Administrative Hearing

SUPPLEMENTAL

Dated July 13, 2023

Meeting of

July 13, 2023
To: Iain Holt, Administrative Hearing Officer

From: Community Development Department

Date: July 13, 2023

Subject: Item 02A Wireless Communications Facility WCF 2023-70006

Project Planner: Gregory Gomez

Attached are additional documents on the subject project including updated findings, a Supplemental Wireless Planning Memorandum from Dr. Jonathan Kramer dated July 12, 2023, and Radio Frequency – Electromagnetic Energy Report dated July 7, 2023, received after the printing of the packet. Also included are Minutes of the May 8, 2023 Administrative Public Hearing.

FINDINGS FOR WCF 2023-70006:

1. The project is consistent with the Thousand Oaks General Plan and any applicable specific plan or redevelopment plan (TOMC Section 9-4.2803(c)(1)).

The project is consistent with the Thousand Oaks General Plan because the project site is designated as “Commercial/Residential” in the Land Use Element of the General Plan, which is intended to accommodate commercial buildings and accessory uses thereto. The installation of a wireless facility on the existing commercial building is accessory to that primary commercial operation. The project is within the boundaries of the Thousand Oaks Boulevard Specific Plan (SP 20) which permits commercial buildings and accessory uses thereto. The subject wireless facility is an accessory to the primary commercial building.

2. The project complies with all applicable laws, regulations, and policies, including the Thousand Oaks Municipal Code (TOMC Section 9-4.4403) and the City’s Guidelines for the Installation of Wireless Communications facilities (Resolution No. 97-197).

The project complies with the Thousand Oaks Municipal Code and Resolution 97-197.

At the conclusion of the May 4, 2023, administrative hearing, the applicant was directed to redesign the proposed screening of the wireless equipment with a design that was architecturally integrated with the existing building. Several designs were considered to achieve their project objectives while also concealing the wireless equipment including:
1. Consolidating the wireless facilities in a faux-penthouse,
2. Modifying the mansard roof, and
3. Constructing an integrated parapet.

The proposed parapet wall with a roofing element that mimics the building’s existing roof is the preferred design. The proposed design has been reviewed by the Telecom Law Firm. The preferred design architecturally integrates the parapet into the design of the existing two-story building while providing adequate concealment to the proposed wireless telecommunication facility. The overall height of the parapet plus roof is within the allowable height within the SP-20 zone.

In conclusion, with the conditions imposed, the project complies with the Thousand Oaks Municipal Code that defers to Resolution 97-197 which requires building-mounted, or roof mounted wireless communications facilities to be integrated into the building’s architecture through design, color, and texture, to be unobtrusive and architecturally compatible with existing structures, mitigate visual impacts from neighboring land uses, and be of a design that harmonizes with the surrounding environment.

3. *The project will not be detrimental to the public health, safety, or general welfare (TOMC Section 9-4.2803(c)(3)).*

The project will not result in a use which may reasonably be expected to become obnoxious, dangerous, offensive or injurious to the public health, safety or welfare, by reason of the emission of noise, smoke, dust, fumes, vibrations, odor or other harmful or annoying substances because the project has also been reviewed by other City departments and agencies for conformance with applicable laws, regulations, and policies, and provided appropriate conditions of approval.

With the conditions imposed, the facility will comply with the Federal Communications Commission’s (FCC) established regulations and standards for human exposure to Radio Frequency. The project has been reviewed in conformance with the provisions of the California Environmental Quality Act and qualifies as a Class 1 categorical exemption under Section 15301 (Existing Facilities) and Section 15303 (New Construction or Conversion of Small Structures).

**Additional Conditions of Approval**

1. The proposed wireless antennas and all associated equipment and any future antennas or modifications shall be concealed behind the parapet wall and shall not exceed the height of the parapet wall.

2. The roof element on the proposed parapet wall is to extend a minimum of 6 inches beyond the face of the parapet wall.
SUPPLEMENTAL WIRELESS PLANNING MEMORANDUM

TO: Mr. Greg Gomez
FROM: Dr. Jonathan Kramer
DATE: July 12, 2023
RE: Technical Review for New Wireless Facility Co-located onto a Building located at 110 Jensen Court

Applicant: Eukon Group
Carrier: Dish Wireless
Site ID: LALAX02069B

1. Summary

Eukon Group ("the Applicant") has submitted to the City of Thousand Oaks ("City") updated application materials on behalf of Dish Wireless ("Dish"). The Applicant submitted updated plans dated May 11, 2023 ("Updated Plans"), updated photo simulations dated July 1, 2023 ("Updated Photo Simulations") and an updated radio frequency report conducted by EBI Consulting and dated July 7, 2023 ("Updated RF Report").

The installation will still be subject to the provisions the Thousand Oaks Municipal Code ("Code") and Resolution 97-197 since the proposal is not a collocation on a structure that already contains other wireless facilities.

The updated application materials contained different concealment elements than the previous design presented to the City. Elsewhere in this memo TLF offers a design refinement to the Applicant’s current design proposal.

With the proper mitigation measures for RF, discussed below, Dish’s proposed updated facility will be in planned compliance with the FCC RF emissions guidelines. TLF recommends that the City review and condition any permit issuance for this project to be subject to the conditions proposed in this memorandum regarding RF emissions safety.

This memorandum reviews the application and related materials for technical and regulatory issues specific to wireless infrastructure. Although many technical issues implicate legal issues, the analysis and recommendations contained in this memorandum do not constitute legal advice.
2. Updates to the Application Materials

Per the Updated Plans, it appears that the physical locations of the antennas for both Sector A and Sector G will change. However, the azimuths for both Sector A and G will remain the same at the new locations.

See Figure 1 for the prior location of the sector antennas and Figure 2 for the updated location for the sector antennas.

Figure 1: Previous location for the antennas in Sector A and G (Source: Old plans Page A-2; annotations in Red by TLF).
Per the Updated Photo Simulations, the concealment elements are also proposed to change. The design will change from individual pop-up fiber reinforced plastic screens ("FRP") to a full wrap around FRP screen enclosure over the building.

See Figure 3 for the previous design and Figure 4 for the proposed design.
Figure 3: Previous design with individual pop up FRP enclosures (Source: Applicant’s Previous photo simulations).
Additional aesthetic elements steps may be taken into consideration to ensure that the proposed FRP screen enclosure is more architecturally integrated to the underlying building design. Figure 4, below, shows the Applicant’s Current vision for the FRP screens. In Figure 5, just below Figure 4, TLF recommends a small but useful concealment addition to better integrate the FRP screen into the existing building façade.

**Figure 4:** Proposed design with full FRP wrap around (Source: Applicant’s Current Photo Simulations).

**Figure 5:** Additional architectural integration on FRP screen (Source: Applicant photo simulations; updated/photoshopped by TLF).
3. Planned Compliance with RF Exposure Regulations

Under the federal Telecommunications Act, the FCC completely occupies the field with respect to RF emissions regulation. The FCC established comprehensive rules for human exposure to RF emissions (the “FCC Guidelines”).\(^1\) State and local governments cannot regulate wireless facilities based on environmental effects from RF emissions to the extent that the emissions comply with the FCC Guidelines.\(^2\)

Although localities cannot establish their own standards for RF exposure, local officials may require wireless applicants to demonstrate compliance with the FCC Guidelines.\(^3\) Such demonstrations usually involve a predictive calculation because the site has not yet been built.

3.1 FCC Guidelines

FCC Guidelines regulate exposure rather than emissions.\(^4\) Although the FCC establishes a maximum permissible exposure (“MPE”) limit, it does not mandate any specific limitations on power levels applicable to all antennas and requires the antenna operator to adopt exposure-mitigation measures only to the extent that certain persons might become exposed to the emissions. Thus, a relatively low-powered site in proximity to the general population might require more comprehensive mitigation measures than a relatively high-powered site in a remote location accessible only to trained personnel.

The MPE limit also differentiates between “general population” and “occupational” classes. Most people fall into the general population class, which includes anyone who either does not know about potential exposure or knows about the exposure but cannot exert control over the transmitters.\(^5\) The narrower occupational class includes persons exposed through their employment and able to exert control over their exposure.\(^6\) The MPE limit for the general population is five times lower than the MPE limit for the occupational class.

Lastly, the FCC “categorically excludes” certain antennas from routine environmental review when either (1) the antennas create exposures in areas virtually inaccessible to humans or (2)

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\(^3\) See In re Procedures for Reviewing Requests for Relief from State and Local Regulations Pursuant to Section 332(c)(7)(B)(iv) of the Communications Act of 1934, Report and Order, 15 FCC Rcd. 22821, 22828–22829 (Nov. 13, 2000) (declining to adopt rules that limit local authority to require compliance demonstrations).
\(^5\) See 47 C.F.R. § 1.1310, Note 2.
\(^6\) See id.
the antennas operate at extreme low power. As a general rule, a wireless site qualified for a categorical exclusion when mounted on a structure built solely or primarily to support FCC-licensed or authorized equipment (i.e., a tower) and such that the lowest point on the lowest transmitter is more than 10 meters (32.8 feet) above ground.\(^7\)

Categorical exclusions establish a presumption that the emissions from the antennas will not significantly impact humans or the human environment. Such antennas are exempt from routine compliance evaluations but not exempt from actual compliance. Under some circumstances, such as a heavily collocated tower or when in close proximity to general population members, even a categorically excluded site will require additional analysis.

### 3.2 Planned Compliance Evaluation and Recommendations

The FCC does not categorically exclude Dish’s facility from routine compliance review because the underlying building was originally constructed to be commercial property, which was not primarily built to support wireless equipment. Therefore, an additional analysis is necessary to determine whether the proposed antennas will demonstrate planned compliance with the FCC Guidelines.

The submitted Updated RF Report, reflecting the new antenna locations for Sectors A and G, contained sufficient emissions information to allow an independent planned-compliance analysis.

Based on the transmitter frequencies and power levels disclosed in the EBI RF Report, the Dish emissions will create a “controlled access zone” that extends approximately 48 feet horizontally from all Dish sectors from the face of the antennas at the midpoint height for each transmitting antenna. There are no structures of any type within the controlled zone of any of the proposed antennas.

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\(^7\) See id. § 1.1307(b)(1).
Figure 6 depicts the emissions of the Dish antennas at the nearest walking surface.

![Nearest Walking Surface (Main Roof Level) Simulation](image)

**Figure 6:** Dish’s antenna emissions and roof overview (Source: EBI RF Report).

The EBI RF Report proposes an RF Safety Plan for anyone accessing the roof of the structure. The EBI RF Report recommended RF safety signage and placement is depicted in Figure 7.
Figure 7: Signage and placement overview (Source: EBI RF Report).
TLF agrees with the signage proposed in the EBI RF Report. The signage must be properly placed to ensure that people are informed prior to going in front of the antennas, such as on the sloped rooftop areas.

The City needs to ensure that if the antennas locations of the azimuth orientations are changed, another RF analysis needs to be performed to determine if there will be accessible areas in front of the barrier in need for barriers.

To promote planned compliance with the FCC Guidelines, TLF recommends the City require the following conditions of approval for this project:

1. Permitee shall always keep the access doors, gates, hatches and ladders to the rooftop locked, except when active maintenance is performed on the rooftop or equipment.

2. Permitee shall ensure that all federally-required radio frequency signage be installed and maintained at all times in good condition. All such radio frequency signage be constructed of hard materials and be UV stabilized. All radio frequency signage must comply with the sign colors, sign sizes, sign symbols, and sign panel layouts in conformance with the most current versions of ANSI Z535.1, ANSI Z535.2, and ANSI C95.2 standards. All such radio frequency signage, or additional signage immediately adjacent to the radio frequency signage, shall provide a working local or toll-free telephone number to its network operations center that reaches a live person who can exert transmitter power-down control over this site as required by the FCC.

3. In the event that the FCC changes any of radio frequency signage requirements that are applicable to the project site approved herein or ANSI Z535.1, ANSI Z535.2, and ANSI C95.2 standards that are applicable to the project site approved herein are changed, Permitee, within 30 days of each such change, at its own cost and expense, shall replace the signage at the project site to comply with the then current standards.

The site, as proposed and with the conditions suggested will in all respects comply with the FCC’s RF emissions rules.

Based on the emissions data provided by the Applicant, and the proposed conditions above, there is no lawful basis to deny the project regarding any RF emissions concerns.

/JLK
Radio Frequency - Electromagnetic Energy (RF-EME) Report

Site No. LALAX02069B
Cee Stanz
110 Jensen Court
Thousand Oaks, California 91360
34° 10’ 39.41” N, -118° 51’ 46.40” W NAD83

EBI Project No. 6222004983
July 7, 2023

Prepared for:
Dish Wireless

Prepared by:
EBI Consulting
environmental | engineering | due diligence
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APPENDICES

APPENDIX A CERTIFICATIONS
APPENDIX B RADIO FREQUENCY ELECTROMAGNETIC ENERGY SAFETY SIGNAGE PLANS
APPENDIX C FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

REFERENCE DOCUMENTS (NOT ATTACHED)
CDs: LALAX02069B_100ZD_REV 7_06-28-2023_OPTION 2
RFDS: RFDS-LALAX02069B-PRELIMINARY-20220307-V.0_20220307135827
EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Dish Wireless to conduct radio frequency electromagnetic (RF-EME) modeling for Dish Wireless Site LALAX02069B located at 110 Jensen Court in Thousand Oaks, California to determine RF-EME exposure levels from proposed Dish Wireless communications equipment at this site. As described in greater detail in Appendix C of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for the general public and for occupational activities. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

As presented in the sections below, based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC’s general public limit within approximately 9 feet of DISH’s proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density will not exceed the FCC’s occupational limit at the main roof level. Additionally, there are areas where workers who may be elevated above the rooftop and ground may be exposed to power densities greater than the occupational limits. Therefore, workers should be informed about the presence and locations of antennas and their associated fields.

At the nearest walking/working surfaces to the Dish Wireless antennas, the maximum power density generated by the DISH antennas is approximately 341.20 percent of the FCC’s general public limit (68.24 percent of the FCC’s occupational limit).

The composite exposure level from all carriers on this site is approximately 341.20 percent of the FCC’s general public limit (68.24 percent of the FCC’s occupational limit) at the nearest walking/working surface to each antenna. At ground level, the composite exposure level from all carriers on this site is approximately 3.23 percent of the FCC’s general public limit (0.646 percent of the FCC’s occupational limit).

Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); Dish Wireless should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with their own standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact Dish Wireless since only DISH has the ability to lockout/tagout the facility, or to authorize others to do so.
1.0 INTRODUCTION

Radio frequency waves are electromagnetic waves from the portion of the electromagnetic spectrum at frequencies lower than visible light and microwaves. The wavelengths of radio waves range from thousands of meters to around 30 centimeters. These wavelengths correspond to frequencies as low as 3 cycles per second (or hertz [Hz]) to as high as one gigahertz (one billion cycles per second).

Personal Communication (PCS) facilities used by Dish Wireless in this area will potentially operate within a frequency range of 600 to 5000 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of in areas in the immediate vicinity of the antennas.

MPE limits do not represent levels where a health risk exists since they are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons regardless of age, gender, size, or health.

2.0 SITE DESCRIPTION

This project site includes the following proposed wireless telecommunication antennas on a rooftop located at 110 Jensen Court in Thousand Oaks, California.

<table>
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<th>Ant #</th>
<th>Operator</th>
<th>Antenna Make</th>
<th>Antenna Model</th>
<th>Frequency (MHz)</th>
<th>Azimuth (°)</th>
<th>Mechanical Downtilt (°)</th>
<th>Horizontal Beamwidth (°)</th>
<th>Aperture (feet)</th>
<th>Total Power Input (Watts)</th>
<th>Gain (dBi)</th>
<th>Total ERP (Watts)</th>
<th>Total EIRP (Watts)</th>
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* Note there is 1 Dish Wireless antenna per sector at this site. For clarity, the different frequencies for each antenna are entered on separate lines.
### 3.0 Worst-Case Predictive Modeling

EBI has performed theoretical MPE modeling using RoofMaster™ software to estimate the worst-case power density at the site’s nearby broadcast levels resulting from operation of the antennas. RoofMaster™ is a widely-used predictive modeling program that has been developed by Waterford Consultants to predict RF power density values for rooftop and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services.

Using the computational methods set forth in Federal Communications Commission (FCC) Office of Engineering & Technology (OET) Bulletin 65, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields” (OET-65), RoofMaster™ calculates predicted power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by Dish Wireless and compared the resultant worst-case MPE levels to the FCC’s occupational/controlled exposure limits outlined in OET Bulletin 65. The assumptions used in the modeling are based upon information provided by Dish Wireless and information gathered from other sources. Elevations of walking/working surfaces were estimated based on elevations provided and available aerial imagery. Sector orientation assignments were made assuming coverage is directed to areas of site. Changes to antenna mount heights or placement will impact site compliance. The parameters used for modeling are summarized in the Site Description antenna inventory table in Section 2.0.

There are no other wireless carriers with equipment installed at this site.

Based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC’s general public limit within approximately 9 feet of Dish Wireless’s Sector A, B, and C antennas on the main roof level.
At the nearest walking/working surfaces to the Dish Wireless antennas, the maximum power density generated by the Dish Wireless antennas is approximately 341.20 percent of the FCC’s general public limit (68.24 percent of the FCC’s occupational limit). The composite exposure level from all carriers on this site is approximately 341.20 percent of the FCC’s general public limit (68.24 percent of the FCC’s occupational limit) at the nearest walking/working surface to each antenna. At ground level, the composite exposure level from all carriers on this site is approximately 3.23 percent of the FCC’s general public limit (0.646 percent of the FCC’s occupational limit).

The Site Safety Plan also presents areas where Dish Wireless antennas contribute greater than 5% of the applicable MPE limit for a site. A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

The inputs used in the modeling are summarized in the Site Description antenna inventory table in Section 2.0. A graphical representation of the RoofMaster™ modeling results is presented in Appendix B.

4.0 MITIGATION/SITE CONTROL OPTIONS

EBI’s modeling indicates that there are areas in front of the Dish Wireless antennas that exceed the FCC standards for general public exposure. Modeling also indicates that the worst-case emitted power density does not exceed the FCC’s occupational limit in front of the Dish Wireless antennas. In order to alert people accessing the rooftop, a Guidelines sign and an NOC Information sign are recommended for installation at each access point to the rooftop. Additionally, Blue Notice signs are recommended for installation behind the Dish Wireless Sector A, B, and C antennas at the main roof level. These signs must be placed in a conspicuous manner so that they are visible to any person approaching the antennas from any direction.

Barriers are recommended for installation when possible to block access to the areas in front of the antennas that exceed the FCC general public and/or occupational limits. Barriers may consist of rope, chain, or fencing. Painted stripes should only be used as a last resort. Barriers are not recommended for this site because the Dish Wireless antenna mounts significantly limit access to the areas of exceedance on the main roof level. Additionally, barriers are not recommended for this site because the sloped roof significantly limits access by unauthorized persons to areas directly in front of the antennas. However, EBI recommends that DISH and the landlord take additional measures to ensure that persons accessing the sloped roof (for example, roofers or other maintenance workers) are informed of areas where RF levels exceed the FCC general public limit and are made aware that these areas must be avoided to maintain compliance with FCC requirements. It is recommended that the landlord distribute this report to anyone accessing the roof and ask for confirmation that it has been read and understood.

These protocols and recommended control measures have been summarized and included with a graphic representation of the antennas and associated signage and control areas in a RF-EME Site Safety Plan, which is included as Appendix B. Individuals and workers accessing the rooftop should be provided with a copy of the attached Site Safety Plan, made aware of the posted signage, and signify their understanding of the Site Safety Plan.

To reduce the risk of exposure, EBI recommends that access to areas associated with the active antenna installation be restricted and secured where possible. All workers and individuals, including arborists and landscapers, accessing the rooftop along with nearby elevated structures or trees within areas exceeding the general public MPE must be made aware of the presence and locations of antennas and their associated fields, where applicable.
Implementation of the signage recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC’s rules and regulations.

5.0 SUMMARY AND CONCLUSIONS

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by Dish Wireless Site Number LALAX02069B located at 110 Jensen Court in Thousand Oaks, California to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, the worst-case emitted power density may exceed the FCC’s general public limit within approximately 9 feet of DISH’s proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density will not exceed the FCC’s occupational limit at the main roof level.

Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 4.0 and within the Site Safety Plan (attached); Dish Wireless should also provide procedures to shut down and lockout/tagout this wireless equipment in accordance with their own standard operating protocol. Non-telecom workers who will be working in areas of exceedance are required to contact Dish Wireless since only Dish Wireless has the ability to lockout/tagout the facility, or to authorize others to do so.

6.0 LIMITATIONS

This report was prepared for the use of Dish Wireless. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.
Appendix A
Certifications
Preparer Certification

I, Colin Mounce, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.

- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified “occupational” under the FCC regulations.

- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.

- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

[Signature]
Reviewed and Approved by:

Michael McGuire  
Electrical Engineer  
mike@h2dc.com  

Note that EBI’s scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI’s scope of work.
Appendix B
Radio Frequency Electromagnetic Energy
Safety Information and Signage Plans
Nearest Walking Surface (Main Roof Level) Simulation
Dish Wireless Safety (Signage) Plan

Post at all Roof Access Points
### Final Compliance Configuration

<table>
<thead>
<tr>
<th>Access Point(s)</th>
<th>GUIDELINES</th>
<th>NOTICE</th>
<th>CAUTION</th>
<th>WARNING</th>
<th>NOC INFO</th>
<th>BARRIER / MARKER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>N/A</td>
</tr>
<tr>
<td>Beta</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Gamma</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Sign Posting Instructions

<table>
<thead>
<tr>
<th>Sign</th>
<th>Posting Instructions</th>
<th>Required Signage / Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NOC Information</strong></td>
<td>Information signs are used to provide contact information for any questions or concerns for personnel accessing the site.</td>
<td>Securely post at the main rooftop access door and every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.</td>
</tr>
<tr>
<td><strong>Guidelines</strong></td>
<td>Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.</td>
<td>Securely post at the main rooftop access door and every point of access to the site in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.</td>
</tr>
<tr>
<td><strong>Notice</strong></td>
<td>Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC’s MPE limit for the general public or occupational exposures.</td>
<td>Securely post behind the Dish Wireless Sector A, B, and C antennas at the main roof level.</td>
</tr>
<tr>
<td><strong>Caution</strong></td>
<td>Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC’s MPE limit is or could be exceeded.</td>
<td>Signage not required.</td>
</tr>
<tr>
<td><strong>Warning</strong></td>
<td>Used to notify individuals that they are entering a hot zone where the occupational FCC’s MPE limit has been exceeded by 10x.</td>
<td>Signage not required.</td>
</tr>
</tbody>
</table>
Appendix C

Federal Communications Commission (FCC) Requirements
The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

**Occupational/controlled exposure limits** apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general public/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**General public/uncontrolled exposure limits** apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Table 1 and Figure 1 (below), which are included within the FCC’s OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are “time-averaged” limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC’s MPEs are measured in terms of power (mW) over a unit surface area (cm²). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm²) and an uncontrolled MPE of 1 mW/cm² for equipment operating in the 1900 MHz frequency range. For the Dish Wireless equipment operating at 600 MHz or 850 MHz, the FCC’s occupational MPE is 2.83 mW/cm² and an uncontrolled MPE of 0.57 mW/cm². For the Dish Wireless equipment operating at 1900 MHz, the FCC’s occupational MPE is 5.0 mW/cm² and an uncontrolled MPE limit of 1.0 mW/cm². These limits are considered protective of these populations.
Table 1: Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure

<table>
<thead>
<tr>
<th>Frequency Range (MHz)</th>
<th>Electric Field Strength (E) (V/m)</th>
<th>Magnetic Field Strength (H) (A/m)</th>
<th>Power Density (S) (mW/cm²)</th>
<th>Averaging Time [E]^2, [H]^2, or S (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3-3.0</td>
<td>614</td>
<td>1.63</td>
<td>(100)^*</td>
<td>6</td>
</tr>
<tr>
<td>3.0-30</td>
<td>1842/f</td>
<td>4.89/f</td>
<td>(900/f)^*</td>
<td>6</td>
</tr>
<tr>
<td>30-300</td>
<td>61.4</td>
<td>0.163</td>
<td>1.0</td>
<td>6</td>
</tr>
<tr>
<td>300-1,500</td>
<td>--</td>
<td>--</td>
<td>f/300</td>
<td>6</td>
</tr>
<tr>
<td>1,500-100,000</td>
<td>--</td>
<td>--</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

(B) Limits for General Public/Uncontrolled Exposure

<table>
<thead>
<tr>
<th>Frequency Range (MHz)</th>
<th>Electric Field Strength (E) (V/m)</th>
<th>Magnetic Field Strength (H) (A/m)</th>
<th>Power Density (S) (mW/cm²)</th>
<th>Averaging Time [E]^2, [H]^2, or S (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3-1.34</td>
<td>614</td>
<td>1.63</td>
<td>(100)^*</td>
<td>30</td>
</tr>
<tr>
<td>1.34-30</td>
<td>824/f</td>
<td>2.19/f</td>
<td>(180/f)^*</td>
<td>30</td>
</tr>
<tr>
<td>30-300</td>
<td>27.5</td>
<td>0.073</td>
<td>0.2</td>
<td>30</td>
</tr>
<tr>
<td>300-1,500</td>
<td>--</td>
<td>--</td>
<td>f/1,500</td>
<td>30</td>
</tr>
<tr>
<td>1,500-100,000</td>
<td>--</td>
<td>--</td>
<td>1.0</td>
<td>30</td>
</tr>
</tbody>
</table>

* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)

Plane-wave Equivalent Power Density
Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

<table>
<thead>
<tr>
<th>Personal Wireless Service</th>
<th>Approximate Frequency</th>
<th>Occupational MPE</th>
<th>Public MPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microwave (Point-to-Point)</td>
<td>5,000 - 80,000 MHz</td>
<td>5.00 mW/cm²</td>
<td>1.00 mW/cm²</td>
</tr>
<tr>
<td>Broadband Radio (BRS)</td>
<td>2,600 MHz</td>
<td>5.00 mW/cm²</td>
<td>1.00 mW/cm²</td>
</tr>
<tr>
<td>Wireless Communication (WCS)</td>
<td>2,300 MHz</td>
<td>5.00 mW/cm²</td>
<td>1.00 mW/cm²</td>
</tr>
<tr>
<td>Advanced Wireless (AWS)</td>
<td>2,100 MHz</td>
<td>5.00 mW/cm²</td>
<td>1.00 mW/cm²</td>
</tr>
<tr>
<td>Personal Communication (PCS)</td>
<td>1,950 MHz</td>
<td>5.00 mW/cm²</td>
<td>1.00 mW/cm²</td>
</tr>
<tr>
<td>Cellular Telephone</td>
<td>870 MHz</td>
<td>2.90 mW/cm²</td>
<td>0.58 mW/cm²</td>
</tr>
<tr>
<td>Specialized Mobile Radio (SMR)</td>
<td>855 MHz</td>
<td>2.85 mW/cm²</td>
<td>0.57 mW/cm²</td>
</tr>
<tr>
<td>Long Term Evolution (LTE)</td>
<td>700 MHz</td>
<td>2.33 mW/cm²</td>
<td>0.47 mW/cm²</td>
</tr>
<tr>
<td>Most Restrictive Frequency Range</td>
<td>30-300 MHz</td>
<td>1.00 mW/cm²</td>
<td>0.20 mW/cm²</td>
</tr>
</tbody>
</table>

MPE limits are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

Personal Communication (PCS) facilities used by Dish Wireless in this area will potentially operate within a frequency range of 600 to 5000 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

**FCC Compliance Requirement**

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.
ADMINISTRATIVE HEARING

May 4, 2023

SUMMARY NOTES

CALL TO ORDER

The Administrative Hearing was called to order at 4:12 p.m. in the Boardroom of the Civic Arts Plaza at 2100 Thousand Oaks Boulevard, Thousand Oaks, California and via videoconference / teleconference. Staff members present at the Hearing were Community Development Director Parker, Deputy Community Development Director Zelaya Melicher, Hearing Officer Holt, Chief Assistant City Attorney Hehir, Interim Planning Division Manager Kolwitz, Associate Planner Chua, Community Development Department Tech II, and Senior Recording Secretary Goor. Office Supervisor McMurtry was present via videoconference. Also present was the City’s RF Consultant Dr. Jonathan Kramer of Telecom Law Firm, P.C.

PUBLIC HEARING

A. Hearing, advertised as required by law, opened to consider Case # WCF 2023-70006, Applicant: Eukon Group for DISH Wireless. Report presented by Community Development Department Tech II Gomez and the City’s RF Consultant Dr. Jonathan Kramer of Telecom Law Firm, P.C. They also responded to questions along with Interim Planning Division Manager Kolwitz and Chief Assistant City Attorney Hehir. RF Consultant Kramer stated he certifies for the record that the project as proposed and as presented complies with all FCC Guidelines. It was noted the issue of RF emissions safety is not under the City’s purview. Dr. Kramer noted the FCC’s shot-clock rules have been reinterpreted to indicated that rather than 150 days, it is 90 days for an already-existing structure, and the 150 days only applies to projects where a structure does not yet exist also known as ‘green grass’ projects.

Speakers: Adrian Culici, Eukon Group for DISH Wireless, Applicant, Temple City, pro; and Eric Ermac, Thousand Oaks, con.

Speakers via Zoom: Jennifer Gillis, Thousand Oaks, con; Brandon Bairian, Thousand Oaks, con; and Kelvin Yamashita, Westlake Village, con. De Jackson, Thousand Oaks, was unable to unmute; however, Hearing Officer Holt pointed out that her name was included in the letter from Jennifer Gillis in the packet.

Statements: There were 0 Written Statement Cards. There was 1 item of written correspondence in the packet, con, that included 17 names in the signature block.
RF Consultant Kramer responded to comments regarding non-ionizing transmissions and property values. Staff responded to comments, including alternative site reviews and property values.

Mr. Culici provided a rebuttal.

Hearing Officer Holt stated there needs to be additional analysis of alternatives that lower the appearance or profile of the cupolas and to continue the existing roofline to the highest degree possible.

RF Consultant Kramer noted that if equipment is pushed further back, it may have to be increased in height. He stated he will need to work with staff to determine if additional RF analysis would need to take place if redesigned.

Staff noted property values are not a criteria staff can consider for these projects.

The possibility of a continuance was discussed.

Chief Assistant City Attorney Hehir noted that if guidance is to be given to the applicant, they need to understand it so they can agree to any change or condition. He added that the building owner would need to agree if a change in roofline is being suggested.

Interim Planning Division Manager Kolwitz responded to Hearing Officer Holt that staff can provide examples of wireless communications facilities disguised in other ways, and noted the goal is to be architecturally compatible with the building.

Mr. Culici discussed the design and what may and may not be possible with regard to continuing the roofline, lowering the antenna, or the possibility of adding a parapet lip, keeping in mind the antenna height needed. He commented on a potential timeframe for photo simulations and plans, but stated they will also need the owner's consent as the building is leased. Community Development Tech II Gomez stated for the record that the photo locations should be from Jensen Court, Highway 23 and the 101 Freeway interchanges to the 101 North and 101 South. He noted staff would review any further design brought forward by the applicant, keeping in mind the need for antenna effectiveness.

Mr. Culici stated for the record they accept a tolling of the shot clock for seven days past the next hearing to allow the Hearing Officer to issue an opinion, and they agree to a continuance to a date certain of June 8, 2023. Interim Planning Manager Kolwitz noted staff seeks something architecturally compatible with the building and will continue to work toward that with the applicant.
The public hearing was closed.

Hearing Officer Holt expressed the opinion that the design of the cupolas do not represent a continuation of design, the public viewshed needs to be taken into consideration including photo simulations, and that further design options should be explored for a more integrated approach. He requested that the project continue the roofline as much as possible or reduce any or all vertical profile. He requested that upon return, staff provide further specifics of the project as it relates to all findings, and expand upon how the project meets those findings and adheres to policies, notably, Finding 3.

The Administrative Public Hearing was continued to a date certain of June 8, 2023 at 3:00 p.m. by Hearing Officer Holt for case # WCF 2023-70006.

The Hearing adjourned at 5:52 p.m.

Summary notes approved on May 15, 2023 by:

[Signature]

Iain Holt, Hearing Officer
Community Development Department