAS, the Planning Commission of the City of Elk Grove (the "Planning Commission") held a duly-noticed public hearing on July 18, 2019, as required by law, to consider the Project, including the information presented by staff, the public, and all other interested persons concerning approval of the proposed Project.

NOW, THEREFORE, BE IT RESOLVED, that the Planning Commission recommends that the City Council of the City of Elk Grove ("City Council") find that no further environmental review is required for the amendments to Title 23 (Zoning) of the Elk Grove Municipal Code and for the MLA pursuant to State CEQA Guidelines Sections 15183, 15301, and 15303 based upon the following finding:

CEQA

Finding: No further environmental review is required under the CEQA pursuant to State CEQA Guidelines sections 15183, 15301, and 15303.

Evidence: CEQA requires analysis of agency approvals of discretionary "projects." A "project," under CEQA, is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" (State CEQA Guidelines Section 15378).

Staff has analyzed the proposed Zoning Code Text Amendment and MLA and has determined that no further environmental review is necessary pursuant to State CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning for which an EIR was certified), Section 15301 (Existing Facilities), and Section 15303 (New Construction or Conversion of Small Structures). The proposed Project consists of amendments to the text of the EGMC to facilitate the deployment of small cell antennas and associated equipment throughout the City, along with an MLA that addresses the processing of permits individual small cell facilities; their operation and maintenance; and their location, design and technical specifications.

Chapter 23.27 of the EGMC currently defines wireless telecommunications facilities and specifies the zoning districts where these wireless facilities are allowed, as well as the permit processes to which these facilities are subject. The proposed amendments define "Wireless Telecommunications Facilities, Small Cell" which area a specific subset of those wireless facilities that are currently allowed but fall within particular size criteria. Wireless Communications Facilities are allowed in all zoning districts throughout the City. Small cell facilities will also be allowed in all zoning districts; however, the proposed code amendments prescribe entitlements that differ from the traditional, large scale facilities. These amendments and the associated MLA are consistent with General Plan policies related to community infrastructure and development density. An EIR was certified in conjunction with the approval of the General Plan (SCH# 2017062058). The zoning amendments and the MLA will not create a significant new impact inconsistent with the General Plan EIR. Pursuant to CEQA Guidelines section 15183, no further CEQA review is required for the approval of the proposed text amendments and MLA.

Approval of the proposed amendments, and the small cell wireless facilities that would be approved by the MLA, are also exempt from CEQA under CEQA Guidelines Sections 15301 and 15303. Section 15301 exempts from CEQA minor alteration to existing public or private structures. Similarly, Section 15303 exempts from CEQA the construction of small facilities, including the installation of small new equipment and facilities. Here, the zoning code amendments and the MLA authorize the installation of facilities at various sites within the City. The new facilities are to be installed on existing City light poles, and the new facilities will be less than 28 cubic feet, with the specifically proposed facilities being much less than half the size of the existing poles. Therefore, the approval of the proposed text amendments and MLA are exempt from CEQA review pursuant to CEQA Guidelines section 15301 and 15303.

AND, BE IT FURTHER RESOLVED, that the Planning Commission hereby recommends that the City Council adopt an Ordinance amending Title 23 (Zoning) of the Elk Grove Municipal Code as described in Exhibit A and provided in Exhibit B attached hereto and incorporated herein by this reference, based upon the following finding:

General Plan Consistency

Finding: The proposed amendments to the Elk Grove Municipal Code are consistent with the General Plan goals, policies, and implementation programs.

Evidence: The proposed code amendments and associated MLA are consistent with the General Plan. The Project will streamline the installation of small cell facilities on existing infrastructure within the public right-of-way which is consistent with General Plan policies related to community infrastructure, specifically, goals related to maximizing the efficiency of infrastructure improvements and encouraging advanced technologies.

AND, BE IT FURTHER RESOLVED, that the Planning Commission hereby recommends that the City Council approve a Master License Agreement with New Cingular Wireless PCS, LLC, doing business as AT&T mobility, attached hereto as Exhibit C and incorporated herein by this reference, consistent with the proposed amendments to Title 23 (Zoning) of the Elk Grove Municipal Code.

The foregoing Resolution of the City of Elk Grove was passed and adopted by the Planning Commission on the 18th day of July 2019, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

ATTEST:

Sandy Kyles, PLANNING SECRETARY	Mackenzie Wieser, CHAIR of the PLANNING COMMISSION

EXHIBIT A

PROJECT DESCIPTION

The proposed Project consists of a Zoning Code Text Amendment to amend Chapters 23.27 and 23.94 of the Elk Grove Municipal Code (EGMC) to facilitate the deployment of small cell communications facilities throughout the City. The Project also includes a Master License Agreement for Small Cell Wireless Communications Facilities between the City of Elk Grove and New Cingular Wireless PCS, LLC

EXHIBIT B

EXHIBIT B

Elk Grove Municipal Code to be amended as follows. New text is underlined. Deleted text is shown as ~~strikeout.~~

[Amend 23.26.050 Description of land use classifications as follows.]

T. "T" Allowed Use Descriptions.

~~1. "Telecommunications facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "telecommunications facilities." Additional definitions can be found in EGMC Chapter 23.94.~~

1. "Theaters and auditoriums" means indoor facilities for public assembly and group entertainment, other than sporting events, including civic theaters and facilities for "live" theater and concerts, exhibition and convention halls, motion picture theaters, public and semi-public auditoriums, and similar public assembly uses. Does not include outdoor theaters, concert and similar entertainment facilities, and indoor and outdoor facilities for sporting events (see "outdoor commercial recreation").

2. "Thrift store" means a retail establishment selling secondhand goods donated by members of the public.

3. "Transit facilities" means maintenance and service centers for the vehicles operated in a mass transportation system. Includes buses, taxis, railways, etc.

4. "Transit stations and terminals" means passenger stations for vehicular and rail mass transit systems; also terminal facilities providing maintenance and service for the vehicles operated in the transit system. Includes buses, taxis, railways, etc.

5. "Transitional housing" means buildings configured as rental housing developments but operated under program requirements that require the termination of assistance and recirculating

of the assisted unit to another eligible program recipient at a predetermined future point in time that shall be no less than six (6) months from the beginning of the assistance.

W. "W" Allowed Use Descriptions.

1. "Wholesaling and distribution" means establishments engaged in selling merchandise to retailers; to industrial, commercial, institutional, farm, or professional business users; or to other wholesalers; or acting as agents or brokers in buying merchandise for or selling merchandise to such persons or companies. Includes such establishments as agents, merchandise or commodity brokers, and commission merchants, assemblers, buyers and associations engaged in the cooperative marketing of farm products, merchant wholesalers, and stores primarily selling electrical, plumbing, heating and air conditioning supplies and equipment.

2. "Wineries, distilleries, and brewery" means manufacturing facilities where raw materials (e.g., grapes, hops, barley) are processed and fermented into wine, beer, and other alcoholic drinks. May include tasting and accessory retail sales of products produced on site. Processing of the products, without fermentation, is considered "agricultural products processing" as defined in this section.

3. "Wireless Communications Facility" means a facility designed and/or used for the purpose of transmitting, receiving, or relaying voice and/or data signals from various wireless communication devices, including a transmission tower, antenna, and/or other facility designed or used for that purpose. Amateur radio transmission facilities, facilities operated exclusively as part of a public safety network, and facilities used exclusively for the transmission of television and/or radio broadcasts are not "wireless communications facilities." Additional definitions can be found in EGMC Chapter 23.94.

4. "Wireless Communications Facility, Small Cell" means any small cell antennas and other wireless communications equipment, including facilities that operate on unlicensed frequencies and FCC-approved frequencies in the bands authorized for commercial wireless communication services by the FCC pursuant to FCC licenses issued to Licensee, and all associated equipment, meeting the following size criteria: (i) the total volume of all small cell antennas on a single facility or property shall not exceed six (6) cubic feet; (ii) any individual piece of associated equipment on a single facility or property shall not exceed nine (9) cubic feet in volume; and (iii) the cumulative total of all associated equipment, including antennas, for a single facility or property shall not exceed twenty-eight (28) cubic feet in volume.

Exhibit B
Cingular Wireless PCS Code Amendments (EG-18-006)
Proposed Amendment to Title 23

[Amend Table 23.27-1 as follows]

Allowed Uses and Required Entitlements for Base Zoning Districts

Land Use/Zoning District	Zoning Districts																									Specific Use Regulations
	Agricultural					Residential					Commercial					Mixed Use		Office		Industrial			Public/Quasi-Public			
	AG-80	AG-20	AR-5/10	AR-2	AR-1	RD-1/2/3	RD-4/5/6	RD-7	RD-10/15	RD-20/25/30	LC	GC	SC	AC	C-O	VCMU	RMU	BP	MP	LI	LI/FX	HI	PR	PS	O	
Residential Uses																										
~~Telecommunication Facility~~ Wireless Communication Facility	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	CUP	P	P	P	CUP	CUP	CUP	EGMC Chapter 23.94
Wireless Communication Facility, Small Cell[1]	CUP[7]	CUP[7]	MUP	MUP	MUP	MUP	MUP	MUP	MUP	MUP	CUP[21]	CUP[21]	CUP[21]	CUP[21]	CUP[21]	CUP[6]	CUP[6]	CUP[10]	CUP[10]	P	P	P	MUP[4]	CUP/ MUP	CUP/ MUP[4]	

Notes to Table 23.27-1

Notes that pertain to all zoning districts concerning any Small Cell Wireless Communication Facility:

1. Notwithstanding any other provision of this Title, any small cell wireless facility located at or within any school shall require an MUP, unless the school is in a zoning district requiring a CUP, in which case a CUP shall be required.

Notes that pertain to the agricultural zoning districts:

7. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use.

Notes that pertain to the commercial zoning districts:

21. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use.

Notes pertaining to the mixed-use zoning districts:

6. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use.

Notes pertaining to the office zoning districts:

10. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use.

Notes that pertain to the public/quasi-public zoning districts:

4. Small cell wireless communications facilities consistent with an agreement between the applicant and the City pursuant to Section 23.94.040 shall be a permitted use, provided, however, that any small cell wireless facility located within a public park shall require an MUP.

[Amend Chapter 23.94 as follows]

23.94.010 Purpose and intent.

The purpose of this chapter is to regulate the installation of antennas and other wireless communications facilities consistent with Federal law. The City acknowledges the community benefit associated with the provision of wireless communication service and potential public benefit from leasing of publicly owned properties. It is also recognized that unrestricted installations are contrary to the City's efforts to promote safety and aesthetic considerations. It is not the intent of this section to unreasonably limit the reception or transmission of signals or to add excessive permit costs. Rather, it is the intent of this chapter to permit antennas and wireless communications facilities where they can be installed without creating adverse safety and aesthetic impacts on abutting and nearby properties and the overall community. [Ord. 8-2011 §39(A), eff. 6-24-2011]

23.94.020 Definitions.

Terms unique to this chapter are listed in EGMC Chapter 23.100 (General Definitions). [Ord. 8-2011 §39(B), eff. 6-24-2011]

23.94.030 Permit requirements by zoning district.

23.94.030 Permit requirements by zoning district.

A. Permit Requirements.

1. New Facilities. ~~Permit Required.~~ In an attempt to protect scenic, historic, natural, or cultural resources of the City; to assure land use compatibility with properties adjacent to such facilities; to minimize negative visual, noise and aesthetic impacts; and to protect the general safety, welfare, and quality of life of the community, unless exempt from permit requirements pursuant to EGMC Section 23.94.040, Exemptions, and except as set forth herein or at EGMC Section 23.94.040, Small Cell Wireless Communications Facilities, all wireless communications facilities in non-industrial zoning districts shall require a conditional use permit or a minor conditional use permit pursuant to EGMC Section 23.16.070, Conditional use permit and minor conditional use permit~~, except for co-location facilities that have been granted a valid conditional use permit from the designated approving authority. Such co-locations shall not increase the height of the tower as previously approved, nor shall they include any new equipment beyond the physical enclosure(s) of the prior approval(s). Additionally, improvements to existing wireless facilities that deviate from the prior conditional use permit approval or result in new visual or noise impacts as determined by the Development Services Director shall require amendments to the conditional use permit~~. Development of the facility may be phased without being required to obtain additional conditional use permit(s) for each antenna or service located on the structure; provided, that

the maximum height of the structure(s), the location of the structure(s), and design of the structure(s) are consistent with the approved conditional use permit.

2. Colocations. Any colocation of any wireless communications facility on a tower or base station at a site for which a conditional use permit or minor conditional use permit has previously been issued shall require a minor conditional use permit approved by the Zoning Administrator. The Zoning Administrator shall not deny, and shall approve, any request for colocation at an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

B. Permit Processing. Permits shall be processed in accordance with the applicable provisions of Division II of this title.

C. Conditions. The designated approving authority may impose conditions on wireless communications facility applications to ensure compliance with all provisions and purposes of this chapter.

D. Findings for Approval. The approving authority may approve or conditionally approve a conditional use permit or minor conditional use permit for a wireless communications facility, where such permit is required, only upon making the following written findings, in addition to the required findings for conditional use permits as provided in EGMC Section 23.16.070, Conditional use permit, based on substantial evidence in the record.

1. All of the following findings are required for the approval of a conditional use permit for any wireless communications facility:

a. The establishment or expansion of the facility demonstrates a reasonable attempt by the applicant to minimize stand-alone facilities.

b. All applicable development standards in EGMC Section 23.94.050 have been met; or, if the application includes a request for an exception to those standards, then the approving body finds that lack of compliance with the development standards would not create adverse visual, noise, or aesthetic impacts to adjacent property.

2. Findings for the establishment of a wireless communications facility that is not co-located with other existing or proposed facilities or a new freestanding pole or tower (at least one (1) finding required):

a. Co-location is not reasonably feasible;

b. Co-location would have greater adverse effects on views, noise or aesthetics as compared with a stand-alone installation; or

c. Co-location is not permitted by the property owner.

E. Findings for Denial. Findings to deny any permit for a wireless communications facility as regulated herein shall be done in writing and supported by substantial evidence contained in the written record. Denial shall not be based on the environmental effects of radio frequency emissions that comply with the Federal Communications Commission emission regulations. [Ord. 24-2015 §11 (Exh. I), eff. 2-12-2016; Ord. 8-2011 §39(C), eff. 6-24-2011]

23.94.035 Small Cell Wireless Communications Facilities

Any small cell wireless communications facility, as defined in Section 23.26.050, shall require a permit as required by Table 23.27-1 of the EGMC. To the extent provided by Table 23.27-1, a small cell wireless communications facility use shall be a permitted use if such use is consistent with an agreement between the applicant and the City, approved by the Elk Grove City Council, and such installation and operation of the small cell wireless communications facility or facilities is in conformance with the agreement. To the extent there is a conflict between the provisions of the agreement for a small cell wireless communications facility or facilities and this chapter, the terms of the agreement shall prevail.

23.94.040 Exemptions.

The following wireless communications facilities are exempt from the requirements of this chapter as specified below and are subject to compliance with other provisions of this title:

A. A wireless communications facility shall be exempt from the provisions of this section if and to the extent that a permit issued by the California Public Utilities Commission (CPUC) or the rules and regulations of the Federal Communications Commission (FCC) specifically provide that the antenna is exempt from local regulation.

B. Satellite earth station (SES) antennas which are two (2) meters (6.5616 feet) or less in diameter or in diagonal measurement, located in any nonresidential zoning district. In order to avoid the creation of an attractive public nuisance, reduce accidental tripping hazards and maximize stability of the structure, such antennas shall be placed whenever possible on top of buildings and as far away as possible from the edges of rooftops.

C. Parabolic antennas, direct broadcast satellite (DBS) antennas and multipoint distribution service (MDS) antennas which are one (1) meter (3.2808 feet) or less in diameter or diagonal measurement and

Television Broadcast Service (TVBS) antennas, so long as said antennas are located entirely on private property and are not located within the required front yard setback area. This locational requirement is necessary to ensure that such antenna installations do not become attractive nuisances and/or result in accidental tripping hazards if located adjacent to a street or other public right-of-way.

D. Amateur radio antenna structures provide a valuable and essential telecommunication service during periods of natural disasters and other emergency conditions and are therefore exempt from permit provisions of this chapter in compliance with the following standards:

1. Height Limits. In residential zoning districts the height limit is forty-five (45' 0") feet and in nonresidential zoning districts the height limit is sixty (60' 0") feet. However, amateur radio antennas in any district may extend to a maximum height of seventy-five (75' 0") feet; provided, that the tower is equipped with a lowering device (motorized and/or mechanical) capable of lowering the antenna to the maximum permitted height when not in operation.

2. Location Parameters. All antenna structures shall be located outside of required front and street side yard areas. Antenna structures shall also be set back a minimum distance of five (5' 0") feet from interior property lines. If any portion of the antenna overhangs any property line, a design review permit is required to obtain the authorized signature of all affected property owners on the required application form.

3. Tower Safety. All antennas shall be located within an enclosed fenced area or have a minimum five (5' 0") foot high tower shield at the tower base to prevent climbing. All active elements of antennas shall have a minimum vertical clearance of eight (8' 0") feet.

4. Minor modifications (emergency or routine), provided there is little or no change in the visual appearance as determined by the Development Services Director. [Ord. 24-2015 §11 (Exh. I), eff. 2-12-2016; Ord. 26-2006 §3, eff. 8-11-2006]

23.94.050 Development standards.

A. General Development Standards. Unless otherwise exempt pursuant to EGMC Section 23.94.040, Exemptions, or as otherwise provided in an agreement approved by the Elk Grove City Council pursuant to EGMC Section 23.94.035, Small Cell Wireless Communications Facilities, the following general development standards shall apply to all wireless communications facilities:

1. All wireless communications facilities shall comply with all applicable requirements of the current uniform codes as adopted by the City and shall be consistent with the General Plan and this title, as well as other standards and guidelines adopted by the City.

2. All wireless communications facilities shall be designed, screened and/or camouflaged from the view of surrounding properties and the public view to the greatest extent possible in one (1) or more of the following ways:

a. Co-located with existing facilities or structures so as not to create substantial visual, noise, or aesthetic impacts. To facilitate co-location when deemed appropriate, conditions of approval for conditional use permits shall require all service providers to cooperate in the siting of equipment and antennas to accommodate the maximum number of operators at a given site when found to be feasible and aesthetically desirable;

b. Sited within areas with substantial screening by existing vegetation;

c. Designed to appear as natural features found in the immediate area, such as trees or rocks, so as to be unnoticeable (camouflaged facilities); or

d. Screened with additional trees and other native or adapted vegetation which shall be planted and maintained around the wireless communications facility, in the vicinity of the project site, and along access roads, where such vegetation is appropriate and deemed necessary to screen the facilities. Such landscaping, including irrigation, shall be installed and maintained by the applicant, as long as the permit is in effect.

3. All wireless communications facilities, including on-site generators, shall be designed, located, and operated to have little to no noise impact on the surrounding area or neighborhood, including interference from adverse noise and aesthetic impacts, and at a minimum shall be subject to the City-adopted noise standards contained in EGMC Chapter 6.32 and the General Plan. Failure to comply with the City's adopted noise standard after written notice and opportunity to cure have been given shall be grounds for the City to conduct a revocation hearing regarding the permit granted pursuant to this section.

4. All ~~conditional use~~ permit applications for wireless communications facilities shall include a description of services proposed and documentation certifying applicable licenses or other approvals required by the Federal Communications Commission to provide services proposed in connection with the application.

5. All ~~conditional use~~ permit applications for wireless communications facilities shall include a map and narrative description of all telecommunication sites existing, proposed or planned by the applicant in the City and within a one (1) mile radius of the City border. Such applications shall

also include an analysis of all reasonable and technically feasible alternative locations and/or facilities (including co-locations) which could provide the proposed communication service.

6. In a residential zoning district, the following development standards shall apply, unless the applicant can demonstrate with substantial evidence satisfactory to the approving authority that such siting limitation will materially inhibit personal wireless service as to a particular small cell wireless communication facility.

a. No small cell wireless communication facility shall be placed within five-hundred (500' 0") feet of another small cell wireless carrier.

b. No small cell wireless communication facility shall be located immediately adjacent to a front yard of any residential dwelling.

~~6.~~7. At least ten (10' 0") feet of horizontal clearance shall be maintained between any part of the antenna and any power lines unless the antenna is installed to be an integral part of a utility tower or facility.

~~7.~~8. Development Standards for Antennas (Excluding Amateur Radio Antennas). Unless otherwise exempt pursuant to EGMC Section 23.94.040, Exemptions, the following development standards shall apply to receive-only antennas (ground- and building-mounted), parabolic antennas, and satellite earth stations as defined in this section:

a. Maximum Number. One (1) wireless facility per parcel, unless the applicant can demonstrate the service need for additional antenna.

b. Antenna Location. Parabolic antenna and satellite earth stations shall be ground-mounted in residential zoning districts. In all nonresidential zoning districts, the preference is for building-mounted antennas. No antenna shall be located in the required front or street side yard of any parcel unless entirely screened from pedestrian view of the abutting street rights-of-way (excluding alleys). In all zoning districts, ground-mounted antennas shall be situated as close to the ground as possible to reduce visual impact without compromising their function and all portions of the structure/antenna shall be set back a minimum of five (5' 0") feet from any property line.

c. Height Limit. The height limit for ground-mounted antennas is six (6' 0") feet. However, the height may be increased to a maximum of twelve (12' 0") feet if the setback distance from all property lines is at least equal to the height of the antenna and if the structure is

screened in accordance with subsection (A)(7)(d) of this section, Screening. Building-mounted antennas shall not extend above the roofline, parapet wall, or other roof screen or project beyond a maximum of eighteen (18") inches from the face of the building or other support structure.

d. Screening. Ground-mounted antennas shall be screened with a fence, wall or dense landscaping so that the antenna is not visible from the public right-of-way and to minimize the visual impact on abutting properties. Building-mounted antennas shall be screened as follows:

i. Wall-mounted equipment shall be flush-mounted and painted or finished to match the building with concealed cables.

ii. Roof-mounted equipment shall be screened from view of public rights-of-way by locating the antenna below the roofline, parapet wall, or other roof screen and by locating the antenna as far away as physically feasible and aesthetically desirable from the edge of the building.

e. Color. Antennas shall have subdued colors and nonreflective materials which blend with the materials and colors of the surrounding area or building.

B. Development Standards for Amateur Radio Antennas. As part of a minor design review, amateur radio antennas as defined in EGMC Chapter 23.100 may exceed the height limit and/or amend the setback provisions of the exempt amateur radio antenna structures (EGMC Section 23.94.040, Exemptions) only when said regulation will result in unreasonable limitations on, or prevent, reception or transmission of signals. The designated approving authority may issue the design review permit subject to any conditions necessary or appropriate to minimize the safety or aesthetic impacts of antenna installations, provided the conditions do not unreasonably prevent or limit transmission or reception of signals.

C. Development Standards for Towers. The following development standards shall apply to towers (including co-location facilities) as defined in EGMC Section 23.94.020, Definitions:

1. Site Design. All facilities (including related equipment) shall be designed to minimize the visual impact to the greatest extent feasible, considering technological requirements, by means of placement, screening, and camouflage, to be compatible with existing architectural elements, landscape elements, and other site characteristics. The applicant shall use the smallest and least visible antennas possible to accomplish the owner/operator's coverage objective. A visual impact

analysis is required to demonstrate how the proposed facility will appear from public rights-of-way (including public trails).

2. Safety Design. All facilities shall be designed so as to be resistant to and minimize opportunities for unauthorized access, climbing, vandalism, graffiti, and other conditions which would result in hazardous conditions, visual blight, or attractive nuisances.

3. Location. Towers shall not be located in any required front or street side yard in any zoning district. The setback distance from any abutting street right-of-way, residential property line, or public trail shall be equal to the height of the facility (tower and related equipment). Otherwise, the minimum setback distance from all other property lines shall be at least equal to twenty (20%) percent of the height of the tower. Existing towers may be allowed to increase the height without requiring the tower to be relocated as part of the conditional use permit approval, provided the overall maximum height of the tower does not exceed the height limit listed in subsection (C)(4) of this section, unless an exception is approved by the designated approving authority.

4. Height Limit. The height limit for towers shall be as listed in Table 23.94-1 based on the underlying zoning district of the site. Exceptions to the height limit may be granted when the designated approving authority finds that reasonable alternatives do not exist to provide the necessary service. There is no height limit specified for co-locations on existing structures, provided facilities are screened from view of abutting street rights-of-way or camouflaged by matching the color(s) and/or material(s) of the structure to which it is attached.

Table 23.94-1

Height Limit for Wireless Towers

Zoning District	**Height Limit**
AG, AR, RD, OS, C-O, RM	55 ft.
LC, GC, SC, AC, BP	65 ft.
MP, LI, HI	80 ft.

5. Lighting. Towers and related equipment shall be unlit except as provided below:

a. A manually operated or motion-detector-controlled light above the equipment shed door may be provided, except that the light shall remain off except when personnel are present at night and shall be shielded or directed downward to the greatest extent

possible to ensure that light shall not spill over onto abutting properties, especially residential zoning districts or uses; and

b. Tower lighting required by FAA regulation.

6. Landscape. Where appropriate, wireless facilities shall be landscaped so as to maintain and enhance the aesthetic quality of the community and generally screen the ground equipment from public view. The perimeter of the facility, as well as any portion of the leasable area directly adjacent to a public right-of-way, a residential use, or a public trail shall be landscaped with trees, foliage, and shrubs. Trees shall be fast-growing evergreen species, twenty-four (24") inch box in size. Shrubs shall be a minimum fifteen (15) gallon size covering a minimum planter area depth of five (5' 0") feet around the facility. Trees and shrubs shall be planted no further apart on center than the mature diameter of the proposed species.

7. Design/Finish. The tower and related equipment shall have subdued colors and nonreflective materials that blend with the colors and materials of surrounding areas.

8. Advertising. The tower and related equipment shall not bear any signs or advertising devices other than certification, warning or other required seals or signs.

9. Parking. The off-street parking for wireless communications facilities shall be determined by the designated approving authority in conjunction with required development permits. All required parking shall be provided in accordance with EGMC Chapter 23.58 EGMC, Parking. [Ord. 31-2014 §3 (Exh. A), eff. 2-13-2015; Ord. 27-2013 §15, eff. 2-7-2014; Ord. 8-2011 §39(D), eff. 6-24-2011]

23.94.060 Operation and maintenance standards.

A. Noise. All wireless communications facilities shall comply with EGMC Chapter 6.32, Noise Control, at all times. Back-up generators shall only be operated during power outages and for testing and maintenance purposes.

B. Nonionizing Electromagnetic Radiation (NIER) Exposure. No wireless communications facility ~~shall be sited or operated in such a manner that it poses, either by itself or in combination with other such facilities, a potential threat to public health. To this end, no facility~~ or combination of facilities shall produce, at any time, power densities in any inhabited area that exceed the FCC's maximum permissible exposure (MPE) limits for electric and magnetic field strength and power density for transmitters~~ or any more restrictive standard subsequently adopted or promulgated by the City, County, State, or the Federal government~~. [Ord. 8-2011 §39(E), eff. 6-24-2011; Ord. 26-2006 §3, eff. 8-11-2006]

23.94.070 Removal provisions.

In the event one or more antennas, towers, or related equipment are not operated for the provision of wireless telecommunication services for a continuous period of three (3) months or more, such antenna, tower, and/or related equipment shall be deemed abandoned. The owner of same shall remove all such items within thirty (30) days following the mailing of written notice that removal is required. If two (2) or more providers of wireless telecommunication services use the antenna support structure or related equipment, the period of nonuse under this section shall be measured from the cessation of operation at the location by all such providers. Failure to remove shall constitute a public nuisance and shall be enforced as such. [Ord. 26-2006 §3, eff. 8-11-2006]

23.94.080 Transfer of operation.

Any carrier/service provider authorized by the City to operate a specific wireless communications facility may assign the operation of the facility to another carrier licensed by the FCC for that radio frequency; provided, that such transfer is made known to the Development Services Director in writing prior to the transfer and all conditions of approval for the subject installation are carried out by the new carrier/service provider. However, the carrier/service provider may, without written notification, transfer operations of the facility to its general partner or any party controlling, controlled by or under common control with the carrier/service provider. [Ord. 24-2015 §11 (Exh. I), eff. 2-12-2016; Ord. 26-2006 §3, eff. 8-11-2006]

23.94.090 Effects of development.

The City shall not be liable if development within the City, after installation of the antenna, impairs antenna reception. [Ord. 26-2006 §3, eff. 8-11-2006]

EXHIBIT C

MASTER LICENSE AGREEMENT FOR SMALL CELL WIRELESS COMMUNICATIONS FACILITIES BETWEEN THE CITY OF ELK GROVE AND NEW CINGULAR WIRELESS PCS, LLC DOING BUSINESS AS AT&T MOBILITY

This License Agreement for Small Cell Wireless Communications Facilities on Municipal Facilities (the "Agreement") is made and entered into as of _____, 2019 ("Effective Date") by and between the City of Elk Grove, a municipal corporation ("Licensor" or "City") and New Cingular Wireless PCS, LLC doing business as AT&T Mobility ("Licensee"). Licensor and Licensee shall sometimes be referred to hereafter individually as a "Party" and collectively as the "Parties."

RECITALS

A. Licensor is the owner of certain Municipal Facilities located in the City's right-of-way situated within the City of Elk Grove;

B. Licensee seeks to affix Small Cell Wireless Communication Facilities to certain of Licensor's Municipal Facilities, as set forth herein;

C. Licensee is willing to compensate Licensor in exchange for a grant and right to use and physically occupy portions of the Municipal Facilities as provided herein;

D. Licensor is willing to accommodate Licensee's non-exclusive use of such Municipal Facilities for Small Cell Wireless Communication Facilities in accordance with all applicable law and the terms of this Agreement;

NOW, THEREFORE, in consideration of the mutual covenants, terms, and conditions set forth in this Agreement, the Parties hereby agree as follows:

1. DEFINITIONS

As used herein, the following capitalized terms have the meaning ascribed to them below:

1.1 "EGMC" means the City of Elk Grove Municipal Code.

1.2 "Emergency" means an event that severely impairs public health, safety, and/or welfare.

1.2 "FCC" means the Federal Communications Commission.

1.3 "Individual Site Permit" means a permit for a single Small Cell Wireless Communications Facility at a specified location on a Municipal Facility.

1.4 "Municipal Facilities" or "Municipal Facility" means those Licensor-owned streetlights, traffic signals, flags, banners and/or signage, refuse receptacle(s); bus stop(s); poles; fixtures, or any other similar structure(s) capable of accommodating a Small Cell Wireless Communications Facility located within the Licensor's Right of Way ("ROW") that are designated or approved by Licensor as being suitable for placement of Small Cell Wireless Communication Facilities.

1.5 "Person" or "Persons" means any natural person or other legal entity including, without limitation a corporation, partnership, or government agency.

1.6 "Small Cell Wireless Communication Facilities" or "Small Cell Wireless Communication Facility" means any small cell antennas and other wireless communications equipment, including facilities that operate on unlicensed frequencies and FCC-approved frequencies in the bands authorized for commercial wireless communication services by the FCC pursuant to FCC licenses issued to Licensee, and all associated equipment, affixed by Licensee to a Licensor's Municipal Facility and meeting the following size criteria: (i) the small cell antenna on a single Municipal Facility shall not exceed six (6) cubic feet in volume; (ii) any individual piece of associated equipment on a single Municipal Facility shall not exceed nine (9) cubic feet in volume; and (iii) the cumulative total of all associated equipment for a single Municipal Facility shall not exceed twenty-eight (28) cubic feet in volume.

2. SCOPE OF AGREEMENT

2.1 Scope of Agreement. Licensor, acting in its proprietary capacity as the owner of Municipal Facilities, and subject to the terms and condition of this Agreement, does hereby grant to Licensee a nonexclusive license to use the Municipal Facilities to attach, install, operate, maintain, upgrade, remove, reattach, reinstall, relocate and replace the Small Cell Wireless Communication Facilities at the locations identified in Exhibit A, attached hereto. Licensee shall provide geographic information system ("GIS") information to the City identifying such sites in an electronic or other form acceptable to the City allowing the City to modify or layer such GIS information on an on-going basis, as needed. The list of Small Cell Wireless Communication Facilities locations set forth at Exhibit A may be amended or supplemented from time to time by the City Manager in order to update the applicable Small Cell Wireless Communication Facilities locations. Nothing in this Agreement grants Licensee the right to make any installation, or to install any other facilities or equipment not addressed in this Agreement and/or that do not conform to this Agreement. Nothing in this Agreement grants Licensee the right to make any installation, or to install any other facilities or equipment on private property. The rights and obligations set forth in this Agreement are contractual only, and no use of Licensee's Municipal Facilities under this Agreement shall create or vest in Licensee any ownership, property, or other similar legal interest in such Municipal Facilities. No permit shall be issued for any Small Cell Wireless Communications Facility for a location not identified on the map contained at Exhibit A, as it may be amended from time to time.

2.2 Interference with Small Cell Wireless Communication Facilities. As of the Effective Date of this Agreement and the installation of Small Cell Wireless Communication Facilities by Licensee pursuant to this Agreement, Licensor shall not materially and adversely affect or interfere with the Licensee's existing Small Cell Wireless Communication Facilities or Licensee's ability to comply with the terms and conditions of this Agreement, all as determined by Licensee in consultation with Licensor, including, without limitation, Licensor's granting of rights to third-parties that would materially and adversely affect or interfere with the Licensee's existing Small Cell Wireless Communication Facilities or Licensee's ability to comply with the terms and conditions of this Agreement. Notwithstanding the foregoing, nothing herein shall prevent Licensor from granting rights to third-parties to allow co-location of facilities or equipment on Municipal Facilities occupied by Licensor, provided that such co-location does not materially and adversely affect or interfere with the Licensee's existing Small Cell Wireless Communication Facilities or Licensee's ability to comply with the terms and conditions of this Agreement in conflict with this section 2.2.

3. GENERAL OBLIGATIONS

3.1 Technical Requirements and Specifications.

(a) All Small Cell Wireless Communication Facilities must be constructed, erected, installed at Licensee's sole expense and in compliance with all applicable laws. Licensee shall maintain and repair all Small Cell Wireless Communication Facilities at its expense in safe condition and good repair including, without limitations, in compliance with the following:

(i) The requirements and specifications of the National Electrical Safety Code ("NESC"), the National Electrical Code ("NEC") and any and all other applicable regulatory codes for safe practices when performing work on or near Municipal Facilities (collectively, "Safety Codes"); and

(ii) Any current or future rules or orders of the FCC, the State public utility commission, or any other federal, state or local authority having jurisdiction.

(iii) All requirements of the EGMC and other applicable law.

(iv) Changes to the requirements, specifications, rules and orders in subsections (i), (ii) and (iii) shall not apply retroactively unless required by law.

3.2 No Liens Permitted. Licensee will not, directly or indirectly, create, incur, assume or suffer to exist any lien with respect to any Municipal Facilities or other Licensor property resulting from any work performed by Licensee or on its behalf pursuant to this Agreement or any act or claim against it or any of its contractors, agents, or customers and will, at its sole expense, promptly take any action as may be necessary

to discharge any such lien within thirty (30) days of first being notified in writing of its existence.

3.3 Worker Qualifications; Responsibility for Agents and Contractors. Licensee shall ensure that its workers and, to the extent that it may employ agents or contractors, their workers, are adequately trained and skilled to access the Municipal Facilities in accordance with all applicable laws and industry standards. Licensor may deny access to its Municipal Facilities to any such worker who is not so qualified, or does not act in a safe and professional manner when accessing any Municipal Facility, all as determined in Licensor's reasonable discretion. In such event, Licensee shall take such reasonable and necessary action so as to ensure that such worker does not continue to access the Municipal Facilities on Licensee's behalf unless such worker is qualified to Licensor's reasonable satisfaction. For installation of all Small Cell Wireless Communications Facilities, Licensee shall designate a project manager who at all times shall represent the Licensee before the Licensor on all matters relating to installation of the Small Cell Wireless Communications Facilities. The project manager shall continue in such capacity unless and until he or she is removed at the request of City, is no longer employed by Licensee, or is replaced with the written approval of City, which approval shall not be unreasonably withheld.

3.4 Training of City Staff. Licensee, at its sole expense, shall provide technical educational materials to City staff and any City contractor, on an ongoing basis and/or as new City staff or City contractors are added, as to the operation of each of its Small Cell Wireless Communication Facilities to ensure safe and efficient operation and maintenance of the Small Cell Wireless Communication Facilities, all in accordance with all applicable laws and industry standards.

3.5 Utilities. Licensee shall be solely responsible for arrangement and payment for electric service necessary in connection with installation of any Small Cell Wireless Communication Facilities. Notwithstanding the foregoing, Licensor, if feasible and subject to Licensor's reasonable discretion, shall provide use and access to Licensor's existing power supply, conduit or other form of infrastructure for the delivery of power and fiber access to a Municipal Facility to allow Licensee to obtain electricity for the operation of Licensee's Small Cell Wireless Communication Facilities with such electricity being paid for by Licensee.

4. PERMITS

4.1 City Use Permits. Prior to the installation of any Small Cell Wireless Communications Facility, Licensee shall obtain all necessary permits as required by EGMC Chapter 23.94 and this Agreement, and Licensee shall obtain all other City permits and/or entitlements necessary for the Small Cell Wireless Communication Facility required by any government agency. In securing permits pursuant to this section and the EGMC, Licensee shall comply with all applicable environmental laws including, without limitation, the California Environmental Quality Act ("CEQA").

4.2 Nonresidential Zoning Districts – Administrative Approval of Individual Site Permits.

(a) Individual Site Permits for Small Cell Wireless Communication Facilities in nonresidential zoning districts within the City shall be subject to the provisions of this section 4.2. The structure, design, and technical standards of the Small Cell Wireless Communication Facilities, as identified at Exhibit B, are hereby preapproved by the City. This preapproved list of Small Cell Wireless Communication Facilities may be amended or supplemented from time to time by the City Manager in the City Manager's discretion. Provided that Licensee submits an application for an Individual Site Permit at a designated location, accompanied by the Individual Site Permit Application Fee as set forth at Exhibit C, that substantially complies with the Small Cell Wireless Communication Facilities identified at Exhibit B, the Public Works Director or his/her designee shall ministerially approve the permit application within forty-five (45) days of submission of the application. During the pendency of the Individual Site Permit application, which "pendency" shall include the time for filing and prosecuting an administrative appeal, if filed, the City shall not approve another Individual Site Permit at the location identified in the application for a Small Cell Wireless Communications Facility other than the Small Cell Wireless Communications Facility identified in the application. Should the Public Works Director affirmatively deny an application, he/she shall set forth in writing the basis for the denial. Any denial of a permit application pursuant to this section, whether by inaction or affirmative denial, shall be subject to administrative appeal to the City Manager or his/her designee, which appeal shall be submitted in writing within ninety (90) days of denial. If no appeal is timely filed, the pendency of the application for the Individual Site Permit shall terminate upon the expiration of the ninety (90) day appeal period. If an appeal is filed and prosecuted to completion, the determination of the City Manager shall be final, shall terminate the pendency of the application for the Individual Site Permit, whether approved or denied, and there shall be no further right of administrative appeal from the City Manager's determination; provided, however, Licensee shall have the right to pursue other appeals and/or remedies available at law.

(b) The administrative approval process set forth at section 4.2(a) shall have no application to Individual Site Permits in any residential zoning district or agricultural-residential zoning district in the City. Notwithstanding any other provision of this Agreement, such Individual Site Permits in any residential zoning district or agricultural-residential zoning district in the City shall be governed by the terms of Chapter 23.94 of the City's Municipal Code, as now existing or hereafter lawfully amended. Notwithstanding the foregoing, those Small Cell Wireless Communication Facilities identified on the initial Exhibit A, attached hereto, which may be in a residential zoning or an agricultural-residential zoning district are hereby approved by this Agreement, but any additional or further Individual Site Permits in in any residential zoning district or any agricultural-residential zoning district in the City shall be governed by the terms of Chapter 23.94 of the City's Municipal Code, as now existing or hereafter lawfully amended.

4.3. Other permits. In addition to any permits required by sections 4.1 through 4.2, Licensee represents and warrants to Licensor that it has (or will have at the time of installation of any Small Cell Wireless Communications Facilities) all licenses, permits, qualifications and approvals of whatsoever nature legally required for Licensee to conduct such installations. Licensee represents and warrants to City that it shall, at its sole cost and expense, obtain and/or keep in effect at all times during the term of this Agreement any licenses, permits, and approvals which are legally required for Licensee to conduct such installations.

5. OPERATION AND MAINTENANCE; RESERVATION OF RIGHTS

5.1 Reservation of Rights. Licensor reserves all rights to operate and maintain its Municipal Facilities, to discontinue such maintenance, and to remove its Municipal Facilities, in the best manner required to fulfill its own service requirements, and to maintain public, employee, and worker safety and welfare.

5.2. Radio Frequency ("RF") Emissions.

(a) Licensee will comply with all FCC regulations regarding RF emissions and exposure limitations. Licensee shall install signage and other mitigation, such as a power cut-off switch on Municipal Facilities, to allow workers and third parties to avoid excess exposure to RF emissions. Licensor's authorized field personnel will contact Licensee's designated point of contact not less than 24 hours in advance to inform Licensee of the need for a temporary power-shut-down. In the event of an unplanned outage or cut-off of power or an Emergency, the power-down will be with such advance notice as practicable. Once the work has been completed and the worker(s) have departed the exposure area, the party who accomplished the power-down shall restore power and inform Licensee as soon as possible that power has been restored. The Parties acknowledge that they understand the vital nature of Licensee's Small Cell Wireless Communications Facilities and agree to limit the frequency of power-downs and restore power as promptly as much as reasonably possible.

(b) Licensee and other users of the Municipal Facilities which emit RF on Licensor's Municipal Facilities are under an obligation to operate their own existing or future facilities to protect against RF interference to RF signals of Licensor, Licensee, and such other users of the Municipal Facilities, as applicable, as may emanate or arise. Licensor and Licensee and all others on Licensor's Municipal Facilities shall endeavor to correct any interference to other networks created by its RF emissions promptly and shall coordinate and cooperate with each other relating to the same.

5.3 FCC Antenna Registrations, Federal Aviation Administration ("FAA") Compliance. Licensee is solely responsible for ensuring compliance with any and all FCC antenna registration, FAA, or similar requirements with respect to the location of the Licensee's antennas or other facilities. Without limitation, Licensee acknowledges and agrees that Licensor's Municipal Facilities are not "antenna structures" under the

FCC's rules and that, accordingly, Licensor has no obligation of its own in this regard to register them with the FCC, the FAA, or other agency.

5.4 Small Cell Wireless Communication Facilities Modification and Replacements. Subsequent to the original installation of Licensee's Small Cell Wireless Communication Facilities, Licensee may modify or replace a Small Cell Wireless Communication Facility without Licensor approval so long as such modification or replacement looks the same aesthetically as the existing Small Cell Wireless Communication Facility and is substantially similar in size, weight, and configuration, complies with all other terms of this Agreement, and does not increase the load on the applicable Municipal Facility beyond the loading, if any, that was established at the time of Licensor's approval of the placement of the Small Cell Wireless Communication Facility, unless otherwise expressly approved by Licensor.

5.5 Access. At all times throughout the Term of this Agreement, and at no additional charge to Licensee, Licensee and its employees, agents, and subcontractors, will have reasonable pedestrian and vehicular access ("Access") to, in and on any Municipal Facility used so that Licensee may install, operate, maintain, repair, replace, remove, or modify its Small Cell Wireless Communications Facilities, provided, however, that such Access shall not unreasonably interfere with any operations of the City including, without limitation, pedestrian or vehicular access on City property or rights-of-way. To the extent Licensee seeks to temporarily encroach on any roadway or other City right-of-way not expressly addressed in this Agreement in order to install, operate, maintain, repair, replace, remove, or modify its Small Cell Wireless Communications Facilities, Licensee shall obtain an encroachment permit from the City, including payment of all applicable encroachment permit fees.

5.6. No Hazardous Substances. Licensee agrees that Licensee, its contractors, subcontractors and agents, will not use, generate, store, produce, transport or dispose any Hazardous Substance on, under, about or within the area of a Municipal Facility or the ROW in which it is located in violation of any applicable federal, state, county, or local law or regulation. For purposes of this Agreement, "Hazardous Substance" means any substance, chemical or waste that is identified as hazardous or toxic in any applicable federal, state or local law or regulation, including but not limited to petroleum products and asbestos.

6. CHARGES, BILLING AND PAYMENT

6.1 Master License Agreement Fee. Upon execution of this Agreement by Licensee, Licensee shall pay Licensor the Master License Agreement Fee set forth at Exhibit C to defray the cost of Licensor's preparation of this Agreement.

6.2 Annual Rent for Small Cell Wireless Communications Facilities. Licensee shall pay Licensor the annual rental fee ("Rent") for each Small Cell Wireless Communications Facility subject to this Agreement in the amounts set forth in Exhibit C for each year (or partial year) that this Agreement remains in effect. Rent is per Municipal Facility and includes all appurtenant Small Cell Wireless Communication

Facilities and facilities used in connection with Small Cell Wireless Communications Facilities. The Rent shall automatically escalate on January 1 of each year that this Agreement is in effect by 2%.

6.3 Timing of Payment and Calculation of Number of Small Cell Wireless Communication Facility.

(a) The Rent shall be payable annually on or before January 1 of each year for each Individual Site Permit issued as of October 1 of the prior calendar year.

(b) If Licensee's records show a different number of Small Cell Wireless Communication Facility for which a Rent payment is required, Licensee shall so notify Licensor. Licensor will then, following receipt of Licensee's notification, either accept in writing Licensee's revised count/information or notify Licensee in writing that a dispute exists about such count, in which event the parties shall comply with the dispute resolutions provisions of the Agreement.

6.4 Surety Bond. Licensee shall furnish a Performance Bond ("Surety Bond") in the amount specified in Exhibit C, attached hereto, and maintain such Bond during the Term of this Agreement. The Bond shall be in a form satisfactory to the City and shall be obtained from a responsible corporate surety acceptable to the City, which is licensed by the State of California to act as surety upon bonds and undertakings and which maintains in this State at least one office for the conduct of its business. The surety shall furnish reports as to its financial condition from time to time as requested by the City. The premiums for said Bond shall be paid by Licensee. The Bond shall be furnished by a company who is authorized and licensed by the Insurance Commissioner as an "admitted surety insurer." The surety shall provide the City with the documentation required by Section 995.660 of the California Code of Civil Procedure. If any surety becomes unacceptable to the City or fails to furnish reports as to its financial condition as requested by the City, Licensee shall promptly furnish such additional security as may be required from time to time to protect the interests of the City and of persons supplying labor or materials in the prosecution of the work contemplated by this Agreement. In the event of any conflict between the terms of the Agreement and the terms of the Bond, the terms of the Agreement shall control and the Bond shall be deemed to be amended thereby. Without limiting the foregoing, the City shall be entitled to exercise all rights granted to it by the Agreement in the event of default, without control thereof by the surety, provided that the City gives the surety notice of such default at the time or before the exercise of any such right by the City, and, regardless of the terms of said Bond, the exercise of any such right by the City shall in no manner affect the liability of the surety under said Bond.

6.5 Unauthorized Small Cell Wireless Communications Facilities. Upon discovery of Small Cell Wireless Communications Equipment of Licensee that has not been approved by Licensor ("Unauthorized Equipment"), Licensee shall remove such Unauthorized Equipment upon thirty (30) days' notice from Licensee unless Licensee has submitted the Small Cell Wireless Communications Equipment for approval under this Agreement. Licensee shall also pay liquidated damages to Licensor in the amount

of three (3) times the then current Rent multiplied by the number of Licensee's unauthorized Small Cell Wireless Communications Equipment in addition to any actual damages provable by Licensor.

6.6 Billing and Payment Generally.

(a) Except as otherwise provided herein, all bills and invoices and other requests for payment rendered under this Agreement shall be paid by Licensee within sixty (60) days from the receipt of invoice. Interest of one and one-half percent (1.5%) per month (or the highest amount permitted by law, whichever is less) of the total amount due and unpaid will apply to any unpaid amount after ten (10) days from the receipt of written notice of late payment.

(b) Licensee shall notify Licensor within thirty (30) days of the date of invoice of any dispute, with sufficient particularity to identify the amounts in, and grounds for, dispute.

7. AUDITS AND INSPECTIONS

7.1 Audits.

(a) Licensee and Licensor shall reasonably cooperate in determining the total number of Small Cell Wireless Communication Facilities within the City. This determination shall be based on an on-going inventory as shown on the Individual Site Permits issued to Licensee. Licensor has the right to require a jointly conducted physical audit of Small Cell Wireless Communications Facilities at least once per calendar year, or more often as deemed reasonable by Licensor. Licensee shall pay all expenses associated with such audit, if requested by Licensor. Any audit by Licensor that is more frequently than once a calendar year shall be at Licensor's expense. Licensor must provide at least ninety (90) days' written notice of any audit.

(b) Licensee and Licensor may mutually agree that in lieu of such a jointly conducted physical audit, the number of Small Cell Wireless Communication Facilities may be determined from existing maps and attachment records, in which case, each Party shall make all relevant maps and records available to the other Party and the number of Small Cell Wireless Communications Facilities shall be cooperatively determined.

7.2 Safety Inspections. Licensor may conduct, at its sole expense, inspections of Small Cell Wireless Communications Facilities on Licensor's Municipal Facilities and to conduct inspections in the vicinity of Small Cell Wireless Communications Facilities. Licensor shall give Licensee twenty-one (21) days' prior written notice of such inspections and Licensee shall have the right to be present at and observe any such inspections, at Licensee's sole expense. However, in the event of an Emergency, as determined in Licensor's discretion, Licensor may conduct such inspections immediately and without prior notice to Licensee.

8. MUNICIPAL FACILITY REPLACEMENT AND ABANDONMENT AND REMOVAL OF WIRELESS COMMUNICATIONS FACILITIES

8.1 Replacement or Abandonment of Municipal Facility.

(a) If for safety, reliability, operational reasons, or due to government requirements Licensor desires to replace a Municipal Facility to which a Small Cell Wireless Communications Facility is affixed, Licensee shall remove all Small Cell Wireless Communications Facilities upon ninety days (90) days' written notice from Licensor, unless a shorter period is required pursuant to a regulatory or governmental order or judicial decision. In the event the removed Small Cell Wireless Communications Facility cannot be reinstalled at any replacement Municipal Facility at the same location, Licensor shall make best and reasonable efforts to identify a relocation site for the Small Cell Wireless Communications Facility located on the original Municipal Facility and transfer it to a replacement Municipal Facility. If Licensor cannot identify a relocation site, after having made best and reasonable attempts to do so, Licensee has the right to terminate the Individual Site Permit for that Municipal Facility, at which point Licensee must promptly remove the Small Cell Wireless Communications Facility at that location. Notwithstanding the foregoing, in the case of an Emergency, as determined in Licensor's reasonable discretion, Licensor may require Licensee to immediately remove and/or replace the Small Cell Wireless Communications Facilities and/or transfer them to replacement Municipal Facilities, or perform any other work in connection with said Small Cell Wireless Communications Facilities that may reasonably be required to maintain, replace, remove or relocate the Municipal Facility. Any removal, replacement, and/or transfer of Small Cell Wireless Communications Facilities pursuant to this section shall be at Licensee's sole expense, and Licensee shall reimburse Licensor for any and all expenses incurred by Licensor as a result of such replacement, removal, and/or transfer. In the event of an Emergency, Licensor shall notify Licensee as soon as reasonably practicable. If Licensor is unable to accommodate a transfer of the Small Cell Wireless Communications Facilities to another Municipal Facility pursuant to this section, Licensee shall be relieved of its obligation to pay Rent for that Small Cell Wireless Communications Facilities.

(b) If Licensor desires to abandon any Municipal Facility, it shall give Licensee ninety (90) days' written notice of the date of the abandonment. Upon abandonment of the Municipal Facility, Licensee shall remove or otherwise dispose of the Small Cell Wireless Communications Facilities installed on such Municipal Facility, unless otherwise agreed in writing.

(c) If a Licensor's Municipal Facility needs to be repaired or replaced in order to accommodate an existing or proposed Small Cell Wireless Communications Facility, Licensee may request of Licensor that Licensee be permitted to undertake such repair and/or replacement work, which may be approved or denied in Licensor's discretion. Any such work will be at Licensee's sole expense, and Licensee shall reimburse Licensor for any and all expenses incurred by Licensor related thereto. Licensor may, at its discretion, require prepayment by Licensee for the estimated costs

of such repair or replacement before any such work commences; any unused funds shall be returned to Licensee upon Licensor's acceptance of the work and any additional expenses exceeding the deposit shall be paid by Licensee within thirty (30) days of an invoice by Licensor.

(d) If, upon expiration of any required notice period for removal, any such Small Cell Wireless Communications Facilities have not been removed, Licensor may at Licensee's sole expense, remove and dispose of the Small Cell Wireless Communications Facilities, without any liability to Licensee for such removal and disposition.

(e) Nothing herein shall obligate the City to replace any Municipal Facility to accommodate any Small Cell Wireless Communications Facility proposed by Licensee.

8.2 Removal of Small Cell Wireless Communications Facilities by Licensee. Licensee may at any time, whether for convenience, damage to the Small Cell Wireless Communications Facilities, or other reason, remove Small Cell Wireless Communications Facilities from Licensor's Municipal Facilities, and shall give Licensor notice of such removal within thirty (30) days prior to removal. Notwithstanding the foregoing, in the case of an Emergency, as determined in Licensee's discretion, Licensee may remove the Small Cell Wireless Communications Facilities without prior notice to Licensor, provided, however, that Licensee shall provide such notice of removal to Licensor as soon as reasonably practical. No refund of any Rent paid will be due on account of such removal, unless such removal arises from a Default of Licensor, as provided for in section 13.3.

8.3 Licensee Safety or Other Violations. If Licensor discovers any regulatory, safety or other violation of this Agreement with respect to Small Cell Wireless Communications Facilities, it may notify Licensee and Licensee shall have sixty (60) days in which to remedy such violations, except that Licensor may require shorter cure period in the event of an Emergency, as determined by Licensor.

9. INSURANCE

Licensee shall at its sole cost and expense maintain the insurance coverage and limits as set forth at Exhibit D, attached hereto, during the entire Term of this Agreement, and shall deliver the required proof of insurance compliance to City or City's insurance certificate processor as City directs. Licensee shall also certify its compliance with Labor Code Section 3700 in the form attached hereto as Exhibit E.

10. LIMITATION ON DAMAGES

Notwithstanding any provision of this Agreement to the contrary, in no event shall either Party be liable in law or equity to the other Party for consequential, incidental, punitive, exemplary, or indirect damages suffered by the other Party, nor for any lost profits or other business interruption damages, whether pursued under statute,

tort, contract or other legal or equitable theory. Nothing herein shall relieve either Party from any liability for damages or injury injuries suffered by third Persons or any third Person's property proximately caused by a Party's act or omission.

11. INDEMNIFICATION

To the fullest extent permitted by law, Licensee shall indemnify, protect, defend, and hold harmless City, its officers, officials, agents, employees and volunteers (together "Licensor Indemnitees") from and against any and all liabilities, damages or claims for damage, including but not limited to all actual and reasonable costs, attorneys' fees, and other charges and expenditures that Licensor Indemnitees may incur, arising out of any failure by Licensee to comply with applicable law, any injury to or death of any person(s), damage to property, loss of use of property, economic loss or otherwise arising out of the performance of the work described herein, to the extent caused by a negligent act or negligent failure to act, errors, omissions, recklessness or willful misconduct incident to the performance of this Agreement on the part of Licensee, except such loss or damage which was caused by the negligence or willful misconduct of the City, as determined by a Court of competent jurisdiction. Unless and until such judicial determination is made, or as otherwise agreed by the parties, Licensee shall remain obligated to defend, indemnify, and hold harmless the City, its officers, officials, employees, volunteers, and agents pursuant to this Agreement.

To the fullest extent permitted by law, Licensor shall indemnify, protect, hold harmless and, at Licensee's sole option, defend Licensee, its principals, parents, affiliates, officers, directors, contractors, subcontractors, suppliers, licensees, invitees, agents, attorneys, employees, successors and assigns (together "Licensee Indemnitees") from and against any and all liabilities, damages or claims for damage, including but not limited to all actual and reasonable costs, attorneys' fees, and other charges and expenditures that Licensee Indemnitees may incur, arising out of any failure by Licensor to comply with applicable law, or the negligent installation, operation, use, repair, or removal of Licensor's Municipal Facilities or breach of the terms of this Agreement by Licensor, including acts or omissions by its agents, contractors, or subcontractors except to the extent that such liabilities, damages or claims are a result of the negligence or willful misconduct of Licensee, as determined by a Court of competent jurisdiction. Unless and until such judicial determination is made, or as otherwise agreed by the parties, Licensor shall remain obligated to indemnify, hold harmless, and, at Licensee's sole option, defend Licensee Indemnitees pursuant to this Agreement. To the extent permitted by law, Licensor shall purchase liability insurance in an amount adequate to fulfill its obligations to indemnify and protect Licensee under this Agreement.

The provisions of this section shall survive termination or suspension of this Agreement.

12. TERM

The Effective Date of this Agreement shall be the date it was executed by all Parties and approved as to form by the City Attorney. In the event that the Parties do not execute the Agreement on the same date, the Effective Date of the Agreement shall be the latest date on which one of the Parties executes the Agreement. This Agreement shall commence as of the Effective Date, and, if not lawfully terminated sooner, shall remain in full force and effect for a term of ten (10) years. Upon mutual written agreement of the Parties, the Agreement may be extended for two (2) successive five (5) year terms, or as otherwise agreed by the Parties in writing. The parties will negotiate in good faith the terms of a successor agreement during the ninth year of the initial term and/or during the final year of any subsequent extension of the Agreement; provided, however, that nothing herein shall obligate either party to enter into any such successor agreement. Upon termination of this Agreement, Licensee shall remove all Small Cell Wireless Communications Equipment from all Licensor's Municipal Facilities within one hundred and eighty (180) days. If not so removed within one hundred and eighty (180) days following such termination, Licensor shall have the right to remove such Small Cell Wireless Communications Facilities, and to dispose of same, at Licensee's sole expense and without any liability to Licensee for such removal and disposition.

13. DEFAULT AND TERMINATION

13.1 Default. If either Party fails to perform or observe any material term or condition of this Agreement within sixty (60) days after receipt of written notice of such failure from the other Party, then such Party will be in default of the Agreement ("Default"). No such failure, however, will be deemed to exist if a Party has commenced to cure such Default within such period and provided that such efforts are prosecuted to completion with reasonable diligence.

13.2 Licensee's Default and Licensor's Remedies. If Licensee does not cure its Default within the allotted time period, Licensor may, at its reasonable discretion, take any one or more of the following actions:

(a) Suspend Licensee's access to any of Licensor's Municipal Facilities to which the Default relates;

(b) Revoke any permits issued to Licensee to which the Default relates;

(c) Require the obligation to be fulfilled;

(d) Remove, relocate, or rearrange Small Cell Wireless Communications Facilities to which such Default relates (all at Licensee's sole expense);

(e) Decline to permit additional Small Cell Wireless Communications Facilities under this Agreement until all such Defaults are cured;

(f) Exercise its rights with respect to the Surety Bond; and/or

(g) Terminate this Agreement if the Default relates to all of Licensee's Small Cell Wireless Communications Facilities.

13.3 Licensor's Default and Licensee's Remedies.

(a) If Licensor does not cure its Default within the allotted time period, Licensee may, at its reasonable discretion, either terminate this Agreement, terminate the Individual Site Permit to which the Default relates, or demand that the terms of this Agreement be complied with.

(b) If Licensor Defaults and Licensee elects to terminate the Agreement, Licensor shall refund any portion of advanced, prepaid Rent actually paid by Licensee pro-rated for any period of the Term remaining following the date of the termination of this Agreement. Licensor shall make such refund within ninety (90) days of the effective date of such termination.

13.4 Date of Termination. Any termination under this section 13 shall be effective upon written notice from the terminating Party to the other Party. Such notice will identify the date of the termination, which date may be as early as the date of the notice under section 15.1.

13.5 Cumulative Remedies. The remedies provided by this section 13 are cumulative and in addition to any other remedies available under this Agreement or otherwise.

14. DISPUTE RESOLUTION PROCEDURES

14.1 Prior to either Party commencing any legal action under this Agreement, the Parties agree to try in good faith, to settle any dispute amicably between them. If a dispute has not been settled after forty-five (45) days of good-faith negotiations or as may be otherwise provided herein, then either party may commence legal action against the other. Notwithstanding the foregoing, either Party may commence legal action sooner than this forty-five (45) day period to the extent necessary to obtain specific performance and/or injunctive, equitable, or other relief necessary to protect the interests of the Party seeking such relief.

15. GENERAL PROVISIONS

15.1 Notices. Except as provided below, all written notices shall be effective upon actual delivery addressed to the other party as follows:

To City/Licensor:
City of Elk Grove
Attn: City Manager
8401 Laguna Palms Way
Elk Grove, California 95758

To Licensee:

_____
_____
_____
_____

Any Party may change its address or other contact information at any time by giving the other Party, and Persons named above, written notice of said change.

15.2 Force Majeure. If an event beyond the reasonable control of either Party, including, but not limited to, hurricane, flood, earthquake or other natural disaster, war or insurrection, fires, natural calamities, riots, significant changes in law, regulation or governmental policy precludes either Party from performing the obligations under this Agreement, then the Agreement shall be suspended as of the date of such event and until such time as such event has subsided, if ever, provided that the Party claiming an inability to perform provides written notice to the other Party within five (5) days of the event justifying the suspension or termination of operations. If the event is not reasonably likely to subside in the foreseeable future and renders the Parties' performance of the Agreement impossible, the Party claiming an inability to perform may terminate this contract upon not less than ten (10) days' written notice. Each Party reserves the right to contest the other Party's claim of inability to perform under this section.

15.3 Time. All times stated herein are of the essence.

15.4 Assignment and Transfer. This Agreement shall be binding upon, and inure to the benefit of, the successors and assigns of the Parties. Except as otherwise provided in this Agreement, neither Party shall assign this Agreement or its rights or obligations to any firm, corporation, individual, or other entity, without the written consent of the other Party, which consent shall not be unreasonably withheld. Notwithstanding the foregoing, either party may assign its rights and obligations to an affiliate without consent. Affiliate for purposes of this provision is any entity that controls, is controlled by, or is under common control with assigning party. Licensee may also assign this Agreement or Individual Site Permit without City's consent to an entity that acquires all or substantially all of Licensee's assets in the market in which the Municipal Facility is located or an entity that acquires Licensee by a change of stock ownership or partnership interest and such assignee entity operates the Small Cell Wireless Facilities subject to this Agreement in the same manner as Licensee.

15.5 No Third Party Beneficiary. It is expressly understood and agreed that the enforcement of these terms and conditions shall be reserved to the Licensor and Licensee. Nothing contained in the Agreement shall give or allow any claim or right of action whatsoever by any third party. It is the express intent of the Licensor and Licensee that any such person or entity, other than the Licensor and Licensee, receiving benefits or services under this agreement shall be deemed as incidental beneficiary and shall have no standing under this Agreement.

15.6 Non-Discrimination/Non-Preferential Treatment Statement. In performing this Agreement, the parties shall not discriminate or grant preferential treatment on the basis of race, sex, color, age, religion, sexual orientation, disability, ethnicity, or national origin, and shall comply to the fullest extent allowed by law, with all applicable local, state, and federal laws relating to nondiscrimination

15.7 Applicable Law. This Agreement shall be interpreted, construed, and enforced, in accordance with the laws of the State of California, without regard to its conflict of laws principles, and, where applicable, federal law.

15.8 Venue. Should any legal proceeding be brought relating to this Agreement, venue shall lie exclusively in a court of competent jurisdiction located in the County of Sacramento, State of California.

15.9 Exhibits. In the event of any inconsistency between the provisions of this Agreement and any Exhibits attached hereto, the provisions of this Agreement shall supersede the provisions of any such incorporated Exhibits unless such Exhibit specifies otherwise.

15.10 Execution in Counterparts. This Agreement may be executed in several counterparts, including by counterpart facsimiles or emails, each of which shall be deemed an original, and all such counterparts together shall constitute one and the same instrument.

15.11 Waiver. The failure of either Party to insist on the strict enforcement of any provision of this Agreement shall not constitute a waiver of any provision.

15.12 Severability. If any portion of this Agreement is found to be unenforceable, the remaining portions shall remain in effect and the Parties shall begin negotiations for a replacement of the invalid or unenforceable portion.

15.13 Survival. The terms and provisions of this Agreement that by their nature require performance by either Party after the termination or expiration of this Agreement, shall be and remain enforceable notwithstanding such termination or expiration of this Agreement for any reason whatsoever.

15.14 Construction and Interpretation. Licensee and Licensor agree and acknowledge that the provisions of this Agreement have been arrived at through negotiation and that each Party has had a full and fair opportunity to revise the provisions of this Agreement and to have such provisions reviewed by legal counsel. Therefore, any ambiguities in construing or interpreting this Agreement shall not be resolved against the drafting party. The titles of the various sections are merely informational and shall not be construed as a substantive portion of this Agreement.

15.15 Entire Agreement; Amendments. This Agreement (including the Exhibits hereto) embodies the entire agreement between Licensee and Licensor with respect to the subject matter of this Agreement and supersedes all prior agreements and understandings, oral or written, with respect thereto. Each Party acknowledges that the other Party has not made any representations other than those contained herein. This Agreement may not be amended or modified orally, but only by an agreement in writing signed by the Party or Parties against whom any waiver, change, amendment, modification, or discharge may be sought to be enforced.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed as of the Effective Date.

CITY OF ELK GROVE

Dated: _____, 2019 By: _____
Jason Berhmann,
City Manager, City of Elk Grove

APPROVED AS TO FORM:

_____
Jonathan P. Hobbs,
City Attorney, City of Elk Grove

ATTEST:

_____
Jason Lindgren,
City Clerk, City of Elk Grove

LICENSEE

Dated: _____, 2019 NEW CINGULAR WIRELESS PCS, LLC
doing business as AT&T MOBILITY

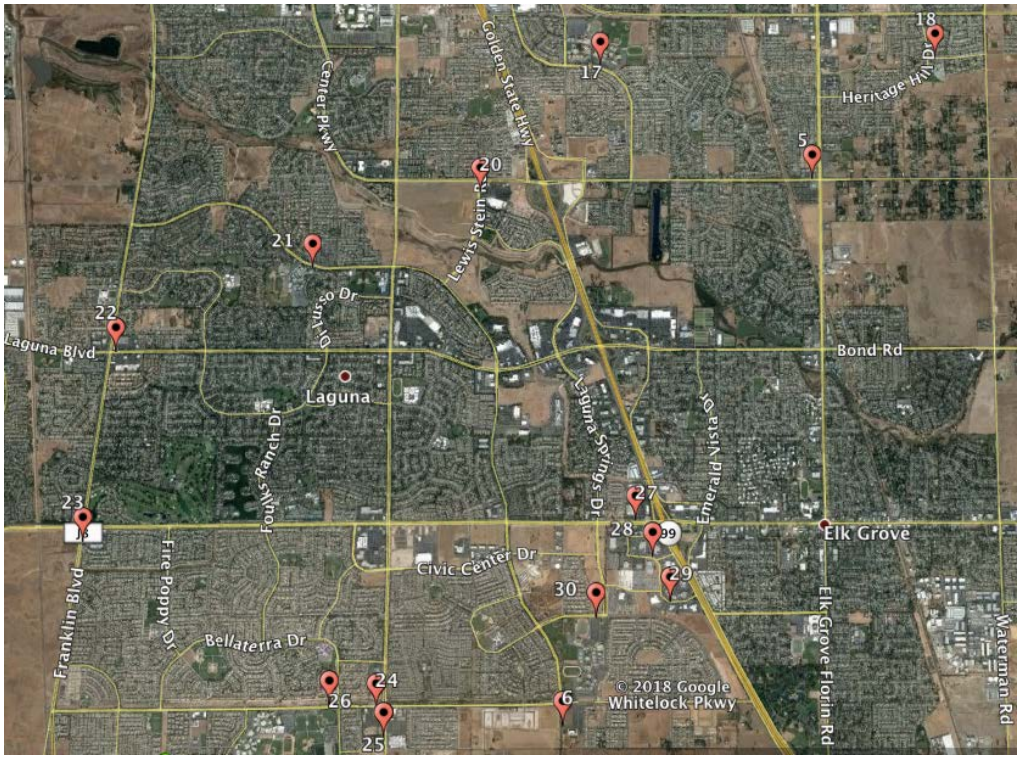
By: _____
Its: _____

APPROVED AS TO FORM:

_____
Licensee's Attorney

EXHIBIT A

Small Cell Wireless Communication Facilities Locations



ROW #	LATITUDE	LONGITUDE	AT&T SITE NAME	POLE #
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2	38.4488169	-121.3589061	CRAN_RSFR_SAC01_018	29750
3	38.4370580	-121.4085530	CRAN_RSFR_SAC01_020	33345
4	38.4304740	-121.4265140	CRAN_RSFR_SAC01_021	30041
5	38.4233200	-121.4473410	CRAN_RSFR_SAC01_022	28918
6	38.4074800	-121.4499200	CRAN_RSFR_SAC01_023	8002574
7	38.3939900	-121.4185300	CRAN_RSFR_SAC01_024	28051D
8	38.3916960	-121.4176840	CRAN_RSFR_SAC01_025	8001958
9	38.3942200	-121.4234300	CRAN_RSFR_SAC01_026	260510P
10	38.4092600	-121.3915800	CRAN_RSFR_SAC01_027	27717
11	38.4062700	-121.3897800	CRAN_RSFR_SAC01_028	31713
12	38.4026200	-121.3879200	CRAN_RSFR_SAC01_029	8002244
13	38.4013440	-121.3956920	CRAN_RSFR_SAC01_030	8001847
14	38.4381800	-121.3725200	CRAN_RSFR_SAC05_005	8000824
15	38.3926100	-121.3990800	CRAN_RSFR_SAC05_006	TBD

EXHIBIT B
Approved Small Cell Wireless Communication Facilities Structure, Design, and Technical Standards

Overview of Pole Types and Designs

(1) Pole Type One: Cobra Head Light Pole

(A) Micro Design

(B) Pico Design

(2) Pole Type Two: Decorative Light Pole

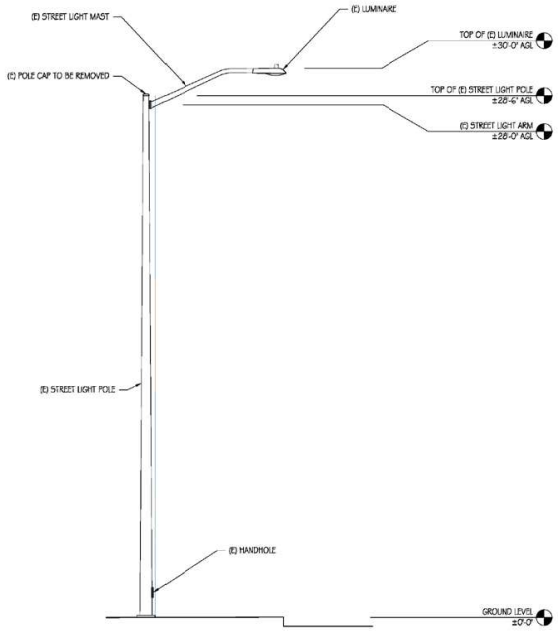
(A) Micro Design

(B) Pico Design

(1) Pole Type One: Cobra Head Light Pole

(A) Micro Design

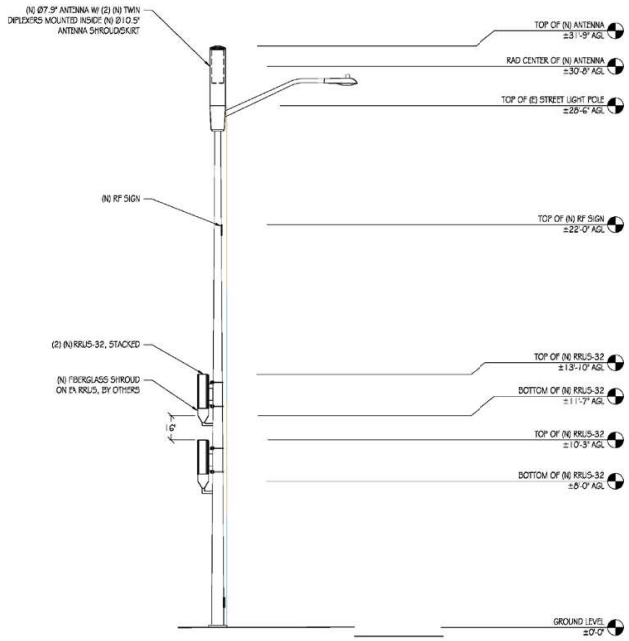
Exhibit C
Cingular Wireless PCS Code Amendment (EG-18-006)
Master Licensing Agreement



EXISTING NORTH ELEVATION
3/8"=1'-0"

NOTES

1. PAINT RRU SOLAR SHIELD, MOUNTING COMPONENTS & CABLE SWEEP TO MATCH POLE
2. FINISH FRP CONCEALMENT SHROUD & SKIRT TO MATCH POLE
3. REMOVE (E) ABANDONED VACANT BAND MOUNTS ON POLE
4. NOTICE/CAUTION SIGNAGE DECAL SHALL FACE OUT TO STREET
5. INSPECT POLE FOR RUST AND CORROSION. REMOVE ALL RUST AND CORROSION BY MECHANICAL/ABRASIVE METHODS ACCEPTABLE TO THE CITY. PREPARE, PRIME, AND PAINT ALL AREAS
6. DESIGN AND HEIGHTS MAY VARY ON A SITE BY SITE BASIS DEPENDING ON EXISTING SITE/POLE CONDITIONS AND EXISTING POLE MOUNTED APPURTENANCES
7. EXISTING TRAFFIC SIGN(S) TO BE RELOCATED AS REQUIRED TO SCREEN RRUS



NEW NORTH ELEVATION
3/8"=1'-0"

AT&T
AT&T MOBILITY
5001 EXECUTIVE PARKWAY
SAN RAMON, CA 94583

Vinculums

PRECISION DESIGN
Graphics INC.
Phone (530) 823-4487 www.pdgi.com
11758 Atwood Rd. Suite 20, Auburn, CA 95603

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ISSUE STATUS

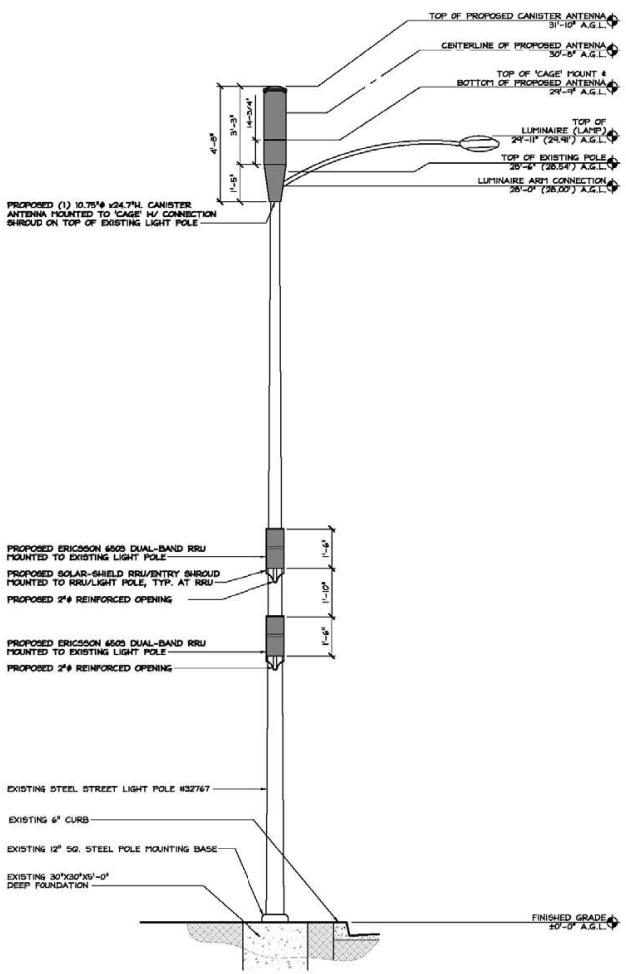
△	DATE	DESCRIPTION
	04/24/18	ZD 50%
	07/24/18	ZD 100%

DRAWN BY: KP/BL
CHECKED BY: T. DICARLO
APPROVED BY: B. McCOMB
DATE: 07/24/18
SHEET TITLE:
ELEVATIONS
SHEET NUMBER
A-3

(1) Pole Type One: Cobra Head Light Pole

(B) Pico Design

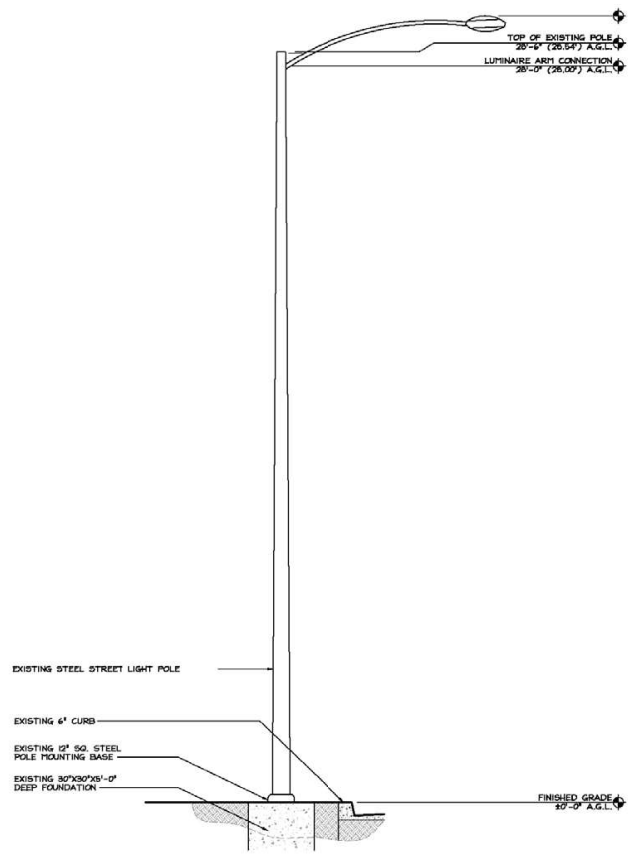
Exhibit C
Cingular Wireless PCS Code Amendment (EG-18-006)
Master Licensing Agreement



PROPOSED NORTHEAST ELEVATION

24"x36" SCALE: 1/2" = 1'-0"
11"x17" SCALE: 1/4" = 1'-0"
2' 1' 0' 2'

2



EXISTING NORTHEAST ELEVATION

24"x36" SCALE: 1/2" = 1'-0"
11"x17" SCALE: 1/4" = 1'-0"
2' 1' 0' 2'

1

AT&T

AT&T MOBILITY
5001 EXECUTIVE PARKWAY
SAN RAMON, CA 94583

Vinculums

575 LENNON LANE #125
WALNUT CREEK, CA 94598
OFFICE: (925) 482-8500

MACRO HUB LOCATION:
PACE ID:
DRAWN BY:
CHECKED BY:

SITE INFORMATION

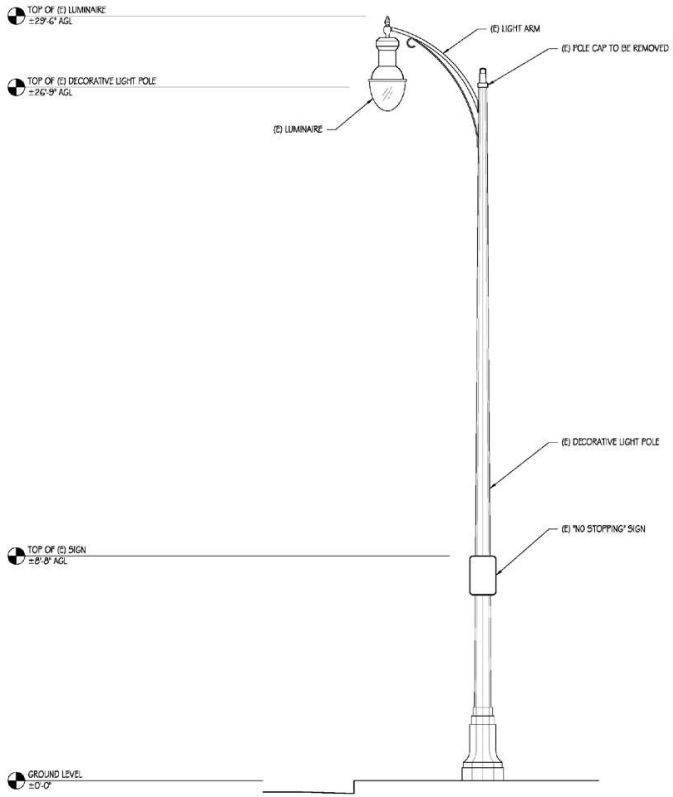
SHEET TITLE
ELEVATIONS

SHEET NUMBER
A-2

(2) Pole Type Two: Decorative Light Pole

(A) Micro Design

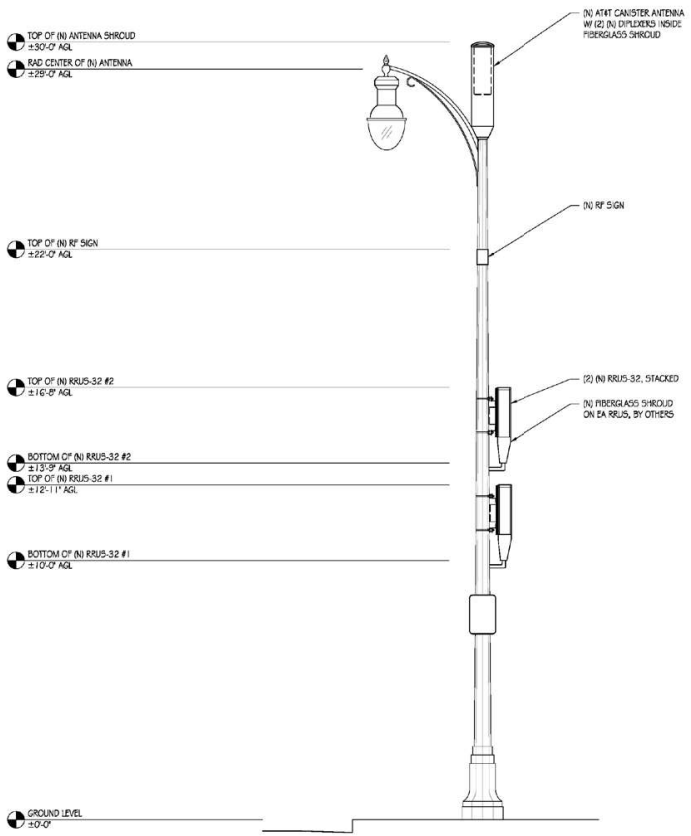
Exhibit C
Cingular Wireless PCS Code Amendment (EG-18-006)
Master Licensing Agreement



EXISTING WEST ELEVATION
1/2"=1'-0"

NOTES

1. PAINT RRU SOLAR SHIELD, MOUNTING COMPONENTS & CABLE SWEEP TO MATCH POLE
2. FINISH FRP CONCEALMENT SHROUD & SKIRT TO MATCH POLE
3. REMOVE (E) ABANDONED VACANT BAND MOUNTS ON POLE
4. NOTICE/CAUTION SIGNAGE DECAL SHALL FACE OUT TO STREET
5. INSPECT POLE FOR RUST AND CORROSION. REMOVE ALL RUST AND CORROSION BY MECHANICAL/ABRASIVE METHODS ACCEPTABLE TO THE CITY. PREPARE, PRIME, AND PAINT ALL AREAS
6. DESIGN AND HEIGHTS MAY VARY ON A SITE BY SITE BASIS DEPENDING ON EXISTING SITE/POLE CONDITIONS AND EXISTING POLE MOUNTED APPURTENANCES
7. EXISTING TRAFFIC SIGN(S) TO BE RELOCATED AS REQUIRED TO SCREEN RRUS



NEW WEST ELEVATION
1/2"=1'-0"

AT&T
AT&T MOBILITY
5001 EXECUTIVE PARKWAY
SAN RAMON, CA 94583

Vinculums

PRECISION DESIGN & Drafting, INC.
Phone: (530) 823-3000 Fax: (530) 823-4000
11769 Atwood Rd. Suite 20 Auburn, CA 95603

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PDI DRAWING SET & SPECIFICATIONS

ISSUE STATUS

△	DATE	DESCRIPTION
	07/20/18	ZD 90%

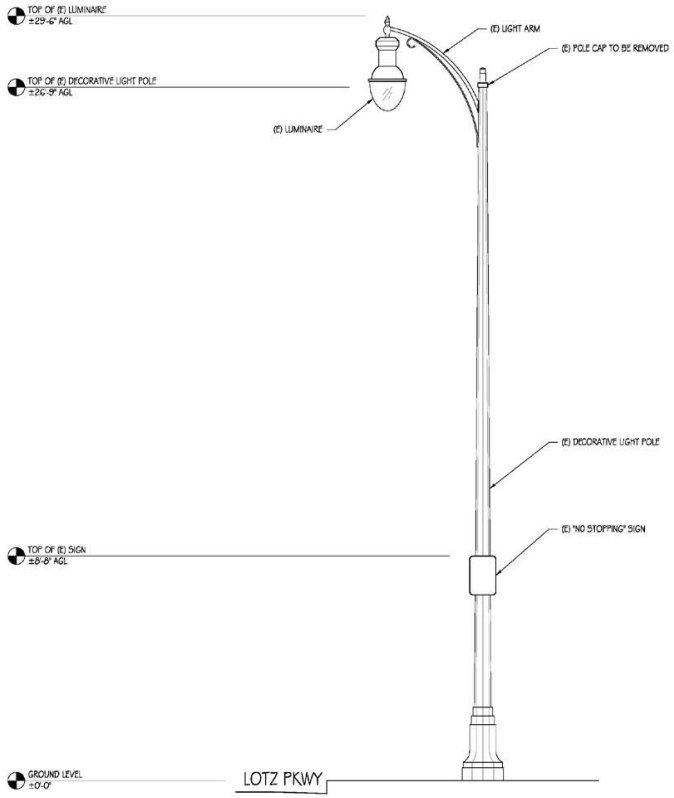
DRAWN BY:	T. DICARLO
CHECKED BY:	B. McCOMB
APPROVED BY:	B. McCOMB
DATE:	07/20/18

SHEET TITLE:
ELEVATIONS

SHEET NUMBER
A-3

(2) Pole Type Two: Decorative Light Pole

(B) Pico Design



EXISTING WEST ELEVATION
1/2"=1'-0"

NOTES
1. PAINT RRU SOLAR SHIELD, MOUNTING COMPONENTS & CABLE SWEEP TO MATCH POLE
2. FINISH FRP CONCEALMENT SHROUD & SKIRT TO MATCH POLE
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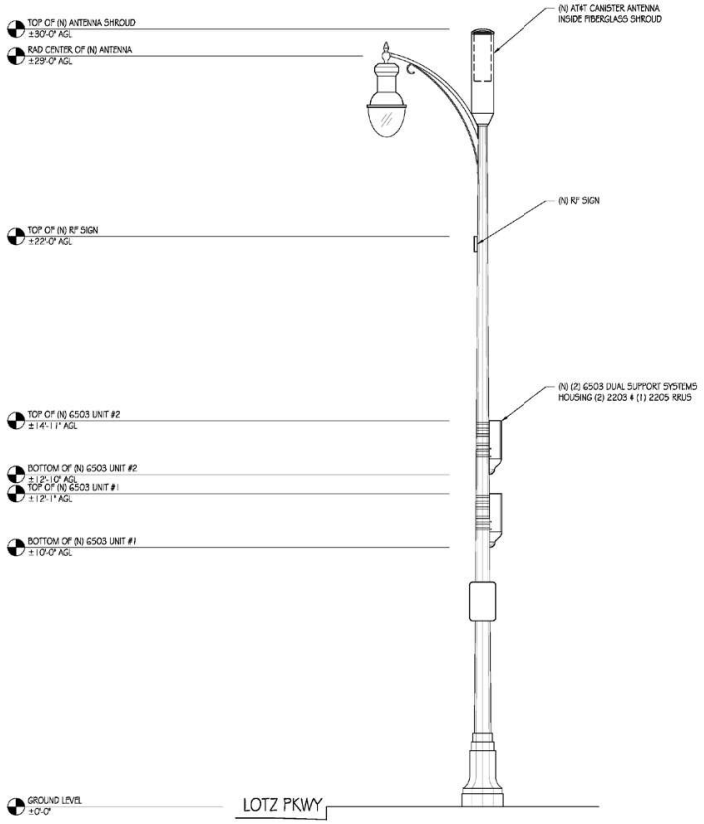

NEW WEST ELEVATION
1/2"=1'-0"

AT&T
STE' WORN BY
5001 DUBLIN PARKWAY
SAN RAMON, CA 94583

Vinculums

PRECISION DESIGN & Drafting, INC.
Phone: (530) 823-6800 Fax: 886-1.com
11769 Atwood Rd. Suite 20 Auburn, CA 95603

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REVISED 10/27/08, 12/12/08, 1/12/09, 2/12/09

REGISTERED PROFESSIONAL ENGINEER
ROBERT A. MCCOMB
C 69891
EXP 09-30-18
STATE OF CALIFORNIA

CRAN_RSFR_SAC01_030

ADJACENT TO 10 WOLFPACK LANE
ELK GROVE, CA 95757

ISSUE STATUS

△	DATE	DESCRIPTION
	08/20/18	ZD 90%

DRAWN BY:	T.D./T.J.
CHECKED BY:	B. McCOMB
APPROVED BY:	B. McCOMB
DATE:	08/20/18

SHEET TITLE:
ELEVATIONS

SHEET NUMBER
A-3

EXHIBIT C
Fees and Bonds

Master License Agreement Fee: $10,000

Individual Site Permit Application Fee: $500 (up to five (5) permits per application)

Annual Rent for each Small Cell Wireless Communication Facility shall be paid as follows:

> Licensee shall pay to the City the Annual Rent for each year in the amount of Two Hundred Seventy and 00/100 Dollars ($270.00) per year. In the event the FCC's Declaratory Ruling and Third Report and Order, FCC 18-133, Released September 27, 2018 ("FCC 2018 Order") is either: (1) reversed and/or set aside by a final and unappealable order of the FCC, a court of competent jurisdiction, or by settlement; or (2) repealed or otherwise set-aside or rendered ineffective by legislative action, and provided that there is no other legal or regulatory requirement that would constrain or otherwise limit the amount of money that City may charge Licensee for the right to place small cells on City's property in the public rights of way in substantially the same manner as the FCC 2018 Order, then the Annual Rent payable for all of Licensee's Small Cell Wireless Communication Facility(ies) located in City's right-of-way shall be as follows: $1,500 for Small Cell Wireless Communication Facilities 1 through 20; $1,000 for Small Cell Wireless Communication Facilities 21 through 100; $500 for Small Cell Wireless Communication Facilities 101 and beyond (collectively, the "New Rate"). The New Rate shall apply prospectively as of the Annual Rent due after the date the relevant judgment, order, settlement, and/or legislative action is effective. Nothing herein shall preclude the Parties from agreeing to an alternative rate structure not set forth herein by a writing singed by all Parties.

The amount of the Performance Bonds shall be $50,000.

EXHIBIT D

Insurance Requirements

Prior to installation of any Small Cell Wireless Communication Facilities under this Agreement, Licensee shall provide to the City proof of, and maintain in full force and effect at all times during the term of the Agreement, at its sole cost and expense, policies of insurance as set forth herein:

1. General Liability:
   a. Commercial general liability insurance including, but not limited to, protection for claims of bodily injury and property damage liability, personal and advertising injury liability and product and completed operations liability.
   b. Coverage shall be at least as broad as Insurance Services Office Commercial General Liability coverage form CG 0001 (occurrence) including contractual liability coverage.
   c. Claims-made coverage is not acceptable.
   d. The limits of liability shall be:

Each occurrence:	One Million Dollars ($1,000,000)
Products & Completed Operations:	One Million Dollars ($1,000,000)
Personal & Advertising Injury:	One Million Dollars ($1,000,000)
General Aggregate:	One Million Dollars ($1,000,000)

   e. If a products and completed operations aggregate limit of liability is used, the products and completed operation aggregate shall be twice the each occurrence limit or the policy shall contain an endorsement stating that the products and completed operations aggregate limit shall apply separately to the project which is the subject of the contract.
2. Automobile Liability:
   a. Automobile liability insurance providing protection against claims of bodily injury and property damage arising out of ownership, operation, maintenance, or use of hired and non-owned automobiles.
   b. Coverage for owned, hired, and non-owned.
   c. The limits of liability per accident shall be:

Combined Single Limit	One Million Dollars ($1,000,000)

   d. Coverage shall include contractual liability coverage.

   The City, its officials, employees, and volunteers shall be included as additional insured as their interests may appear under this Agreement as respects liability arising out of activities performed by or on behalf of the Licensee, products and completed operations of the Licensee, premises owned, occupied, or used by the Licensee, or automobiles owned, leased,

hired, or borrowed by the Licensee on a separate blanket additional insured endorsement reasonably acceptable to the City.

3. Worker's Compensation
   a. Worker's Compensation Insurance, with coverage as required by the State of California (unless the Licensee is a qualified self-insurer with the State of California), and Employers Liability coverage. The Licensee shall execute a certificate in compliance with Labor Code Section 1861, on the form provided in Exhibit E.
   b. Employer's Liability Coverage limits of One Million Dollars ($1,000,000) per accident/disease/policy limit.
   c. If an injury occurs to any employee of the Licensee for which the employee or his dependents, in the event of his death, may be entitled to compensation from the City under the provisions of the Acts, for which compensation is claimed from the City, there will be retained out of the sums due the Licensee under this Agreement, an amount sufficient to cover such compensation as fixed by the Acts, until such compensation is paid or it is determined that no compensation is due.
   d. If the City is required to pay such compensation, the amount so paid will be deducted and retained from such sums due, or to become due to the Licensee.
   e. The insurer shall agree to waive all rights of subrogation against the City, its officers, officials, and employees for losses arising from work performed by the Licensee.

4. Other Insurance Provisions: The required general liability coverage shall contain the following provisions and endorsements:
   a. The City, its officials, employees, and volunteers shall be covered as additional insured as their interests may appear under this Agreement as respects liability arising out of activities performed by the Licensee, products and completed operations of the Licensee, premises owned, occupied, or used by the Licensee, or automobiles owned, leased, hired, or borrowed by the Licensee on a separate blanket endorsement reasonably acceptable to the City.
   b. Coverage shall contain a provision or endorsement that waives any rights of subrogation against the City, its officers, officials, employees, agents, and volunteers.
   c. The policy shall contain no special limitations on the scope of coverage afforded to the City, its officials, employees, or volunteers other than for claims solely caused by the additional insureds.
   d. Provision or endorsement stating that for any claims related to this project, the Licensee's required insurance coverage shall be primary insurance as respects the City, its officers, officials, employees and volunteers to the extent the City is an additional insured. Any insurance or self-insurance maintained by the City, its officers,

officials, employees or volunteers shall be in excess of the Licensee's required insurance and shall not contribute with it, to the payment or satisfaction of any defense expenses, loss or judgment.

e. Any failure to comply with reporting or other provisions of the policies on the part of the Licensee, including breaches of warranties, shall not affect Licensee's requirement to provide coverage to the City, its officers, officials, employees, or volunteers.

5. Acceptability of Insurers: Insurance is to be placed with insurers with **a Bests' rating of no less than A minus:VII**.

6. The Licensee shall furnish the City with certificates of insurance and original blanket additional insured endorsements, signed by a person authorized by the insurer to bind coverage on its behalf, evidencing the coverage required by this Agreement.

7. The City, at its discretion, may increase the amounts and types of insurance coverage required hereunder once per three years by giving 30 days written notice, all subject to Licensee's review and acceptance.

8. The Licensee shall provide the City at least thirty (30) days' prior written notice of cancellation or non-renewal of any required coverage that is not replaced.

9. If the Licensee fails to procure or maintain insurance as required by this section, and any Supplementary Conditions, or fails to furnish the City with proof of such insurance, the City, at its discretion, may procure any or all such insurance. Reasonable premiums paid for such insurance procured by the City shall be deducted and retained from any sums due the Licensee under the contract.

10. Failure of the City to obtain such insurance shall in no way relieve the Licensee from any of its responsibilities under the contract.

11. The making of progress payments to the Licensee shall not be construed as relieving the Licensee or its Subcontractors or agents of responsibility for loss or direct physical loss, damage, or destruction occurring prior to final acceptance by the City.

12. The failure of the City to enforce in a timely manner any of the provisions of this section shall not act as a waiver to enforcement of any of these provisions at any time during the term of the contract.

13. The requirement as to types and limits of insurance coverage to be maintained by Licensee are not intended to, and shall not in any manner, limit or qualify the liabilities and obligations assumed by Licensee under the Agreement.

14. Self-Insurance. Notwithstanding the foregoing, Licensee shall have the right to self-insure the coverages required in this section as long as Licensee or its affiliated parent maintains a net worth of at least $100 million as evidenced in publicly available certified financials. In the event Licensee elects to self-insure its obligation to include City as an additional insured, the following additional provisions shall apply (in addition to those set forth in section):

    (i) Licensor shall promptly and no later than thirty (30) days after notice thereof provide Licensee with written notice of any claim, demand, lawsuit, or the like for which it seeks coverage pursuant to this Section and provide Licensee with copies of any demands, notices, summonses, or legal papers received in connection with such claim, demand, lawsuit, or the like;

    (ii) Licensor shall not settle any such claim, demand, lawsuit, or the like without the prior written consent of Licensee; and

    (iii) Licensor shall fully cooperate with Licensee in the defense of the claim, demand, lawsuit, or the like.

EXHIBIT E

Certificate of Compliance With Labor Code § 3700, Release and Indemnification

The undersigned, on behalf of and as the duly certified representative of Licensee, certifies as follows:

1. Licensee is aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and Licensee has complied or will comply with such provisions before commencing the performance of the work of this contract. (Cal. Labor Code §§1860, 1861.)

2. Should Licensee fail to secure Workers' Compensation coverage as required by the State of California, Licensee shall release, hold harmless, defend and indemnify the City of Elk Grove from and against any damage, liability, claim, cause of action and any other loss, including without limitation, court costs, reasonable attorney's fees and costs resulting from any failure to take and/or maintain Workers' Compensation insurance as required by law. The provisions of this Exhibit shall survive termination, suspension and/or completion of this Agreement. It is further understood and agreed that this release and assumption of risk is to be binding on Licensee's successors, heirs and assigns.

LICENSEE

By:_____

Date: _____

Name: _____

Title: _____

ATTACHMENT 2

From: Karen Steward <karenaraki@hotmail.com>
Sent: Tuesday, April 16, 2019 11:10 AM
To: Jason Lindgren
Subject: Cell Antenna Website

Mr. Lindgren,

Please forward this to the Council Members, Mr. Behrmann, Mr. Hobbs and Mr. Ablog for the file on EG-18-006,

City Council Members, Mr. Behrmann, Mr. Hobbs and Mr. Ablog,
Thank you for creating a City web page on 5G cell antennas.
http://www.elkgrovecity.org/city_hall/departments_divisions/planning/current_development_projects/small_cell_telecommunication_facilities
It is a step in the right direction. Prior to this the City had done NOTHING to inform residents about what the City has been working on, what the wireless companies have been proposed, what the City's options are and how each would work other than the community workshop. Or to ask Elk Grove residents what we want and don't want in a 5G cell antenna policy. 99% of Elk Grove residents have no idea of any of this because you have not told them. Meanwhile for 20 months your staff has been negotiating deals with AT&T and Verizon to install powerful and hazardous cell antennas throughout our city.
Unfortunately the City's new 5G web page needs work. Please change the following items:
#1 It should mention health effects.
#2 It should present an accurate picture of the City's broad authority to regulate cell antennas.
#3 It should mention what other cities have done to protect their interests and residents' interests.
#4 It should solicit the opinions of City residents.
#5 It should not chill or deter residents from expressing their opinions to the Council.
Overall please look for ways to fully exercise its powers of local control so as to protect the interests of the City and its residents. Direct your staff to use their skills and efforts to achieve that.
Details on each recommendation follow.
#1 It should mention health effects. The City can present iself as neutral WHILE promoting information to residents about both sides of the issues. To omit the evidence that electromagnetic radiation is hazardous, in current exposures, is to deceive and mislead the public.
The only information is a link to the FCC web page on EMR safety.
However FCC is very biased and they do not tell an accurate story or the entire story. Hundreds of scientists and thousands of doctors have a different point of view including the California Medical Association, the American Academy of Pediatrics, the EMF Scientist International Appeal, and the BioInitiative 2012.
https://ehtrust.org/the-california-medical-association-wireless-resolution/
https://ecfsapi.fcc.gov/file/7520941318.pdf
https://emfscientist.org
https://bioinitiative.org
The California Department of Public Health has issued recommendations for reducing one's exposure to EMR from cell phones.
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHIB/CDPH%20Document%20Library/Cell-Phone-Guidance.pdf
#2 It should present an accurate picture of the City's broad authority to regulate cell antennas.
Section 704 of the Telecommunications Act of 1996 does not pre-empt City regulation of regulation of the operation of cell antennas on any basis or the placement, construction or modification of cell antennas on the basis of:
Technological needs for a given company's system to work
Aesthetics
House values

Nor does it prohibit the City from keeping cell antennas out of residential neighborhoods and away from parks and schools, especially given the 2,000' range of a 5G cell antenna according to Verizon CEO Lowell McAdam.
47 U.S.C. 332(c)(7) is called "Preservation of local zoning authority" and it begins with:
``(A) General authority.--Except as provided in this paragraph, nothing in this Act shall limit or affect the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction, and modification of personal wireless service facilities."
https://www.govinfo.gov/content/pkg/PLAW-104publ104/html/PLAW-104publ104.htm
#3 It should mention what other cities have done to protect their interests and residents' interests. (Petaluma, Mill Valley, Belvedere, Calabasas, Fairfax, Palos Verdes, San Anselmo, San Rafael and Sonoma City)
https://mdsafetech.org/cell-tower-and-city-ordinances/
#4 It should solicit the opinions of City residents. "What do you want the City of Elk Grove to do about 5G?!" "What don't you want?" Please ask these questions on the web page and provide a way for residents to tell you.
#5 It should not chill or deter residents from expressing their opinions to the Council.
The web page says, "Some City residents have expressed health concerns about wireless technology. However, the City is preempted by federal law from regulating in this area. Changes to those regulations must occur at the federal level." This strongly suggests that the City's hands are tied and that the City has no choice but to go along with the wireless companies' proposals until federal law changes - EVEN IF it means serious health impacts for thousands of Elk Grove residents. That is not true!! The most likely result of a person reading this statement is that they will give up and won't even write to the Council about the City's new 5G cell antenna policy. It appears hopeless.
This is misleading at best because it connects possible City actions to address and prevent health impacts with changes in federal law, which are nowhere near being made. This is a false connection.
Please reply to this message.
Thank you.
Sincerely,

Karen Steward
5819 Adobe Spring Way
Elk Grove, CA 95758

Get Outlook for iOS

From: rogenmoser@surewest.net
Sent: Tuesday, April 16, 2019 9:33 PM
To: Jason Lindgren
Subject: >> NO 5G IN ELK GROVE PLEASE <<

Hello Jason,

Please read the article below and the list of Five Basic Requests.

Please share with whoever is responsible for approving 5G in Elk Grove.

https://articles.mercola.com/sites/articles/archive/2019/04/16/cell-tower-emf-radiation.aspx?utm_source=facebook.com&utm_medium=referral&utm_content=facebookmercola_lead&utm_campaign=20190416_cell-tower-emf-radiation&fbclid=IwAR060cjhiqgiabjh2mOrJfPW4PdaiXQ-mgMpXctLqSP4noTIYZLzjFstRio

Basic Requests

Fast five requests: (send to City Clerk Jason Lindgren jlindgren@elkgrovecity.org for the City Council)

1. Build a city wide fiber optic network or partner with the companies to build one
2. Keep cell antennas away from our Elk Grove homes! (out of residential neighborhoods)
3. Keep cell antennas away from libraries, schools and parks.
4. Create a City web page about 5G to facilitate the flow of information both ways: from the City to residents and from residents to the City. Mention the studies on health effects!!
5. Limit the output of cell antennas to no more than 150 microwatts per square meter.

Basic requests

Here are the basic requests of Keep Cell Antennas Away From Our Elk Grove Homes for our City to put in place (hello, City Council and staff!) regarding 5G cell antenna zoning and permitting. We have been talking and writing about these for months and first presented them as a set at the March 27, 2019 Council meeting. There are 9 requests for now. We may add more later.

1 Build a city wide fiber optic network or partner with the companies to build one

Much more energy efficient, zero health hazards, and better at handling lots of data. They use fiber optics to bring data to their poles.

2 Keep cell antennas out of residential neighborhoods.

3,000' minimum distance between cell antennas of a given carrier
1,500' minimum distance between a cell antenna and the nearest home
(Consistent with the 2,000' + range per Verizon CEO McAdam.)

3 Keep cell antennas away from schools, libraries, and parks

1,500' minimum distance between a cell antenna and schools, etc.
(The 1st point may accomplish the 2nd.)

4 Maximize local control, including but not limited to:

Require applications to demonstrate that a given proposed cell antenna will:
Close a significant gap in coverage
Using the least intrusive means
(*MetroPCS, Inc. v. City & County of San Francisco* (9th Cir. 2005) 400 F.3d 715.)

5 Regulate the operation and output of cell antennas

to no more than 150 microwatts per square meter at any time.
Enforced by sensors with automatic shut off. Fines for exceeding.

6 Place underground all equipment that can be placed underground.

7 Build a thorough City web page on 5G that mentions the health effects and scientific studies to facilitate the flow of information both ways:

from the City to residents; and
from residents to the City

8 Require applicants to pay the City to hire a legitimate expert

to review applications, proposals, etc. and advise on technological and policy options

9 Require warning signs at eye level on every pole that has a cell antenna

Saying the cell antenna on this pole produces electromagnetic radiation (EMR), and that the California Department of Public Health has issued recommendations for reducing one's exposure to EMR.

Thank you,

Cathy & Rene Rogenmoser
Elk Grove, CA
916-837-6893

From: Ruben J. Casillas
To: Antonio Ablog
Subject: 4G & 5G antennas
Date: Saturday, October 20, 2018 9:07:51 AM

Dear Mr Ablog, Planning Commissioners and City Council members, our family and neighbors are very concerned about the serious adverse impacts caused by the 24 hour a day microwave radiation from 4G and 5G cell antennas in residential neighborhoods, which will come right through the walls of our homes. There will be impacts on property values, appearance, the environment and our health. AT&T has proposed an agreement and a code amendment that would spread these hazardous cell antennas throughout residential neighborhoods by enabling cell antenna permitting decisions to be made behind the backs of Elk Grove residents and the City Council. The public interest must come before corporate profits. We do not want these cell antennas outside our bedroom windows! What will happen to children exposed to this radiation 24/7 for their entire lives?! Elk Grove must protect its interests and our residents' interests and health. Elk Grove should pass an ordinance amending its Municipal Code to set strict limits and requirements for permitting of these cell antennas and towers, such as keeping cell antennas out of residential zones. The cities of Petaluma and Mill Valley have recently done this. Other cities in Northern California are in the process. Please put this topic on your agenda and prevent the installation of these dangerous antennas in the City of Elk Grove. And please share this message with all of the Planning Commissioners and City Council members.

Sincerely,

Ruben Casillas
9545 Kind Ct.
Elk Grove 95624

Ruben J. Casillas

916.753.7652

Message sent via iPhone

From: Karen Steward
To: Antonio Ablog; Jason Lindgren; Sandy Kyles
Subject: 4G/5G Cell Towers and AT&T
Date: Monday, October 29, 2018 1:11:21 AM

Dear Mr. Ablog, Planning Commissioners and City Council members,

We are very concerned about the ser adverse impacts caused by the 24 hour a day microwave radiation from 4G and 5G cell antennas in residential neighborhoods, which will come right through the walls of our homes. There will be impacts on property values, appearance, the environment and our health.

AT&T has proposed an agreement and a code amendment that would spread these hazardous cell antennas throughout residential neighborhoods by enabling cell antenna permitting decisions to be made behind the backs of Elk Grove residents and the City Council. The public interest must come before corporate profits.

We do not want these cell antennas outside our bedroom windows! What will happen to children exposed to this radiation 24/7 for their entire lives?!

Elk Grove must protect its interests and our residents' interests and health. Elk Grove should pass an ordinance amending its Municipal Code to set strict limits and requirements for permitting of these cell antennas and towers, such as keeping cell antennas out of residential zones. The cities of Petaluma and Mill Valley have recently done this. Other cities in Northern California are in the process.
Please put this topic on your agenda and prevent the installation of these dangerous antennas in the City of Elk Grove. Please be open and clear to the residents and do not pass this without our knowledge. This is our home and as a resident, we have the right to know. Keep large corporations out of having total control over where to place these towers.

We love Elk Grove and it's small town feel. Please keep Elk Grove safe from these unnecessary changes.

What research has been conducted on safety of placing these towers right near residential areas? Who was the study funded by, and where exactly will these towers be placed?

Please share this message with all of the Planning Commissioners and City Council members.

Sincerely,

Karen Steward and Ay Yommalat
5819 Adobe Spring Way Elk Grove, CA 95758

From: Hugh Mitten <htmitten1@gmail.com>
Sent: Sunday, May 19, 2019 9:38 AM
To: Jason Lindgren
Subject: antennas

Follow Up Flag: Follow up
Flag Status: Flagged

As an Elk Grove resident I respectfully ask you to preserve the character and quality of life of our City by keeping cell antennas out of residential neighborhoods and away from parks and schools. Do not allow more antennas in Elk Grove.

Thank you.

Sincerely,

Hugh and Ly Mitten

8545 Mecca Rd,

Elk Grove CA 95624

From: Mark Graham <Mark@markegraham.net>
Sent: Thursday, June 13, 2019 3:17 PM
To: Jason Lindgren
Subject: Examples of Small Cell Wireless Facilities Emergency Ordinances

[EXTERNAL EMAIL]

June 13, 2019

Mr. Lindgren

Please forward this to each of the Council Members ant to the staff.

Thank you,

Dear Council Members and staff,

Here is a list of several cities in Northern California that have taken action to protect their interests and their residents' interests from the assault of 5G cell antennas.

Examples of Small Cell Wireless Facilities Emergency Ordinances

- **City of Belvedere, California** https://www.cityofbelvedere.org/DocumentCenter/View/5641/Item-11
- **Calabasas, California (very strong)** . http://calabasas.granicus.com/MediaPlayer.php?view_id=2&clip_id=6587
- **Fairfax, California**. Fairfax Emergency Wireless Ordinance 2018
- **City of Mill Valley, California** http://cityofmillvalley.granicus.com/MetaViewer.php?view_id=2&clip_id=1290&meta_id=59943
- **Palos Verdes, California (Strong)** https://www.rpvca.gov/DocumentCenter/View/7952/RPV—ROW-Wireless-Telecommunications-Urgency-Ordinance
- **Petaluma, California** https://www.codepublishing.com/CA/Petaluma/html/Petaluma14/Petaluma1444.html
- **San Anselmo, California** https://www.townofsananselmo.org/DocumentCenter/View/23883/Wireless-Policy-in-effect-September-26-2018
- **San Raphael, California** https://www.cityofsanrafael.org/documents/ordinance-1967/ and https://www.cityofsanrafael.org/documents/resolution-14621/
- **Sonoma City, California (strong)** https://sonomacity.civicweb.net/document/17797

Please take a look. I am sure that my friends and allies would agree with you when I said we want the City of Elk Grove to fully exercise its powers over local zoning authority.

Thank you,

Mark Graham
Sent from my hard wired computer

From: Bonita <heartbailey@yahoo.com>
Sent: Wednesday, June 26, 2019 3:50 PM
To: Jason Lindgren
Subject: 5G Elk Grove

Follow Up Flag: Follow up
Flag Status: Flagged

[EXTERNAL EMAIL]

Mr. Lindgren, Ms. Kyles, Elk Grove City Council, Planning Commission and staff,

As an Elk Grove resident I respectfully ask you to preserve the character and quality of life of our City by keeping cell antennas out of residential neighborhoods and away from parks and schools. Bring SafeG – A Safe Alternative to Harmful 5G Wireless - to Elk Grove!

SafeG is not a single product or service, but a framework for an internet and telecommunications system. It is defined as follows:

SafeG means safe, fast, reliable, secure internet and telecommunications services brought into our homes and businesses by wired technology. It means technology that safeguards our health, privacy and security and that evolves over time with the goal of *reducing* exposure to harmful wireless radiation.

SafeG is about choice. SafeG accepts the right of homeowners and businesses to decide for themselves whether to have wired or wireless networks on their premises *without forcing that choice on others as the wireless industry wishes to do on all of us through 5G*.

https://safeg.net/home/

Please adopt an urgency ordinance similar to Sonoma City urgency ordinance 07-2018, adopted in November, 2018.

Finally, please defer any formal action on the AT&T / Cingular zoning code amendment EG-18-006 and any proposed agreements with the wireless companies until the ongoing lawsuits against the FCC over their Declaratory Ruling and Third Report and Order, (WT Docket No. 17-79; WC Docket No. 17-84) are fully resolved. The City has nothing to gain by taking formal action while these lawsuits are pending and a lot to lose. The National League of Cities and the League of California Cities, both of which represent the City of Elk Grove, are parties to one or more of these lawsuits.

http://cacities.org/Top/News/News-Articles/2018/October/FCC-Sides-with-Wireless-Industry-on-Policy-that-Er

Cities across the U.S. as well as organizations representing cities, counties, mayors, governors, and all levels of local government have strongly opposed the Order. It would take away control by local government over the use of public property and give that control, and billions of dollars in profits, to the wireless companies. If the City acts now and complies with this ill-conceived order and then the U.S. Court of Appeals for the Ninth Circuit overturns the order, as is very likely, the City will be stuck with whatever deal it made with the wireless companies. Other cites, that had the foresight to wait, will be in a much better position to amend their zoning codes once the order is overturned. Timing is everything. The City does not have to act now. Please wait.

Thank you.

Sincerely,

[Your name and address, or at least that you live in Elk Grove]

Sent from my iPhone

From: Susan Mason
To: Jason Lindgren; Antonio Ablog; Sandy Kyles
Subject: AT&T Cell Towers and Antennas
Date: Friday, November 16, 2018 5:57:25 PM

To Mr Ablog, Planning Commissioners and City Council members,
I have become aware of AT&T applying for a code amendment (January 25, 2018, EG-18-006) and proposing an agreement with the city (August 20, 2017) to allow AT&T to install 4G and/or 5G cell antennas in residential neighborhoods. They are ugly and hazardous as well!!
I write to urge you to deny both the application and agreement in the interest of Elk Grove residents.
I choose to reduce my exposure to as much radiation as I can, whether wi-fi, electromagnetic, Smart Meters. microwave—just to list a few. I am concerned about the health impact that has been identified by credible, scientific groups. Published studies reveal that exposure to long-term non-ionizing radiation has profound health risks. AT&T is only interested in its profits and not in my health or the health of the community.
I understand that other cities, for example, have set strict limits and requirements for permitting cell towers and antennas to only commercial and industrial areas.
Please consider this request and protect the interests of this city and protect the residents of Elk Grove.
Ms. Kyles, please forward this email to all of the Planning Commissioners.
Mr. Lindgren, please forward this message to all of the City Council members.
Thank you,
Susan Mason
6836 Romanzo Way
Elk Grove CA 95758

From: Mark Graham
To: Jason Lindgren
Cc: Antonio Ablog
Subject: Cell Phone Towers (and Antennas) Lower Property Values
Date: Friday, December 21, 2018 2:21:57 PM
Attachments: Bond_Squires_Using_GIS_to_Measure.pdf
TAJSummer05p256-277.pdf
Bond_The_Impact_Of_Cellular_Phone_Base_Station_Towers_On_Property_Values.pdf
Burbank Action on DECREASED REAL ESTATE VALUE.docx
LACRPB letters on house values.pdf
Santa Cruz preschool closes citing cell tower radiation.docx
Burbank Real Estate Professionals Statement.docx
Burgoyne appraiser on Cell-Towers-Home-Values.pdf
NISLPP survey on lower house values.docx
EMF-Real-Estate-Survey-Results-PDF.pdf

December 21, 2018

Dear Mr. Lindgren,

Will you please forward this to the Council Members, Mr. Hobbs and Mr. Behrmann? It is about cell antenna policy, also known as Close Proximity Microwave Radiation Antennas (CPMRAs) and in particular their effect on house values. Will you let me know that you have forwarded this message to them?

Thank you.

Dear Mr. Ablog,

Please accept this for the record on application EG-18-006, the Cingular and AT&T proposed code amendment. There are several attachments to this email.

Dear Council Members, Mr. Hobbs and Mr. Behrmann,

I have mentioned that Close Proximity Microwave Radiation Antennas (CPMRAs) in Elk Grove will lower our home values or property values. Here is some documentation of that claim from the following page, but note that I have omitted a lot of the links and quotations from that page as not relevant or applicable:

https://ehtrust.org/cell-phone-towers-lower-property-values-documentation-research/

As you may know a real estate agent has an obligation to disclose the presence of a nuisance to a potential house buyer.

Significantly, there appears to be a legal obligation to disclose the existence of a facility when selling a home which will decrease property value.

- The California Association of Realtors maintains that "sellers and licensees must disclose material facts that affect the value or desirability of the property" and this includes "known conditions outside of and surrounding the property." A material fact is one that a reasonable home buyer would wish to know.
- The California Real Estate Transfer Disclosure Statement requires disclosure of "11. Neighborhood noise problems or other nuisances."
- The California Real Estate Transfer Disclosure Statement also requires disclosure of: "19. Whether the subject property *is affected by* or zoned to allow certain manufacturing or commercial or airport use as set forth in CCP 731a."

Make no mistake: Everyone will know this facility is there. Besides the unsightly antennas placed on raised trellises, there will be safety, emergency notification and warning signs that will signal its presence and, in addition, neighbors will know it is there because of their strong opposition to it. Of course, there is also the moral obligation to consider in making disclosures when selling one's home.

I welcome your questions and comments on this. These documents are not just about cell towers - they are about CPMRAs or cell antennas too.

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Cell Phone Towers Lower Property Values: Documentation And Research On Cellular Base Stations Near Homes

Research indicates that over 90% of home buyers and renters are less interested in properties near cell towers *and* would pay less for a property in close vicinity to cellular antennas. Documentation of a price drop up to 20% is found in multiple surveys and published articles as listed below. The US Department of Housing and Urban Development (HUD) considers cell towers as "Hazards and Nuisances."

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- The NISLAPP survey echoes the findings of a study by Sandy Bond of the New Zealand Property Institute and past president of the Pacific Rim Real Estate Society (PRRES). "The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods," which was published in The Appraisal Journal in 2006, found that buyers would pay as much as 20 percent less for a property near a cell tower or antenna.

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NEWS ARTICLES

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" Property dealers across the city say that buildings which host mobile phone towers have 10-20 % less market value.

"Forget buying these properties , people don't want to take them on rent even, particularly when they have a choice. If a person is going to invest crores, why would he buy a property with a tower?" asks Pal. According to LK Thakkar, a Defence Colony-based property dealer, while the cost of the building which has the tower is relatively less, other buildings in the vicinity also get affected. "No one wants to buy a house within 100 metres of the building which has the tower. The rates for such properties drop by 10-20 %, and sometimes even more," said Thakkar, co-owner of A-One Associates ."

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STUDIES ON IMPACTS OF TOWERS

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Cell Towers are Discussed in the Written Testimony of Bobbi Borland Acting Branch Chief, HUD Santa Ana Homeownership Center Hearing before the Subcommittee on Insurance, Housing and Community Opportunity U.S. House of Representatives Committee on Financial Services on "The Impact of Overhead High Voltage Transmission Towers and Lines on Eligibility for Federal Housing Administration (FHA) Insured Mortgage Programs" Saturday, April 14, 2012

- With regard to the new FHA originations, the guide provides that: "The appraiser must indicate whether the dwelling or related property improvements are located within the easement serving a high-voltage transmission line, radio/TV transmission tower, cell phone tower, microwave relay dish or tower, or satellite dish (radio, TV cable, etc)."

Thank you and happy holidays,

Mark Graham

Sent from my hard wired computer

From: Janet
To: Jason Lindgren; Sandy Kyles; Antonio Ablog
Subject: Cell Towers
Date: Thursday, November 1, 2018 8:33:12 AM

Dear Mr Ablog, Planning Commissioners and City Council members,

I was surprised and concerned to learn that there may be 4G and 5G cell phone towers going up in our neighborhoods here in Elk Grove. I live in Stonelake and would consider moving if one was installed here because of the risk to our environment, health and property value. There simply have not been long term studies done and preliminary studies show adverse affects of microwave radiation especially in young kids, of which I have two.

The public interest must come before AT&T corporate profits. We do not want these cell antennas outside our bedroom and our kids' bedroom windows!

Elk Grove must protect its interests and our residents' interests and health. Elk Grove should pass an ordinance amending its Municipal Code to set strict limits and requirements for permitting of these cell antennas and towers, such as keeping cell antennas out of residential zones. The cities of Petaluma and Mill Valley have recently done this. Other cities in Northern California are in the process.
Please put this topic on your agenda and prevent the installation of these dangerous antennas in the City of Elk Grove.

And please share this message with all of the Planning Commissioners and City Council members.

Sincerely,
Janet Yung
Elk Grove resident

From: Brittany
To: Antonio Ablog
Subject: No small cell towers!
Date: Wednesday, October 31, 2018 11:42:05 AM

ISSUE: AT&T has proposed an agreement with the city (August 20, 2017) and applied for a code amendment (January 25, 2018, EG-18-006) that would cut the City Council and Elk Grove residents out of permitting decisions on cell antennas in residential neighborhoods. Permits would be issued by the Department of Public Works, which does not hold public meetings. AT&T could then install these antennas on a light pole or telephone pole near you without your knowledge or consent. CONSEQUENCES: Elk Grove does not need these cell antennas. There is already good cell phone coverage in Elk Grove. These "Small Cell" antennas will reduce property values, be an eyesore, and adversely affect our health. 4G microwave radiation is powerful and hazardous. 5G will be even more so. There have been literally thousands of studies on the health impacts of long term exposure to non-ionizing radiation, the kind cell antennas produce. The World Health Organization, International Agency for Research on Cancer (WHO – IARC) determined in 2011 that such radiation is a Category 2B possible human carcinogen, in the same category as lead and DDT. http://www.iarc.fr/en/media-centre/pr/2011/pdfs/pr208_E.pdf The U.S. National Toxicology Program study published in 2018 found that cell phone radiation caused cancer tumors of the brain and heart in rats. https://ehtrust.org/clear-evidence-of-cancer-concludes-the…/ Over 240 scientists signed the EMF Scientist International Appeal starting in May, 2015. https://emfscientist.org/ Based on their research, the scientists say that long-term exposure to non-ionizing radiation causes increased risk of cancer, genetic damages, cardiovascular problems, abnormal brain function, impaired fertility, memory deficits, headaches, insomnia, confusion, weakness, and structural and functional changes to the reproductive system. WHAT IS 5G? 5G is the next generation of wireless technology. It is to be used for streaming and downloading videos at faster speeds. It is not needed for text messages or phone calls. CELL ANTENNAS AND POWER: These cell antennas are 48" high by 14.6" in diameter. A better name for them is Close Proximity Microwave Radiation Antenna – Wireless Telecommunication Facilities (CPMRA-WTFs). According to Verizon CEO Lowell McAdam a 5G cell antenna has a range of 2,000'. https://www.youtube.com/watch?time_continue=7&v=FwAsr1pC13Q Yet AT&T has proposed an agreement with the City that would allow it to install these antennas on light poles and utility poles in the public right of way, right outside of our homes. Actual electromagnetic fields from these antennas are tens of thousands of times higher than the signal strength necessary for phone calls. TAKE ACTION: PLEASE DO THE FOLLOWING: 1. Email City leaders Email City of Elk Grove Planning Manager Antonio Ablog - aablog@elkgrovecity.org; Planning Commissioner staff Sandy Kyles skyles@elkgrovecity.org and ask her to forward your message to the Planning Commissioners; and City Clerk Jason Lindgren at jlindgren@elkgrovecity.org and ask him to forward your message to the Council Members. You can send a letter to any of them at 8400 Laguna Palms Way, Elk Grove, CA 95758. Suggested Message: (Feel free to personalize your message, which will make it even better.) "Dear Mr Ablog, Planning Commissioners and City Council members, We are very concerned about the serious adverse impacts caused by the 24 hour a day microwave radiation from 4G and 5G cell antennas in residential neighborhoods, which will come right through the walls of our homes. There will be impacts on property values, appearance, the environment and our health. AT&T has proposed an agreement and a code amendment that would spread these hazardous cell antennas throughout residential neighborhoods by enabling cell antenna permitting decisions to be made behind the backs of Elk Grove residents and the City Council. The public interest must come before corporate

profits. We do not want these cell antennas outside our bedroom windows! What will happen to children exposed to this radiation 24/7 for their entire lives?! Elk Grove must protect its interests and our residents' interests and health. Elk Grove should pass an ordinance amending its Municipal Code to set strict limits and requirements for permitting of these cell antennas and towers, such as keeping cell antennas out of residential zones. The cities of Petaluma and Mill Valley have recently done this. Other cities in Northern California are in the process. Please put this topic on your agenda and prevent the installation of these dangerous antennas in the City of Elk Grove. And please share this message with all of the Planning Commissioners and City Council members. Sincerely, Your name and address" 2. Attend a meeting of the Elk Grove City Council http://elkgrovecity.org/…/cit…/city_council/council_meetings WHAT: We are not on the agenda, but please turn in a blue speaker card at the back of the room to speak for a maximum of 3 minutes during public comments which happen near the beginning of the meeting. WHEN: the second and fourth Wednesdays of each month. Meetings are scheduled to begin at 6:00 p.m. WHERE: Council Chambers located at Elk Grove City Hall, 8400 Laguna Palms Way, Elk Grove, CA 95758. 3. Attend a meeting of the Elk Grove Planning Commission http://elkgrovecity.org/…/commission_an…/planning_commission WHAT: The Planning Commission and City Council have the same procedures for public comments, but Planning Commission meetings more often begin on time. Please turn in a blue speaker card to speak. WHEN: the first and third Thursday of every month at 6:00 p.m. WHERE: Same place as the City Council meetings, in the Council Chambers, 8400 Laguna Palms Way 3. Spread the news - Forward this email to all your email contacts in the City of Elk Grove and copy and post this message on Facebook, Twitter, Nextdoor and other social media. 4. Stay informed - For more information & updates, join Keep Cell Antennas Away from Our Elk Grove Homes on Facebook https://www.facebook.com/KeepCellAntennasAwayFromOurElkGro…/ or e-mail info5G@keepcellantennasawayfromourelkgrovehomes.org to be added to our 5G activist mailing list. Learn more at www.keepcellantennasawayfromourelkgrovehomes.org/ See what other Northern California cities are doing on this issue at http://mystreetmychoice.com/ It is vitally important that as many Elk Grove residents as possible email Planning Commission and City Council members – and attend Planning Commission and City Council meetings – to oppose these 4G and 5G cell antennas. Thank you in advance for taking action. Together we are stronger. Together, we can make a difference and protect our communities.
Sent from my iPhone

From: jeffjeffjen@aol.com
To: Antonio Ablog
Subject: oppose 4g and 5g cell towers in Elk Grove
Date: Wednesday, October 31, 2018 10:31:35 AM

Mr. Ablog,
I am writing you to please oppose the idea of putting small cell towers in our neighborhoods. I have AT&T and my coverage in Elk Grove is fantastic. This is unnecessary and the studies are conclusive that they do cause cancer. I am a breast cancer survivor and a 20 year resident of Elk Grove, but if this is implemented I will be moving.
Thank you for your time,
Jennifer Dresser

From: Mark Graham
To: Jason Lindgren
Cc: Antonio Ablog
Subject: Cell Phone Towers (and Antennas) Lower Property Values
Date: Friday, December 21, 2018 2:21:57 PM
Attachments: Bond_Squires_Using_GIS_to_Measure.pdf
TAJSummer05p256-277.pdf
Bond_The_Impact_Of_Cellular_Phone_Base_Station_Towers_On_Property_Values.pdf
Burbank Action on DECREASED REAL ESTATE VALUE.docx
LACRPB letters on house values.pdf
Santa Cruz preschool closes citing cell tower radiation.docx
Burbank Real Estate Professionals Statement.docx
Burgoyne appraiser on Cell-Towers-Home-Values.pdf
NISLPP survey on lower house values.docx
EMF-Real-Estate-Survey-Results-PDF.pdf

December 21, 2018

Dear Mr. Lindgren,

Will you please forward this to the Council Members, Mr. Hobbs and Mr. Behrmann? It is about cell antenna policy, also known as Close Proximity Microwave Radiation Antennas (CPMRAs) and in particular their effect on house values. Will you let me know that you have forwarded this message to them?

Thank you.

Dear Mr. Ablog,

Please accept this for the record on application EG-18-006, the Cingular and AT&T proposed code amendment. There are several attachments to this email.

Dear Council Members, Mr. Hobbs and Mr. Behrmann,

I have mentioned that Close Proximity Microwave Radiation Antennas (CPMRAs) in Elk Grove will lower our home values or property values. Here is some documentation of that claim from the following page, but note that I have omitted a lot of the links and quotations from that page as not relevant or applicable:

https://ehtrust.org/cell-phone-towers-lower-property-values-documentation-research/

As you may know a real estate agent has an obligation to disclose the presence of a nuisance to a potential house buyer.

Significantly, there appears to be a legal obligation to disclose the existence of a facility when selling a home which will decrease property value.

- The California Association of Realtors maintains that "sellers and licensees must disclose material facts that affect the value or desirability of the property" and this includes "known conditions outside of and surrounding the property." A material fact is one that a reasonable home buyer would wish to know.
- The California Real Estate Transfer Disclosure Statement requires disclosure of "11. Neighborhood noise problems or other nuisances."
- The California Real Estate Transfer Disclosure Statement also requires disclosure of: "19. Whether the subject property *is affected by* or zoned to allow certain manufacturing or commercial or airport use as set forth in CCP 731a."

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STUDIES ON IMPACTS OF TOWERS

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The effect of distance to cell phone towers on house prices S Bond, Appraisal Journal, Fall 2007, Source, Appraisal Journal (Found on page 22) See also Using GIS to Measure the Impact of Distance to Cell Phone Towers on House Prices in Florida

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Mark Graham

Sent from my hard wired computer

Thirteenth Pacific-Rim Real Estate Society Conference,
Perth, Western Australia 21-24 January 2007

Using GIS to Measure the Impact of Distance to Cell Phone Towers on House Prices in Florida

Draft: December 2006

Sandy Bond, Ph.D., MBS, ANZIV,
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E-mail: dr_sandybond@yahoo.com
Website: www.buildingchi.com

&

Larry Squires, Research Assistant,
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PO Box 117140,
Gainesville FL 32611-7140

Using GIS to Measure the Impact of Distance to Cell Phone Towers on House Prices in Florida

Keywords: Cellular phone base stations – GIS - health risks – multiple regression analysis – property values – stigma

Abstract:
The siting of cellular phone transmitting antennas, their base stations and the towers that support them (*towers*) is a public concern due to fears of potential health hazards from the electromagnetic fields (EMFs) that these devices emit. Negative media attention to the potential health hazards has only fuelled the perception of uncertainty over the health effects. The unsightliness of these structures and fear of lowered property values are other regularly voiced concerns about the siting of these towers. However, the extent to which such attitudes are reflected in lower property values affected by tower proximity is controversial.

This paper outlines the results of a study carried out in Florida in 2004 to show the effect that tower proximity has on residential property prices. The study involved an analysis of residential property sales transaction data. Both GIS and multiple regression analysis in a hedonic framework were used to determine the effect of actual distance of homes to towers on residential property prices.

The results of the research show that prices of properties decreased by just over 2%, on average, after a tower was built. This effect generally reduced with distance from the tower and was almost negligible after about 200 meters (656 feet).

1. Introduction

This paper outlines the results of one of the first US-based cell-phone tower studies. The research was carried out in Florida in 2004 to show the effect that **distance** to a CPBS has on residential property prices. It follows on from several New Zealand (NZ) studies conducted in 2003.[1] The first of the earlier NZ studies examined residents' perceptions toward living near CPBSs, while the most recent NZ study adopted GIS to measure the impact that distance to a CPBS has on residential property prices using multiple regression analysis in a hedonic pricing framework. The current study was conducted to determine if US residents respond similarly to those in NZ towards living near CPBSs and hence, whether the results can be generally applied.

The paper commences with a brief literature review of the previous NZ studies for the readers' convenience as well as the literature relating to property value effects from other similar structures. The next section describes the research data and methodology used. The results are then discussed. The final section provides a summary and conclusion.

[1] Bond, S.G. and Wang, K. (2005). "The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods", The Appraisal Journal, Volume LXXIII, No.3, pp.256-277, Bond, S.G., Beamish, K. (2005). "Cellular Phone Towers: Perceived Impact on Residents and Property Values", Pacific Rim Property Research Journal, vol. 11, no. 2, pp. 158-177 and Bond, S.G. and Xue, J. (2005). "Cell Phone Tower Proximity Impacts on House Prices: A New Zealand Case Study", European Real Estate Society and International Real Estate Society Conference, June 15-18, Dublin, Ireland.

2. Literature Review

2.1 Property Value Effects

First, an opinion survey by Bond and Beamish (2005) was used to investigate the current perceptions of residents towards living near CPBSs in a case study city of Christchurch, New Zealand and how this proximity might affect property values. Second, a study by Bond and Wang (2005) that analyzed property sales transactions using multiple regression analysis was conducted to help confirm the results of the initial opinion survey. It did this by measuring the impact of proximity to CPBSs on residential property prices in four case study areas. The Bond and Xue (2005) study refined the previous transaction-based study by including a more accurate variable to account for distance to a CPBS.

The City of Christchurch was selected as the case study area for all the NZ studies due to **the large amount of media attention** this area had received in recent years relating to the siting of CPBSs. Two prominent court cases over the siting of CPBSs were the main cause for this attention.[2] In summary, the Environmental Court ruled in each case that there is no established adverse health effects arising from the emission of radio waves from CPBSs as there is no epidemiological evidence to show this. However, in the court's decisions they did concede that while there is no proven health affects that there is evidence of **property values** being affected by both of the above allegations.

These court cases were only the start of the negative publicity surrounding CPBSs in Christchurch. Dr. Neil Cherry, a prominent and vocal local Professor, served only to fuel the negative attention to CPBSs by regularly publishing the health hazards relating to these structures.[3] This media attention had an impact on the results of the studies, outlined next.

2.2 The Opinion Survey

The Bond and Beamish (2005) opinion survey study included residents in ten suburbs: five case study areas (within 100 feet of a cell phone TOWER) and five control areas (over 0.6 of a mile from a cell phone TOWER). The five the case study suburbs were matched with five control suburbs that had similar living environments (in socio-economic terms) except that the former are areas where a CPBS is located, while the latter are without a CPBS. Eighty questionnaires[4] were distributed to each of the ten suburbs in Christchurch (i.e. 800 surveys were delivered in total).
After sending out reminder letters to those residents who had not yet responded, an overall response rate of 46% was achieved. Over three-quarters (78.5%) of the case study respondents were homeowners compared to 94% in the control area.

The results were mixed with responses from residents ranging from having no concerns to being very concerned about proximity to a CPBS. Interestingly, in general, those people living in areas further away from CPBSs were **much more** concerned about issues from proximity to CPBSs than residents who lived near CPBSs.

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[2] McIntyre and others vs. Christchurch City Council [1996] NZRMA 289 and Shirley Primary School vs. Telecom Mobile Communications Ltd [1999] NZRMA 66

[3] For example, Cherry, N. (2000), "Health Effects Associated with Mobil Base Stations in Communities: The Need for Health Studies," Environmental Management and Design Division, Lincoln University, June 8. Available from: http://pages.britishlibrary.net/orange/cherryonbasestations.htm.

4 Approved by the University of Auckland Human Subjects Ethics Committee (reference 2002/185).

Over 40% of the control group respondents were worried a lot about future health risks, aesthetics and future property values compared to the case study areas where only 13% of the respondents were worried a lot about these issues. However, in both the case study and control areas, the impact of proximity to CPBSs on future **property values** is the issue of **greatest concern** for respondents. If purchasing or renting a property near a CPBS, over a third (38%) of the control group respondents would **reduce price** of their property by more than **20%.** The perceptions of the case study respondents were again less negative with a third of them saying they would reduce price by only 1-9%, and 24% would reduce price by between 10 and 19%.

Reasons for the lack of concern shown by the case study respondents may be due to the CPBS being either not visible or only barely visible from their homes. Another reason may be that the CPBS was far enough away from respondent's property (as was indicated by many respondents, particularly in St Albans West, Upper Riccarton, and Bishopdale) or hidden by trees and consequently it did not affect them much. The results may have been quite different had the CPBS being more visually prominent.

2.3 Transaction-based Market Study

The Bond and Wang (2005) market transaction-based regression study included 4283 property sales in four suburbs that occurred between 1986 and 2002 (approximately 1000 sales per suburb). The sales data that occurred before a CPBS was built were compared to sales data after a CPBS was built to determine any variance in price, after accounting for all the relevant independent variables.

Interestingly, the effect of a CPBS on price (a decrease of between 20.7% and 21%) was very similar in the two suburbs where the towers were built in the year 2000, after the negative media publicity given to CPBSs following the two legal cases outlined above. The other two suburbs that indicated a CPBS was either insignificant or increased prices by around 12%, had towers built in them in 1994, prior to the media publicity. Also, given that the cell phone technology was relatively new to NZ in 1994 (introduced in late 1987) there may have been more desire then to live closer to a tower to receive better coverage than in later years when the technology became more common and the potential health hazards from these became more widely publicized.

The main limitation affecting this study was that there was no accurate proximity measure included in the model, such as GIS coordinates for each property. Instead, street name was included as an independent variable to help to control for the proximity effects. A study has subsequently been performed using GIS analysis to determine the impact that distance to a CPBS has on residential property prices. The results from this study are outlined next.

2.4 Proximity Impact Study

Bond and Xue study conducted in 2004 involved analysis of the residential transaction data using the same hedonic framework as the previous study as well as including the same data but added a further six suburbs to give a total of ten suburbs: five suburbs with CPBSs located in them and five control suburbs without CPBSs. In addition, the geographical {x, y} coordinates that relate to each property's absolute location were included. A total of 9,514 geo-coded property sales were used (approximately 1000 sales per suburb).

In terms of the effect that proximity to a CPBS has on price the overall results indicate that this is significant and negative. Generally, the closer to the CPBS a property is the greater the decrease in price. The effect of proximity to a CPBS **reduces price by 15%, on average.** This effect reduces

with distance from the CPBS and is negligible after 1000 feet.

2.5 High Voltage Overhead Transmission Line Research

CPBSs are very similar structures to high voltage overhead transmission lines (HVOTLs) and their supporting structure, the pylons. Therefore, despite the limited research relating to value effects from CPBS, it is worthwhile reviewing the body of literature on the property values effects from HVOTLs and pylons.

2.5.1 New Zealand HVOTL Research

The only recently published study in New Zealand on HVOTLs value effects is by Bond and Hopkins (2000).[5] The case study area selected for the research was a low-middle income, predominantly single-family residential district in the northern Wellington suburb of Newlands that is crossed by two 110KV transmission lines with 85 foot high steel pylons **located on private land**.

The results of the sales analysis, comprising sales from 1989 to 1991 (330 of which were within 1000 feet, or 300 meters, of a HVOTL), indicate the effect of having a 'pylon' close to a particular property is statistically significant and has a **negative effect of 27%** at 33 feet (10 meters) from the pylon, 18% at 50 feet (15 meters), decreasing to 5% at 164 feet (50 meters). This effect diminishes to a negligible amount after 328 feet (100 meters). However, the presence of a 'transmission line' in the case study area has a minimal effect and is not a statistically significant factor in the sales price.

2.5.2 UK HVOTL Research

In England, the effect of HVOTLs on the value of residential property remains relatively unexplored due, in part, to the lack of available transaction data for analysis. The most recently published study is by Sims and Dent (2005).[6] They compare the results of two parallel UK studies: the first is an analysis of transaction data from a case study in Scotland where sales data are available; the second is a national survey of property appraisers' perceptions (Chartered Surveyors and members of the National Association of Estate Agents) of the presence of distribution equipment in close proximity to residential property.

The data set for the Scotland study consisted of 593 single-family houses that sold between 1994 and 1996 near Glasgow. There is a 275 kV HVOTL running through the centre of the neighborhood in a corridor of land. (Note: This scenario is akin to the US situation where HVOTLs are also situated in easement corridors).

In summary, the analysis of prices at varying distances from the HVOTL showed no clear pattern. The presence of a pylon was found to have a more significant impact on value than the HVOTL and could **reduce price by up to 20.7%.** All negative impacts appeared to reduce with distance and were negligible at around 820 feet (250 meters).

The results from the survey of appraisers and real estate agents indicate they **reduce house price by around 5-10%** when valuing a property within close proximity to a HVOTL. Comparing the

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[5] Bond, S.G. & Hopkins, J. (2000)."The Impact of Transmission Lines on Residential Property Values: Results of a Case Study in a Suburb of Wellington, New Zealand". *Pacific Rim Property Research Journal*, Vol.6, No.2, pp.52-60.

[6] Sims, S. and Dent, P. (2005), "High-voltage overhead power lines and property values: A residential study in the UK", Urban Studies, Vol.42, No.4, pp. 665-694.

results from both studies suggests that appraisers and real estate agents underestimate the impact of proximate HVOTLs on value.

2.5.3 US and Canadian Research

There have been a number of HVOTLs studies carried out in the US and Canada. A major review and analysis of the literature by Kroll and Priestley indicated that in about half the studies carried out, HVOTLs had not affected property values and in the rest of the studies there was a loss in property value between 2-10%.[7]

Kroll and Priestley were generally critical of most valuer type studies because of the small number of properties included and the failure to use econometric techniques, such as multiple regression analysis. They found that the Colwell study was one of the more careful and systematic analysis of residential impacts.[8] This study was carried out in Illinois and found that the strongest effect of the HVOTLs was within the first 50 feet (15m) but with this dissipating quickly further away, disappearing beyond 200 feet (60m).

A Canadian study (Des Rosiers, 2002) based on a sample of 507 single-family house sales in the City of Brossard, Greater Montreal that sold between 1991-1996 showed that the severe visual encumbrance due to a direct view of either a pylon or lines exerts a significantly negative impact on property prices of between 5% to well in excess of 20%. The extent of value diminution depended on the degree of set back of the homes with respect to the HVOTL easement. The smaller the set back the greater the reduction in price (for example, with a setback of 50ft price was reduced by 21%).

However, the study also showed that a house located adjacent to a transmission corridor may increase values. The proximity advantages include enlarged visual field and increased privacy. The decrease in value from the visual impact of the HVOTLs and pylons (between, on average, 5-10% of mean house value) tends to be cancelled out by the increase in value from proximity to the easement.[9]

A study by Wolverton and Bottemiller[10] utilized a paired-sale methodology of home sales occurring in 1989-1992 to ascertain any difference in sale price between properties abutting rights-of-way of transmission lines (subjects) in Portland, Oregon; Vancouver, Washington; and Seattle, Washington and those located in the same cities but not abutting transmission line rights-of-way (comparisons). Their results did not support a finding of a price effect from abutting an HVTL right-of-way. In their conclusion they warn that the results cannot and should not be generalized outside of the data. They explain that

> "limits on generalizations are a universal problem for real property sale data because analysis is constrained to properties that sell and sold properties are never a randomly drawn representative sample. Hence, generalizations must rely on the weight of evidence

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[7] Kroll, C. and Priestley, T. (1992), "The Effects of Overhead Transmission Lines on Property Values: A Review and Analysis of the Literature", Edison Electric Institute, July.

[8] Colwell, P. (1990), "Power Lines and Land Value", *The Journal of Real Estate Research*, American Real Estate Society, Vol. 5, No. 1, Spring.

[9] Des Rosiers, F. (2002), Power Lines, Visual Encumbrance and House Values: A Microspatial Approach to Impact Measurement, *Journal of Real Estate Research*, Vol.23, No.3, pp. 275 – 301.

[10] Wolverton, M.L. & Bottemiller, S.C., (2003), "Further analysis of transmission line impact on residential property values", *The Appraisal Journal*, Vol.71, No.3, pp. 244.

from numerous studies, samples, and locations," p. 250.

Thus, despite the varying results reported in the literature on property value effects from HVOTLs, each study adds to the growing body of evidence and knowledge on this (and similar) valuation issue(s).

2.5.4 Summary

This literature review shows that the price effect of proximity to a HVOTL-pylon is generally consistent between studies (i.e. negative and significant) ranging from between 12 to 27% depending on the distance to these. The closer the home is to a pylon, the greater the diminution in price. The effect diminishes to a negligible amount after 820 feet (250 meters), on average.

The effect of proximity to CPBSs is similar to that caused by proximity to HVOTL-pylons and **reduces price by around 21%.** Taking actual distance into account (using GIS analysis) the effect is a reduction of price of 15%, on average (but up to 25% depending on the neighborhood). This effect reduces with distance from the CPBS and is negligible after 1000 feet (300 meters).

The literature on property value effects from HVOTLs, pylons and cell phone towers adds to the growing body of evidence and knowledge on this (and similar) valuation issue(s). The study reported here is one such study.

3. Market Study

3.1 The Data

Part of the selection process for finding an appropriate case study area was to find one where there were a sufficient number of property sales in suburbs where a tower had been built for analysis to provide statistically reliable and valid results. Sales were required both before and after the tower was built to study the effect of the existence the tower had on the surrounding property's sale prices.

Cellular phone tower information was obtained from the Federal Communication Commission (FCC). Approximately sixty-percent (60%) of the towers located in Orange County were constructed between the years 1990 and 2000. Additionally, twenty of the towers have the greatest potential for impact on the price of residential properties, based on the greatest number of residential properties close to each tower. These twenty towers were selected to construct a dataset for the study.

Residential properties that sold between 1990 and 2000, the years during which the towers were constructed and were closest to the twenty towers were selected. Parcel data was collected from the Office of the Property Appraiser for Orange County, Florida.[11] Overall, 5783 single-family, residential properties were selected from northeast Orange County (see Appendix I: Location Map).

The study investigates the potential impact of proximity to a tower on the price of residential property, as indicated by the dependant variable: SALE_PRICE.[12] The study controls for site and structural characteristics by assessing the impact of various independent variables. The independent data set was limited to those available in the dataset and known, based on other well-

[11] As reported to the Florida Department of Revenue.
[12] Model 1, Model 2, and Model 3 estimate the Log of the SALE_PRICE.

tested models reported in the literature and from valuation theory, to be related to property price. The independent variables selected include: lot size in square feet (LOT), floor area of the dwelling in square feet (SQFT), age of the dwelling in years (AGE), the time of construction (AFTER-TWR), the closest distance of each home to the associated tower (DISTANCE), and the dwelling's absolute location is indicated by the Cartesian coordinates (XCOORD) and (YCOORD).[13]

The effect of construction of a tower on price is taken into account by the inclusion of the dummy, independent variable AFTER_TWR. By including AFTER_TWR property prices prior to tower construction can be compared with prices after tower construction.[14] Frequency distributions indicate that, among the residential properties that sold between 1990 and 2000, approximately eighty percent (80%) of the residential properties were sold after tower construction.

The mean SALE_PRICE of single-family, residential property that sold between 1990 and 2000 is $113,830 for northeast Orange County. The mean square footage of a dwelling is 1535 sq. ft., the mean lot size is 8525 square feet and the mean age is 14 years. The mean DISTANCE from residential property to a tower is 1813 feet.[15]

Based on the parcel and tower data for Orange County, descriptive statistics for select variables are presented in Table 1, below.

Table 1: Orange County, Florida: Select Descriptive Statistics (n= 5783)[16]

VARIABLE	MEAN	STD. DEV.	MIN	MAX
SALE_PRICE	113830.6	58816.68	45000	961500
SQFT	1535.367	503.8962	672	5428
LOT	8525.193	4363.28	1638	107732
AGE	13.92755	10.03648	0	35
XCOORD	664108.9	6130.238	640460	671089
YCOORD	511489.4	2422.946	506361	531096
DISTANCE	1813.077	725.5693	133	6620

3.2 Methodology

The method selected for this study was a hedonic house price approach. GIS was also adopted to aid the analysis of distance to the towers. The null hypothesis states that tower proximity does not explain any variation in residential property sales price.

To address the many difficulties in estimating the composite effects of externalities on property price an interactive approach is adopted.[17] To allow the composite effect of site, structural and

[13] See Fik, Ling and Mulligan (2003) for further discussion of the significance of the absolute location in the form of {x, y} coordinates.
[14] Dummy variables for each year of residential sales were also incorporated into each of the model specifications to control for the potential effects of time on the price of residential property.
[15] Initially, the HEIGHT of the tower was also included among the explanatory variables. However, the HEIGHT variable provided no significant explanatory power.
[16] Polynomial expansions of the independent variables, identified by the *VARIABLE***2** were included in the interactions in the three model specifications discussed in the methodology.
[17] Externalities include influences external to the property such as school zoning, proximity to both amenities and dis-amenities, and the socio-economic make-up of the resident population.

location attributes on the value of residential property to vary spatially they are interacted with the Cartesian coordinates that are included in the model.

Unless the hedonic pricing equation provides for interaction between aspatial and spatial characteristics the effects of the explanatory variables on the dependant variable will likely be underestimated, misspecified, undervalued or, worse, overvalued. Including the Cartesian coordinates in the model is intended to increase the explanatory power of the estimated model, and reduce the likelihood of model misspecification (i.e. inaccurate estimates of the regression coefficients, inflated standard errors of the regression coefficients, deflated partial t-tests for the regression coefficients, false non-significant p-values, and degradation of the model predictability, etc.) by allowing the explanatory variables to vary spatially and by removing the spatial dependence observed in the error terms of aspatial, non-interactive models.

Adhering to the methodology proposed by Fik, Ling, and Mulligan (2003), empirical models were selected and progressively tested. The models were based on other well-tested hedonic housing price equations reported in the literature, to derive a best-fit model.

The methodology progresses from an interactive model specification which controls for site and structural attributes of residential property as well as the effects of absolute location and then proceeds to a model specification that measures the effects of discrete location characteristics based on distance intervals. The final model incorporates the impact of explicit location to measure the effects of the proximity to towers (as indicated by DISTANCE) on the sales price of residential property.

Preliminary tests of each model, proceeding from interactive aspatial and spatial estimates, were executed to identify an appropriate polynomial order, or a model that provided the greatest number of statistically significant coefficients and the highest adjusted R-squared value (Fik, et al., p. 633). Like the study by Fik, et al., sensitivity analyses suggested the use of a fourth-order model, at most. Similarly, the following model specifications are estimated with a stepwise regression procedure to ensure that the potential for model misspecification due to multi-collinearity is minimized and that only the independent variables offering the greatest explanatory power are included in the final model.

Model 1 was utilized as a benchmark for the remaining two models. The SALE_PRICE is estimated using the following independent variables: lot size (LOT), square footage of the dwelling (SQFT), age of the dwelling in years (AGE), and the dwelling's absolute location (XCOORD) and (YCOORD). To investigate the effect of tower construction on the price of homes the dummy variable (AFTER_TWR) was also included. Residential sales prices prior to tower construction, BEFORE (=0), were compared to sales prices after tower construction, AFTER (=1). With the addition of the absolute location Model 1 was used to provide a sound model specification, to maximize the explanatory value of the study and minimize the potential for misspecification in the estimated models.

Model 2 integrated the base-model with distance intervals akin to discrete locations. Residential properties within the discrete intervals were then coded according to the interval in which each property was located. The distance intervals, adopted are: 500MTRS (500 to 451 meters), 450MTRS (450 to 401 meters), 400MTRS (400 to 351 meters), 350MTRS (350 to 301 meters), 300MTRS (300 to 251 meters), 250MTRS (250 to 201 meters), 150MTRS (150 to 101 meters), 100MTRS (100 to 51 meters), 50 MTRS (50 meters, or less, to the tower). These distance rings are

within the range of distances used in other similar proximity studies of detrimental features on property values (see for example: Des Rosiers 2002; Reichert 1997; Colwell 1990, and Bond and Hopkins 2000).

Model 3 includes distance-based measures indicating the property's explicit location, with respect to the closest tower. Model 3 integrated the base-model (Model 1) with the distance from the tower to the property. Model 3 introduces the independent variable DISTANCE and interacts this variable with the variables from Model 1. The final model, Model 3, is used to assess the variation in sale price due to proximity to a tower.

3.4 Empirical Results

Tables 2, 3 and 5 are shown in Appendices II and III. The Tables show the progressive development of a spatial and fully interactive model specification to estimate the effects of the proximity to towers on the price of residential property, according to the base-model, Model 1.

In the semi-logarithmic equation the interpretation of the dummy variable coefficients involves the use of the formula: $100(e^{bn} -1)$, where bn is the dummy variable coefficient (Halvorsen & Palmquist).[18] This formula derives the percentage effect on price of the presence of the factor represented by the dummy variable.

Results in Table 2 (Appendix II) suggest that the price of residential properties sold after the construction of a tower increases by 1.47% (i.e. AFTER_TWR = 1.46E-02). Interactions with AFTER_TWR and other variables also suggest an increase in the price for single, family residential properties sold after tower construction. This may reflect residents' preference to live near a tower to obtain better cell phone coverage.

Among the control variables SQFT increases price by 0.039% with each additional square foot of space (i.e. SQFT = 3.88E). AGE reduces price by 0.25% for each additional year of age. The t-statistics for the explanatory variables SQFT, AGE, XCOORD and YCOORD suggest significant explanatory power within the specification (i.e. SQFT = 47, AGE2 = 7, XCOORD = -7.105 and YCOORD = 6.799). Model 1 accounts for 82% of the variation in the SALE_PRICE (i.e. Adj. R-Square = .08219987).

The results of Model 2 (in Table 3, Appendix II) indicate the estimated effect that proximity to a tower has on residential property prices. Although the SALE_PRICE of single-family, residential properties may appear to increase after the construction of towers as indicated by Model 1, the discrete intervals created in Model 2 suggest that the value of residential properties also increases as the distance from towers increases. That is, if the distance from the residential property to the tower decreases, then the price of the residential property likewise decreases.

Model 2 indicates that the influence of the proximity of towers on the price of residential properties increases inversely with the distance. Under 200MTRS from the towers, the negative signs of the estimate coefficients suggest a decrease in the value of residential properties with an increased proximity or decreased distance to towers. The price of a property located between 101 and 150 meters of a tower decreases by 1.57% ($1- e^{-0.0156}$) relative to properties that sold prior to the tower being built when holding other explanatory variables constant. The price of properties

[18] Halvorsen, R. and Palmquist, R. "The Interpretation of Dummy Variables in Semilogarithmic Equations," *American Economic Review*, (70:3, 1980): 474-475.

that are located between 151 and 200 meters from a tower is reduced by 2.71% (1- $e^{-0.0275}$). Thus, a tower has a statistically significant, albeit minimal, effect on prices of property located within 200 meters of a tower.

From 300MTRS to 400MTRS, the price of residential property increases with the distance from the tower. Between 400MTRS and 500MTRS, the price continues to increase with the distance from the tower. These price increases vary from between 1.045% at 350 meters to 2.32% at 500 meters. Additionally, the t-statistics increase with the distance, further suggesting the impact indicated by the increase in estimate coefficients. Although the general trend in the data suggests a positive relationship between the price of residential properties and distance, anomalies exist within the distance intervals.

Having provided a preliminary assessment of the impact of the proximity of towers on residential property prices, Model 3 introduces the independent variable DISTANCE to better assess the variation in sale price due to the external effect of a tower.

Table 4 provides a summary of the distance-based results from Models 2 and 3. While the results of Model 2 present minor anomalies within the data intervals, the results of Model 3 suggest a greater consistency in the results. The results from Model 3 are presented in Table 5 (see Appendix III).

Table 4: A Comparison of Distance-Based Location Coefficients *(% impact on price)*

DISCRETE LOCATION	**ADJ. R^2 = 0.826257**
500-450MTRS	2.30E-02 ***(2.33%)***
450-400MTRS	1.91E-02 ***(1.93%)***
400-350MTRS	2.17E-02 ***(2.19%)***
350-300MTRS	1.04E-02 ***(1.045%)***
200-150MTRS	-2.75E-02 ***(-2.71%)***
150-100MTRS	-1.56E-02 ***(-1.57%)***
EXPLICIT LOCATION	**ADJ. R^2 = 0.8282641**
DISTANCE	5.69E-05 (5.69-03%)
DISTANCE2	-1.49E-08

The results of Model 3 clearly show that the price of residential property increases with the distance from a tower. The independent variable, DISTANCE, estimates a coefficient with a positive sign, that increases with increasing distance from the tower (i.e. Distance = 5.69E-05). Moreover, the t-statistic associated with the estimated coefficient indicates the significance of the explanatory power of the variable (i.e. *t*-Stat = 10.751).

DISTANCE presents significant interactions with the other independent variables. The t-statistics associated with these interactions provide strong evidence that the price of residential property, while highly associated with site and structural characteristics, may be significantly impacted by proximity to towers (i.e. AFTER_TWR*DISTANCE = 3.519; DISTANCE2 = -12.258; DISTANCE*AGE = 4.829).

Further, although the estimated effect of the explanatory variable AFTER_TWR continues to suggest that the value of residential property increases with the distance from towers, the interactive nature of AFTER_TWR with DISTANCE2 suggests that the effect of AFTER_TWR

may vary due to varying distances from the tower. Indeed, the estimated coefficient for AFTER_TWR from Model 1 is diminished in Model 2 and Model 3 as discrete and explicit, distance-based locational attributes are included in the model specification (i.e. Model 1, AFTER_TWR = 1.46E-02 ***(1.47%),*** Model 2, AFTER_TWR = 1.1495-02 ***(1.156%)*** and Model 3, AFTER_TWR = .012722 ***(1.28%)***).

3.5 Limitations and Comparison with the NZ Study

This study analyzed residential property sales drawn from a number of different, but neighbouring, suburbs in Orange County, Florida as an entire dataset (the suburbs were grouped together and analyzed as a whole). While the Location Value Signature was included in the model to take into account composite externalities as well as to allow these and other independent variables in the model to vary spatially, and therefore preclude the need to analyse neighbourhoods separately, it is possible that not all neighbourhood differences were accounted for when these results are compared to those from the NZ study.

The NZ study (2004) included an analysis of the whole dataset but also of the separate suburbs. The analysis of the whole dataset indicates that CPBSs have a significant, but minimal, effect on the prices of proximate properties. The same general result was obtained for the current US study. However, what the NZ study showed by analyzing the suburbs separately was that substantive differences exist in the effect that CPBSs have on property prices between suburbs, since the distribution of the property sales prices is quite different in each.

The analysis showed that the most significant variables and their effect on price were similar between the four suburbs: St. Albans, Beckenham, Papanui, and Bishopdale. This indicates the relative stability of the coefficients between each model. The overall results indicate that the presence of a CPBS has a significant and negative effect on property prices. This effect is not very strong when the variable *TOWER* is included in the model fitted to the **entire dataset**. However, the effect in each suburb is quite pronounced. It is possible that if the current study had analyzed suburbs separately that similar differences would have been found. Table 6, below, summarizes the results.

Table 6: Coefficients of TOWER, inv.dist and DIST

Model & Date Tower Built		TOWER	Inv.dist	DIST1	DIST 2	DIST 3
All Suburbs	Coefficients	-2.29e-02	-3.68e-01	-2.78e-02	-2.91e-02	-3.98e-03
	Value Effects	**-2.3%**	**50m @ -5.07%** **100m@ -3.61%**	**-2.7%**	**-2.87%**	Insignif.
St Albans 1994	Coefficients	1.48e-01	8.99e-01	1.45e-01	1.53e-01	1.44e-01
	Value Effects	**+16%** **(+12%)**	**50m@ +13.6%** **100m@ +9.4%**	**+15.6%**	**+16.5%**	**+15.5%**
Beckenham 2000	Coefficients	-1.81e-01	-2.85e+00	-1.74e-01	-1.74e-01	-2.03e-01
	Value Effects	**-16.56%**	**97m @-25.13%**	**-15.9%**	**-15.9%**	**-18.37%**
Bishopdale 1994	Coefficients	-9.86e-02	1.62e+00	-1.34e-01	-9.18e-02	
	Value Effects	**-9.39%**	**50m @-20.4%** **100m@ -15%**	**-12.54%**	**-8.96%**	

Papanui 2000	Coefficients	-8.17e-02	-2.24e+00	-7.02e-03	-1.55e-01	-6.70e-02
	Value Effects	**-7.85%**	**177m @-15.5%**	**Insignif.**	**-14.36%**	**-6.48%**

Other factors that could affect the results are the style and appearance of the CPBSs and how visible they are to residents.

4. Summary and Conclusions

This paper presents the results of a study carried out in Florida in 2004. The study involved the analysis of market transaction data of single-family homes that sold in Orange County between 1990 and 2000 to investigate the affect on the price of property in close proximity to a tower. The results showed that while a tower has a statistically significant effect on prices of property located near a tower, this effect is minimal. The price of properties within 200 meters (656 feet) decreased, on average, by just over 2%.

Each geographical location is unique as evidenced by the difference in results from the NZ and US studies. These observed differences are partly due to the manifold factors that influence the degree of negative reaction to towers. Residents' perceptions and assessments of risk vary according to a wide range of processes including psychological, social, institutional, and **cultural**. In addition to the potential heath, aesthetic and property value impacts from towers, other factors that may impact on the degree of negative reaction from residents living near these structures and that may be reflected in price are listed below:

- The kinds of health and other risks residents associate with towers, and the level of risk perceived;
- The height, style, and appearance of the towers, how visible these are to residents and how they perceive such views;
- The marketability of homes near towers;
- The extent and frequency of negative media attention to towers;
- The socio-economic make-up of the resident population (prior research indicates that social class is an important variable influencing people's response to environmental detriments, Thayer *et al.* 1992, and Dale *et al*. 1999);
- The distance from the towers residents feel they have to be to be free of concerns.

As the results reported here are from a case study conducted in 2004 in a specific geographic area (Orange County, Florida) the results should not be generally applied. Wolverton and Bottemiller[19] explain that:

> "…limits on generalizations are a universal problem for real property sale data because analysis is constrained to properties that sell and sold properties are never a randomly drawn representative sample. Hence, generalizations must rely on the weight of evidence from numerous studies, samples, and locations," p. 250.

Thus, to determine if the results are consistent across time and space many similar studies in different geographic locations would need to be conducted over time. Further, to allow valid comparison between them, such studies would need to be of similar design. As suggested by Bond

[19] Wolverton, M.L. & Bottemiller, S.C., (2003), "Further analysis of transmission line impact on residential property values", *The Appraisal Journal*, Vol.71, No.3, pp. 244.

and Wang (2005), the sharing of results from similar studies would aid in the development of a global database to assist appraisers in determining the perceived level of risk associated with towers and other similar structures from geographically and socio-economically diverse areas.

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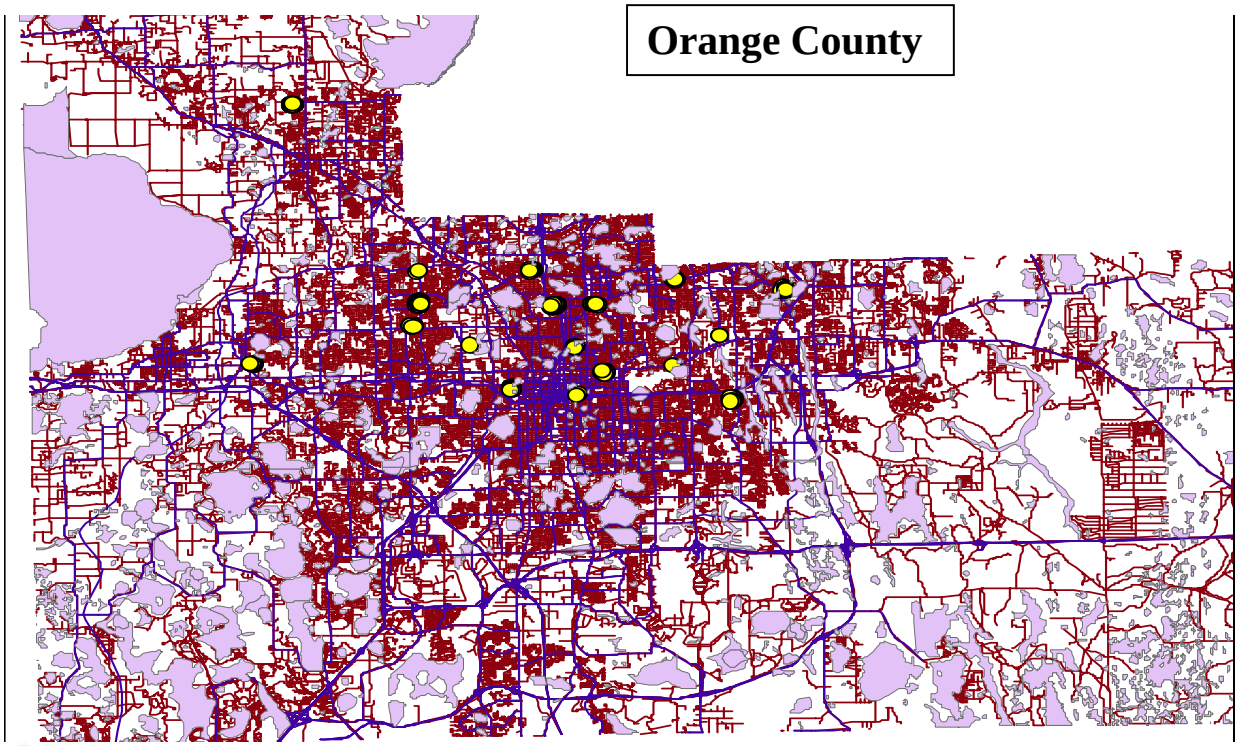
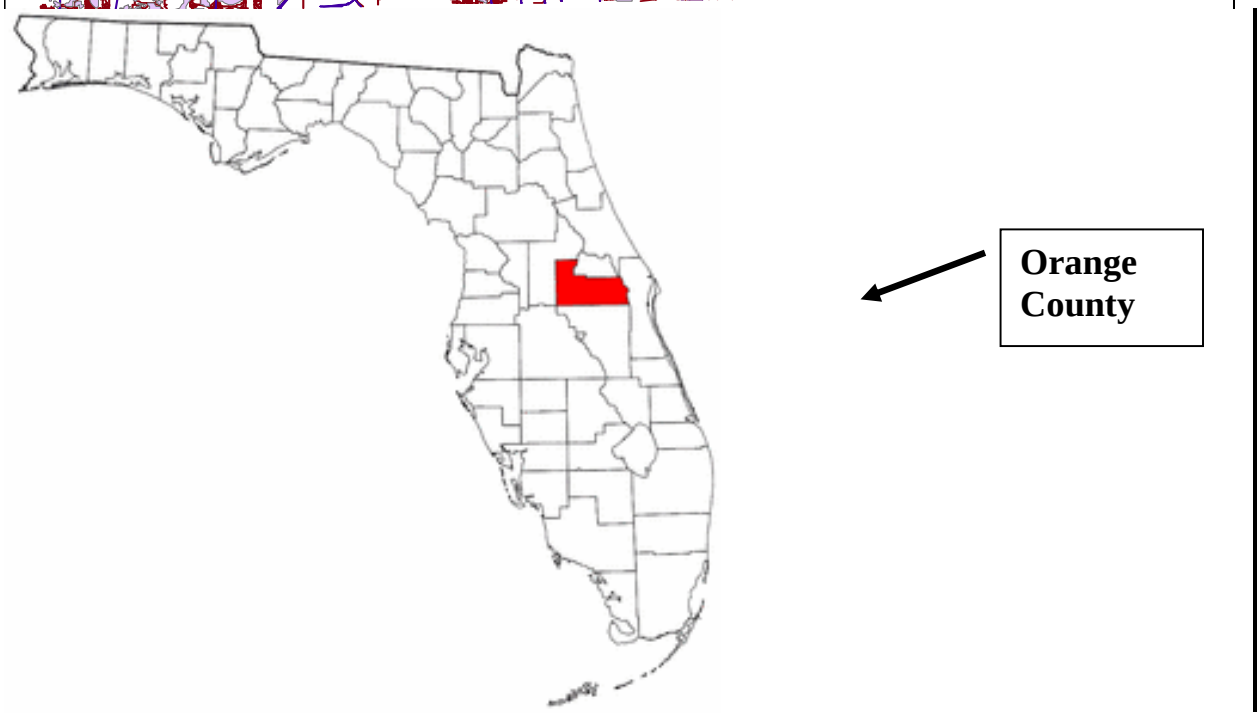
Appendix I - Location Map





Appendix II – Model 1 & 2 Results

Table 2: Model 1 (*n* = 5783); Adjusted R-Square = .8219987					
Variables	**Est. Coefficient**	**Std. Error**	**Std. Coefficient**	***t-Stat***	**Significance**
Constant	3.689244	0.257416		14.332	0.0000
AFTER_TWR	1.46E-02	5.08E-03	0.0353	2.867	0.0042
AFTER_TWR*AGE	5.99E-04	2.62E-04	0.0395	2.29	0.0221
AFTER_TWR*LOT	8.79E-07	2.91E-07	0.0272	3.018	0.0026
SQFT	3.88E-04	8.20E-06	1.2072	47.368	0.0000
SQFT2	-3.02E-08	1.90E-09	-0.3779	-15.912	0.0000
SQFT*AGE	3.52E-07	1.78E-07	0.0429	1.982	0.0475
AGE	-2.81E-03	5.17E-04	-0.1739	-5.429	0.0000
AGE2	7.12E-05	9.94E-06	0.1527	7.165	0.0000
XCOORD	-1.14E-06	1.61E-07	-0.0432	-7.105	0.0000
YCOORD	3.05E-06	4.48E-07	0.0456	6.799	0.0000

Table 3: Model 2 (*n* = 5783); Adjusted R-Square = .826257					
Variables	**Est. Coefficient**	**Std. Error**	**Std. Coefficient**	***t-Stat***	**Significance**
Constant	3.9082	0.2556		15.291	0.0000
AFTER_TWR	0.011495	5.05E-03	0.0279	2.275	0.0230
AFTER_TWR*AGE	5.57E-04	2.59E-04	0.0367	2.151	0.0315
AFTER_TWR*LOT	1.25E-06	2.91E-07	0.0387	4.301	0.0000
SQFT	3.98E-04	7.78E-06	1.2385	51.236	0.0000
SQFT2	-3.21E-08	1.89E-09	-0.4011	-16.994	0.0000
SQFT*AGE	----------	----------	----------	----------	----------
AGE	-2.29E-03	4.36E-04	-0.1418	-5.247	0.0000
AGE2	7.11E-05	9.81E-06	0.1524	7.245	0.0000
XCOORD	-1.67E-06	1.65E-07	-0.0633	-10.134	0.0000
YCOORD	3.26E-06	4.45E-07	0.0487	7.324	0.0000
500MTRS	2.30E-02	2.94E-03	0.0699	7.835	0.0000
450MTRS	1.91E-02	3.97E-03	0.0344	4.813	0.0000
400MTRS	2.17E-02	4.04E-03	0.0376	5.364	0.0000
350MTRS	1.04E-02	4.30E-03	0.0162	2.415	0.0158
200MTRS	-2.75E-02	6.12E-03	-0.0271	-4.489	0.0000
150MTRS	-1.56E-02	7.16E-03	-0.0128	-2.177	0.0295

Appendix III – Model 3 Results

Table 5: Model 3 (*n* = 5783); Adjusted R-Square = .8282641					
Variables	**Est. Coefficient**	**Std. Error**	**Std. Coefficient**	***t-Stat***	**Significance**
Constant	3.097387	0.268028		11.556	0.0000
AFTER_TWR	0.012722	4.42E-03	0.0309	2.877	0.0040
AFTER_TWR*AGE	----------	----------	--	----------	----------
AFTER_TWR*LOT	1.26E-06	2.86E-07	0.0389	4.4	0.0000
AFTER_TWR*DISTANCE2	2.72E-09	7.73E-10	0.055	3.519	0.0004
SQFT	4.01E-04	8.45E-06	1.2464	47.46	0.0000
SQFT2	-3.04E-08	1.93E-09	-0.3797	-15.726	0.0000
SQFT*AGE	----------	----------	---	----------	----------
AGE	-2.80E-03	3.95E-04	-0.1731	-7.077	0.0000
AGE2	6.72E-05	9.70E-06	0.1442	6.931	0.0000
XCOORD	-1.61E-06	1.63E-07	-0.061	-9.911	0.0000
YCOORD	4.70E-06	4.80E-07	0.0702	9.798	0.0000
DISTANCE	5.69E-05	5.29E-06	0.2548	10.751	0.0000
DISTANCE2	-1.49E-08	1.22E-09	-0.2927	-12.258	0.0000
DISTANCE*AGE	6.20E-07	1.28E-07	0.0909	4.829	0.0000
DISTANCE*SQFT	-5.43E-09	2.71E-09	-0.0568	-2.002	0.0453

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The Impact Of Cellular Phone Base Station Towers On Property Values

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The Impact Of Cellular Phone Base Station Towers On Property Values

Keywords: Electromagnetic fields - radio frequency & microwave radiation - cellular phone base stations – property values - stigma

Abstract: Studies show that devices that emit electromagnetic fields (EMFs) are no longer seen as a welcome sign of progress. Media attention to the potential health hazards of EMFs has caused changes in public perception. The introduction of cellular phone systems and a rapid increase in the number of users of cellular phones in the last decade has increased the exposure of the population to EMFs quite considerably. Health consequences of long-term use of cellular phones are not known in detail, but available data indicate that development of non-specific health symptoms is possible (Szmigielski & Sobiczewska, 2000). Conversely, it appears health effects from cellular phone equipment (antennas and base stations) pose few (if any) known health hazards (Barnes, 1999).

A concern associated with cellular phone usage is the siting of cellular phone transmitting antennas and their base stations (CPBSs). These are appearing at an alarming rate across the country mainly on the rooftops of buildings but with numerous base stations installed on towers. These towers are occasionally located in close proximity to houses and schools. The extent of opposition from property owners affected by the siting of these is increasing due to fears of health risks from exposure to EMFs (despite the research reports to the contrary), changes in neighbourhood aesthetics and loss in property values. However, the extent to which such attitudes are reflected in lower property values affected by proximity to CPBSs is not known in New Zealand.

This paper outlines the results of a pilot study carried out in 2002 to show the effect of CPBSs on residential property values in Auckland, New Zealand. The research examines residents' perceptions toward living near CPBSs and how they evaluate the impacts of these structures. A case study approach was used. The results were mixed with responses from residents ranging from having no concerns to being very concerned about proximity to a CPBS. Consequently, how these perceptions impact on property values was also mixed with responses from residents ranging from being prepared to pay the same to being prepared to pay more than twenty percent less for a property located near a CPBS. Interestingly, in general, those people living near the CPBSs were much less concerned about issues such as future health risks or the aesthetic problems caused by the sites than people who lived in areas further away from them. A more in-depth study to confirm these results is to follow in 2003 that will include econometric analysis of sales transaction data.

1. Introduction

Understanding the effects of CPBSs on property values is important to telecommunications companies in helping plan the siting of these and for determining likely opposition from property owners. Similarly, property valuers need to understand the valuation implications of CPBSs when valuing CPBSs-affected property. The owners of affected property also want to understand the magnitude of effects, particularly if compensation claims or an award for damages are to be made against such property.

CPBSs are increasingly in demand as the two major cellular phone companies, Telecom and Vodafone, seek to upgrade and extend their network coverage. This demand could provide the owner of a well-located property a yearly income for the siting of a CPBS (Williams, 2001). However, new technology that represents potential hazards to human health and safety may cause property values to diminish due to the existence of "widespread public fear" and "widespread public perceptions of hazards". The increased media attention to the potential health hazards of CPBSs has caused a spread of such fear with a resulting increase in resistance to CPBSs due to the perceived negative effects on health, aesthetics and property values in close proximity to CPBSs.

Studies (for example, Krause et al. 2000 and Fesenko et al. 1999) suggest a positive correlation between long-term exposure to the electromagnetic fields produced by CPBSs and certain types of cancer. Yet other studies (for example, the World Health Organisation 1993, Royal Society of Canada 1999, and the UK Independent Expert Group on Mobile Phones 2000) report inconclusive results on health effects. Notwithstanding these results, recent media reports (for example, Fox 2002) indicate that the extent of opposition from some property owners affected by the siting of CPBSs is still strong. However, the extent to which such attitudes are reflected in lower property values affected by CPBSs is not widely known in New Zealand.

The two studies that have been conducted (commissioned by Telecom in Auckland (1998/99) and Christchurch (2001)) to ascertain the adverse health and visual effects of CPBSs on property values but these have not been made publicly known. Further, although the researchers reported through personal correspondence with Bond in 2002 that the results showed that property prices are not statistically significantly affected by the presence of CPBSs, their research involved only limited sales data analysis. Further, no surveys of residents' perceptions were undertaken, nor of the media attention to the sites and the affect this may have on saleability of properties in close proximity to CPBSs. Hence, this initial study aims to help fill the research void on this contentious topic. The research develops a case study approach to determine residents' perceptions towards living near CPBSs in two Auckland neighbourhoods and to quantify these effects in monetary terms according to an increasing or decreasing percentage of property value.

A more in-depth study will be undertaken in 2003 in Christchurch, NZ using both an opinion survey and econometric analysis of sales transaction data. The final results can then be used to help resolve compensation issues and damage claims in a quantitative way. Further, they will provide a potential source of information for related government agencies in assessing the necessity for increasing health and other information pertaining to CPBSs to help allay public concerns about these.

The paper provides a brief review of the cellular phone technology and relevant literature. The following section describes the research procedure used, including a description of both case study and control areas. The results are then discussed. The final section provides a summary and conclusion.

2. Literature Review

2.1 Background: Cellular Telephone Technology[1]

Increasing demand for a more convenient communication system has led to the emergence of the wireless (mobile) telephone technology through the allocation of a portion of the radio frequency

[1] The information in this section was sourced from http://www.telecom.co.nz, http://www.mfe.govt.nz and http://www.moh.govt.nz.

to this and through interconnection with the existing wire telephone network.

Mobile phones are sophisticated two-way radios that use ultra high frequency (UHF) radio waves to communicate information. The information is passed between a mobile phone and a network of low-powered transceivers, called mobile phone sites or cell sites. As mobile sites are very low powered they serve only a limited geographic area (or "cell"), varying from a few hundred metres to several kilometres, and can handle only a limited number of calls at one time. When a mobile phone user on the move leaves one "cell" and enters another, the next site automatically takes over the call, allowing contact to be maintained.

When a mobile phone connects to the network, it uses radio signals to communicate with the nearest mobile phone site. All of the mobile phone sites in a network are interlinked by cable or microwave beam, enabling phone calls to be passed from one cell to another automatically. Mobile phone sites are also linked to the public telephone network so callers can access other networks, cities or countries. A mobile phone site is typically made up of a mast with antennas connected to equipment stored in a cabinet. Power is fed into the cabinet by underground cable. The antennas are designed to transmit most of the signal away horizontally, or just below the horizontal, rather than at steep angles to the ground.

The actual use of radio frequency transmission requires only a small amount of energy, making mobile phone technology one of the most efficient forms of communication available. Unlike television and radio transmitters which work at full power all the time, a mobile phone site is designed to control its output so that it provides exactly the signal strength required to handle the number of calls being made at that moment, no more and no less. Therefore, if no calls are being made at any one moment, the cell site will virtually shut itself down.

As mobile phone sites can only accommodate a limited number of calls at any one time, when this limit is reached the mobile phone signal is transferred to the next nearest site. If this site is full or is too far away, the call will fail. One way of achieving an increased capacity is with the use of micro-sites or infill sites. These are mini mobile phone sites that can be mounted on street light poles, traffic lights or building verandas. They are common at busy intersections where they can help handle the increased capacity at rush hour and during the day they will rarely be required. Micro-sites only have a range of one to two hundred metres, and therefore cannot be used everywhere. They are designed for operation in dense urban areas in conjunction with conventional sites.

2.1.1 NZ Adoption of Cellular Phone Technology

The cellular telephone service first became available in New Zealand in 1987. By mid 1988 there were approximately 2,300 customers throughout New Zealand. In the late 1990's over 300,000 customers had cellular phones. This figure has continued to balloon in recent years. It is estimated that today over 2.3 million New Zealanders have a mobile phone and it is expected that 80 percent of people will be mobile within five years (Telecom, 2002)[2].

Cell site capacity is a major issue that the telecommunication companies are faced with at present. As the population continues to grow and so does the number of people using mobile phones, more and more cell sites are going to be required to meet customer demand for reliable coverage. In

[2] At the end of March 2002, Telecom had more than 1.3 million mobile phone customers and more than 750 mobile phone sites throughout New Zealand (a 54% share of the mobile market).Vodafone had over 1.1 million mobile phone customers throughout New Zealand (a 46% share of the mobile market), (Vodafone, 2002).

areas such as Auckland where almost complete coverage has been achieved, the main issue is ensuring that there is the capacity to handle the ever-increasing number of mobile phones and calls being made.

2.2 Locating Cellular Phone sites

Unlike higher-powered transmission sites such as television and radio, mobile phone sites are very low powered. Therefore, if cellular service companies are to provide a reliable service to their customers they are required to locate their sites where the service is needed.

For cellular phone service providers the main aims when locating cell sites are finding a site that provides the best possible coverage in the area without causing interference with other "cells" and one that causes the least amount of environmental impact on the surrounding area. Where possible service providers will attempt to locate cell sites on existing structures such as buildings where antennas can be mounted on the roof to minimize the environmental impact. Where this is not possible the site will require a mast to be erected to support the antennas.

For service providers, the preferred location for cell sites is in commercial or industrial areas due to the previous difficulty in obtaining resource consent for towers located in residential areas under the Resource Management Act.[3] Under the Resource Management Act 1991 (RMA), resource consent may be required from the local council to establish a cell site in the area. This may be either notified or non-notified. If the council decides it is to be notified this allows anyone in the community to have their say about it. Once submissions have been received and a hearing is held (if required) the council decides whether or not to grant the consent. One of the positive outcomes of the RMA resource consent procedure is the resulting unobtrusive nature of most cell sites. Some sites have even been incorporated into clock towers, building's chimneys and building signage.

There is no concern of the providers running out of room to locate the towers in the short term, however, it is expected that in the future, service providers will be required to share sites as they do overseas. If the service providers were to use the same mast they would have to be well separated meaning a much higher mast and a more undesirable structure in the community.

Despite the high level of demand for better cell phone coverage, the location of cell sites continues to be a contentious issue. The majority of people want better cell phone coverage in areas where they live and work, but they do not want a site in their neighbourhood. Thus, cell sites in or near residential areas are of particular concern. Concerns expressed usually relate to health, property values and visual impact (Szmigielski and Sobiczewska, 2000 and Barnes, 1999).

In general, uncertainties in the assessment of health risks from base stations is presented and distributed by organised groups of residents who protest against settlement of base stations. These reports appear to be exaggerated with a frequent tendency for including incredible extrapolation of results from microwave exposure systems which do not resemble either the intensities or the frequencies applied in the cell phone systems being tested. When the media publishes these stories it serves only to amplify the negative bias in these results and raises public concern. According to Covello (1998), this leads to incorrect assessment of risks and threats by the public with a tendency to overestimate risks from base stations and neglect risks from the use of cell phones.

[3] This has now been amended and replaced with a much simply consent process.

2.3 Assessment of Environmental Effects

2.3.1 Introduction: The Resource Management Act 1991

Under the Resource Management Act 1991 (RMA) an assessment of environmental effects is required every time an application for resource consent is made. Information that must be provided includes the following:

> "An assessment of any actual or potential effects that the activity may have on the environment, and the ways in which any adverse effects may be mitigated". (Section 88(4)(b), RMA).

An assessment of the environmental effects (AEE) of cell sites would take into consideration such things as:

- Health and Safety effects
- Visual effects
- Effects on the neighbourhood
- Interference with radio and television reception

2.3.2 Radio Frequency and Microwave Emissions from CPBSs

According to the Ministry for the Environment (2000), the factors that affect exposure to radiation are as follows.

- Distance: Increasing the distance from the emitting source, decreases the radiation's strength and decreases the exposure.
- Transmitter power: The stronger the transmitter, the higher the exposure.
- Directionality of the antenna: Increasing the amount of antennas pointing in a particular direction increases the transmitting power and increases the exposure.
- Height of the antenna above the ground: Increasing the height of an antenna increases the distance from the antenna and decreases the exposure.
- Local terrain: Increasing the intervening ridgelines decreases the exposure.

The amount of radiofrequency power absorbed in the body, the dose, is measured in watts per kilogram, known as Specific Absorption Rate (SAR). The SAR depends on the power density in watts per square metre. The radio frequencies (RF) from cellular phone systems travel in a "line of sight". The antennas are designed to radiate energy horizontally so that only small amounts of RF are directed down to the ground. The greatest exposures are in front of the antenna so that near the base of these towers, exposure is at minimum. Further, power density from the transmitter decreases rapidly as one moves away from the antenna. However, it should be noted that by initially walking away from the base, the exposure rises and then decreases again. The initial increase in exposure corresponds to the point where the lobe from the antenna beam intersects the ground. For instance, on the ground within 7-10 meters from the cell site, power densities are about 0.2 W/m^2 while within 100 metres, power densities will be around 0.0003-0.005W/m^2 (Ministry for the Environment, 2000 and Szmigielski and Sobiczewska, 2000).

2.3.3 Adverse Health Effects

According to Barnes (1999) and Szmigielski and Sobiczewska (2000) the analog phone system (using 800-900 Megahertz band) and digital phone system (using 1850-1990 Megahertz band) expose humans to electromagnetic field (EMF) emissions: radio frequency radiation (RF) and microwave radiation (MW), respectively. These two radiations are emitted from both the cellular phones and CPBSs.

For years the cell phone companies have assured the public that cell phones are perfectly safe. They state that the particular set of radiation parameters associated with cell phones are the same

as any other radio signal. However, reported scientific evidence challenges this view and shows that cell phone radiation causes various effects, including:[4]
- Alters brain activity
- Disturbs sleep
- Alters human reaction times: responses and speed of switching attention significantly worse
- Weakness the blood brain barrier
- Increased auditory brainstem response and hearing deficiency in 2 KHZ to 10 KHZ range
-Causes significant changes in local temperature, and in physiologic parameters of the cardiovascular system
- Causes memory loss, connection difficulties, fatigue, and headaches
- Increases blood pressure
- Reduces melatonin, etc..

According to Cherry (2000), there is strong evidence to conclude that cell sites are risk factors for:
- Cancer, specifically brain tumours and leukaemia
- Heart attack and heart disease, particularly arrhythmia
- Neurological effects including sleep disturbance, learning difficulties, depression and suicide
- Reproductive effects, especially miscarriage and congenital malformation
- Viral and infectious diseases because of reduced immune system competency associated with reduced melatonin and altered calcium ion homeostasis.

The main health concerns relating to EMF emissions from CPBSs are caused by the fact that radio frequency fields penetrate exposed tissues. Radio frequency energy is absorbed in the body and produces heat. All established health effects of radio frequency exposure are clearly related to heating. Public concern regarding both cell phones and CPBSs in many countries has led to a number of independent expert groups being requested by governments and cellular service providers to carry out detailed reviews of the research literature.

Research on the health effects of exposures to RF are reviewed by, for instance, The New Zealand Radiation Laboratory (2001), the World Health Organization (1993), International Commission on Non-Ionizing Radiation Protection (ICNIRP) (1997,1998), the Royal Society of Canada (1999) and the UK Independent Expert Group on Mobile Phones (2000). The reviews conclude that there are no clearly established health effects under low levels of exposure. Such exposures typically occur in publicly accessible areas around RF transmitters.

Various epidemiological studies[5] have been undertaken on the health effects of exposure to RF/MW radiation. However, most of these studies are conducted with occupational groups exposed to the radiation at work rather than with the general population in the home environment. The results of such studies provide insufficient evidence of the linkage between exposure and cancers in the general population due to the different intensities and duration of MW exposure in workers compared to those in the general public. The MW exposure in the home environment is typically continuous but not exceeding $0.1W/m^2$ while in the working environment, the duration is

[4] Mann & Roschkle (1996), Krause et al. (2000), Borbely et al. (1999), Kellenyi et al. (1999), Khdnisskil, Moshkarev & Fomenko (1999), Hocking (1998), Burch et al. (1998) and others as resported in Cherry, N. (2000).
[5] Epidemiological studies study the relationship between exposure to EMFs and health in a population through observation. It is employed to provide evidence of EMF's association with any diseases, statistically. However, these studies cannot control for the degree of exposure. In the real world there are multiple exposures (such as radiation from television and radio).

limited to 1-2 hours period but intensities range between 2-10W/m^2 (Szmigielski and Sobiczewska, 2000).

According to Barnes (1999), the Institute of Electrical and Electronics Engineers (IEEE) and the American Food and Drug Administration (FDA) found no health hazard associated to cell phone use. Laboratory studies revealed no related cancer symptoms in people exposed to levels at or below current standards (refer to the discussion on standards, below, in section 2.3.4). Furthermore, Szmigielski and Sobiczewska (2000) add that MW radiation from cell phone systems contribute only 10 percent of the total MW energy emitted from other sources such as TV and radio signals. They conclude similarly to Barnes (1999) that there is currently no valid scientific data providing evidence of bio-effects from weak MW emission. However, there are questions over the delayed effects of exposure.

The Royal Society of Canada (1999) reports that biological effects, such as cell proliferation, are found at low levels of exposure and depend on other exposure conditions, stated earlier, but are not known to cause any adverse health effects. Nonetheless, at high exposures, heating is produced and can eventually damage tissues. Szmigielski and Sobiczewska (2000) state that at intense exposure the "thermal effect" from MW energy absorption inside tissues is associated with DNA damage. Further, they add that other non-specific health symptoms (NSHS) such as headaches, fatigue and small changes in blood pressure are also found.

While, at present, medical and epidemiological studies reveal weak association between bio-effects and low-level exposures of RF/MW fields, controversy remains between scientists, producers and the general public. Information from scientific or technological experts must be provided to the public to help allay fears about cell phone systems and help them to make rational investment decisions when considering the purchase of a property located in proximity to a CPBS. However, risk communication ("the exchange of information about the nature, magnitude, significance, acceptability and management of risk", Covello 1998) has always posed a challenge to the policy makers (usually politicians) responsible for communicating risk data to the general pubic. Risk communication usually involves the provision of information about the probability of exposure to the risk and about the nature and extent of the consequences. Yet, events of a probabilistic nature relating to an uncertain science are not well understood by the general public. This, together with negative media attention, results in the perception of uncertainty over the health effects from cell phone systems.

2.3.4 Radio Frequency Exposure Standards

2.3.4.1 International Standards

Despite ongoing controversy, the reviews of research on the health effects of exposures to RF helped establish the basis for exposure standards that will limit exposures to a level for safe and healthy living and working conditions. Most standards set by, for example, the International Commission on Non-Ionising Radiation Protection (ICNIRP), the American National Standards Institute (ANSI) and New Zealand are based on the most adverse effects. These standards have been developed to give people an assurance that what cellular service providers are doing complies with safety guidelines.

The 1998 ICNIRP guidelines have been accepted by the world's scientific and health communities as these are not only consistent with other stated standards but are also published by ICNIRP, a highly respected and independent scientific organisation. ICNIRP is responsible for providing guidance and advice on the health hazards of non-ionising radiation for the World Health

Organization (WHO) and the International Labour Office (Ministry for the Environment and Ministry of Health, 2000).

2.3.4.1 The New Zealand Standard

When a mobile phone site is being planned, radio frequency engineers calculate the level of electromagnetic energy (EME) that will be emitted by the site. The level of EME is predicted by taking into account power output, cable loss, antenna gain, path loss, height and distance from the antenna, etc. These calculations result in figures that allow engineers to calculate maximum possible emissions in a worst-case scenario – as if the site was operated at maximum power all the time. The aim is to produce EME levels that are below international and New Zealand standards in areas where the general public have unrestricted access.

It is a requirement that all mobile phone sites in New Zealand comply, in all respects, with the New Zealand Standard for radio frequency exposures, NZS 2772.1:1999 Radiofrequency Fields Part I: Maximum Exposure Levels – 3kHz to 300GHz. This standard, which was adopted in April 1999, was based largely on the 1998 ICNIRP recommendations for maximum human exposure levels to radio frequency. The standard also includes a requirement for:

> "Minimising, as appropriate, Radio Frequency exposure which is unnecessary or incidental to achievement of service objectives or process requirements, provided that this can be achieved at modest expense." (National Radiation Laboratory, 2001, p.7).

Currently this standard sets out a limit of continuous exposure to the public for radio frequency levels from mobile phone sites of 450 microwatts per square centimetre. This standard is the same as used in most European countries, and is more stringent than that used in the United States, Canada and Japan. This exposure level has been lowered even further in some cases. For example, the Christchurch City Council has made their allowable standard 200 microwatts per square centimetre (which is less than 50% of the New Zealand Standard). In reality however, mobile phone sites only operate at a fraction of the level set by the standard. The National Radiation Laboratory has measured exposures around many operating cell sites. Maximum exposures in publicly accessible areas around the great majority of sites are less than 1% of the public exposure limit in the standard. Exposures are rarely more than a few percent of the limit, and none have been above 10%.

2.3.5 Effects on Property Values in New Zealand

In New Zealand, based on two court cases: McIntyre and others vs. Christchurch City Council [1996] NZRMA 289 and Shirley Primary School vs. Telecom Mobile Communications Ltd [1999] NZRMA 66, there are two main alleged adverse effects of cell-phone base station on property values:

- The risk of adverse health effects from radio frequency radiation emitted from cell-phone base stations
- The adverse visual effects

Very few cell site cases have actually proceeded to Environment Court hearings. In McIntyre and others vs. Christchurch City Council, Bell South applied for resource consent to erect a cell phone base station in Fendalton, Christchurch. The activity was a non-complying activity under the Transitional District Plan. Residents' objected to the application. Their objections were related to the harmful health effects from radio frequency radiation. In particular, they argued it would be an error of law to decide on the present state of scientific knowledge that there were no harmful health effects from low-level radio frequency exposure levels. It was also argued that the Resource

Management Act (1991) contains a precautionary policy and that section 104 requires a consent authority to have regard to potential effects of low probability but high impact in considering an application.

The Planning Tribunal considered residents' objections and heard experts' opinions as to the potential health effects, and granted the consent, subject to conditions. It was found that there would be no adverse health effects from low levels of radiation from the proposed transmitter, not even effects of low probability but high potential impact.

In Shirley Primary School vs. Telecom Mobil Communication Limited, Telecom applied to the Christchurch City Council for resource consent to establish, operate and maintain a CPBS on land at Shirley Road, Christchurch, adjacent to the Shirley Primary School. This activity was also non-complying under the Transitional District Plan. Again, the Council granted the consent subject to conditions. However, the school appealed the decision, alleging four main adverse effects, as follows:

- The risk of adverse health effects from the radio frequency radiation emitted from the cell site
- The school's perception of the risks and related psychological adverse effects on pupils and teachers
- Adverse visual effects
- Reduced financial viability of the school if pupils were withdrawn because of the perceived adverse health effects

The Court concluded that the risk of the school children or teachers at the school incurring leukaemia of other cancer from radio frequency radiation emitted by the cell site is extremely low, and the risk to the pupils of exposure to radio frequency radiation causing sleep disorders or learning disabilities is higher but still very small. Accordingly, the Telecom proposal was allowed to proceed.

In summary, the Environmental Court has ruled that there are no established adverse health effects arising from the emission of radio waves from CPBSs as there is no epidemiological evidence to show this. The court was persuaded by the ICNIRP guidelines that risk of health effects from low-level exposure is very low and that the cell phone frequency imposed by the NZ standard is safe, being almost two and a half times lower than that of the ICNIRP's.

However, in the court's decisions they did concede that while there is no proven health affects that there is evidence of property values being affected by both of the above allegations. However, the court suggests that such a reduction in property values should not be counted as a separate adverse effect from, for example, adverse visual or amenities effects. That is, a reduction in property values is not an environmental effect in itself; it is merely evidence, in monetary terms, of the other adverse effects noted.

In Chen vs. Christchurch City Council the court stated that valuation is simply another expert opinion of the adverse effect (loss). Further, in this case the court established a precedent relating to the effects on property values. In Goldfinch vs. Auckland City Council (NZRMA 97) the Planning Tribunal considered evidence on potential losses in value of the properties of objectors to a proposal for the siting of a CPBS. The Court concluded that the valuer's monetary assessments support and reflect that the adverse effects of the CPBS. Further, it concluded that the effects are more than just minor as the CPBS stood upon the immediately neighbouring property.

2.3.6 Research on Property Value Effects

While experimental and epidemiological studies focus on the adverse health effects of radiation from the use of cell phones and CPBSs few studies have been conducted to ascertain the adverse health and visual effects of CPBSs on property values. Further, as there has been very few cell site cases proceeding to the Environment Court little evidence of property value effects has been provided by the courts. Thus, the extent to which opposition from property owners affected by the siting of CPBSs are reflected in lower property values is not well known in New Zealand. Two studies have been commissioned by Telecom in Auckland (1998/99) and Christchurch (2001) but these have not been made publicly known. Further, although the researchers communicated with the authors that results showed that property prices are not statistically significantly affected by the presence of CPBSs, their research involved only limited sales data analysis. Further, no surveys of residents' perceptions were undertaken, nor of the media attention to the sites and the affect this may have on saleability of properties in close proximity to CPBSs. This initial study aims to help fill the research void in this area.

3.0 DATA COLLECTION AND ANALYSIS

3.1 Research Objectives and Methodology

An opinion survey was conducted to investigate the current perceptions of residents towards living near cell-phone base stations and how this proximity might affect property values. Residents were asked questions, about: how they rate the suburb they live relative to other similar suburbs; when the CPBS was constructed and the proximity of it in relation to their home; the importance they place on the CPBS as a factor in relocation decisions and on the price/rent they were prepared to pay for their house; the degree of concern of the effects of health/stigma/aesthetic/property values, etc.

Two case study areas in the city of Auckland, New Zealand were selected for this pilot study: the residential suburbs of Clover Park, Manakau in south-Auckland and St Johns in east-Auckland. Each case study included residents in two areas: the case study area (within 300 metres of a cell phone tower) and a control area (over 1km from the cell phone tower). Both areas within each case study had the same living environment (in socio-economic terms) except that the former is an area with a CPBS while the latter is without a CPBS.

Sixty questionnaires[6] were randomly distributed to each of the areas (case study and control) in each neighbourhood (i.e. 240 surveys were delivered in total). As time and cost in conducting the survey were both limited delivery of the surveys was by hand to the property owner's letterbox. Respondents were instructed to complete the survey and return it to the letterbox. These were collected by hand two days after delivery.

The surveys were coded and the property address of each, once delivered, was recorded. This enabled each respondent's property to be located on a map and to show this in relation to the cell site. With a sample size of just 60 for each area within each neighbourhood the results are not fully representative of how the entire population perceive cell sites. However, the results do provide a gauge of the perceptions that people have about living near a cell site, or moving to an area near one, and how this might impact on values of properties in proximity to a CPBS.

The analysis of responses included the calculation of means and percentage of responses to each question to allow for an overview of the response patterns in each area. Comparison of the results between the case study area and the control area reveal any significant differences.

[6] Approved by the University of Auckland Human Subjects Ethics Committee (reference 2002/185).

3.2 Case Study Areas

3.2.1 St Johns

The east-Auckland suburb of St Johns was selected (see Appendix A for a location map) as there are two CPBSs within close proximity of each other on St Johns Road near its intersection with St Heliers Bay Road. It is a medium to upper priced residential housing suburb[7] in a generally sought after neighbourhood due to its close proximity to beaches, schools, shopping, recreational facilities and the Auckland CBD.

3.2.2. Manakau

The south-Auckland neighbourhood of Clover Park, Manukau City was selected (see Appendix A for a location map) as it is also proximate to a CPBS but it provides a different (lower) socio-economic sample to the first study area. The address of the CPBS site is 726 Great South Road, Manukau City and is located on a BP petroleum station property. It is situated among trees between Valentine Restaurant and Rainbows End Theme Park, at the corner of Great South Road and Redoubt Road, Manukau City.

The questionnaires were distributed to properties in Sikkim Crescent, the residential area that runs off Great South Road. The area is an older, lower-priced residential suburb area characterised by houses in a poor state of repair.[8] It has good access to the Auckland-Hamilton Motorway and is within close proximity to a primary school and recreational facilities such as the Cycling Velodrome, Manukau Sports Bowl and the Greyhound Race Track. However, there are no shops nearby apart from the basic supplies available from the BP petroleum station. Some properties are also near a high voltage power pylon.

3.3 Control Areas

3.3.1 St Johns

The control area for St Johns is located further away (over 1 kilometre) from the CPBS in the case study area and is in the same suburb. The area contains a living environment and housing stock very similar to the case study area, as stated above, the only exception is that there is no cell site.

3.3.2 Manakau

The control area for Manakau is in the neighbourhood of Manukau Heights, Manukau City. It is located further away (over 1.5 kilometre) from Clover Park. The area contains a living environment and housing stock very similar to Clover Park, as stated above, the only exception is that there is no cell site. The questionnaires were distributed to properties in the streets of Sidey Avenue, Dillion and Darrell Crescents. Manakau Heights has good access to the Auckland-Hamilton Motorway and is within close proximity to a primary school and recreational facilities (Totara Park and Murphys Bush Scenic Reserve).

4. Research Results

Appendix B provides a summary of the main findings from the survey. These are outlined and discussed in more detail below.

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[7] The median house price for Auckland city in October 2002 was $335,000 and for St Johns it was $375,000. St Johns borders the high-priced Eastern Suburbs where the median house price was $515,000.

[8] The median house price for Auckland city in October 2002 was $335,000 and for Manakau it was $278,000.

4.1 Survey 1: Cell Site: St Johns

Of the 60 questionnaires mailed to homeowners and tenants in the study area, 53% were completed and returned. Over half (56%) of the respondents were homeowners.

4.1.1 Desirability of the suburb as a place to live

One-third (34%) of respondents have lived in St Johns for between 1- 4 years, and 40% for more than five years. Two-thirds (66%) rated St Johns as either desirable or very desirable as a place to live when compared with other similar suburbs. The reasons given for this include that the suburb is within walking distance to shops and is clean and relatively graffiti-free. The reasons 17% responded that St Johns is less desirable compared with other suburbs is that it is not as close to the waterfront/beaches as the adjoining suburbs of Kohimarama and St Heliers.

4.1.2 Feelings towards the CPBS as an element of the neighbourhood

The CPBS was already constructed when 81% of the respondents bought their house or began renting. Of these respondents, 21 (80%) said the proximity of the tower was of no concern to them. For the 20% of respondents' that said the proximity of the tower was of concern to them the most common reasons given for this were: health reasons, as proclaimed by the media, and that it obstructed their views somewhat. Of the 19% that said the CPBS was not constructed when they bought the house or began renting all said they would have gone ahead with the purchase anyway if they had known that the CPBS was to be constructed.

4.1.3 Affect on Decision to Purchase or Rent

The tower was visible from the house of 60% (19) of the respondents, yet the majority (13) said it was barely noticeable. Over two-thirds (71%) of the respondents said the location of the cell site nearby did not affect the price they were prepared to pay for the property. Ten percent said they were prepared to pay a little less (between 0-9% less) and the remaining 19% bought their property before the cell site was constructed.

4.1.4 Concerns About the Proximity to the CPBS

Generally, residents were not particularly worried about the effects that proximity to a CPBS has on health, stigma, property value or aesthetics. Of the concerns about towers that respondents were asked to comment on, the negative effects on aesthetics and future health were what respondents were most worried about, but only to a limited degree. Over two-thirds were not worried about the possibility of harmful health effects in the future (28% were somewhat worried) and 72% were not worried about "stigma" associated with houses near CPBSs (18% were somewhat worried and 10% were very worried). The majority of respondents (90%) were not worried about the affect that proximity to a CPBS will have on property values in the future (10% were somewhat worried) and just over half (53%) were not worried about the aesthetic problems caused by CPBSs (47% were somewhat worried).

4.2 Survey 2: Control Group: St Johns

Of the 60 questionnaires mailed to homeowners and tenants in the study area, 57% were completed and returned. Nearly two-thirds (65%) of the respondents were homeowners.

4.2.1 Desirability of the suburb as a place to live

Nearly a third (29%) of respondents have lived in St Johns for between 1- 4 years, and over half (53%) for more than five years. Over three-quarters (76%) of the respondents rated St Johns as either desirable or very desirable as a place to live when compared with other similar suburbs. The reasons given for this include that the suburb has cheaper house prices but is still central to

services and the beaches, it has good views, the houses are of a good quality and the area is well serviced by public transport. The reasons 6% responded that St Johns is less desirable compared with other suburbs include its proximity to lower socio-economic areas and the high number of sub-standard rental properties in the area.

4.2.2 Feelings towards a CPBS as an element of the neighbourhood

Two-thirds (65%) of the respondents would be opposed to the construction of a cell phone tower nearby. The location of a CPBS would be taken into account by 82% of respondents if they were to consider moving.

4.2.3 Affect on Decision to Purchase or Rent

If a CPBS were located nearby over half (53%) of the respondents would be prepared to pay substantially less for their property, and nearly one-third (29%) would be prepared to pay just a little less for their property.

4.2.4 Concerns About the Proximity to a CPBS

Of the concerns about towers that respondents were asked to comment on, the negative effects on aesthetics and future health were what respondents were most worried about. More than half (59%) of the respondents were worried somewhat and over one-third (35%) were very worried about the possibility of harmful health effects in the future and the aesthetic problems caused by CPBSs. Similar responses were recorded for the "stigma" associated with houses near CPBSs (59% were somewhat worried and 23% were very worried) and the affect that proximity to a CPBS will have on property values in the future (53% were somewhat worried and 35% were very worried).

Other comments provided by respondents at the end of the survey, include:

- "In no way would I choose to live near such a cell phone site at all".
- "A decisive statement on the health, aesthetic and property value issues by the authorities concerned is long overdue – there seems to have been a great deal of procrastination to date".
- "This survey appears to be biased as you haven't asked, for example, how important coverage is, and if this meant putting in a cell phone site what would this mean for you. Also, a lot of people are complaining about roads being dug up to lay phone cables – at least cell sites are not disruptive to the same extent when being installed".

4.3 Discussion of the Results: St Johns

From the above responses it appears that people who live near cell sites seem to be far less concerned about the possible associated health risks and aesthetic issues of the sites than those people who live further away from the sites. An explanation for the difference between the case study and control groups' responses is that the case study group are those people that have already purchased or rent in an area where a CPBS is constructed and may not represent the entire population of potential land purchasers/renters. Such residents are, by the very fact that they have purchased/rented in an area where a CPBS is located, less sensitive to this than might be the case for the market as a whole. Such people who live near something that is perceived but not proven to be a risk tend may pass the threat off and take the view that there is no evidence of it being a problem so why worry about it.

Alternatively, the case study residents' apparent lower sensitivity to the CPBS than the control group residents may be due to the possible affect of cognitive dissonance reduction. In this case,

they are not necessarily less sensitive to the CPBS but are unwilling to admit, due to the large amounts of money already paid, that they may have made a poor purchasing/renting decision to buy a property located in close proximity to a CPBS.

4.4 Survey 1: Cell Site: Manakau Results

After the distribution of the questionnaires, the collection of survey responses resulted in only 3 responses (5%) from each area. With such a lower than expected response rate, the results are unlikely to be representative of the total population and the impact that CPBSs have on property values could not be conclusively determined. However, some interesting perceptions were revealed and are described generally below.

4.4.1 Desirability of the suburb as a place to live

Two-thirds (67%) of the respondents were homeowners and have been residing in the area for over 5 years. Half of the respondents rated Clover Park as desirable and the other 50% rated it as less desirable as a place to live compared to other similar suburbs (for example, East Tamaki and Manakau Heights).

4.4.2 Feelings towards the CPBS as an element of the neighbourhood

Two-thirds of the respondents did not know about the existence of the CPBS when they brought or began renting their house. The remaining third said it was not constructed. Consequently, the proximity of the CPBS was not of concern to them. If they had known at the time of purchase or rental that the CPBS was to be constructed half said they would not have gone ahead with the purchase/rental whereas the other half said they would have.

4.4.3 Affect on Decision to Purchase or Rent

None of the respondents could se the CPBS from their house. Consequently, it did not affect the price or rent they were prepared to pay for the property.

4.4.4 Concerns About the Proximity to a CPBS

Of the concerns about CPBSs that respondents were asked to comment on two-thirds (66%) were somewhat worried about the possibility of harmful health effects in the future, the stigma associated with houses near CPBSs and the affect on property values. The remaining one-third was not worried about these things. All respondents were somewhat concerned about the aesthetic problems caused by the towers.

4.5 Survey 2: Control Group: Manakau

Two-thirds of the control group respondents were tenants living in the area between 6 months and 4 years. They rated their suburb as either desirable or very desirable as a place to live compared to other similar suburbs due to the easy access to amenities.

4.5.1 Feelings towards a CPBS as an element of the neighbourhood

Two-thirds of respondents would be opposed to the construction of a CPBS nearby. Yet, at odds to this response, only a third said it would be a factor to consider when relocating.

4.5.2 Affect on Decision to Purchase or Rent

One-third of the respondents said they would be prepared to pay 0-9% less for a property nearby a CPBS, one-third were prepared to pay 10-19% less and the remaining one-third would pay 20%or more, less for such a property.

4.5.3 Concerns About the Proximity to a CPBS

All of the respondents were greatly concerned about the harmful health effects from proximity to a CPBS while two-thirds were worried a lot about stigma, loss in property values in the future and aesthetic problems associated with houses near CPBSs. The remaining one-third or respondents were only somewhat worried about these factors.

4.6 Discussion of the Results: Manakau

From the responses above, it appears that the effects of CPBSs tend to be ignored in Manakau if the residents are unaware of them in their neighbourhood, as would be expected. Yet, there are strong concerns about the effects of CPBSs from residents in the control area. Nonetheless, these survey results are inconclusive due to the limited response rate.

5. Limitations of the Research

There are a number of limitations affecting this survey in addition to the limited response rate for Manakau. There was a time constraint in locating an appropriate CPBS that was visible to the residents in the Manakau case study area. The selected site is situated amongst trees and not highly visible. Many of the residents were not aware of its existence that likely affected both he responses and response rate. Further, giving respondents only two days to complete the survey may have been insufficient. Fortunately, this time constraint did not adversely affect the St Johns area response rate.

Finally, it must be kept in mind that these results are the product of only two case studies carried out in a specific area (Auckland) at a specific time (2002). The value-effects from CPBSs may vary over time as market participant's perceptions change due to increased public awareness regarding the potential adverse health and other effects of living near a CPBS. Perceptions toward CPBSs can change either positively or negatively over time. For example, as the World Health Organisation's ten-year study of the health effects from CPBSs is completed and becomes available consumers' attitudes may either increase or decrease depending on the outcome of those studies. To confirm this, many similar studies, of similar design to allow comparison between them, need to be conducted over time and the results made public.

As a result of these limitations caution must be used in making generalisations from the study or applying the results directly to other similar studies or valuation assignments.

6. Areas for Further Study

This research has focused on residents' perceptions of negative affects from proximity to CPBSs rather than the scientific or technological estimates of these risks. The technologists' objective view of risk is that risk is measurable solely in terms of probabilities and severity of consequences, whereas the public, while taking experts' assessments into account, view risk more subjectively, based on other factors. Further, the results of scientific studies about the health effects of radio frequency and microwave radiation from CPBSs are not always consistent. Residents' perceptions and assessments of risk vary according to a wide range of processes including psychological, social, institutional, and cultural and a reason why their assessments may be at odds with those of the experts.

Given the public concerns about the potential risk arising from being located nearby a CPBS it is important for future studies to focus more attention on this issue. More information is needed on the kinds of health and other risks the public associates with CPBSs, and the level of risk

perceived. How far away from the CPBS do people feel they have to be to be safe? What are the social, economic, educational and other demographic variables that influence how people perceive the risks from CPBSs? Are these perceived risks reflected in property values and to what extent? Do these perceived risks vary over time, and to what degree?

Answers to these questions, if shared amongst researchers and made public, could lead to the development of a global database. Such a database could assist valuers in determining the perceived level of risk associated with CPBSs from geographically and socio-economically diverse areas to aid in the valuation of property affected by these, anywhere in the world. Similarly, knowledge of the extent these risks are incorporated into property prices and how they vary over time will lead to more accurate value assessments of properties in close proximity to a CPBS.

7. Summary and Conclusions

This research report presents the results of an opinion survey undertaken in 2002 to residents' perceptions towards living near CPBSs and how this impacts on property values. From the results it appears that people whom live close to a CPBS perceive the sites less negatively than those whom live further away.

As research to date (ICNIRP, 1998) reports that there are no clearly established health effects from RF emissions of CPBSs operated at, or below, the current safety standards the only reason a rational investor might continue to avoid property near a cell site would be because it was intrusive on the views received from the property or because of the adverse aesthetic effects of the CPBS on the property. Yet, recent media reports (for example, Fox, 2002) indicate that people still perceive that CPBSs have harmful health effects.

Thus, whether or not CPBSs are ever proven conclusively to be free from health risks is only relevant to the extent that buyers of property near a CPBS perceive this to be true. Consequently, values of residential property located in close proximity to CPBSs may be adversely affected by the negative perceptions of buyers, regardless of research evidence to the contrary.

Further research is needed to provide more statistically valid conclusions than this pilot study provide about the public perceptions towards the health and visual effects of CPBSs and how this influences property values. To this end a larger study is to be conducted in 2003 that will include, in addition to a survey of affected residents living in close proximity to a CPBS, econometric analysis of the sales transaction data.

The results from such studies can provide useful information to related government agencies in assessing the need for increasing the public's understanding of CPBSs of how radio frequency transmitting facilities operate and of the strict exposure standard limits imposed on the telecommunication industry. A lack of understanding of these issues creates public concern about the location of CPBSs. As more information is discovered that refutes any adverse health effects from CPBSs and as this, together with information about the NZ Standards for high safety margins regarding the emission of RF and MW radiation, are made more publicly available, the perceptions of risk may gradually change. The visual effects can still pose a concern to residents, however, but this may vary according to the size, height and design of the CPBSs as well as the landscape surrounding them.

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Appendix A- Survey Location Map

Appendix B - Survey Results

Case Study Area:

Questions	St Johns Response (*%, n = 32)	Manakau Response (*%, n = 3)
1.Which one of the following categories best describes you?	- Homeowner (56%) - Tenant (44%)	- Homeowner (67%) - Tenant (33%)
2.How long have you lived at this address?	- Less than 6 months (12%) - 6 months ~ 1 year (12%) - 1 ~ 4 years (34%) - More than 5 years (40%)	- Less than 6 months (0%) - 6 months ~ 1 year (0%) - 1 ~ 4 years (33%) - More than 5 years (67%)
3. Comparing your suburb to other similar suburbs, how do you consider your suburb:	- Very desirable (22%) - Desirable (44%) - Less desirable (19%) - About average (15%)	- Very desirable (0%) - Desirable (50%) - Less desirable (50%) - About average (0%)
4. When you purchased this house / began renting, was the cell phone tower already constructed?	- Yes (81%) - No (19%)	- Yes (0%) - No (33%) - I don't know (67%)
5. Was the proximity of the cell phone site of concern to you?	- Yes (80%) - No (20%)	- Yes (0%) - No (100%)
6. If you had known at the time of purchase or rental that a CPBS was to be constructed, would you still have purchased or rented?	- Yes (100%) - No (0%)	- Yes (50%) - No (50%)
7. Is the cell phone tower visible from your house?	- Yes (60%) - No (40%)	- Yes (0%) - No (100%)
8. How did the cell phone site affect the price or rent you were prepared to pay for this property?	-Substantially more (0%) -A little more (0%) -No Influence (71%) -A little less (10%) -Substantially less (0%) Tower not constructed (19%)	-Substantially more (0%) -A little more (0%) -No Influence (100%) -A little less (0%) -Substantially less (0%)
9. Concerns associated with properties near a CPBS: (a) The possibility of harmful health effects in the future. (b) The stigma associated with houses near cell phone sites. (c) The affect on your properties value in the future (d) The aesthetic problems caused by the tower	 - Not worried (69%) - Somewhat worried (28%) - This worries you a lot (3%) - Not worried (72%) - Somewhat worried (18%) - This worries you a lot (10%) - Not worried (90%) - Somewhat worried (10%) - This worries you a lot (0%) - Not worried (53%) - Somewhat worried (47%) - This worries you a lot (0%)	 - Not worried (33%) - Somewhat worried (67%) - This worries you a lot (0%) - Not worried (33%) - Somewhat worried (67%) - This worries you a lot (0%) - Not worried (33%) - Somewhat worried (67%) - This worries you a lot (0%) - Not worried (0%) - Somewhat worried (100%) - This worries you a lot (0%)

* Valid Percentage: This indicates the percent of those respondents that answered that specific question (it does not include non-responses).

Appendix B continued - Survey Results

Control Area

Questions	St Johns Response (*%, n = 34)	Manakau Response (*%, n = 3)
1.Which one of the following categories best describes you?	- Homeowner (65%) - Tenant (35%)	- Homeowner (33%) - Tenant (67%)
2.How long have you lived at this address?	- Less than 6 months (12%) - 6 months ~ 1 year (6%) - 1 ~ 4 years (29%) - More than 5 years (53%)	Less than 6 months (0%) - 6 months ~ 1 year (33%) - 1 ~ 4 years (33%) - More than 5 years (33%)
3. Comparing your suburb to other similar suburbs, how do you consider your suburb:	- Very desirable (35%) - Desirable (41%) - Less desirable (6%) - About average (18%)	- Very desirable (33%) - Desirable (33%) - Less desirable (0%) - About average (33%)
4. Would you be opposed to the construction of a cell phone site nearby?	- Yes (65%) - No (35%)	- Yes (67%) - No (33%)
5. If you were to consider moving houses, would the location of a CPBS be a factor?	- Yes (82%) - No (18%)	- Yes (33%) - No (67%)
6. How would a cell phone site nearby affect the price or rent you would be prepared to pay for this property? Please specify as a % of total property price	-Pay substantially more (0%) -Pay a little more (0%) -No Different (18%) -Pay a little less (29%) -Pay substantially less (53%) - +20% or more (0%) - +10% to +20% (0%) - 1% to +9% (0%) - -9% to 0% (47%) - -19% to -10% (0%) - -20% or less (53%)	-Pay substantially more (0%) -Pay a little more (0%) -No Different (33%) -Pay a little less (0%) -Pay substantially less (67%) - +20% or more (0%) - +10% to +20% (0%) - 1% to +9% (0%) - -9% to 0% (33%) - -19% to -10% (33%) - -20% or less (33%)
7. Concerns associated with properties near CPBSs: (a) The possibility of harmful health effects in the future. (b) The stigma associated with houses near cell phone sites. (c) The affect on your properties value in the future (d) The aesthetic problems caused by the tower	- Not worried (6%) - Somewhat worried (59%) - This worries you a lot (35%) - Not worried (18%) - Somewhat worried (59%) - This worries you a lot (23%) - Not worried (12%) - Somewhat worried (53%) - This worries you a lot (35%) - Not worried (6%) - Somewhat worried (59%) - This worries you a lot (35%)	- Not worried (0%) - Somewhat worried (0%) - This worries you a lot (100%) - Not worried (0%) - Somewhat worried (33%) - This worries you a lot (67%) - Not worried (0%) - Somewhat worried (33%) - This worries you a lot (67%) - Not worried (0%) - Somewhat worried (33%) - This worries you a lot (67%)

Burbank Action on DECREASED REAL ESTATE VALUE

https://sites.google.com/site/nocelltowerinourneighborhood/home/decreased-real-estate-value

DECREASED REAL ESTATE VALUE

A number of organizations and studies have documented the detrimental effects of cell towers on property values.

1. The Appraisal Institute, the largest global professional membership organization for appraisers with 91 chapters throughout the world, spotlighted the issue of cell towers and the fair market value of a home and educated its members that a cell tower should, in fact, cause a decrease in home value.

The definitive work on this subject was done by Dr. Sandy Bond, who concluded that "media attention to the potential health hazards of [cellular phone towers and antennas] has spread concerns among the public, resulting in increased resistance" to sites near those towers. Percentage decreases mentioned in the study range from 2 to 20% with the percentage moving toward the higher range the closer the property. These are a few of her studies:

a. "The effect of distance to cell phone towers on house prices" by Sandy Bond, Appraisal Journal, Fall 2007, see attached. Source, Appraisal Journal, found on the Entrepreneur website, http://www.prres.net/papers/Bond_Squires_Using_GIS_to_Measure.pdf

Note: I am sending that in a separate file called Bond_Squires_Using_GIS_to_Measure.pdf.

b. Sandy Bond, Ph.D., Ko-Kang Wang, “The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods,” The Appraisal Journal, Summer 2005; see attached.

Note: I am sending that in a separate file called TAJSummer05p256-277.pdf.

c. Sandy Bond also co-authored, "Cellular Phone Towers: Perceived impact on residents and property values" University of Auckland, paper presented at the Ninth Pacific-Rim Real Estate Society Conference, Brisbane, Australia, January 19-22, 2003; see attached. Source: Pacific Rim Real Estate Society website, http://www.prres.net/Papers/Bond_The_Impact_Of_Cellular_Phone_Base_Station_Towers_On_Property_Values.pdf

Note: I am sending that paper separately in a pdf file of that name.

On a local level, residents and real estate professionals have also informed city officials about the detrimental effects of cell towers on home property values.

2. Windsor Hills/View Park, CA: residents who were fighting off a T-Mobile antenna in their neighborhood received letters from real estate companies, homeowner associations and resident organizations in their community confirming that real estate values would decrease with a cell phone antenna in their neighborhood. To see copies of their letters to city officials, look at the . Report from Los Angeles County Regional Planning Commission regarding CUP Case No. 200700020-(2), from L.A. County Board of Supervisors September 16, 2009, Meeting documents, Los Angeles County website, here at: http://file.lacounty.gov/bos/supdocs/48444.pdf

Note: I have scanned the pages 296 – 306 and am sending them in a separate file called LACRPB letters on house values.pdf.

a. See page 295, August 31, 2008 Letter from Donna Bohanna, President/Realtor of Solstice International Realty and resident of Baldwin Hills to Los Angeles Board of Supervisors explaining negative effect of cell tower on property values of surrounding properties. "As a realtor, I must disclose to potential buyers where there are any cell towers nearby. I have found in my own experience that there is a very real stigma and cellular facilities near homes are perceived as undesirable."

b. See page 296, March 26, 2008 Letter from real estate professional Beverly Clark, "Those who would otherwise purchase a home, now considered desirable, can be deterred by a facility like the one proposed and this significantly reduces sales prices and does so immediately…I believe a facility such as the one proposed will diminish the buyer pool, significantly reduce homes sales prices, alter the character of the surrounding area and impair the use of the residential properties for their primary uses."

c. See Page 298, The Appraiser Squad Comment Addendum, about the reduced value of a home of resident directly behind the proposed installation after the city had approved the CUP for a wireless facility there: "The property owner has listed the property…and has had a potential buyer back out of the deal once this particular information of the satellite communication center was announced….there has been a canceled potential sale therefore it is relevant and determined that this new planning decision can have some negative effect on the subject property."

d. See Page 301, PowerPower presentation by residents about real estate values: "The California Association of Realtors maintains that 'sellers and licensees must disclose material facts that affect the value or desirability of the property,' including 'known conditions outside of and surrounding' it. This includes 'nuisances' and zoning changes that allow for commercial uses."

e. See Pages 302-305 from the Baldwin Hills Estates Homeowners Association, the United Homeowners Association, and the Windsor Hills Block Club, opposing the proposed cell tower and addressing the effects on homes there: "Many residents are prepared to sell in an already depressed market or, in the case of one new resident with little to no equity, simply walk away if these antennas are installed.

3. Santa Cruz, CA: Also attached is a story about how a preschool closed up because of a cell tower installed on its grounds; "Santa Cruz Preschool Closes Citing Cell Tower Radiation," Santa Cruz Sentinel, May 17, 2006; Source, EMFacts website: http://www.emfacts.com/weblog/?p=466.

Note: I am sending that in a separate file called Santa Cruz preschool closes citing cell tower radiation.docx

5. Burbank, CA: As for Burbank, at a City Council public hearing on December 8, 2009, hillside resident and a California licensed real estate professional Alex Safarian informed city officials that local real estate professionals he spoke with agree about the adverse effects the proposed cell tower would have on property values:

"I've done research on the subject and as well as spoken to many real estate professionals in the area, and they all agree that there's no doubt that cell towers negatively affect real estate values. Steve

Hovakimian, a resident near Brace park, and a California real estate broker, and the publisher of “Home by Design” monthly real estate magazine, stated that he has seen properties near cell towers lose up to 10% of their value due to proximity of the cell tower...So even if they try to disguise them as tacky fake metal pine trees, as a real estate professional you’re required by the California Association of Realtors: that sellers and licensees must disclose material facts that affect the value or desirability of a property including conditions that are known outside and surrounding areas."

(See City of Burbank Website, Video, Alex Safarian comments @ 6:24:28, http://burbank.granicus.com/MediaPlayer.php?view_id=6&clip_id=848)

Indeed, 27 Burbank real estate professionals in December 2009, signed a petition/statement offering their professional opinion that the proposed T-Mobile cell tower at Brace Canyon Park would negatively impact the surrounding homes, stating:

"It is our professional opinion that cell towers decrease the value of homes in the area tremendously. Peer reviewed research also concurs that cell sites do indeed cause a decrease in home value. We encourage you to respect the wishes of the residents and deny the proposed T-Mobile lease at this location. We also request that you strengthen your zoning ordinance regarding wireless facilities like the neighboring city of Glendale has done, to create preferred and non preferred zones that will protect the welfare of our residents and their properties as well as Burbank's real estate business professionals and the City of Burbank. Higher property values mean more tax revenue for the city, which helps improve our city." (Submitted to City Council, Planning Board, City Manager, City Clerk and other city officials via e-mail on June 18, 2010. To see a copy of this, scroll down to bottom of page and click "Subpages" or go here: http://sites.google.com/site/nocelltowerinourneighborhood/home/decreased-real-estate-value/burbank-real-estate-professionals-statement)

Note: I am sending that petition in a separate file called Burbank Real Estate Professionals Statement.docx

In another case, a Houston jury awarded 1.2 million to a couple because a 100-foot-tall cell tower was determined to have lessened the value of their property and caused them mental anguish: Nissimov, R., "GTE Wireless Loses Lawsuit over Cell-Phone Tower," Houston Chronicle, February 23, 1999, Section A, page 11. (Property values depreciate by about 10 percent because of the tower.)

Note: I do not have a hyperlink for that article.

Burbank Real Estate Professionals Statement

http://sites.google.com/site/nocelltowerinourneighborhood/home/decreased-real-estate-value/burbank-real-estate-professionals-statement

Burbank Real Estate Professionals Statement

Here is a copy of the professional opinion/statement signed by 27 Burbank real estate professionals on how the proposed cell tower at Brace Canyon park would affect property values, local businesses and the City; submitted to our City Council, Planning Board, City Manager, City Clerk and other city officials in our Residential Report on June 18, 2010:

Note: The above is the text on the web page. The following paragraph is mine.

As elected officials (the City Council) and staff for the City of Elk Grove this petition gives good reason to believe that the permitting of Close Proximity Microwave Radiation Antennas (CPMRAs) in Elk Grove will have the same effect; namely, it will lower house values. This is a logical conclusion. There is no reason to believe that it won't. I have recommended that the City do a survey of Elk Grove realtors to ask them this question. So far the City has not done that. Unless the City does that and the survey reveals that Elk Grove realtors think that CPMRAs will NOT lower house values it is only logical to conclude that they will.

Mark Graham

December 9, 2009

Dear Burbank City Council and Planning Board Members,
It is our professional opinion, as real estate professionals, that the proposed placement of the T-Mobile cell site at Brace Canyon park would negatively impact the surrounding homes.

In fact, it is our professional opinion that cell towers decrease the value of homes in the area tremendously. Peer reviewed research also concurs that cell sites do indeed cause a decrease in home value.

We encourage you to respect the wishes of the residents and deny the proposed T-Mobile lease at this location. We also request you strengthen your zoning ordinance regarding wireless facilities like the neighboring city of Glendale has done, to create preferred and non preferred zones that will protect the welfare of our residents and their properties as well as Burbank's real estate business professionals and the City of Burbank. Higher property values mean more tax revenue for the city, which helps improve our city.

Thank you,

Name	Company	Tel #	Signature
Steve Havakimyan	RE/MAX	818-845 5551	
NARINE HAKOBYAN	RE/MAX	(818) 845-5551	N. Hakobyan
Karolin Shirvanian		818-281-8510	
Sairis Gyurgyan		(323)492-8687	
MARY Kreyian		818-201-6171	
Greg Tomasyan	Remax	818-845-8451	
Ludwig Parsamian	Remax	818-281-5888	

December 9, 2009

Dear Burbank City Council and Planning Board Members,
It is our professional opinion, as real estate professionals, that the proposed placement of the T-Mobile cell site at Brace Canyon park would negatively impact the surrounding homes.

In fact, it is our professional opinion that cell towers decrease the value of homes in the area tremendously. Peer reviewed research also concurs that cell sites do indeed cause a decrease in home value.

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Thank you,

Name	Company	Tel #	Signature
Shantelle Hobbard		818-554-4122	Shantelle Hobbard
Edith Benton	Re/Max T.C.	(818)636-9970	Edith Benton
Maria Ramos		(818)842-2222	Maria Ramos
Nicky Mojada		3309808	Nicky Mojada
[illegible]		(818)631-7495	[illegible]
Josephine Chen	Re/Max T.C.R.	818-848-2888	Josephine Chen
Robert J Crandlemire	RE/MAX T/C	818-848-2888	[illegible]

December 9, 2009

Dear Burbank City Council and Planning Board Members,
It is our professional opinion, as real estate professionals, that the proposed placement of the T-Mobile cell site at Brace Canyon park would negatively impact the surrounding homes.

In fact, it is our professional opinion that cell towers decrease the value of homes in the area tremendously. Peer reviewed research also concurs that cell sites do indeed cause a decrease in home value.

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Thank you,

Name	Company	Tel #	Signature
MARK TIZER	RE/MAX	818-434-2017	
ROMMEL	FARIN	Remax Town Center	
Julian Munoz	Remax Town Center	(818)399-4006	
Phillip Bramwell		661 259 0288	
Susan Leatherly	RE/MAX	818 823 7443	
Nora Rodriguez		818-848-2888	
Sabina Baretta		818 848 2888	

December 9, 2009

Dear Burbank City Council and Planning Board Members,
It is our professional opinion, as real estate professionals, that the proposed placement of the T-Mobile cell site at Brace Canyon park would negatively impact the surrounding homes.

In fact, it is our professional opinion that cell towers decrease the value of homes in the area tremendously. Peer reviewed research also concurs that cell sites do indeed cause a decrease in home value.

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Thank you,

Name	Company	Tel #	Signature
Craig Hunter	RE/MAX	818-848-2202	
Dawn T Park	RE/MAX	818-843-7121	
[illegible]	RE/MAX TC	8189540585	
Betty Zaun	RE/Max	818 558-6565	
Sepan Ohanian		818/618-1240	
Petak Oktanian	Re/max Town Center Realtor		

"Impact of Communication Towers and Equipment on Nearby Property Values"

Prepared by

Burgoyne Appraisal Company

Executed March 7, 2017

Exhibit Presented as evidence in Comments of the Smart Communities Citing Coalition on the Mobilitie Petition for Declaratory Ruling on Streamlining of Small Cell Infrastructure By Improving Wireless Facilities Siting Policies.

WT Docket No. 16-421.

For the full comments of the Smart Communities Siting Coalition please see

https://ecfsapi.fcc.gov/file/1030998488645/COMMENTS_SMART%20COMMUNITIES%20SITING%20COALITION.pdf

BURGOYNE
APPRAISAL COMPANY

DAVID E. BURGOYNE ASA SR/WA
CERTIFIED GENERAL REAL ESTATE APPRAISER
MICHIGAN, INDIANA, NORTH AND SOUTH CAROLINA
AQB CERTIFIED USPAP INSTRUCTOR

MARK J. ST. DENNIS
BRIAN A. O'NEILL SR/WA RW-AC
SCOTT M. CARLSON
RICHARD J. ANTIO
GOKHAN ANDI

Burgoyne Appraisal Company has investigated the impact of communication towers and communication equipment on nearby property values, including residential properties, commercial properties, and properties in historically designated areas. Our report on such impacts is based upon our more than thirty years of professional appraisal experience and drawing upon literature search of other articles and appraisal papers.

Please note that due to the nature of the report our investigation is general in nature and is not specifically related to any given location.

IMPACT OF COMMUNICATION TOWERS AND EQUIPMENT ON NEARBY PROPERTY VALUES

I. Executive Summary

- The Burgoyne Appraisal Company ("Burgoyne"), drawing upon its thirty-two (32) years of experience as a Real Estate Appraiser specializing in detrimental conditions, takings, adverse impacts and right-of-way, finds that:

- As a general matter, assuming two generally comparable areas, aesthetics will have the most significant impact on property values. If, for example, I assume two houses of equal age, size and condition in the same residential area, the relative value of one home will be most affected by the aesthetics in the immediate vicinity of that home.

- As a general matter, visible utility structures do adversely affect property values. This is reflected in the fact that, as a general matter property values are higher in areas where there are no aboveground utility facilities (other than lighting) than in areas where utilities are aboveground.

- The impact will generally be related to the size of the facility, the characteristics of the facility, its location (including proximity), and visibility. That is to say, I would expect a tower or other structure that is larger than existing structures to have a greater impact on property values than a structure that is similarly sized and in keeping with other structures. I would expect that installation of equipment that is widely visible to have a more significant impact than equipment that is not (so, for example, a transformer at the top of a pole would have less of an impact than a box of similar size that is within a normal site line, or on the

ground). The characteristics of the facility are also important. An unorganized conglomeration of various boxes and wires would have a greater impact than a streamlined and contained single cabinet.

The literature does not tell us the impact of various iterations of DAS designs on residential properties; there is more information about towers of the sort imposed by Mobilitie. Nonetheless, based on my experience, it would be unwise to assume that the impact of additional ground cabinets, or of structures of the sort that entities would be entitled to install under the FCC's Section 6409 rules is zero or so near to zero. Just looking at the literature on property values in underground v. non-underground areas, there are reasons for concern that justify maintenance of significant latitude at the local level over siting and compensation.

While it is certainly recognized that DAS systems and Cellular antennas are an important part of our nation's infrastructure, and that it is inevitable that new antennas will need to be installed as we move into the future, it is important for municipalities (and property owners, in the case of right-of-way easements) to retain significant control over the size, location, scope, expansion, and characterization of the installations. This is because adverse impacts from negative externalities vary considerably with the size, location, scope, expansion, and characterization of the installations.

Hidden, smaller, and neatly mounted "small cells," will have an impact, but that impact will be lesser than other alternatives. Likewise, there needs to be control over future growth of installed facilities. It is my opinion that the Commission needs to analyze those impacts in detail before considering additional rules. It is also my opinion that municipalities need to retain some regulatory control over these installations in order to minimize impacts and protect the health, welfare, and safety of their residents in the same way that other regulations and the exercise of reasonable police powers do.

II. Qualifications

David E. Burgoyne, ASA, SR/WA, is a native of Ann Arbor, Michigan and attended Greenhills School in Ann Arbor. He graduated in 1981 from Colgate University in Hamilton, New York with a Bachelor of Arts Degree in Liberal Arts with a concentration in Physics-Astronomy. He also served as a graduate instructor at the University of Wyoming as a Doctoral Candidate in Astrophysics.

Mr. Burgoyne is an independent fee appraiser currently licensed as a Certified General Real Estate Appraiser by the States of Michigan, Indiana, North and South Carolina. Mr. Burgoyne is a Senior Member of the American Society of Appraisers holding the ASA Designation for Real Property. Mr. Burgoyne is currently re-accredited as an ASA through June 10, 2017. He is also a senior member holding the SR/WA designation and is a Past Chapter President of the International Right of Way Association. Mr. Burgoyne is currently re-certified as an SR/WA through June 15, 2018.

Mr. Burgoyne is an AQB certified USPAP instructor #44603 (expiring March 31, 2018) and is also a CLIMB Certified Instructor of right-of-way appraisal and other courses for IRWA, including courses on the appraisal of partial takings, easement valuation, appraisal review, ethics and standards, USPAP, adult education, and the valuation of contaminated properties. In 2015, Mr. Burgoyne was awarded the 2014 W. Howard Armstrong International Instructor of the Year Award by the International Right of Way Association.

Mr. Burgoyne has qualified as an expert witness in the United States Court of Claims, the United States District Courts for the Eastern and Western Districts of Michigan; the Michigan Circuit Courts of Allegan, Barry, Cass, Eaton, Genesee, Grand Traverse, Huron, Ingham, Jackson, Kent, Lapeer, Leelanau, Lenawee, Macomb, Montmorency, Muskegon, Oakland, Ottawa, Tuscola, Washtenaw, Wayne, and Wexford Counties; Hamilton and Marion Counties in Indiana, The Michigan Public Service Commission, and The Michigan Tax Tribunal. He has also been appointed as an independent appraiser by the U. S. District Court, Eastern District of Michigan.

FORMAL EDUCATION

Greenhills School - Ann Arbor, Michigan (1976)

Colgate University - Hamilton, New York: BA in Liberal Arts - concentrating in Physics-Astronomy (1981)

Courses included Architecture, Economics, Mathematics, Statistics and Economic Geography.

University of Wyoming - Laramie, Wyoming: Ph.D. candidate in Astrophysics. (1981-1982)

III. Introduction

Our analysis and the literature we reviewed is focused on single family residential units, and does not take into account any location-specific analysis. For example, we do not consider whether there are special impacts of an installation on particular historic properties, or commercial properties. Burgoyne understands that this report will be contained in a filing by Smart Communities Siting Coalition in response to the Federal Communications Wireless Telecommunications Bureau request for public input[1] including, but not limited to suggestions offered by Mobilitie in its Petition for Declaratory Ruling.[2]

Burgoyne provides the following analysis following a literature scan on appraiser research on communications towers impact and on Mr. Burgoyne's more than 32 years in business.

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[1] Public Notice, *Comment Sought on Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies; Mobilitie, LLC Petition for Declaratory Ruling*, WT Docket No. 16-421 (released Dec. 22, 2016)("Public Notice").

[2] *See* Mobilitie, LLC Petition for Declaratory Ruling, *Promoting Broadband for All Americans by Prohibiting Excessive Charges for Access to Public Rights of Way* (filed Nov. 15, 2016)(Mobilitie Petition).

IV. Background

The FCC Notice focuses on small cells and DAS systems. It is our understanding that the placement of these systems could involve:

- Erection of a new tower or monopole 100 to 120 feet in height in public right-of-way. This in fact appears to be proposed by applicant Mobilitie.

- Placement of new base station equipment on existing utility poles in the rights of way, which may involve an initial extension of anywhere between 3-15 feet to that pole for placement of an antenna at the top of the pole, and addition of equipment cabinets, plus additional utility infrastructure (meters and disconnect boxes). It is our understanding that the wireless industry is seeking authority in several states to place equipment cabinets as large as 28 cubic feet on the poles, which could then be expanded significantly as of right under the FCC's Section 6409 rules. In addition, there may be ground cabinets for back-up power or for equipment that might otherwise be placed on the poles of up to 50 cubic feet. Under Section 6409, the placement of these facilities could result in up to three additional ground cabinets being added in the right of way in front of a residential unit.

- Erection of new utility poles, sometimes exceeding 40 feet in height, in the public right-of-way for placement of the above referenced equipment

- Please note that public road rights-of-way are often owned in fee by the municipality but are also not uncommonly easements over private property owned in fee by a private citizen or company. This can be common in areas served by the Government Survey System (outside of the original 13 colonies as well as portions of Ohio, Kentucky and Tennessee). As a result, in these cases, neither the municipality, nor the utility, have complete authority to dictate what is permitted within the right of way.[3]

- From the point of view of sound appraisal practice, it is necessary to presume and consider full utilization of rights granted by virtue of a particular authorization. That is, one must consider the impact of a 120 foot pole if a 120 foot is allowed as of right (even if only a 100 foot pole is installed in the instant case at this time). Likewise, in assessing whether the impact of the authorization of a DAS in a residential neighborhood, one would consider the additions and expansions that would be permitted as of right under the Commission's Section 6409 rules.

---

[3] "... "[a]ctivities by the owner of the dominant estate [easement holder] that go beyond the reasonable exercise of the use granted by the easement may constitute a trespass to the owner of the servient estate." Schadewald v Brule, 225 Mich App 26, 40; 570 NW2d 788 (1997)... p.2

....we decline to infringe on the private property rights of a landowner through unsupported implication, particularly when there is a complete absence of any legislative intent in the LDA to give a public utility free reign to build on an easement as it pleases. ... AT&T provided no legal basis, facts, or documentary evidence to establish that the city or county has the legal authority to decide on the nature, size, or scope of equipment a utility may install in a utility easement or whether the city or county actually considers said questions when they issue a building permit...p.3. 289 Mich App 70 (2010)

Thus, unless a provider can agree otherwise, if a DAS cabinet is not subject to concealment elements, it appears an appurtenance up to 6 feet could be attached horizontally to the same pole, and that appurtenance would only be subject to the limits that might be imposed by the owner of the pole.

- In this case, I have attempted to consider the impacts of various "small cell" and "DAS" installations by Mobilitie and others, both in light of, and without considering the impact of the FCC Section 6409 rules. I have also looked at state legislation and considered possible impacts if facilities of the permitted size were installed.

V. Areas of Concern

The following areas of concern have been considered and investigated. The most significant are discussed in the following sections.

- Market resistance (or stigma) in general.
- Aesthetics.
- Underground Utilities.
- Changes in the highest and best use of properties.
- Wireless infrastructure and service providers' history of paying for the right to place towers on private property.
- Perceived safety risks from potential failure of a structure.
- Right of way easements

A. Market Resistance

Market resistance (or stigma) in general is quantified in scholarly articles and peer-reviewed journal publications as it relates to the impact of communication towers and equipment on nearby property values. Hedonic studies and surveys generally address market resistance to the placement of new towers or equipment without regard to the cause of said market resistance.

There has been significant research regarding the question of the impact on residential property values from construction of cell phone towers in neighborhoods. The results of these studies vary but they commonly indicate that there is a significant impact. While the magnitude of the impact varies, the studies uniformly indicate that there is a significant impact on residential property values from installation of cell phone towers. Not surprisingly, the studies that show little or no impact are universally commissioned by and paid for by the telecommunications industry.

Most studies have dealt with more conventional, larger towers and not DAS installations. These studies would nevertheless be directly applicable to the proposed 100 to 120 foot monopole referenced on the previous page. As to "small cell" and DAS

installations, it should be noted that "small cell" references the size of the coverage area and not necessarily the size of the equipment. Furthermore, small cell and DAS installations will generally be located much closer to nearby properties and they will be installed in hundreds of locations ubiquitously. The FCC Public Notice dated December 22, 2106 states "Although the facilities used in these networks are smaller and less obtrusive than traditional cell towers and antennas, they must be deployed more densely – *i.e.,* in many more location – to function effectively (Page 1).

In addition, to numbers that exceed the location of larger towers by orders of magnitude, small cell and DAS installations are often directly within the line of site (midway up a 40 foot pole, for example) and even include ground cabinets, which are particularly egregious. Even if the individual impact of small cells is lesser than for larger towers (which is by no means a given), this may be offset or partially offset by the location, closer proximity and the numbers that exceed tower installations by orders of magnitude. Some of the studies are briefly discussed below.

Sandy Bond and Ko-Kang Wang performed a 2005 study in New Zealand where they support a 15% diminution in residential property value within 300 Meters of communication antennas. Their Summer 2005 publication in the Appraisal Journal (as published by the Appraisal Institute, Summer 2005, Pages 256 – 277) summarizes this study. They indicate survey results ranging from 10% to over 20% diminution, which is supported by multiple regression analysis (a hedonic study) indicating 21% diminution in residential property values.

Sandy Bond also performed and presented a study from December 2003 in Florida that supported just over 2% diminution.

Stephen L. Locke and Glenn C. Blomquist published "The Cost of Convenience: Estimating the Impact of Communication Antennas on Residential Property Values" in *Land Economics in* February 2106. This is the most current study. They conclude that a visible antenna up to 1,000 feet away (vs 4,500 feet as the control) results in a market diminution of 1.82% for residential homes ($3,342 per home in the market studied). While this seems like a relatively small percentage, they correlate this to an Aggregate impact of a reduction of market value of Ten Million Dollars when applied to all of the homes around a single tower in their study area.

While there have not been any scientific studies of the impact on property values from small cell and DAS deployments, there are many anecdotal examples indicating both a negative market perception and adverse impacts on property values. (Of course, negative market perception is precisely what causes an adverse impact on property values). These include published articles and petitions from Real Estate Professionals ranging from Manhattan to Burbank indicating negative impact, reduced property value, and market resistance. From an August 10, 2010 article in the New York Times...

"TINA CANARIS, an associate broker and a co-owner of RE/MAX Hearthstone in Merrick, has a $999,000 listing for a high ranch on the water in South Merrick, one of a handful of homes on the block on the market. But her listing has what some consider a disadvantage: a cell antenna poking from the top of a telephone pole at the front of the 65-by-100-foot lot. "Even houses where there are transformers in front" make "people shy away," Ms. Canaris said. "If they have the opportunity to buy another home, they

do." She said cell antennas and towers near homes affected property values, adding, "You can see a buyer's dismay over the sight of a cell tower near a home just by their expression, even if they don't say anything."

B. Aesthetics and Underground Utilities

In 32 years of experience as a Real Estate Appraiser specializing in detrimental conditions, takings, adverse impacts and right-of-way, I have found that aesthetics (or rather the adverse impact on aesthetics) of externalities routinely has the largest impact on property values. As a result, proximity to towers of all types (cell, wind turbine, and electric transmission) has an impact on property values. The same is true with all sorts of surface installations such as pump stations and communication equipment boxes. This would apply to new small cell and DAS equipment, although again, one would expect that the less intrusive the facility, the less significant the impact. Small cell and DAS installations can be unsightly, bulky, inconsistent, and even noisy. A few demonstrative photos are included on Page 10.

While it is certainly recognized that DAS systems and Cellular antennas are an important part of our nation's infrastructure, and that it is inevitable that new antennas will need to be installed as we move into the future, it is important for municipalities (and property owners, in the case of right-of-way easements) to retain some control over the size, location, scope, expansion, and characterization of the installations. This is because adverse impacts from negative externalities vary considerably with the size, location, scope, expansion, and characterization of the installations.

All things being otherwise equal…

- Larger facilities have a greater impact than smaller facilities.
- Facilities on the ground and located closer to common sight lines have a greater impact than those that are less visible.
- Underground facilities have a lesser impact than above-ground facilities in most instances (although there are cases where the structures required for vaulting may be as intrusive as the above-ground facilities).
- Streamlined and contained facilities have a lesser impact than unorganized conglomerations of diverse elements.
- Impact tends to lessen over time as a facility remains unchanged so that changes and expansions have an additional negative impact.
- Facilities that are designed to be in balance with existing utility structures have a lesser impact than less harmonious installations. For example, an above ground facility will have a greater impact in an area with existing underground utilities. And a new pole that is three times higher than existing poles will have a greater impact than a new pole that is the same height as existing poles. Please reference the proposed Tx 120 (120 foot) Mobilitie tower shown below (particularly as compared to the existing wood utility poles).

Likewise, please compare this set of examples of unorganized and uncontrolled conglomerations of diverse elements with more streamlined installations.

DET02:2350248.1

It is not an accident that the articles, cases, and publications of the wireless industry often address circumstances that involve *hiding* wireless facilities, or show pictures of physically small "small cells" neatly mounted. Hidden, smaller, and neatly mounted "small cells," will have an impact, but that impact will be lesser than other alternatives. Likewise, there needs to be control over future growth of installed facilities.

It is my opinion that the Federal Communications Commission should analyze the potential impact of small cell and DAS deployments in detail before considering additional rules. It is important for the Commission to have information as to which installations may have *De Minimis* impacts and which may have significant impacts before establishing national rules.

It is also my opinion that municipalities need to retain significant regulatory control over these installations in public rights-of-way in order to minimize impacts and protect the health, welfare, and safety of their residences in the same way that other regulations and the reasonable exercise of police powers have over the last hundred years.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 7, 2017.

David E. Burgoyne, ASA, SR/WA
Certified General Real Estate Appraiser
(Indiana, Michigan, North and South Carolina)

DET02:2350248.1

EMF Real Estate Survey Results: "Neighborhood Cell Towers & Antennas—Do They Impact a Property's Desirability?"

The National Institute for Science, Law and Public Policy's survey **"Neighborhood Cell Towers & Antennas—Do They Impact a Property's Desirability?"** initiated June 2, 2014, has now been completed by 1,000 respondents as of June 28, 2014. The survey, which circulated online through email and social networking sites, in both the U.S. and abroad, sought to determine if nearby cell towers and antennas, or wireless antennas placed on top of or on the side of a building, would impact a home buyer's or renter's interest in a real estate property.

The overwhelming majority of respondents (94%) reported that cell towers and antennas in a neighborhood or on a building would impact interest in a property and the price they would be willing to pay for it. And 79% said under no circumstances would they ever purchase or rent a property within a few blocks of a cell tower or antenna.

- **94% said a nearby cell tower or group of antennas would negatively impact interest in a property or the price they would be willing to pay for it.**
- **94% said a cell tower or group of antennas on top of, or attached to, an apartment building would negatively impact interest in the apartment building or the price they would be willing to pay for it.**
- **95% said they would opt to buy or rent a property that had zero antennas on the building over a comparable property that had several antennas on the building.**
- **79% said under no circumstances would they ever purchase or rent a property within a few blocks of a cell tower or antennas.**
- **88% said that under no circumstances would they ever purchase or rent a property with a cell tower or group of antennas on top of, or attached to, the apartment building.**
- **89% said they were generally concerned about the increasing number of cell towers and antennas in their residential neighborhood.**

The National Institute for Science, Law and Public Policy (NISLAPP) was curious if respondents had previous experience with physical or cognitive effects of wireless radiation, or if their concern about neighborhood antennas was unrelated to personal experience with the radiation. **Of the 1,000 respondents, 57% had previously experienced cognitive effects from radiation emitted by a cell phone, wireless router, portable phone, utility smart meter, or neighborhood antenna or cell tower, and 43% had not experienced cognitive effects. 63% of respondents had previously experienced physical effects from these devices or neighborhood towers and antennas and 37% had not experienced physical effects.**

The majority of respondents provided contact information indicating they would like to receive the results of this survey or news related to the possible connection between neighborhood cell towers

and antennas and real estate decisions.

Comments from real estate brokers who completed the NISLAPP survey:

"I am a real estate broker in NYC. I sold a townhouse that had a cell tower attached. Many potential buyers chose to avoid purchasing the property because of it. There was a long lease."

"I own several properties in Santa Fe, NM and believe me, I have taken care not to buy near cell towers. Most of these are rental properties and I think I would have a harder time renting those units… were a cell tower or antenna nearby. Though I have not noticed any negative health effects myself, I know many people are affected. And in addition, these antennas and towers are often extremely ugly–despite the attempt in our town of hiding them as chimneys or fake trees."

"We are home owners and real estate investors in Marin County and have been for the last 25 years. We own homes and apartment building here in Marin. We would not think of investing in real estate that would harm our tenants. All our properties are free of smart meters. Thank you for all of your work."

"I'm a realtor. I've never had a single complaint about cell phone antennae. Electric poles, on the other hand, are a huge problem for buyers."

Concern was expressed in the comments section by respondents about potential property valuation declines near antennas and cell towers. While the NISLAPP survey did not evaluate property price declines, a study on this subject by Sandy Bond, PhD of the New Zealand Property Institute, and Past President of the Pacific Rim Real Estate Society (PRRES), The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods (http://snurl.com/2922m58), was published in *The Appraisal Journal* of the Appraisal Institute in 2006. The Appraisal Institute is the largest global professional organization for appraisers with 91 chapters. The study indicated that **homebuyers would pay from 10%–19% less to over 20% less for a property if it were in close proximity to a cell phone base station.** The 'opinion' survey results were then confirmed by a market sales analysis. **The results of the sales analysis showed prices of properties were reduced by around 21% after a cell phone base station was built in the neighborhood."**

The Appraisal Journal study added,

"Even buyers who believe that there are no adverse health effects from cell phone base stations, knowing that other potential buyers might think the reverse, will probably seek a price discount for a property located near a cell phone base station."

James S. Turner, Esq., Chairman of the National Institute for Science, Law & Public Policy and Partner, Swankin & Turner in Washington, D.C., says,

"The recent NISLAPP survey suggests there is now a high level of awareness about potential risks from cell towers and antennas. In addition, the survey indicates respondents believe they have personally experienced cognitive (57%) or physical (63%) effects from radiofrequency radiation from towers, antennas or other radiating devices, such as cell phones, routers, smart meters and other consumer electronics. Almost 90% are concerned about the increasing number of cell towers and antennas generally. A study of real estate sales prices would be beneficial at this time in the Unites States to determine what discounts homebuyers are currently placing on properties near cell towers and antennas. Americans deserve to know."

Betsy Lehrfeld, Esq., an attorney and Executive Director of NISLAPP, says,

"The proliferation of this irradiating infrastructure throughout our country would never have occurred in the first place had Section 704 of the Telecommunications Act of 1996 not prohibited state and local governments from regulating the placement of wireless facilities on health or environmental grounds. The federal preemption leaves us in a situation today where Americans are clearly concerned about risks from antennas and towers, some face cognitive and physical health consequences, yet they and their families increasingly have no choice but to endure these exposures, while watching their real property valuations decline."

The National Institute for Science, Law, and Public Policy (NISLAPP) in Washington, D.C. was founded in 1978 to bridge the gap between scientific uncertainties and the need for laws protecting public health and safety. Its overriding objective is to bring practitioners of science and law together to develop intelligent policy that best serves all interested parties in a given controversy. Its focus is on the points at which these two disciplines converge.

NISLAPP contact:
James S. Turner, Esq.
(202) 462-8800 / jim@swankin-turner.com
Emily Roberson
er79000@yahoo.com

If you can support NISLAPP's work, please donate here:
http://snurl.com/2922mso

See Commentary by ElectromagneticHealth.org on NISLAPP EMF Real Estate Survey Results and Recommendations for Real Estate Agents and Homebuyers here:
http://electromagnetichealth.org/electromagnetic-health-blog/survey-commentary/

Exhibit 12

20132 Pacific Coast Highway
Malibu, CA 90265
310-456-1475

To the L.A. Board of Supervisors
Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

August 31, 2008

Regarding CUP # 200700020/Project No. R2006-03164-(2) - CVS/T-Mobile

Dear Supervisors:

My name is Donna Bohana. I grew up in Baldwin Hills and currently have family in View Park where the proposed cell antenna facility will be placed. I have been in real estate for over 14 years with Coldwell Banker and now own my own company. I must express my professional opinion and a sincere concern for the community in its entirety.

The greatest concern to my clients, as well as others in the neighborhood is this placement of such a telecommunications facility will affect how some potential future buyers of homes in this neighborhood would view this as an obstacle and ultimately affect the salability of these homes by diminishing the buyer pool. It is therefore my opinion based on my experience that the presence of this facility in this location will have a substantial negative effect on the property values of the surrounding properties.

As a realtor, I must disclose to potential buyers where there are cell antennas nearby. I have found in my own experience that there is a very real stigma and cellular facilities near homes are perceived as undesirable.

This is an established neighborhood with a tremendous sense of community. It is my hope that you will recognize that this possible addition will impact a residential neighborhood in many ways.

Sincerely,

Donna Bohana - President/Realtor

March 26, 2008

Hall of Records
Los Angeles County Regional Planning Board
(13th Floor)
320 West Temple Street
Los Angeles, CA 90012

Re: Conditional Use Permit - T-Mobile/CVS
Case # 200700020/Project No. R2006-03164-(2)

To Whom It May Concern:

I am writing to oppose the construction of the T-Mobile facility with nine cell phone antennas on the rooftop of CVS Pharmacy at Slauson and Overhill.

I am very familiar with the homes and Real Estate market in this area and more specifically the area of Windsor Hills and View Park as both a resident and a realtor. I own a Real Estate office on the corner of Slauson and Overhill and have sold many properties in Windsor Hills, View Park, surrounding areas and throughout all of Los Angeles over the past 40 years.

I am also very familiar with the impact that nearby telecommunications antenna or facility may have on a home's marketability. Based on my experience, I believe the installation of the proposed facility at CVS will have an immediate and adverse impact on the surrounding neighborhood. Those who would otherwise purchase a home, now considered desirable, can be deterred by a facility like the one proposed and this significantly reduces sales prices and does so immediately. The perceived health and safety risks of living near cellular facilities are of concern to many people.

As a result, I believe a facility such as the one proposed will diminish the buyer pool, significantly reduce home sales prices, alter the character of the surrounding area and impair the use of the residential properties for their primary uses.

I encourage the County to work with T-Mobile on finding an alternative site and to keep sites away from residential areas.

Thank you for your time and consideration.

Sincerely,

Beverly Clark

Exhibit 13

The Appraisers Squad LLC
COMMENT ADDENDUM

File No. 808222SF
Case No.

Borrower Brown
Property Address 5577 Onacrest Dr
City Los Angeles County Los Angeles State CA Zip Code 90043
Lender/Client Management Portfolio Address 5577 Onacrest Dr Los Angeles CA 90043

SUBJECT PROPERTY ANALYSIS:

The subject property is a 10 room 3 bedroom 2 bathroom Single family dwelling in the Los Angeles County View Park Area of the City of Los Angeles. the subject property has been upgraded with Custom kitchen cabinets, New Carpet, Granite kitchen counters, Landscaping and new fixtures. The overall condition of the subject property is excellent with modern amenities and fixtures, nevertheless there is an exterior condition which has negatively affected the subject which includeds the commercial building at the rear of the subject, and the recent decision which has been approved by the city of Los Angeles July 08, 2008 for condition use permit (CUP # 2007-00020) to allow for the construction, operation and maintenence of a wireless telecommunications facility at rear of subject. The property owner has listed the property on the MLS and has had a potential buyer back out of the deal once this particular information of the satellite communication center was announced as the local community protest continues throughout the neighborhood. This particular communication wireless center has had some speculations of health hazards therfore the local community continues to protest. The appraiser is not a specialist in the field of hazardous affects and or materials, although there has been a canceled potential sale therefore it is relevant and determined that this new planning decision can have some negative affect on the subject property.

"The property owner has a potential buyer back out of the deal once it was [disclosed]. There has been a canceled potential sale therefor it is relevant and it's been determined that this ... has a negative affect on the subject property."

- **THE PLACEMENT OF THE CELL TOWER WILL AFFECT NEIGHBORHOOD VALUES**

  - The Appraisal Institute is the largest global professional membership organization for appraisers with 91 chapters throughout the world.

  - The Institute spotlighted the issue of cell towers and the fair market value of a home and educated its members that a cell tower should, in fact, cause a decrease in home value. (www.appraisalinstitute.org)

  - *The studies above and additional peer reviewed research and data were submitted to regional planning in March 2008. If these are no longer in our file, please notify the Community to resubmit.*

Cont.

Exhibit 14

- The definitive work on this subject was done by Dr. Sandy Bond, who concluded that "media attention to the potential health hazards of [cellular phone towers and antennas] has spread concerns among the public, resulting in increased resistance" to sites near those towers.
- Percentage decreases mentioned in the study range from 2 to 20% with the percentage moving toward the higher range the closer the property. In today's market, can we afford this?
- Recent CNN/Larry King Live poll shows 72% now believe cell technology is dangerous. Increased awareness of health risks posed by living near cell antennas **lowers property values even more.**

Cont.

There may be a legal obligation the County is forcing onto the Windsor Hills and View Park Residents - to disclose even the potential existence of this facility when selling a home which will erode property value – as long as the matter remains unsettled.

- The California Association of Realtors maintains that "sellers and licensees must disclose material facts that affect the value or desirability of the property," including "known conditions outside of and surrounding" it. This includes "nuisances" and zoning changes that allow for commercial uses.

- We have submitted letters from realtors <u>ALL SAYING THIS WILL AFFECT HOME VALUES</u>

BALDWIN HILLS ESTATES HOMEOWNERS ASSOCIATION
P.O. BOX 8897
LOS ANGELES, CA 90008-0897
(323) 292-4342

www.baldwinhillsestates.net

June 13, 2008

Los Angeles County Regional Planning Commission
320 West Temple Street, Hall of Administration, Room 150
Los Angeles, CA 90012

RE: **Los Angeles County Conditional Use Permit #2007-00020, #R2006-03162-(2)**

Dear Planning Commissioners:

This letter stands as notification of the strong opposition of over 4000 residents from the Baldwin Hills Estates Homeowners' Association to the T-Mobile Zoning Conditional Use Permit.

Several months ago, our residents experienced a public hearing on appeal by T-Mobile before the Los Angeles City Planning Commissioners in opposition to a request by T-Mobile for a condition use permit to install 8 unmanned telecommunications antennas on a building adjacent to residential housing within Baldwin Hills, located just up the street from the current pending CVS Pharmacy site.

"direct Fiscal impact to houses"

Residents presented information to the Los Angeles City Planning Commissioners regarding the historical nature of the community, the integrity of the existing housing uniformity, the direct fiscal impact to houses within the zone of service and the option of other sites outside and away from residential communities. The commissioners found, among other things, that altering a residential community for commercial use would not be a win win. Thus, we are asking you to deny this application for similar reasons as well.

Please be advised that the Los Angeles City Zoning Administrator gave T-Mobile until 03-25-07 to meet with residents in the city of Los Angeles for an amicable resolution. However, T-Mobile decided to circumvent this decision by relocating just up the street from the original site, re-apply to the County Planning Board of Commissioners for a site now patronized by neighboring families and to increase their antennas installation from 8 to 9.

We are vehemently opposed to the T-Mobile application on file and request your support to deny the application for good cause. Again, it is our desire not to convert and/or alter our residential community to commercial use for the purposes of harboring equipment for profit by T-Mobile. Also, the Los Angeles City Planning Commissioners mentioned several area alternative sites during the hearing, and the CVS Pharmacy on file was not one of them.

I hope that you would be familiar with the concerns and issues of our community and support our request to uphold the prior decision rendered against the same applicant in a neighboring jurisdiction by the Los Angeles City Planning Commissioners.

Sincerely,

Robert Cole

Robert Cole - President, Baldwin Hills Estates Homeowners' Association

UNITED HOMEOWNERS ASSOCIATION

P.O. BOX 43338
LOS ANGELES, CA 90043

March 17, 2008

Los Angeles County Dept. of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

Re: Conditional Use Permit – Case # 200700020/Project NO. R2006-O3164-(2)
4501 West Slauson Avenue

Dear Regional Planning Board and Zoning Administrator,

The United Homeowners Association (UHA) represents approximately 5000 households in the Windsor Hills, View Park and View Heights communities as well as those portions of the unincorporated Los Angeles County area abutting the City of Inglewood to the north and east. Since the early 1970s, UHA has worked to maintain property values, increase the quality of life and preserve these and surrounding communities. As part of our conservation and preservation efforts, we have worked closely with City and County officials and neighboring cities to address issues of aesthetics, as well as visual and economic blight.

We respectfully request that you **DENY** the Conditional Use Permit 200700020/Project NO. R2006-O3164-(2) to preserve and protect the property values, safety and peace of mind for homeowners in the area.

A cell facility of this magnitude (9 antennas) approximately 50 feet away from a home and across the street from a Nursery School will be precedent-setting and open the door for other cell carriers to have similar facilities easily approved throughout our community. Further, this facility will lower property values of the single family homes in this residential community. Residents would seek lower tax assessments as a result of this installation. There are various appraiser journals and industry publications that confirm that cell phone antennas reduce property values and adversely affect house sales.[1] Many nearby residents are prepared to sell in an already depressed market or, in the case of one new resident with little to no equity, simply walk away if these antennas are installed.

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[1] *See, e.g.*, Sandy Bond, PhD and Ko-Kang Wang,, "The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods," *The Appraisal Journal* (Summer 2005): 256-277 (both a survey examining residents' perception of living near cellular phone base stations (CPBS) and a market sales study analyzing actual property sales data found that CPBS have a negative impact on the prices of houses in the study areas). *See also* Sandy Bond, PhD, "The Effect of Distance to Cell Phone Towers on House Prices in Florida," *The Appraisal Journal* (Fall 2007): 362-370.

Local government control of land use, i.e. zoning, in the United States dates back to 1916. A 1926 Supreme Court decision, *Euclid v. Ambler Realty Co.*, reinforces the principle that the single-family residential use is at the top of the hierarchy of land uses to be protected by zoning regulations. Zoning regulations are written to implement municipal planning priorities whose purpose is to mitigate negative externalities that one real estate owner's use could impose on other members of the community.[2]

The local government officials of Los Angeles County must not leave it up to cellular site developers or personal wireless services providers to interpret the requirements of the Telecommunications Act (TCA) of 1996. There is an ample record from California State and federal appeals courts and from professional real estate appraisers and agents to justify denying permits for inappropriate antenna site proposals. Denying a specific permit does not equal denying wireless service. Local zoning authority has not been removed by the language of the TCA of 1996. *See MetroPCS v. City and County of San Francisco*, 400 F.3d 715 (9th Cir. 2005); *see also San Diego Gas & Electric Co. v. Daley*, 205 Cal.App.3d 1334, 1349 (1988) ("The trial court here was correct in its analysis and determination that the truth or lack of truth in whether electromagnetic projections caused a health hazard . . . was immaterial. Rather the question was whether the fear of the danger existed and would affect market value").

UHA STRONGLY OPPOSES the approval for the conditional use permit being requested at 4501 West Slauson Avenue and urges Los Angeles County Regional Planning and Zoning Officials to overturn the decision of the hearing officer to approve the application filed under Case # 200700020/Project NO. R2006-O3164-(2). By denying the installation at Slauson and Overhill, the County of Los Angeles will be protecting our community from future economic blight and blighted home sales as a result of inappropriate placement and, at the same time, ensure the health, safety and well being of the community as we seek to examine the potential impacts of this new and rapidly growing technology.

Thank you for support in this very important matter.

Best Regards,

Theodore Irving
PRESIDENT

[2] Carol C. McDonough, "The Price of Zoning Revisited: Zoning Issues Raised by the Telecommunications Act of 1996," *Illinois Real Estate Letter*, Winter 1999, p.1, Office of Real Estate Research, University of Illinois at Urbana-Champaign.

WHBC *Participating in Neighborhood Excellence*

Windsor Hills Block Club
Windsor Hills, CA 90043

March 20, 2008

To: Los Angeles County Department of Regional Planning

Re: Conditional Use Permit – Case # 200700020/Project No. R2006-03164-(2)

To Whom It May Concern:

Windsor Hills Block Club (WHBC) represents over 200 homes in the area of Windsor Hills and was created for the purposes of reinstating our neighborhood watch and to build a strong community alliance that will empower us to effectively address and resolve issues that impact our community.

We held a community meeting (with approximately 80 in attendance) on March 15th 2008 to carefully consider the pros and cons of the proposed T-Mobile cellular facility at CVS on the corner of Slauson and Overhill and to take a vote on whether to support or oppose this project. In a unanimous decision WHBC voted to **OPPOSE** the T-Mobile facility.

On behalf of WHBC I am writing today to respectfully request you overturn the decision of the hearing officer, January 8th, 2008, regarding the conditional use permit to authorize construction, operation and maintenance of an unmanned wireless telecommunications facility consisting of 9 antennas and 6 BTS equipment cabinets on the roof of an existing CVS Pharmacy at 4501 West Slauson Avenue.

Many in our community have expressed concerns over the negative impact that would be caused by such an installation of this cellular facility on the roof of CVS and residents are growing increasingly vocal in their objections. The psychological impact can adversely affect the marketability of nearby business in the same way that union picketing reduces the value of the stock in large companies involved in hostile labor negotiations. And this is what we are facing with growing numbers wishing to boycott the CVS pharmacy and owner of the property, Alexander Haagen.

Residents are most concerned that this cellular facility will lower the property values of our homes. In some instances, it will also impact the views our neighbors currently enjoy from their residences. Based on their professional experience, Real Estate brokers and agents recognize that the presence of a nearby cell tower brings on a definite and ultimate decline in the potential buyers pool for homes in the vicinity. They point out that allowing construction of a cell facility which is a commercial/industrial use in or near a designated residential zone alters the character and aesthetics of the surrounding area. They have stated that this shrinking of the buyer pool can translate to a loss of 30 to 50% in the value of a home. Some homes in this situation are impossible for agents to sell.

The proposed facility does not conform to the area's historic and cultural element. Windsor Hills was originally designed as a "fashionable" residential district with specific intent of banning businesses that generated a "noxious" influence upon the surrounding residential area. See attached document regarding deeded prohibitions extended to 57 business classifications (and over 80 sub-classifications) in total. Adding rooftop antennas visible from the street will have a negative impact on the marketability of the property and surrounding properties who are always concerned with the image the

property conveys to passersby. It would forever alter the character of our neighborhood and simply doesn't fit directly across the street from a Nursery School, Health Food Store, above a drug store and immediately adjacent single family homes.

In addition, there are many safety issues that have not been thoroughly examined and serious potential health and environmental impacts of rooftop antennas at close range which require fences, signage and other mechanisms to prevent one from injury. For these reasons Courts have also recognized that communities can deny antennas where "it is not unreasonably discriminatory to deny a subsequent application for a cell site that is substantially more intrusive than existing cell sites by virtue of its structure, placement or cumulative impact." The "least intrusive manner" takes into consideration the adverse impacts of the development on the character of the neighborhood in which the site is found, and the potential for property devaluation of the adjoining landowners.

We do not want cellular antennas placed close to homes or schools and believe this is not about providing us a service but more for the market share of one company. Many of us are already satisfied with the existing cellular coverage in the area and/or have land lines. Those who want improved cellular coverage are not willing to obtain it at the cost of our property values or other associated risks.

Please help us to preserve and protect our property values, safety and peace of mind and the continued support of nearby businesses by denying a Conditional Use Permit– Case # 200700020/Project No. R2006-03164-(2) 4501 West Slauson Avenue.

On behalf of the residents of Windsor Hills, we thank you for your consideration and hopefully cooperation.

Toni Mc Donald-Tabor
President
Windsor Hills Block Club

Harold Anderson
Vice-President
Windsor Hills Block Club

NISLPP survey on lower house values

https://www.businesswire.com/news/home/20140703005726/en/Survey-National-Institute-Science-Law-Public-Policy

Survey by the National Institute for Science, Law & Public Policy Indicates Cell Towers and Antennas Negatively Impact Interest in Real Estate Properties

94% of respondents said a nearby cell tower or group of antennas would negatively impact interest in a property or the price they would be willing to pay for it

July 03, 2014 01:57 PM Eastern Daylight Time

WASHINGTON--(BUSINESS WIRE)--A survey conducted in June 2014 by the National Institute for Science, Law and Public Policy (NISLAPP) in Washington, D.C., *"Neighborhood Cell Towers & Antennas—Do They Impact a Property's Desirability?"*, shows home buyers and renters are less interested in properties located near cell towers and antennas, as well as in properties where a cell tower or group of antennas are placed on top of or attached to a building.

"A study of real estate sales prices would be beneficial at this time in the Unites States to determine what discounts homebuyers are currently placing on properties near cell towers and antennas."

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Of the 1,000 survey respondents, 94% reported that cell towers and antennas in a neighborhood or on a building would impact interest in a property and the price they would be willing to pay for it. And 79% said under no circumstances would they ever purchase or rent a property within a few blocks of a cell tower or antennas. And almost 90% of respondents said they were concerned about the increasing number of cell towers and antennas in their residential neighborhood, generally. See Full Results here: http://electromagnetichealth.org/electromagnetic-health-blog/survey-property-desirability/.

(Note by MG: I have downloaded that pdf file and am enclosing it too.)

The NISLAPP survey reinforced the findings of a study by Sandy Bond, Ph.D. of the New Zealand Property Institute, and Past President of the Pacific Rim Real Estate Society (PRRES), published in *The Appraisal Journal* in 2006, The Impact of Cell Phone

Towers on House Prices in Residential Neighborhoods. That study found buyers would pay as much as 20% less, as determined at that time by an opinion survey in addition to a sales price analysis.

Jim Turner, Esq., Chairman of the National Institute for Science, Law and Public Policy, says, “The results of the 2014 NISLAPP survey suggest there is now high awareness about potential risks from cell towers and antennas, including among people who have never experienced cognitive or physical effects from the radiation.” He adds, “A study of real estate sales prices would be beneficial at this time in the Unites States to determine what discounts homebuyers are currently placing on properties near cell towers and antennas.”

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Santa Cruz preschool closes citing cell tower radiation

By ROGER SIDEMAN

SENTINEL STAFF WRITERSANTA CRUZ

A new Westside elementary school is closing its doors following plans by First Congregational Church to install three cell-phone transmitters next door atop its 80-foot steeple.

Una Familia, the private school at 900 High St. that serves 25 kindergarten through fifth-grade students at 900 High St., has a stated mission of incorporating neuroscience into its curriculum. It's an emphasis that school founder Joan Harrington, who rents the space from the church, says is inherently incompatible with a business deal she says would bathe the neighborhood in electromagnetic radiation.

"This has ruined my business because the families that come to me were coming to be part of this special program," said Harrington, who taught at Bonny Doon School for 20 years before opening Una Familia on the old Pacific Collegiate site in January. "It makes absolutely no sense for me to go forward with my research."

Part of the school's so-called "brain-based" educational model looks at how ambient radiation impairs student performance and intensifies student distractibility.

Cell phone companies have long maintained that there isn't any clear evidence that cellular towers pose any health risks. In the Telecommunications Act of 1996, Congress banned local governments from blocking towers on safety grounds.

First Congregational Church's senior minister Dave Grishaw-Jones said he's heartbroken by the situation with the elementary school.

"We believe Jean's mission at the school fit our values as a progressive church," Grishaw-Jones said. "If our leadership felt the science was clear, we'd back off in a flash. Science is used in different ways, and we thought it's best not to be intimated."

Built in the late 1950s, the church's steeple is now is disrepair and needs to be stabilized, Grishaw-Jones said. A financial deal initiated by cell provider Sprint will allo w the church to keep the steeple, he said.

Raising funds to fix the steeple is one thing, local activists contend, but doing it by building a cell transmitter to benefit a private enterprise is another.

Though the new transmitters are intended to smooth out patchy phone service in the area â•‰ a frequent complaint of UC Santa Cruz staff and students nearby â•‰ Harrington and other opponents view them as nothing less than an affront to human health and the democratic process.

“It’s a usurpation of our rights to choose the hazards we want or don’t want to be exposed to,” said Deborah Salisbury of the Alliance for Wireless Hazard Protection based in Live Oak.

Parent Annemarie Bertschi had two children enrolled in art classes at Una Familia.

“I’ve looked at some of the data around cell towers and a 1,000 foot buffer would be more reasonable; this is way too close,” she said.

But apparently there’s already a smaller cell tower much closer to th e school, hidden inside a fake chimney on the church roof; it’s been there since 1999. Harrington said she learned about it just five weeks ago, adding that the existing tower was also a factor in her decision to close the school.

The federal ban that prevents local governments from using health concerns as a factor in regulating cellular towers hasn’t stopped some area governments. Some have called for moratoriums on tower building, and places like Gilroy have passed local laws to restrict the size, shape and location of future cell sites.

No moratorium exists in Santa Cruz, but the proposal by First Congressional Church still requires the City Council’s approval, Grishaw-Jones said.

Last month, the U.S. Food and Drug Administration said it will review wireless phone safety following a recently published study that raised concerns about a heightened risk of brain cancer. The agency continues to monitor studies for possible health problems stemming from long-te rm exposure to radio frequency energy.

Earlier this year in Monterey, the city approved plans to install three cell phone towers disguised inside three specially constructed fiberglass crosses to be mounted atop St. Mark Coptic Orthodox Church. Elsewhere in the region, companies have begun disguising cell towers inside faux pine trees, water towers and billboards.

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Source: Bonnie Hicman

features

The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods

by Sandy Bond, PhD, and Ko-Kang Wang

abstract

This article examines whether proximity to cellular phone towers has an impact on residential property values and the extent of any impact. First, a survey approach is used to examine how residents perceive living near cellular phone base stations (CPBSs) and how residents evaluate the impacts of CPBSs. Next, a market study attempts to confirm the perceived value impacts reported in the survey by analyzing actual property sales data. A multiple regression analysis in a hedonic pricing framework is used to measure the price impact of proximity to CPBSs. Both the survey and market sales analysis find that CPBSs have a negative impact on the prices of houses in the study areas.

The introduction of cellular phone systems and the rapid increase in the number of users of cellular phones have increased exposure to electromagnetic fields (EMFs). Health consequences of long-term use of cellular phones are not known in detail, but available data indicates that development of nonspecific health symptoms is possible.[1] Conversely, it appears health effects from cellular phone equipment (antennas and base stations) pose few, if any, known health hazards.[2]

A concern associated with cellular phone usage is the siting of cellular phone transmitting antennas (CPTAs) and cellular phone base stations (CPBSs). In New Zealand, CPBS sites are increasingly in demand as the major cellular phone companies there, Telecom and Vodafone, upgrade and extend their network coverage. This demand could provide the owner of a well-located property a yearly income for the siting of a CPBS.[3] However, new technology that represents potential hazards to human health and safety may cause property values to diminish due to public perceptions of hazards. Media attention to the potential health hazards of CPBSs has spread concerns among the public, resulting in increased resistance to CPBS sites.

Some studies suggest a positive correlation between long-term exposure to the electromagnetic fields and certain types of cancer,[4] yet other studies report inconclusive results on health effects.[5] Notwithstanding the research results, media reports indicate that the extent of opposition from some property owners

1. Stanislaw Szmigielski and Elizbieta Sobiczewska, "Cellular Phone Systems and Human Health—Problems with Risk Perception and Communication," *Environmental Management and Health* 11, no. 4 (2000): 352–368.
2. Jerry R. Barnes, "Cellular Phones: Are They Safe?" *Professional Safety* 44, no. 12 (Dec. 1999): 20–23.
3. R. Williams, "Phone Zone—Renting Roof Space to Ma Bell," *The Property Business* 12 (April 2001): 6–7.
4. C. M. Krause et al., "Effects of Electromagnetic Field Emitted by Cellular Phones on the EEG During a Memory Task," *Neuroreport* 11, no. 4 (2000): 761–764.
5. Independent Expert Group on Mobile Phones, *Mobile Phones and Health* (Report to the United Kingdom Government, 2000), http://www.iegmp.org.uk.

affected by the siting of CPBSs remains strong.[6] However, the extent to which such attitudes are reflected in lower property values for homes located near CPBSs is not known.

Understanding the impact of CPBSs on property values is important to telecommunications companies both for planning the siting of CPBSs and for determining likely opposition from property owners. Similarly, property appraisers need to understand the valuation implications of CPBSs when valuing CPBS-affected property. The owners of affected property also want to understand the magnitude of any effects, particularly if compensation claims or an award for damages are to be made based on any negative effects on value.

The research here uses a case study approach to determine residents' perceptions towards living near CPBSs in Christchurch, New Zealand, and to quantify these effects in monetary terms according to an increasing or decreasing percentage of property value. The case study uses both an opinion survey and an econometric analysis of sales transaction data. A comparison of the results can be used to help appraisers value affected property as well as to resolve compensation issues and damage claims in a quantitative way. Further, the results provide a potential source of information for government agencies in assessing the necessity for increased information pertaining to CPBSs.

The following provides a brief review of the cellular phone technology and relevant literature. Then, the next section describes the research procedure used, including descriptions of the case study and control areas. The results are then discussed, and the final section provides a summary and conclusion.

Cellular Telephone Technology[7]

Cellular (mobile) telephones are sophisticated two-way radios that use ultrahigh frequency (UHF) radio waves to communicate information. The information is passed between a mobile phone and a network of low-powered transceivers, called mobile phone sites or cell sites. As mobile sites are very low powered they serve only a limited geographic area (or "cell"), varying from a few hundred meters to several kilometers; they can handle only a limited number of calls at one time. When a mobile phone user on the move leaves one cell and enters another, the next site automatically takes over the call, allowing contact to be maintained.

When a mobile phone call is initiated, the phone connects to the network by using radio signals to communicate with the nearest mobile phone site. The mobile phone sites in a network are interlinked by cable or microwave beam, enabling phone calls to be passed from one cell to another automatically. A mobile phone site is typically made up of a mast with antennas connected to equipment stored in a cabinet. Power is fed into the cabinet by underground cable. The antennas are designed to transmit most of the signal away horizontally, or just below horizontal, rather than at steep angles to the ground.

Mobile phone sites can only accommodate a limited number of calls at any one time. When this limit is reached, the mobile phone signal is transferred to the next nearest site. If this site is full or is too far away, the call will fail.

Cell site capacity is a major issue for telecommunication companies. As the number of people using mobile phones grows, more and more cell sites are required to meet customer demand for reliable coverage. At the end of March 2002, Telecom had more than 1.3 million mobile phone customers and more than 750 mobile phone sites throughout New Zealand. Vodafone had over 1.1 million mobile phone customers.[8] In areas, such as Auckland (the largest city in New Zealand, with close to a third of the NZ population), where almost complete coverage has been achieved, the main issue is ensuring that there is the capacity to handle the ever-increasing number of mobile phones and calls.

Locating Cellular Phone Sites

For cellular phone service providers, the main goals when locating cell sites are (1) finding a site that provides the best possible coverage in the area without causing interference with other cells, and (2) finding a site that causes the least amount of environmental impact on the surrounding area. Service providers usually attempt to locate cell sites on existing structures such as buildings, where antennas can be mounted on the roof to minimize the environmental impact. If this is not possible, a mast will need to be erected to support the antennas for the new cell site.

6. S. Fox, "Cell Phone Antenna Worries Family," *East & Bays Courier,* November 8, 2002, 1.
7. The information in this section was sourced from Telecom, http://www.telecom.co.nz; New Zealand Ministry for the Environment, http://www.mfe.govt.nz; and New Zealand Ministry of Health, http://www.moh.govt.nz.
8. Vodafone, "Cell Sites and the Environment," http://www.vodafone.co.nz/aboutus/vdfn_about_cellsites.pdf (accessed December 19, 2002) and "Mobile Phones and Health," http://www.vodafone.co.nz/aboutus/vdfn_about_health_and_safety.pdf (accessed December 19, 2002); and Telecom, "Mobile Phone Sites and Safety," http://www.telecom.co.nz/content/0,3900,27116-1536,00.html (accessed December 19, 2002).

Service providers prefer to locate cell sites in commercial or industrial areas due to the "resource consent" procedure required by the Resource Management Act 1991[9] for towers located in residential areas.

Despite the high level of demand for better cell phone coverage, the location of cell sites continues to be a contentious issue. The majority of people want better cell phone coverage where they live and work, but they do not want a site in their neighborhood. Thus, cell sites in or near residential areas are of particular concern. Concerns expressed usually relate to health, property values, and visual impact.[10]

In general, uncertainties in the assessment of health risks from base stations are presented and distributed in reports by organized groups of residents who protest against siting of base stations. When the media publishes these reports it amplifies the negative bias and raises public concerns. According to Covello, this leads to incorrect assessment of risks and threats by the public, with a tendency to overestimate risks from base stations and neglect risks from the use of cell phones.[11]

Assessment of Environmental Effects

Under the Resource Management Act 1991 (RMA), an assessment of environmental effects is required every time an application for resource consent is made. Information that must be provided includes "an assessment of any actual or potential effects that the activity may have on the environment, and the ways in which any adverse effects may be mitigated."[12] An assessment of the environmental effects of cell sites would take into consideration such things as health and safety effects; visual effects; effects on the neighborhood; and interference with radio and television reception.

Radio Frequency and Microwave Emissions from CPBSs

According to the Ministry for the Environment, the factors that affect exposure to radiation are as follows:

- Distance. Increasing the distance from the emitting source decreases the radiation's strength and decreases the exposure.
- Transmitter power. The stronger the transmitter, the higher the exposure.
- Directionality of the antenna. Increasing the amount of antennas pointing in a particular direction increases the transmitting power and increases the exposure.
- Height of the antenna above the ground. Increasing the height of an antenna increases the distance from the antenna and decreases the exposure.
- Local terrain. Increasing the intervening ridgelines decreases the exposure.[13]

The amount of radiofrequency power absorbed by the body (the dose) is measured in watts per kilogram, known as the specific absorption rate (SAR). The SAR depends on the power density in watts per square meter. The radio frequencies from cellular phone systems travel in a "line of sight." The antennas are designed to radiate energy horizontally so that only small amounts of radio frequencies are directed down to the ground. The greatest exposures are in front of the antenna so that near the base of these towers, exposure is minimal. Further, power density from the transmitter decreases rapidly as it moves away from the antenna. However, it should be noted that by initially walking away from the base, the exposure rises and then decreases again. The initial increase in exposure corresponds to the point where the lobe from the antenna beam intersects the ground.[14]

Health Effects

According to Szmigielski and Sobiczewska, the analogue phone system (using the 800–900 megahertz band) and digital phone system (using the 1850–1990 megahertz band) expose humans to electromagnetic field (EMF) emissions: radio frequency radiation (RF) and microwave radiation (MW), respectively. These two radiations are emitted from both cellular phones and CPBSs.[15]

For years cellular phone companies have assured the public that cell phones are safe. They state that the particular set of radiation parameters associated with cell phones is the same as any other ra-

9. The Resource Management Act 1991 is the core of the legislation intended to help achieve sustainability in New Zealand; see http://www.mfe.govt.nz/laws/rma.
10. Szmigielski and Sobiczewska; and Barnes.
11. Vincent T. Covello, "Risk Perception, Risk Communication, and EMF Exposure: Tools and Techniques for Communicating Risk Information," in *Risk Perception, Risk Communication and Its Application to EMF Exposure: Proceedings of the World Health Organization and ICNIRP Conference,* ed. R. Matthes, J. H. Bernhardt, M. H. Repucholi, 179–214 (Munich, Germany, May 1998).
12. Section 88(4), (b), Resource Management Act 1991.
13. Ministry for the Environment and Ministry of Health, *National Guidelines for Managing the Effects of Radiofrequency Transmitters,* available at http://www.mfe.govt.nz and http://www.moh.govt.nz (accessed May 21, 2002).
14. Ibid.; and Szmigielski and Sobiczewska.
15. Szmigielski and Sobiczewska.

dio signal. However, reported scientific evidence challenges this view and shows that cell phone radiation causes various effects, such as altered brain activity, memory loss, and fatigue.[16]

According to Cherry, there is also strong evidence to conclude that cell sites are risk factors for certain types of cancer, heart disease, neurological symptoms and other effects.[17] The main concerns related to EMF emissions from CPBSs are linked to the fact that radio frequency fields penetrate exposed tissues.

Public concern regarding both cell phones and CPBSs in many countries has led to establishment of independent expert groups to carry out detailed reviews of the research literature. Research on the health effects of exposures to RF are reviewed by, for instance, the NZ Radiation Laboratory, the World Health Organization, the International Commission on Non-Ionizing Radiation Protection (ICNIRP), the Royal Society of Canada, and the UK Independent Expert Group on Mobile Phones. The reviews conclude that there are no clearly established health effects for low levels of exposure. Such exposures typically occur in publicly accessible areas around radio frequency transmitters. However, there are questions over the delayed effects of exposure.

While present medical and epidemiological studies reveal weak association between health effects and low-level exposures of RF/MW fields, controversy remains among scientists, producers, and the general public. Negative media attention has fuelled the perception of uncertainty over the health effects from cell phone systems. Further scientific or technological information is needed to allay fears of the public about cell phone systems.

Radio Frequency Radiation Exposure Standards

International Standards. The reviews of research on the health effects of exposures to RF have helped establish exposure standards that limit RF exposures to a safe level. Most standards–including those set by the ICNIRP, the American National Standards Institute (ANSI), and New Zealand–are based on the most-adverse potential effects.

The 1998 ICNIRP guidelines have been accepted by the world's scientific and health communities; these guidelines are both consistent with other stated standards and published by a highly respected and independent scientific organization. The ICNIRP is responsible for providing guidance and advice on the health hazards of nonionizing radiation for the World Health Organization (WHO) and the International Labour Office.[18]

The New Zealand Standard. In New Zealand, when a mobile phone site is being planned, radio frequency engineers calculate the level of electromagnetic energy (EME) that will be emitted by the site. The level of EME is predicted by taking into account factors such as power output, cable loss, antenna gain, path loss, and height and distance from the antenna. These calculations allow engineers to determine the maximum possible emissions in a worst-case scenario, i.e., as if the site was operated at maximum power all the time. The aim is to ensure that EME levels are below international and NZ standards in areas where the general public has unrestricted access.

All mobile phone sites in New Zealand must comply in all respects with the NZ standard for radio frequency exposures.[19] This standard is the same as used in most European countries, and is more stringent than that used in the United States, Canada, and Japan. Some local communities in New Zealand have even lower exposure-level standards; however, in reality mobile phone sites only operate at a fraction of the level set by the NZ standard. The National Radiation Laboratory has measured exposures around many operating cell sites, and maximum exposures in publicly accessible areas around the great majority of sites are less than 1% of the exposure limit of the NZ standard. Exposures are rarely more than a few percent of the limit, and none have been above 10%.

Court Decisions

Two court cases in New Zealand have alleged adverse effects due to CPBSs: *McIntyre v. Christchurch City*

16. K. Mann and J. Röschke, "Effects of Pulsed High-Frequency Electromagnetic Fields on Human Sleep," *Neuropsychobiology* 33, no. 1 (1996): 41–47; Krause et al.; Alexander Borbely et al., "Pulsed High-Frequency Electromagnetic Field Affects Human Sleep and Sleep Electroencephalogram," *Neurosci Let,* 275, no. 3 (1999): 207–210; L. Kellenyi et al., "Effects of Mobile GSM Radiotelephone Exposure on the Auditory Brainstem Response (ABR)," *Neurobiology* 7, no. 1 (1999): 79–81; B. Hocking, "Preliminary Report: Symptoms Associated with Mobile Phone Use," *Occup Med* 48, no. 6 (Sept. 1998): 357–360; and others as reported in Neil Cherry, *Health Effects Associated with Mobil Base Stations in Communities: The Need for Health Studies,* Environmental Management and Design Division, Lincoln University (June 8, 2000); http://pages.britishlibrary.net/orange/cherryonbasestations.htm.
17. Cherry.
18. Ministry for the Environment and Ministry of Health.
19. NZS 2772.1:1999, "Radiofrequency Fields Part I: Maximum Exposure Levels – 3kHz to 300GHz." This standard was based largely on the 1998 ICNIRP recommendations for maximum human exposure levels to radio frequency. The standard also includes a requirement for minimizing radio frequency exposure. See National Radiation Laboratory, *Cell Sites* (March 2001), 7; available at http://www.nrl.moh.govt.nz/CellsiteBooklet.pdf.

Council[20] and *Shirley Primary School v. Telecom Mobile Communications Ltd.*[21] Very few cell site cases have actually proceeded to Environment Court hearings. In these two cases the plaintiffs claimed that there was a risk of adverse health effects from radio frequency radiation emitted from cell phone base stations and that the CPBSs had adverse visual effects.

In *McIntyre*, Bell South applied for resource consent to erect a CPBS. The activity was a noncomplying activity under the Transitional District Plan. Residents objected to the application. Their objections were related to the harmful health effects from radio frequency radiation. In particular, they argued it would be an error of law to decide, based on the present state of scientific knowledge, that there are no harmful health effects from low-level radio frequency exposure. It was also argued that the Resource Management Act contains a precautionary policy and also requires a consent authority to consider potential effects of low probability but high impact in reviewing an application.

The Planning Tribunal considered residents' objections and heard experts' opinions as to the potential health effects, and granted the consent, subject to conditions. It was found that there would be no adverse health effects from low levels of radiation from the proposed transmitter, not even effects of low probability but high potential impact.

In *Shirley Primary School*, Telecom applied to the Christchurch City Council for resource consent to establish, operate, and maintain a CPBS on land adjacent to the Shirley Primary School. This activity was a noncomplying activity under the Transitional District Plan. Again, the city council granted the consent subject to conditions. However, the school appealed the decision, alleging the following four adverse effects:

- Risk of adverse health effects from the radio frequency radiation emitted from the cell site
- Adverse psychological effects on pupils and teachers because of the perceived health risks
- Adverse visual effects
- Reduced financial viability of the school if pupils withdraw because of the perceived adverse health effects

The court concluded that the risk of the children or teachers at the school developing leukemia or other cancers from radio frequency radiation emitted by the cell site is extremely low, and the risk to the pupils of developing sleep disorders or learning disabilities because of exposure to radio frequency radiation is higher, but still very small. Accordingly, the Telecom proposal was allowed to proceed.

In summary, the Environmental Court ruled that there are no established adverse health effects from the emission of radio waves from CPBSs and no epidemiological evidence to show this. The court was persuaded by the ICNIRP guidelines that risk of health effects from low-level exposure is very low and that the cell phone frequency imposed by the NZ standard is safe, being almost two and one-half times lower than that of the ICNIRP.

The court did concede that while there are no proven health effects, there was evidence of property values being affected by both of the health allegations. The court suggested that such a reduction in property values should not be counted as a separate adverse effect from, for example, adverse visual or amenities effects. That is, a reduction in property values is not an environmental effect in itself; it is merely evidence, in monetary terms, of the other adverse effects noted.

In a third case, *Goldfinch v. Auckland City Council*,[22] the Planning Tribunal considered evidence on potential losses in value of the properties of objectors to a proposal for the siting of a CPBS. The court concluded that the valuer's monetary assessments support and reflect the adverse effects of the CPBS. Further, it concluded that the effects are more than just minor as the CPBS stood upon the immediately neighboring property.

Literature Review

While experimental and epidemiological studies have focused on the adverse health effects of radiation from the use of cell phones and CPBSs, few studies have been conducted to ascertain the impact of CPBSs on property values. Further, little evidence of property value effects has been provided by the courts. Thus, the extent to which opposition from property owners affected by the siting of CPBSs is reflected in lower property values is not well known in New Zealand.

Two studies have been conducted to ascertain the adverse health and visual effects of CPBSs on property values. Telecom commissioned Knight Frank (NZ) Ltd to undertake a study in Auckland in 1998/

20. NZRMA 289 (1996).
21. NZRMA 66 (1999).
22. NZRMA 97 (1996).

99 and commissioned Telfer Young (Canterbury) Ltd to undertake a similar study in Christchurch in 2001. Although the studies show that there is not a statistically significant effect on property prices where CPBSs are present,[23] the research in both cases involves only limited sales data analysis. Further, no surveys of residents' perceptions were undertaken, and the studies did not examine media attention to the sites and the impact this may have on saleability of properties in close proximity to CPBSs. Finally, as the sponsoring party to the research was a telecommunication company it is questionable whether the results are completely free from bias. Hence, the present study aims to help fill the research void on this contentious topic in an objective way.

CPBSs are very similar structures to high-voltage overhead transmission lines (HVOTLs); therefore it is worthwhile to review the body of literature on the property values effects of HVOTLs. The only recently published study in New Zealand on HVOTLs effects is by Bond and Hopkins.[24] Their research consists of both a regression analysis of residential property transaction data and an opinion survey to determine the attitudes and reactions of property owners in the study area toward living close to HVOTLs and pylons.

The results of the sales analysis indicate that having a pylon close to a particular property is statistically significant and has a negative effect of 20% at 10–15 meters from the pylon, decreasing to 5% at 50 meters. This effect diminishes to a negligible amount after 100 meters. However, the presence of a transmission line in the case study area has a minimal effect and is not a statistically significant factor in the sale prices.

The attitudinal study results indicate that nearly two-thirds of the respondents have negative feelings about the HVOTLs. Proximity to HVOTLs determines the degree of negativity: respondents living closer to the HVOTLs expressed more negative feelings towards them than those living farther away. It appears, however, from a comparison of the results, that the negative feelings expressed are often not reflected in the prices paid for such properties.

There have been a number of HVOTLs studies carried out in the United States and Canada. A major review and analysis of the literature by Kroll and Priestley indicates that in about half the studies, HVOTLs have not affected property values and in the rest of the studies there is a loss in property value between 2%–10%.[25] Kroll and Priestley are generally critical of most valuer-type studies because of the small number of properties included and the failure to use econometric techniques such as multiple regression analysis. They identify the Colwell study as one of the more careful and systematic analyses of residential impacts.[26] That study, carried out in Illinois, finds that the strongest effect of HVOTLs is within the first 15 meters, but the effect dissipates quickly with distance, disappearing beyond 60 meters.

A Canadian study by Des Rosiers, using a sample of 507 single-family house sales, finds that severe visual encumbrance due to a direct view of either a pylon or lines exerts a significant, negative impact on property values; however location adjacent to a transmission corridor may increase value.[27] This was particularly evident where the transmission corridor was on a well-wooded, 90-meter right-of-way. The proximity advantages include enlarged visual field and increased privacy. The decrease in value from the visual impact of the HVOTLs and pylons (on average between 5% and 10% of mean house value) tends to be cancelled out by the increase in value from proximity to the easement.

A study by Wolverton and Bottemiller[28] uses a paired-sale analysis of home sales in 1989–1992 to ascertain any difference in sale price between properties abutting rights-of-way of transmission lines (subjects) in Portland, Oregon; Vancouver, Washington; and Seattle, Washington; and those located in the same cities but not abutting transmission line rights-of-way (comparisons). Subjects sold during the study period were selected first; then a matching comparison was selected that was as similar to the subject as possible. The study results did not support a finding of a price effect from abutting an HVTL right-of-way. In their conclusion, the authors

23. Mark Dunbar, Telfer Young research valuer, personal communication with Bond, 2002. The results of these studies have not been made publicly known. The study by Knight Frank of Auckland was conducted by Robert Albrecht.

24. S. G. Bond and J. Hopkins, "The Impact of Transmission Lines on Residential Property Values: Results of a Case Study in a Suburb of Wellington, New Zealand," *Pacific Rim Property Research Journal* 6, no. 2 (2000): 52–60.

25. C. Kroll and T. Priestley, "The Effects of Overhead Transmission Lines on Property Values: A Review and Analysis of the Literature," Edison Electric Institute (July 1992).

26. Peter F. Colwell, "Power Lines and Land Value," *Journal of Real Estate Research* 5, no. 1 (Spring 1990): 117–127.

27. François Des Rosiers, "Power Lines, Visual Encumbrance and House Values: A Microspatial Approach to Impact Measurement," *Journal of Real Estate Research* 23, no. 3 (2002): 275–301.

28. Marvin L. Wolverton and Steven C. Bottemiller, "Further Analysis of Transmission Line Impact on Residential Property Values," *The Appraisal Journal* (July 2003): 244–252.

warn that the results cannot and should not be generalized outside of the data. They explain that

> limits on generalizations are a universal problem for real property sale data because analysis is constrained to properties that sell and sold properties are never a randomly drawn representative sample. Hence, generalizations must rely on the weight of evidence from numerous studies, samples, and locations.[29]

Thus, despite the varying results reported in the literature on property value effects from HVOTLs, each study adds to the growing body of evidence and knowledge on this (and similar) valuation issue(s). The study reported here is one such study.

Opinion Survey Research Objectives and Methodology

Research by Abelson;[30] Chalmers and Roehr;[31] Kinnard, Geckler and Dickey;[32] Bond;[33] and Flynn et al.,[34] recommend the use of market sales analysis in tandem with opinion survey studies to measure the impact of environmental hazards on residential property values. The use of more than one approach provides the opportunity to compare the results from each and to derive a more informed conclusion than obtained from relying solely on one approach. Thus, the methods selected for this study include a public opinion survey and a hedonic house price approach (as proposed by Freeman[35] and Rosen[36]). A comparison of the results from both of these techniques will reveal the extent to which the market reacts to cell phone towers.

Public Opinion Survey

An opinion survey was conducted to investigate the current perceptions of residents towards living near CPBSs and how this proximity might affect property values. Case study areas in the city of Christchurch were selected for this study. The study included residents in ten suburbs: five case study areas (within 300 meters of a cell phone tower) and five control areas (over 1 kilometer from the cell phone tower). The five case study suburbs were matched with five control suburbs that had similar living environments (in socioeconomic terms) except for the presence of a CPBS.

The number of respondents to be surveyed (800) and the nature of the data to be gathered (perceptions/personal feelings towards CPBSs) governed the choice of a self-administered questionnaire as the most appropriate collection technique. Questionnaires were mailed to residents living in the case study and control areas.

A self-administered survey helps to avoid interviewer bias and to increase the chances of an honest reply where the respondent is not influenced by the presence of an interviewer. Also, mail surveys provide the time for respondents to reflect on the questions and answer these at their leisure, without feeling pressured by the time constraints of an interview. In this way, there is a better chance of a thoughtful and accurate reply.

The greatest limitation of mail surveys is that a low response rate is typical. Various techniques were used to help overcome this limitation, including careful questionnaire design; inclusion of a free-post return envelope; an accompanying letter ensuring anonymity; and reminder letters. An overall response rate of 46% was achieved for this study.

The questionnaire contained 43 individual response items. The first question acted as an identifier to determine whether the respondent was a homeowner or tenant. While responses from both groups were of interest, the former was of greater importance, as they are the group of purchasers/sellers that primarily influence the value of property. However, it was considered relevant to survey both groups as both are affected by proximity to a CPBS to much the same extent from an occupiers' perspective, i.e., they both may perceive risks associated with a CPBS. It was hypothesized that tenants, being less-permanent residents, would perceive the effects in a similar way, but to a much lesser degree.

Other survey questions related to overall neighborhood environmental desirability; the timing of

29. Ibid., 252.
30. P. W. Abelson, "Property Prices and Amenity Values," *Journal of Environmental Economics and Management* 6 (1979): 11–28.
31. James A. Chalmers and Scott Roehr, "Issues in the Valuation of Contaminated Property," *The Appraisal Journal* (January 1993): 28–41.
32. W. N., Kinnard, M. B. Geckler, and S. A. Dickey, "Fear (as a Measure of Damages) Strikes Out: Two Case Studies Comparisons of Actual Market Behaviour with Opinion Survey Research" (paper presented at the Tenth Annual American Real Estate Society Conference, Santa Barbara, California, April 1994).
33. S. G. Bond, "Do Market Perceptions Affect Market Prices? A Case of a Remediated Contaminated Site," in *Real Estate Valuation Theory,* ed. K. Wang and M. L. Wolverton, 285–321 (Boston: Kluwer Academic Publishers, 2002).
34. James Flynn et al., "Survey Approach for Demonstrating Stigma Effects in Property Value Litigation," *The Appraisal Journal* (Winter 2004): 35–45.
35. A. Myrick Freeman, *The Benefits of Environmental Improvement: Theory and Practice* (Baltimore: John Hopkins Press, 1979).
36. Sherwin Rosen, "Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition," *Journal of Political Economy* 82, no. 1 (Jan/Feb 1974): 34–55.

the CPBS's construction and its proximity in relation to the respondent's home; the importance placed on the CPBS as a factor in relocation decisions and on the price/rent the respondent was prepared to pay for the house; how a CPBS might affect the price the respondent would be willing to pay for the property; and the degree of concern regarding the effects of CPBSs on health, stigma, aesthetics, and property values. The surveys were coded to identify the property address of the respondent. This enabled each respondent's property to be located on a map and to show this in relation to the cell site.

Eighty questionnaires[37] were distributed to each of the ten suburbs (five case study and five control areas) in Christchurch. Respondents were instructed to complete the survey and return it in the free-post, self-addressed envelope provided. The initial response rate was 31%. A month later, a further 575 questionnaires with reminder letters were sent out to residents who had not yet responded. A total response rate of 46% was achieved. Response rates from each suburb ranged from 33% (Linwood) to 61% (Bishopdale).

The questionnaire responses were coded and entered into a computerized database.[38] The analysis of responses included the calculation of means and percentage of responses to each question to allow for an overview of the response patterns in each area.

Case Study and Control Areas

The suburbs of Beckenham, Papanui, Upper Riccarton, Bishopdale, and St Albans were selected for the case study because there is at least one CPBS within each of these communities. Census data, providing demographic and socioeconomic characteristics of geographic areas, was used to select the control suburbs of Spreydon, Linwood, Bromley, Avonhead, and Ilam.[39] The control areas are located further away (over 1 kilometer) from the CPBS in their matched case study area. As well as matching demographic and socioeconomic characteristics, each suburb was selected based on its similarity to its matched case study area in terms of living environment and housing stock, distance to the central business district, and geographic size; the only dissimilarity is that there are no CPBSs in the control areas. (See Appendix I for a location map.)

Demographic statistics show that Bromley and Ilam comprise a younger population (median age about 33), with Bishopdale and Upper Riccarton having an older population (median age about 40). The ethnic breakdown of each suburb indicates that Papanui and Spreydon have the highest proportion of Europeans (about 90%), Bromley has the highest proportion of both Maoris and Pacific Islanders (13.9% and 8.5% respectively), while Ilam, Avonhead, and Upper Riccarton have the highest proportion of Asians (16.1% to 18.5%).[40]

Median household and median family incomes (MHI and MFI) are highest in Ilam and Avonhead (MHI: $34,751NZ, $53,405NZ; MFI: $51,530NZ, $65,804NZ, respectively) and lowest in Linwood and Beckenham (MHI: $22,275NZ, $26,398NZ; MFI: $29,673NZ, $33,847NZ respectively).[41] Residents of St Albans West have the highest levels of education (21.7% have a degree or a higher degree) followed by Upper Riccarton (18.7%), Ilam (16.7%), and Avonhead (16.2%). These same suburbs have the highest proportion of professionals by occupational class (20.3% to 27.3%). Residents of Bromley have the lowest education (40% have no qualification) and the lowest proportion of professionals (5.5%).[42]

In summary, the socioeconomic data shows that Ilam is the more superior suburb, followed by Avonhead, Upper Riccarton, St Albans West, and Papanui. The lower socioeconomic areas are, in decreasing order, Spreydon, Bishopdale, Bromley, Beckenham, and Linwood.

Survey Results

A summary of the main findings from the survey is presented in Appendix II, and the survey results are discussed in the following.

Response Rates

Of the 800 questionnaires mailed to homeowners and tenants in the case study and control areas (400 to each group), 50% from the case study area and 41%

37. Approved by the University of Auckland Human Subjects Ethics Committee (reference 2002/185).
38. The computer program SPSS was selected as the appropriate analytical tool for processing the data.
39. The census is conducted in New Zealand every five years, and the data used to define the control areas is from the latest census conducted in 2001, see Christchurch City Area Unit Profile, 2001 at http://www.ccc.govt.nz/Census/ChristchurchCityAreaUnitProfile.xls.
40. Christchurch City Area Unit Profile statistics.
41. $1NZ = $0.65US, thus, $34,751NZ = $22,588US.
42. The median house price for Christchurch city in August 2003 was $185,000NZ/$120,000US (New Zealand national median house price at this time was $215,000NZ/$140,000US), http://www.reinz.co.nz/files/HousingFacts-Sample-Pg1-5.pdf (accessed March 17, 2004). Median house prices in each individual suburb could not be obtained as the median sales data from the Real Estate Institute of NZ (REINZ) contains more than one suburb in each location grouping.

from the control area were completed and returned. Over three-quarters (78.5%) of the case study respondents were homeowners compared to 94% in the control area.

Desirability of the Suburb as a Place to Live

More than half (58.3%) the case study respondents have lived in their suburb for more than five years (compared to 65% in the control group) and a quarter (25%) have lived in their suburb between 1 and 4 years (compared to 28% in the control group).

Around two-thirds (65% of the case study respondents and 68% of the control group respondents) rated their neighborhoods as either above average or superior as a place to live when compared with other similar named suburbs. The reasons given for this include close proximity to amenities (shops, library, medical facilities, public transport, and recreational facilities) and good schools.

Reasons given for rating the case study neighborhoods inferior to other similar neighborhoods include lower house prices, older homes, more student housing and lower-income residents. The reasons given by the control group respondents for an inferior rating include distance from the central business district (Avonhead); smell from the sewerage oxidation ponds and composting ponds (Bromley); and lower socioeconomic area and noise from the airport (Linwood).

Feelings About a CPBS as an Element of the Neighborhood

In the case study areas, a CPBS had already been constructed when only 39% of the respondents bought their houses or began renting in the neighborhood. Some responded that they were not notified that the CPBS was to be built, that they had no opportunity to object to it, and that they felt they should have been consulted about its construction. For the respondents who said that proximity to the tower was of concern to them, the most common reasons given for this were the impact of the CPBS on health, aesthetics, and property values. Nearly three-quarters (74%) of the respondents said they would have gone ahead with the purchase or rental of their property anyway if they had known that the CPBS was to be constructed.

In the control areas nearly three-quarters (72%) of the respondents indicated they would be opposed to construction of a CPBS nearby. The location of a CPBS would be taken into account by 83% of respondents if they were to consider moving. As with the case study respondents, the control group respondents who were concerned about proximity to a CPBS were most often concerned about the effects of CPBSs on health, aesthetics, and property values.

Impact on Decision to Purchase or Rent

In the case study areas, the tower was visible from the houses of 46% of the respondents, yet two-thirds (66%) of these said it was barely noticeable, and one-quarter said it mildly obstructed their view. When asked in what way the CPBS impacts the enjoyment of living in their home, 37% responded that its impact was related to health concerns, 21% said it impacted neighborhood aesthetics, 20% said it impacted property value, and 12% said it impacted the view from their property.

When asked about the impact that the CPBS had on the price/rent they were prepared to pay for their property, over half the case study respondents (53.1%) said that the tower was not constructed at the time of purchase/rental, and 51.4% of the respondents said the proximity to the CPBS did not affect the price they were prepared to pay for the property. Nearly 3% said they were prepared to pay a little less, 2% said they were prepared to pay a little more. For the control group respondents, 45% of the respondents would pay substantially less for a property if a CPBS were located nearby, over one-third (38%) were prepared to pay just a little less for such a property, and 17% responded that a CPBS would not influence the price they would pay.

Only 10% of the case study respondents gave an indication of the impact that the CPBS had on the price/rent they were prepared to pay for the property; one-third of these felt it would decrease price/rent by 1% to 9%. For the control group, over one-third (38%) of the respondents felt that a CPBS would decrease price/rent by more than 20%, and a similar number (36%) said they would be prepared to pay 10% to 19% less for property located near a CPBS. The responses are outlined in Table 1.

Table 1 Impact of a CPBS on Purchase/Rental Price Decision

Price/Rent Effect	Percent of Case Study Respondents (Control Group Responses)
20% more	5% (3%)
10–19% more	10% (2%)
1–9% more	14% (2%)
1–9% less	33% (19%)
10–19% less	24% (36%)
20% or greater reduction in price/rent	14% (38%)

Interestingly, it would seem that those living farther away from the CPBSs (the control group) are far more concerned about proximity to CPBSs than those living near CPBSs (the case study group); they indicated that a CPBS would have a greater price/rent effect. The possible explanations for this are discussed in the survey results section.

Concerns About Proximity to the CPBS

Most case study respondents were not worried about the effects of proximity to a CPBS related to health (50%), stigma (55%), future property value (61%), or aesthetics (63%). About one-quarter to one-third of these respondents were somewhat worried about the impact of proximity to a CPBS on health (38%), stigma (34%), future property value (25%), or aesthetics (25%). From the list of issues, respondents were most worried about future property value, but only 13.5% of the respondents responded this way.

Here again, control group respondents were much more concerned about the effects of proximity to a CPBS than their case study counterparts. Of the possible concerns about CPBSs on which respondents were asked to comment, control group respondents were most worried about the negative effects on future property values and aesthetics. Nearly half the respondents were worried a lot about these issues. Similar responses were recorded for the possibility of harmful health effects in the future from CPBSs (42% were worried a lot about this) and stigma associated with houses near CPBSs (34% were worried a lot). The responses regarding concerns about living near a CPBS are shown in Table 2.

In both the case study and control areas, the issue of greatest concern for respondents was the impact of proximity to CPBSs on future property values. The main concerns related to CPBSs were the unknown potential health effects, the possible socioeconomic implications of the siting of CPBSs, and how CPBSs affect property values. There also were concerns that the city council was not notifying the public about the possible construction of CPBSs.

Discussion of the Survey Results

The results were mixed, with responses from residents ranging from having no concerns to being very concerned about proximity to a CPBS. In general, those people living in areas farther from CPBSs were much more concerned about issues related to proximity to CPBSs than residents who lived near CPBSs.

Over 40% of the control group respondents were worried a lot about future health risks, aesthetics, and future property values compared with the case study areas, where only 13% of the respondents were worried a lot about these issues. However, in both the case study and control areas, the impact of proximity to CPBSs on future property values is the issue of greatest concern for respondents. If purchasing or renting a property near a CPBS, over a third (38%) of the control group respondents said a CPBS would reduce the price of their property by more than 20%. The perceptions of the case study respondents were again less negative, with a third saying they would reduce the price by only 1%–9%, and 24% saying they would reduce the price by 10%–19%.

The lack of concern shown by the case study respondents may be due to the CPBSs being either not visible or only barely visible from their homes. The CPBSs may be far enough away from respondents' properties (as was indicated by many respondents, particularly in St Albans West, Upper Riccarton, and Bishopdale) or hidden by trees and consequently not perceived as affecting the properties. The results may have been quite different had the CPBS being more visually prominent.

Alternatively, the apparent lower sensitivity to CPBSs of case study residents compared to the control group residents may be due to cognitive dissonance reduction. In this case, respondents may be unwilling to admit, due to the large amounts of money already paid, that they may have made a poor purchase or rental decision in buying or renting property located near a CPBS. Similarly, the homeowners may be unwilling to admit there are concerns about CPBSs when the CPBSs were built

Table 2 Concerns about Living Near a CPBS*

Concern	Does not worry me	Worries me somewhat	Worries me a lot
Possibility of harmful health effects	50% (20%)	38% (38%)	12% (42%)
Stigma effect	55% (21%)	34% (45%)	12% (34%)
Effect on future property values	61% (15%)	25% (37%)	13% (47%)
Aesthetics	63% (18%)	25% (37%)	11% (45%)

* Percent of case study respondents having that concern (control group respondents). All numbers are rounded.

after they had purchased their homes, because to do so might have a negative impact on property values.

Regardless of the reasons for the difference in responses from the case study and control groups, the overall results show that residents perceive CPBSs negatively. In both the case study and control areas, the impact of proximity to CPBSs on future property values was the issue of greatest concern for respondents. Overall, respondents felt that proximity to a CPBS would reduce value by from 10% to over 20%. The second part of the study outlined below, involving an econometric analysis of Christchurch property sales transaction data, helps to confirm these results.

Respondents' comments added at the end of the survey indicate that residents have ongoing concerns about CPBSs. Although some people accepted the need for CPBSs, they said that they did not want them built in their back yard, or they preferred that they be disguised to blend better with their environment.

Market Study Research Objectives and Methodology

A market study was undertaken to test the hypothesis that in suburbs where there is a CPBS it will be possible to observe discounts to the selling price of homes located near these structures. Such discounts would be observed where buyers of proximate homes view the CPBSs in negative terms due to a perceived risk of adverse effects on health, aesthetics, and property value.

The literature dealing specifically with the measurement of the impact of environmental hazards on residential sale prices (including proximity to transmission lines, landfill sites, and ground water contamination) indicates the popularity of hedonic pricing models, as introduced by Court[43] and later Griliches,[44] and further developed by Freeman[45] and Rosen.[46] The more recent studies, including those by Dotzour;[47] Simons and Sementelli;[48] and Reichert,[49] focus on proximity to an environmental hazard and demonstrate that this reduces residential house prices by varying amounts depending on the distance from the hazard.[50] However, there are no known published studies that use hedonic housing models to measure the impact of proximity to a CPBS on residential property values.

As in the previous residential house price studies, the standard hedonic methodology was used here to quantify the impact of a CPBS on sale prices of homes located near a CPBS. The results from this study in tandem with the opinion survey results will help test the hypothesis that proximity to a CPBS has a negative impact on property value and will reveal the extent to which the market reacts to CPBSs.

Model Specification

A hedonic price model is constructed by treating the price of a property as a function of its utility-bearing attributes. Independent variables used in the model to account for the property attributes are limited to those available in the data set and known, based on other well-tested models reported in the literature and from valuation theory, to be related to property price. The basic model used to analyze the impact on sale price of a house located near a CPBS, is as follows:

$$P_i = f(X_{1,i}, X_{2,i} \ldots \ldots \ldots \ldots \ldots X_{n,i})$$

where:

P_i = property price at the i th location

$X_{1,i} \ldots X_{n,i}$ = individual characteristics of each sold property (e.g., land area, age of house, floor area, sale date, construction materials, house condition, CPBS construction date, etc.)

The more recent hedonic pricing studies that demonstrate the effects of proximity to an environmental hazard use different functional forms to represent the relationship between price and various property characteristics.[51] In hedonic housing models the linear and log-linear models are most popular. The linear model implies constant partial effects between house prices and housing characteristics, while the log-linear model allows for nonlinear price effects and is shown in the following equation:

43. A. T. Court, "Hedonic Price Indexes with Automotive Examples," in *The Dynamics of Automobile Demand* (New York: General Motors, 1939).
44. Zvi Griliches, ed. *Price Indexes and Quality Change* (Cambridge, Mass.: Harvard University Press, 1971).
45. Freeman.
46. Rosen.
47. Mark Dotzour, "Groundwater Contamination and Residential Property Values," *The Appraisal Journal* (July 1997): 279–285.
48. Robert A. Simons and Arthur Sementelli, "Liquidity Loss and Delayed Transactions with Leaking Underground Storage Tanks," *The Appraisal Journal* (July 1997): 255–260.
49. Alan K. Reichert, "Impact of a Toxic Waste Superfund Site on Property Values," *The Appraisal Journal* (October 1997): 381–392.
50. Only Dotzour found no significant impact of the discovery of contaminated groundwater on residential house prices. This was likely due to the nonhazardous nature of the contamination where the groundwater was not used for drinking purposes.
51. See for example L. Dale et al., "Do Property Values Rebound from Environmental Stigmas? Evidence from Dallas," *Land Economics* 75, no. 2 (May 1999): 311–326; Dotzour; Simons and Sementelli; and Reichert.

$$\ln P_i = b_0 + b_1 \times X_{1,i} + b_2 \times X_{2i} + b_3 \times X_{3i} \ldots \ldots \ldots + b_n \times X_{n+1} + a_o \times D_o + \ldots \ldots + a_m \times D_m + e_0$$

where:

$\ln P_i$ = the natural logarithm of sale price

b_0 = the intercept

$b_1 \ldots b_n$; $a_o \ldots a_m$ = the model parameters to be estimated, i.e., the implicit unit prices for increments in the property characteristics

$X_1 \ldots X_n$ = the continuous characteristics, such as land area

$D_o \ldots D_m$ = the categorical (dummy) variables, such as whether the sale occurred before (0) or after (1) the CPBS was built

Sometimes the natural logarithm of land area and floor area is also used. The parameters are estimated by regressing property sales on the property characteristics and are interpreted as the households' implicit valuations of different property attributes. The null hypothesis states that the effect of being located near a CPBS does not explain any variation in property sale prices.

The Data

Part of the process for selecting appropriate case study areas was identifying areas where there had been a sufficient number of property sales to provide statistically reliable and valid results. Sales were required for the period before and after the CPBS had been built in order to study the impact of the CPBS on the surrounding properties' sale prices.

Further, due to the multitude of factors that combine to determine a neighborhood's character, such as proximity to the central business district, standard of schooling, recreational facilities provided, standard of housing, proximity to amenities, and the difficulty in allowing for these separately, sales located in areas with comparable neighborhood characteristics were preferred.

Four of the suburbs in the survey case study met the criteria for the market study: St Albans, Beckenham, Papanui, and Bishopdale. No sales data was available for Upper Riccarton after the CPBS was built in this suburb, hence this suburb was not included in the market analysis study. As each CPBS was built at a different date, the sales from each suburb were separately analyzed. The uniformity of locational and neighborhood characteristics in each of these suburbs allows the analysis to be simplified and to focus on the properties' physical attributes. The relative homogeneity of housing, locational, and neighborhood attributes was verified through field inspections.

The dependent variable is the property sale price. The data set includes 4283 property sales that occurred between 1986 and 2002 (approximately 1000 sales per suburb).[52]

The independent data set was limited to those variables that correspond to property attributes known and suspected to influence price. These variables are floor area (m^2); land area (ha); age of the house (the year the house was built); tower (a dummy variable indicating whether the sale occurred before or after the CPBS was built); sale date (month and year); time of sale based on the number of quarters before or after the CPBS was built (to help control for movements in house prices over time); category of residential property (stand-alone dwelling, dwelling converted into flats, ownership unit, etc); quality of the principal structure (as assessed by an appraiser); and roof and wall materials. The number of bedrooms was not available in the data set, but would not have been included as an independent variable since the number of bedrooms is highly correlated with floor area.

Since the GIS coordinates of properties for the initial analysis were not available, street name was included as an independent variable instead. To a limited extent, street name helped to control for the proximity effects of a CPBS. It was suspected that houses on a street close to a CPBS may, on average, sell for less than houses on a street farther away from the CPBS.

While views, particularly water views, have been shown in previous empirical studies to be an important attribute affecting sale price, in the present study the flat contour of the landscape where the homes are located, together with the suburban nature of the environment surrounding these, precluded any significant views. Thus, views were not included in the analysis. Further, due to the large number of sales included in the analysis, inspections of each individual property were not made to determine the view, if any, of a CPBS from each house. It was felt that it is not merely the view that may impact on price, but also proximity to a CPBS due to the potential effect this may have on health, cell phone coverage, and neighborhood aes-

52. These sales were obtained from Headway Systems Ltd, a data distribution and system development company. Headway is the major supplier of property market sales information to New Zealand's valuation profession; it is jointly owned by the NZ Institute of Valuers (NZIV) and PT Investments, a consortium of 28 shareholders from within the property industry.

thetics. Hence, view of a CPBS was not included as an independent variable. The variable descriptions are listed in Table 3. Variable codes are shown in Appendix III and basic descriptive statistics for selected quantitative variables are shown in Appendix IV.

Table 3 Variable Descriptions

Variable*	Definition
SLNETX	Sale price of the house (NZ$)
SITSTX	Street name
CATGYX2	Category of dwelling: D, E, etc.†
CATGYX4	Quality of the structure: A, B, C†
TIMESOLD.Q	Using the time the cell phone tower was built as a baseline quarter, the number of quarters before (–) and after (+) it was built
AGE	Year the house was built
LANDAX	Land area (ha)
MATFAX	Total floor area (m^2)
WALLCNX	Wall construction: W, B, C, etc. †
ROOFCNX	Roof construction: W, B, C, etc. †
TOWER	An indicator variable: 0 if before the cell phone tower was built, or 1 after it was built

* Sale price is the dependent variable.

† See Appendix III for explanation of variable codes.

Market Study Results

An econometric analysis of Christchurch property transaction data helped to confirm the opinion survey results. In the analysis of selected suburbs, the sales data from sales that occurred before a CPBS was built was compared to sales data from after a CPBS was built to determine any variance in price, after accounting for all the relevant independent variables.

Empirical Results

The model of choice is one that best represents the relationships between the variables and has a small variance and unbiased parameters. Various models were tested and the results are described in the next section. The following statistics were used to help select the most appropriate model: the adjusted coefficient of determination (adjusted R^2); the standard error of the regression equation; the AIC[53] and BIC[54] statistics; and *t*-test of significance of the coefficients and *F*-statistic.

Significance of Variables and the Equation: St Albans

As hedonic prices can vary significantly across different functional forms, various commonly used functional forms were examined to determine the model specification that best describes the relationship between price and the independent variables. Also, to test the belief that the relationship between *Price* and *Land Area* is not a linear function of *Price,* the variable *LANDAX* (land area) was transformed to reflect the correct relationship. Several transformations were tested including: linear of *SLNETX* (sale price) and log of *LANDAX*; log of *SLNETX* and linear of *LANDAX;* and log of *SLNETX* and log of *LANDAX*. All dummy variables remained in their linear form in each model.

It was found that the best result was obtained from using the log of *SLNETX* and log of *LANDAX*, and the linear form of all the dummy variables. Taking the log of an independent variable implies diminishing marginal benefits. For example, an extra 50 square meters of land area on a 550-square-meter site would be worth less than the previous 50 square meters. The log-log model shows the percent change in price for a one-percent change in the independent variable, while all other independent variables are held constant (as explained in Hill, Griffiths, and Judge).[55]

In the semilogarithmic equation the interpretation of the dummy variable coefficients involves the use of the formula: $100(e^{b_n} - 1)$, where b_n is the dummy variable coefficient.[56] This formula derives the percentage effect on price of the presence of the factor represented by the dummy variable and is advocated over the alternative, and commonly misused, formula of 100. (b_n). The resulting model included all the available variables as follows:

$$\begin{aligned}\log(SLNETX) = \alpha &+ \beta_1 \times TOWER + \beta_2 \times SITSTX \\ &+ \beta_3 \times CATGYX2 + \beta_4 \times CATGYX4 \\ &+ \beta_5 \times TIMESOLD \times Q + \beta_6 \times AGE \\ &+ \beta_7 \times \log(LANDAX) \\ &+ \beta_8 \times MATFAX \\ &+ \beta_9 \times WALLCNX \\ &+ \beta_{10} \times ROOFCNX\end{aligned}$$

53. AIC is the Akaike Information Criterion, and is a "goodness of fit" measure involving the standard error of the regression adjusted by a penalty factor. The model selected is the one that minimizes this criterion (Microsoft SPSSPC Online Guide, 1997).

54. The BIC is the Bayesian Information Criterion. Like the AIC, BIC takes into account both how well the model fits the observed data, and the number of parameters used in the model. The model selected is the one that adequately describes the series and has the minimum SBC. The SBC is based on Bayesian (maximum-likelihood) considerations. (Microsoft SPSSPC Online Guide, 1997).

55. R. Carter Hill, William E. Griffiths, and George G. Judge, *Undergraduate Econometrics* (New York: John Wiley & Sons, 1997).

56. See Robert Halvorsen and Raymond Palmquist, "The Interpretation of Dummy Variables in Semi-Logarithmic Equations," *American Economic Review* 70, no. 3 (1980): 474–475.

From the regression output, the variables *ROOFCNX* and *WALLCNX* were found to be insignificant so these were removed from the model and the regression was rerun. The table in Appendix V summarizes these results. The *F*-statistic (123) shows that the estimated relationship in the model is statistically significant at the 95% confidence level and that at least one of the coefficients of the independent variables within the model is not zero.

Table 4 summarizes the model selection test statistics. Based on the AIC and BIC, the regression that excludes the variables *ROOFCNX* and *WALLCNX* is superior to the regression that includes them (AIC and BIC are minimized). For this reason, the model excluding these variables was selected for analysis, and it is discussed next.

Table 4 Test Statistics — St Albans

	Adjusted R^2	AIC	BIC
Full Model	0.82	-118.38	36.55
Sub Model	0.82	-121.64	5.95

Tests for normality, heteroskedasticity, and multicollinearity generally indicated that the model was adequately specified and that the data were not severely ill conditioned (heteroskedasticity and multicollinearity were diminished when the data were transformed).

The coefficient of determination (R^2) indicates that approximately 82% of the variation in sale price is explained by the variation in the independent variable set. All variable coefficients had the expected signs,[57] except for *TOWER*, which was positive. The positive coefficient for *TOWER* shows that, when all the other variables are held constant, after the installation of a CPBS in St Albans, the price of a house would increase by $e^{0.1133} \approx 1.12$ (12%). A possible explanation is that cell phone technology was quite new at the time (1994), and as there had been little in the media about possible adverse health effects from CPBSs, people may have perceived it as a benefit as they were likely to get better cell phone coverage.

The most significant variables were *TIMESOLD.Q* (the quarter in which the sale occurred before or after the CPBS was built), *log(LANDAX)* (log of land area), and *MATFAX* (total floor area) and all have a positive influence on price. The positive *TIMESOLD.Q* indicates that the market was increasing over time since the CPBS was built (1994), but only to a limited extent (1.38%). The positive log of land area and total floor area shows that prices increase with increasing size.

The regression coefficient on *log(LANDAX)* is 0.3285, which indicates that, on average, a 10% increase in *LANDAX* will generate a 3.285% increase in price. The positive coefficient for *MATFAX* indicates that, when all the other variables are held constant, for each additional m^2 the price would increase by $e^{0.0022314} \approx 1.0022314$ (0.22% increase).

Significance of Variables and the Equation: Papanui

The same functional form used for St Albans was used for Papanui. From the regression output, the variable *CATGYX2* was found to be insignificant so it was removed from the model and the regression was rerun; Appendix VI summarizes the results. The *F*-statistic (152) shows that the estimated relationship in the model is statistically significant at the 95% confidence level and that at least one of the coefficients of the independent variables within the model is not zero.

Table 5 summarizes the model selection test statistics. Based on the AIC and BIC, the regression that excludes the variable *CATGYX2* is superior to the regression that includes it (AIC and BIC are minimized). For this reason, the model excluding this variable was selected for analysis, and is discussed next.

Table 5 Test Statistics — Papanui

	Adjusted R^2	AIC	BIC
Full Model	0.87	-509.91	-371.99
Sub Model	0.87	-510.57	-381.56

The coefficient of determination (R^2) indicates that approximately 87% of the variation in sale price is explained by the variation in the independent variable set. This would be considered high in comparison with the amount of explanation obtained in similar hedonic house studies reported in the literature.[58] All variable coefficients had the expected signs.

The most significant variables were *TIMESOLD.Q*, *MATFAX* (total floor area), and *TOWER*. The former two have a positive influence on price. The positive *TIMESOLD.Q* indicates that the

57. Note that the variable *AGE* is positive as this variable indicates the year the house was built; therefore, the higher the year, the younger the home. Newer houses have less wear and tear than older homes and sell, on average, for more than older homes.

58. For example, Reichert obtained an adjusted R^2 of 84%; Simons and Sementelli, 78%; Abelson, 68%; Dotzour, 56%–61%.

market was increasing over time since the CPBS was built (2000), but only by 1.4% per quarter. The positive coefficient for *MATFAX* indicates that, when all the other variables are held constant, the price would increase by $e^{0.0042576} \approx 1.00427$ (0.43%), with increasing size. The negative coefficient for *TOWER* shows that, when all the other variables are held constant, after the installation of a CPBS in Papanui, the price of a house would decrease by $e^{-0.2340} \approx 0.79$ (21% decrease).

Significance of Variables and the Equation: Beckenham

The same functional form used for Papanui and St Albans was used for Beckenham. From the regression output, the variable *ROOFCNX* was found to be insignificant so it was removed from the model and the regression was rerun; Appendix VII summarizes these results. The *F*-statistic (214) shows that the estimated relationship in the model is statistically significant at the 95% confidence level and that at least one of the coefficients of the independent variables within the model is not zero.

Table 6 summarizes the model selection test statistics. Based on the AIC and BIC, the regression that excludes the variable *ROOFCNX* is superior to the regression that includes it (AIC and BIC are minimized). For this reason, the model excluding this variable was selected for analysis.

Table 6 Test Statistics — Beckenham

	Adjusted R^2	AIC	BIC
Full Model	0.89	-819.00	-641.39
Sub Model	0.89	-818.66	-650.66

The coefficient of determination (R^2) indicates that approximately 89% of the variation in sale price is explained by the variation in the independent variable set. Again, as with the model for Papanui this amount of explanation would be considered high.

The most significant variables were *TIMESOLD.Q, MATFAX,* and *TOWER*. The former two have a positive influence on price. The positive *TIMESOLD.Q* indicates that the market was increasing over time since the CPBS was built in 2000, but only by 1.91% per quarter. The positive coefficient for *MATFAX* indicates that, when all the other variables are held constant, the price would increase by $e^{0.0042054} \approx 1.00421$ (0.42%), with increasing size. The negative coefficient for *TOWER* shows that, when all the other variables are held constant, after the installation of a CPBS in Beckenham, the price of a house would decrease by $e^{-0.25019} \approx 0.793$ (20.7% decrease).

Significance of Variables and the Equation: Bishopdale

The same functional form used for the other three suburbs was used for Bishopdale. From the regression output, the variables *ROOFCNX* and *CATGYX* were found to be insignificant so these were removed from the model and the regression was rerun; Appendix VIII summarizes these results. The *F*-statistic (122) shows that the estimated relationship in the model is statistically significant at the 95% confidence level and that at least one of the coefficients of the independent variables within the model is not zero.

Table 7 Test Statistics — Bishopdale

	Adjusted R^2	AIC	BIC
Full Model	0.79	-927.48	-775.71
Sub Model	0.79	-929.32	-796.52

Table 7 summarizes the model selection test statistics. Based on the AIC and BIC, the regression that excludes the variable *ROOFCNX* and *CATGYX* is superior to the regression that includes it (AIC and BIC are minimized). For this reason, the model excluding these variables was selected for analysis.

Again, the most significant variables were *TIMESOLD.Q* and *MATFAX*; the variable of interest, *TOWER*, was not a significant variable in the model so it is not discussed further. The former two variables have a positive influence on price. The positive *TIMESOLD.Q* indicates that the market was increasing over time since the CPBS was built in 1994, but only at 0.98% per quarter. The positive coefficient for *MATFAX* indicates that, when all the other variables are held constant, the price would increase by $e^{0.0039665} \approx 1.004$ (0.40%), with increasing size.

Summary of Results

The above analysis shows that the most significant variables and their impact on price were similar between suburbs. This indicates the relative stability of the coefficients between each model. Interestingly, the impact of *TOWER* on price (a decrease of between 20.7% and 21%) was very similar in the two suburbs where the towers were built in the year 2000. This may be due to the much greater media publicity given to CPBSs after the two legal cases in Christchurch (*McIntyre* and *Shirley Primary School*

in 1996 and 1999, respectively). The two suburbs where *TOWER* was either insignificant or increased prices by around 12%, were suburbs where towers had been built in 1994, prior to the media publicity.

Limitations of the Research

The main limitation affecting this survey was in the selection of the case study areas. Specifically, the areas selected had CPBSs that were not highly visible to residents. If more-visible CPBSs had been selected, the results may have been quite different. Thus, caution must be used in making generalizations from this study or applying the results directly to other similar studies or valuation assignments. Factors that could affect results are the distance of homes from the CPBS, the style and appearance of the CPBS, how visible the CPBS is to residents, the type of home (single family, multifamily, rental, etc.), and the socioeconomic make-up of the resident population.

To help address the proximity factor, a study is in progress examining the role of distance to the CPBSs and price effects; that study uses GIS analysis to determine the impact this has on residential property prices. It is expected that this will provide a more precise estimation of the impact of a CPBS on price.

It must be kept in mind that these results are the product of only one case study carried out in a specific area (Christchurch) at a specific time (2003). The above results indicate that value effects from CPBSs may vary over time as market participants' perceptions change. Perceptions toward CPBSs can change either positively or negatively over time. For example, as the World Health Organization's ten-year study of the health effects from CPBSs is completed and becomes available, consumers' attitudes may become more positive or negative depending on the outcome of that study. Consequently, studies of the price effects of CPBSs need to be conducted over time.

Areas for Further Study

This research has focused on residents' perceptions of negative effects from proximity to CPBSs and how these impact property values, rather than the scientific or technological estimates of these risks. The technologists' objective view of risk is that risk is measurable solely in terms of probabilities and severity of consequences, whereas the public, while taking experts' assessments into account, view risk more subjectively, based on other factors. Further, the results of scientific studies about the health effects of radio frequency and microwave radiation from CPBSs are not consistent. Residents' perceptions and assessments of risk vary according to a wide range of psychological, social, institutional, and cultural processes, and this may explain why their assessments differ from those of the experts.

Given the public concerns about the potential risks arising from being located nearby a CPBS, it is important for future studies to focus more attention on the kinds of risks the public associates with CPBSs and the level of risk perceived. How far away from the CPBS do people feel they have to be to be safe? What CPBS design, size, and surrounding landscape would help CPBSs to be more publicly acceptable? What social, economic, educational, and other demographic variables influence how people perceive the risks from CPBSs? Do residents that are heavy users of cell phones have a different perception of CPBSs than residents who make little use of this technology? Are these perceived risks reflected in property values and to what extent? Do these perceived risks vary over time and to what degree?

Answers to these questions, if shared among researchers and made public, could lead to the development of a global database to assist appraisers in determining the perceived level of risk associated with CPBSs and other similar structures.[59] Knowledge of the extent that these risks are incorporated into property prices and how they vary over time will lead to more accurate value assessments of properties in close proximity to CPBSs and other similar structures.

Summary and Conclusions

Focusing on four case study neighborhoods in Christchurch, New Zealand, this article presents the results from both an opinion survey and market sales analysis undertaken in 2003 to determine residents' perceptions towards living near a CPBS and how this may impact property prices. From the results, it appears that people who live close to CPBSs perceive the sites less negatively than those who live farther away.

The issue of greatest concern for survey respondents in both the case study and control areas is the impact of proximity to CPBSs on future property values. Overall, respondents would pay from 10%–19% less to over 20% less for a property if it were in close proximity to a CPBS.

The opinion survey results were generally confirmed by the market sales analysis using a hedonic house price approach. The results of the sales analysis show prices of properties were reduced by around 21% after a CPBS was built in the neighborhood. How-

59. For example, high-voltage overhead transmission lines.

ever, this result varies between neighborhoods, with a positive impact on price being recorded in one neighborhood, possibly due to the CPBS being built in that suburb before any adverse media publicity about CPBSs appeared in the local Christchurch press.

Research to date reports no clearly established health effects from radio frequency emissions of CPBSs operated at or below the current safety standards, yet recent media reports indicate that people still perceive that CPBSs have harmful effects. Thus, whether or not CPBSs are proven to be free from health risks is only relevant to the extent that buyers of properties near CPBSs perceive this to be true. Even buyers who believe that there are no adverse health effects from CPBSs, knowing that other potential buyers might think the reverse, will probably seek a price discount for a property located near a CPBS.

The comments of survey participants indicate the ongoing concerns that residents have about CPBSs. There is the need to increase the public's understanding of how radio frequency transmitting facilities operate and the strict exposure-limit standards imposed on the telecommunication industry. As more information is discovered that refutes concerns regarding adverse health effects from CPBSs, and as information about the NZ safety standards are made more publicly available, the perception of risk may gradually change, eliminating the discounts for neighboring properties.

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Appendix I Location Map

Areas circled in white at the top are without a cell phone tower, while areas circled in the bottom three maps have a cell phone tower.
Source: http://www.ccc.govt.nz/maps/Wises/

Appendix II Summary of the Survey Results

Variable	Responose	Valid Percent (%) Case Study	Valid Percent (%) Control
Occupancy	Homeowner	78.5	94.2
	Tenant	21.5	5.8
How long have you lived there?	Less than 6 months	8.0	2.6
	6 months–1 year	8.6	4.5
	1–4 years	25.1	27.7
	More than 5 years	58.3	65.2
How would you rate the desirability of your neighborhood?	Superior	27.4	30.9
	Above Average	37.4	36.8
	Average	28.5	27.0
	Below Average	5.6	4.6
	Inferior	1.1	0.7
Would you be opposed to construction of a cell phone tower nearby?	Yes		72.1
	No		27.9
When you purchased/began renting was the cell phone tower already constructed?	Yes	39.3	
	No	60.7	
Was the proximity of the cell phone tower a concern to you?	Yes	20.0	
	No	80.0	
Would you have gone ahead with rental/purchase if you had known a cell phone site was to be constructed?	Yes	73.9	
	No	26.1	
Is location of a cell phone tower a factor you would consider when moving?	Yes		83.4
	No		16.6
Is the cell phone tower visible from your house?	Yes	45.7	
	No	54.3	
If yes, how much does it impact on your view?	Very obstructive	9.6	
	Mildly obstructive	24.5	
	Barely noticeable	66.0	
In what way does it impact on the enjoyment of living in your house?	Views	11.8	
	Aesthetics	20.6	
	Health concerns	36.8	
	Change in property value	19.9	
	Other	11.0	
Effect a nearby cell phone tower would have on the price/rent you would pay for the property	Tower wasn't constructed	53.1	
	Pay substantially more	0.0	0.0
	Pay a little more	2.3	0.0
	Pay a little less	2.8	37.6
	Pay substantially less	0.6	45.4
	Not influence price	51.4	17.0
% Effect a nearby cell phone tower would have on the price/rent you would pay for the property	20% higher or more	5	3.2
	10–19% more	10	1.6
	1–9% more	14	2.4
	1–9% less	33	19.2
	10–19% less	24	36.0
	20% or a greater reduction	14	37.6
Concern about the possibility of harmful health effects in the future	Does not worry me	50.3	19.9
	Worries me somewhat	38.0	38.4
	Worries me a lot	11.7	41.7
Concern about the stigma associated with houses near the cell phone sites	Does not worry me	54.6	20.8
	Worries me somewhat	33.9	45.0
	Worries me a lot	11.5	34.2
Concern about the affect on your properties value in the future	Does not worry me	61.3	15.4
	Worries me somewhat	25.4	37.2
	Worries me a lot	13.3	47.4
Concern about the aesthetic problems caused by the tower	Does not worry me	63.3	18.2
	Worries me somewhat	25.4	37.0
	Worries me a lot	11.3	44.8

Appendix III Variable Codes

Category of Dwelling

Code	Definition
D	Dwelling houses are of a fully detached or semi-detached style situated on their own clearly defined piece of land.
E	Converted dwelling houses that are now used as rental flat.
F	Ownership home units which may be single storey or multi-storey and which do not have the appearance of dwelling houses.
H	Home and income. The dwelling is the predominant use, and there is an additional unit of use attached to or associated with the dwelling house that can be used to produce income.
R	Rental flats that have been purpose built.

Quality of the Principal Structure

Code	Definition
A	Superior design and quality of fixtures and fittings is first class.
B	The design is typical of its era and the quality of the fixtures and fittings is average to good.
C	The design is below the level generally expected for the era, or the level of fixtures and fittings is barely adequate and possibly of below average quality.

Building Materials: Walls and Roof

Code	Definition
W	Wood
B	Brick
C	Concrete
S	Stone
R	Roughcast
F	Fibrolite
M	Malthoid
P	Plastic
I	Iron
A	Aluminium
G	Glass
T	Tiles
X	*

Appendix IV Descriptive Statistics

Variable	Mean	Std. dev.	Median	Minimum	Maximum	Range
St Albans:						
Sale Price ($)	221,957	110,761	200,000	42,000	839,000	797,000
Land Area (ha)	0.0658	0.0331	0.0579	0.0261*	0.3794	0.3533
Floor Area (m^2)	161	70.40	150	50	450	400
Beckenham:						
Sale Price ($)	116,012	50,037	111,000	21,500	385,000	363,500
Land Area (ha)	0.0601	0.0234	0.0553	0.0164*	0.2140	0.1976
Floor Area (m^2)	115	32.50	110	40	340	300
Papanui:						
Sale Price ($)	127,661	51,114	119,000	43,000	375,000	332,000
Land Area (ha)	0.0685	0.0289	0.0675	0.0310	0.3169	0.2859
Floor Area (m^2)	122	34.60	110	56	290	234
Bishopdale:						
Sale Price ($)	136,786	41,390	134,500	56,000	342,000	286,000
Land Area (ha)	0.0679	0.0163	0.0653	0.0400	0.2028	0.1628
Floor Area (m^2)	125	31.20	118	64	290	226

* These small land areas are related to apartments or units in a block of apartments/units that have the land area apportioned on a pro rata basis.

Appendix V Regression Model: St Albans

log(*SLNETX*) = *TOWER* + *CATGYX2* + *CATGYX4* + *TIMESOLD.Q* + *AGE* + log(*LANDAX*) + *MATFAX* + *SITSTX*

Residuals:	**Min**	**1Q**	**Median**	**3Q**	**Max**
	-0.72855	-0.15032	0.01593	0.14263	0.72047

Coefficients:	**Estimate**	**Std. Error**	***t*-value**	**Pr(> |*t*|)**
(Intercept)	9.1781868	0.6769096	13.559	< 2e-16 ***
TOWER	**0.1133186**	0.0318188	**3.561**	0.000395 ***
CATGYX2D	0.1846417	0.0702520	2.628	0.008776 **
CATGYX2O	0.0334663	0.1008594	0.332	0.740134
CATGYX4B	-0.1551409	0.0245485	-6.320	4.75e-10 ***
CATGYX4C	-0.1483169	0.0722959	-2.052	0.040600 *
TIMESOLD.Q	**0.0136663**	**0.0008208**	**16.650**	< 2e-16 ***
AGE	0.0016408	0.0003521	4.660	3.81e-06 ***
log(LANDAX)	**0.3285367**	**0.0283610**	**11.584**	< 2e-16 ***
MATFAX	**0.0022314**	**0.0001962**	**11.373**	< 2e-16 ***
SITSTXAIKMANS RD	0.4029259	0.0533671	7.550	1.41e-13 ***
SITSTXBEVERLEY ST	0.2330787	0.0803137	2.902	0.003827 **
SITSTXBRISTOL ST	0.1706840	0.0521716	3.272	0.001124 **
SITSTXBROWNS RD	0.2492536	0.0720854	3.458	0.000579 ***
SITSTXCOX ST	0.3055798	0.0581672	5.253	2.00e-07 ***
SITSTXGORDON AVE	0.0823422	0.0679833	1.211	0.226236
SITSTXKNOWLES ST	0.1690979	0.0558911	3.025	0.002576 **
SITSTXMANSFIELD AVE	0.2954242	0.0652983	4.524	7.16e-06 ***
SITSTXMCDOUGALL AVE	0.3303105	0.0623720	5.296	1.60e-07 ***
SITSTXMURRAY PL	0.3613773	0.0629166	5.744	1.40e-08 ***
SITSTXOFFICE RD	0.3681146	0.0543368	6.775	2.71e-11 ***
SITSTX Other	0.0618491	0.0736629	0.840	0.401416
SITSTXPAPANUI RD	0.1940369	0.0560474	3.462	0.000570 ***
SITSTXRANFURLY ST	0.1701716	0.0617504	2.756	0.006012 **
SITSTXST ALBANS ST	0.1458665	0.0571172	2.554	0.010873 *
SITSTXWEBB ST	0.1895432	0.0725061	2.614	0.009143 **
SITSTXWESTON RD	0.2084419	0.0527555	3.951	8.60e-05 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Residual standard error: 0.2175 on 677 degrees of freedom
Multiple *R*-Squared: 0.8253, Adjusted *R*-squared: 0.8186
F-statistic: 123 on 26 and 677 DF, *p*-value: < 2.2e-16

Appendix VI Regression Model: Papanui

ln(formula = log(*SLNETX*) ~ *TOWER* + *SITSTX* + *TIMESOLD.Q* + *AGE* + log(*LANDAX*) + *MATFAX* + *WALLCNX* + *ROOFCNX* + *CATGYX4*, data = *Papanui.final*)

Residuals:	**Min**	**1Q**	**Median**	**3Q**	**Max**
	-0.484987	-0.098006	0.003859	0.106253	0.563126

Coefficients:	**Estimate**	**Std. Error**	***t*-value**	**Pr(> |*t*|)**
(Intercept)	5.9482316	0.6998186	8.500	< 2e-16 ***
TOWER	**-0.2339640**	0.0240908	**-9.712**	< 2e-16 ***
SITSTXHOANI ST	-0.1966982	0.0265429	-7.411	4.26e-13 ***
SITSTXLANGDONS RD	-0.1192547	0.0281242	-4.240	2.58e-05 ***
SITSTXLEANDER ST	0.0305555	0.0449437	0.680	0.496853
SITSTXMATSONS AVE	0.0949636	0.0292461	3.247	0.001231 **
SITSTXMORELAND AVE	-0.0892332	0.0397622	-2.244	0.025183 *
SITSTXMORRISON AVE	-0.1984492	0.0289772	-6.848	1.84e-11 ***
SITSTXOther	-0.1543194	0.0337436	-4.573	5.83e-06 ***
SITSTXSAILS ST	-0.0761412	0.0433455	-1.757	0.079490 .
SITSTXSAWTELL PL	0.1840793	0.0393904	4.673	3.66e-06 ***
SITSTXSAWYERS ARMS RD	0.0872393	0.0201388	4.332	1.73e-05 ***
SITSTXST JAMES AVE	0.2497688	0.0289940	8.615	< 2e-16 ***
TIMESOLD.Q	**0.0138914**	0.0004137	**33.575**	< 2e-16 ***
AGE	0.0029307	0.0003512	8.345	4.85e-16 ***
log(LANDAX)	0.0904764	0.0270812	3.341	0.000886 ***
MATFAX	**0.0042576**	0.0002410	**17.664**	< 2e-16 ***
WALLCNXC	0.0054100	0.0200666	0.270	0.787558
WALLCNXF	-0.0980851	0.0464442	-2.112	0.035106 *
WALLCNXO	-0.1158407	0.0468334	-2.473	0.013655 *
WALLCNXR	-0.0670051	0.0244382	-2.742	0.006291 **
WALLCNXW	-0.0679166	0.0192628	-3.526	0.000454 ***
WALLCNXX	-0.0571365	0.0358369	-1.594	0.111381
ROOFCNXI	0.1502973	0.1139845	1.319	0.187810
ROOFCNXO	0.0870092	0.1164152	0.747	0.455111
ROOFCNXT	0.0954874	0.1138506	0.839	0.401965
CATGYX4B	-0.0623758	0.0343487	-1.816	0.069872 .
CATGYX4C	-0.3669901	0.0905659	-4.052	5.74e-05 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Residual standard error: 0.1579 on 604 degrees of freedom
Multiple *R*-Squared: 0.8718, Adjusted *R*-squared: 0.8661
F-statistic: 152.2 on 27 and 604 DF, *p*-value: < 2.2e-16

Appendix VII Regression Model: Beckenham

ln(formula = log(*SLNETX*) ~ TOWER + *SITSTX* + *CATGYX4* + *TIMESOLD.Q* + *AGE* + log(*LANDAX*) + *MATFAX* + *WALLCNX* + *CATGYX2*, data = *Beckenham.final)*

Residuals:	**Min**	**1Q**	**Median**	**3Q**	**Max**
	-0.64490	-0.09026	0.01142	0.10112	0.40993

Coefficients:	**Estimate**	**Std. Error**	***t*-value**	**Pr(> |*t*|)**
(Intercept)	9.2062865	0.4725194	19.483	< 2e-16 ***
TOWER1	**-0.2301918**	0.0182774	**-12.594**	< 2e-16 ***
SITSTXBECKENHAM ST	0.1648069	0.0515406	3.198	0.001436 **
SITSTXBOON ST	-0.0616738	0.0484966	-1.272	0.203817
SITSTXBRADFORD AVE	0.0923843	0.0494942	1.867	0.062300 .
SITSTXCOLOMBO ST	0.0623765	0.0467234	1.335	0.182223
SITSTXDEVON ST	-0.0959430	0.0457562	-2.097	0.036299 *
SITSTXDUNN ST	-0.0207886	0.0427676	-0.486	0.627031
SITSTXFISHER AVE	0.2271245	0.0400288	5.674	1.90e-08 ***
SITSTXLONGFELLOW ST	-0.0186953	0.0451597	-0.414	0.678990
SITSTXOTHER	-0.0222126	0.0467607	-0.475	0.634888
SITSTXPERCIVAL ST	-0.0347190	0.0517740	-0.671	0.502663
SITSTXROXBURGH ST	0.1029109	0.0466753	2.205	0.027729 *
SITSTXSOMERFIELD ST	0.0186495	0.0428968	0.435	0.663851
SITSTXSOUTHAMPTON ST	-0.0243265	0.0402926	-0.604	0.546171
SITSTXSOUTHEY ST	-0.0324513	0.0429880	-0.755	0.450520
SITSTXSTRICKLAND ST	-0.0819418	0.0407196	-2.012	0.044494 *
SITSTXTENNYSON ST	0.1165007	0.0393410	2.961	0.003147 **
SITSTXWEMBLEY ST	0.0648226	0.0458033	1.415	0.157359
CATGYX4B	0.0275481	0.0373405	0.738	0.460864
CATGYX4C	-0.1168640	0.0469787	-2.488	0.013049 *
TIMESOLD.Q	**0.0189904**	0.0003396	**55.928**	< 2e-16 ***
AGE	0.0010988	0.0002426	4.530	6.74e-06 ***
log(LANDAX)	0.1546535	0.0195655	7.904	8.19e-15 ***
MATFAX	**0.0042054**	0.0002138	**19.674**	< 2e-16 ***
WALLCNXC	-0.0208433	0.0378338	-0.551	0.581833
WALLCNXF	-0.1171637	0.0394091	-2.973	0.003031 **
WALLCNXO	-0.0445073	0.0399745	-1.113	0.265849
WALLCNXR	-0.1119164	0.0235736	-4.748	2.41e-06 ***
WALLCNXW	-0.0629968	0.0222366	-2.833	0.004718 **
WALLCNXX	-0.0992564	0.0398493	-2.491	0.012933 *
CATGYX2D	0.1445276	0.0399650	3.616	0.000316 ***
CATGYX2F	0.3069113	0.0744524	4.122	4.11e-05 ***
CATGYX2R	0.2927391	0.1222453	2.395	0.016847 *

Signif. codes:0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Residual standard error: 0.1515 on 864 degrees of freedom
Multiple *R*-Squared: 0.8911, Adjusted *R*-squared: 0.8869
F-statistic: 214.2 on 33 and 864 DF, *p*-value: < 2.2e-16

Appendix VIII Regression Model: Bishopdale

ln(formula = log(*SLNETX*) ~ *TOWER* + *TIMESOLD.Q* + *AGE* + log(*LANDAX*) + *MATFAX* + *WALLCNX* + *SITSTX*, data = *Bishopdale.final)*

Residuals:	**Min**	**1Q**	**Median**	**3Q**	**Max**
	-0.53633	-0.08893	0.01446	0.08850	0.49048

Coefficients:	**Estimate**	**Std. Error**	***t*-value**	**Pr(> |*t*|)**
(Intercept)	9.0005033	0.6988891	12.878	< 2e-16 ***
TOWER	0.0262575	0.0182796	1.436	0.151259
TIMESOLD.Q	**0.0097887**	0.0004834	**20.251**	< 2e-16 ***
AGE	0.0013236	0.0003598	3.679	0.000249 ***
log(LANDAX)	0.1357753	0.0333622	4.070	5.16e-05 ***
MATFAX	**0.0039665**	0.0001855	**21.389**	< 2e-16 ***
WALLCNXC	-0.0169935	0.0108641	-1.564	0.118160
WALLCNXO	0.0785660	0.0336688	2.333	0.019863 *
WALLCNXR	-0.0693225	0.0300511	-2.307	0.021313 *
WALLCNXW	-0.0815023	0.0230110	-3.542	0.000420 ***
SITSTXCARDOME ST	0.0610536	0.0314227	1.943	0.052360 .
SITSTXCHEDWORTH AVE	0.0330487	0.0317738	1.040	0.298589
SITSTXCLOTILDA PL	**0.2252988**	0.0420078	**5.363**	1.06e-07 ***
SITSTXCOLESBURY ST	0.0528749	0.0302668	1.747	0.081018 .
SITSTXCOTSWOLD AVE	0.0604953	0.0286474	2.112	0.035012 *
SITSTXEASTLING ST	0.0551537	0.0319833	1.724	0.085003 .
SITSTXFARRINGTON AVE	-0.0001768	0.0238544	-0.007	0.994087
SITSTXHAREWOOD RD	0.0204412	0.0252674	0.809	0.418753
SITSTXHIGHSTED RD	0.0391760	0.0253953	1.543	0.123302
SITSTXKILBURN ST	-0.0176756	0.0366951	-0.482	0.630155
SITSTXKINGROVE ST	-0.0052772	0.0375965	-0.140	0.888406
SITSTXLEACROFT ST	0.1058243	0.0333633	3.172	0.001571 **
SITSTXMURMONT ST	0.1825316	0.0365287	4.997	7.12e-07 ***
SITSTXNEWMARK ST	-0.0342136	0.0272490	-1.256	0.209621
SITSTXOTHER	0.0525437	0.0253634	2.072	0.038612 *
SITSTXRALEIGH ST	0.0470151	0.0314032	1.497	0.134740
SITSTXSTACKHOUSE AVE	0.0235719	0.0278844	-0.845	0.398165

Signif. codes:0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
Residual standard error: 0.137 on 821 degrees of freedom
Multiple *R*-Squared: 0.7946, Adjusted *R*-squared: 0.7881
F-statistic: 122.1 on 26 and 821 DF, *p*-value: < 2.2e-16

Incorporated July 1, 2000

CITY OF ELK GROVE

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Elk Grove, California 95758

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City of Elk Grove – City Council

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that on **Wednesday, August 28, 2019 at the hour of 6:00 p.m.,** or as soon thereafter as the matter may be heard, the Elk Grove City Council will conduct a public hearing at City Hall in the Council Chambers, 8400 Laguna Palms Way, Elk Grove, California, to consider the following matter:

CINGULAR WIRELESS PCS (BY AT&T MOBILITY) CODE AMENDMENT (EG-18-006) – ZONING CODE TEXT AMENDMENT AND MASTER LICENSE AGREEMENT APPROVAL:

The proposed Project consists of a Zoning Code Text Amendment to amend Chapters 23.26 (use classification system), 23.27 (allowed uses and required entitlements), and 23.94 (wireless communication facilities) of the Elk Grove Municipal Code (EGMC) to facilitate the deployment of small cell communications facilities throughout the City. The Project also includes a Master License Agreement for Small Cell Wireless Communications Facilities between the City of Elk Grove and New Cingular Wireless PCS, LLC (by AT&T Mobility) that would allow the deployment of small cell communications facilities within the City, subject to the terms and conditions of the agreement.

The Planning Commission reviewed this matter at its meeting on July 18, 2019 and voted 4-0 (Wieser absent) to recommend that the City Council approve the Zoning Code Amendment and the related Master License Agreement.

PROJECT APPLICANT:
Vinculums Services, LLC
For New Cingular Wireless PCS. LLC (by AT&T Mobility)
Matthew Yergovich (Representative)
1200 Del Paso Road, Ste. 150
Sacramento, CA 95834

LOCATION/APN: Citywide

ZONING: All Zoning Designations

ENVIRONMENTAL: No further environmental review is required under the California Environmental Quality Act (CEQA) pursuant Sections 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning), 15301 (CEQA exemption for minor alteration to existing facilities), and 15303

(CEQA exemption for new construction or conversion of small structure) of Title 14 of the California Code of Regulations.

Information or questions regarding this item should be referred to Antonio Ablog, (916) 627-3335; or to the Office of Development Services – Planning, 8401 Laguna Palms Way, Elk Grove, CA, 95758. All interested persons are invited to present their views and comments on this matter. Written statements may be filed with the City Clerk at any time prior to the close of the hearing scheduled herein, and oral statements may be made at said hearing.

If you challenge the subject matter in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or in written correspondence delivered to the City Clerk, 8401 Laguna Palms Way, 1st Floor, Elk Grove, CA, 95758, at or prior to the close of the public hearing.

Dated / Published: August 16, 2019

JASON LINDGREN
CITY CLERK, CITY OF ELK GROVE

ADA COMPLIANCE STATEMENT
In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Office of the City Clerk at (916) 478-3635. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.