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June 20, 2007

Via Hand Delivery by Doug Loranger
June 22, 2007

San Francisco Board of Supervisors
1 Dr. Carlton B. Goodlett Place, Room 244
San Francisco, CA 94102-4689

**RE: Appeal of Planning Department Determination of CEQA Categorical
Exemption for EarthLink WiFi Proposal, File No. 070077, Case No.
2007.0097E**

Dear Supervisors:

This office represents the San Francisco Neighborhood Antenna Free Union (“SNAFU”) regarding the proposal by the City and County of San Francisco (“San Francisco”) to partner with EarthLink, Inc. in placing WiFi antennas throughout San Francisco. This is the “letter to follow” that was referred to in SNAFU’s original comment letter (dated May 29, 2007 and submitted the following day) on page six, section IV. That entire original letter is incorporated herein by reference; the comments in this letter are in addition to those in the original letter and are not in any way to be construed as replacements or alterations thereof.

Again, please include this office and that of SNAFU, 1835 Broderick Street, San Francisco, CA 94115, in any further communications to the public by your office regarding the proposed categorical exemption for this project. In particular, please provide us with a copy of your determination.

Sincerely,

Jeff Hoffman

I. THE PROPOSED PROJECT IS NOT ELIGIBLE FOR A CATEGORICAL EXEMPTION, BECAUSE IT MAY HAVE A SIGNIFICANT ENVIRONMENTAL IMPACT.

“Only those projects having no significant effect on the environment are categorically exempt from CEQA review. [CITATIONS] If a project may have a significant effect on the environment, CEQA review must occur” (*Salmon Protection and Watershed Network v. County of Marin* (2004) 125 Cal.App.4th 1098, 1102.)

Dr. Magda Havas, from Trent University in Ontario, Canada, drafted a report showing the significant environmental impacts that could be caused by San Francisco’s WiFi proposal (Exh. A).¹ Those harms are fully discussed below. This study shows that significant negative health effects could occur at levels below those to which San Francisco residents would be exposed by the proposal.

Specifically, the radiofrequency radiation emitted by this proposal alone may have substantial health impacts on humans, and on bank swallows listed as “threatened” by the State of California and that might perch on poles with proposed transmitters. Due to the fact that this proposal may cause significant impacts to humans and to threatened birds, it is not exempt from CEQA review.

A. The Proposal May Have A Significant Environmental Impact, Because Its Radiofrequency Radiation Emissions May Cause Significant Health Impacts On Humans At The Proposed Emission Levels.

Where the “environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly,” that proposed project will have a significant effect on the environment. (Pub. Resources Code, § 21083(b)(3).)

San Francisco’s WiFi proposal could cause persons within San Francisco to be exposed to a level of radiofrequency radiation as high as 41 $\mu\text{W}/\text{cm}^2$ *while sitting in their own homes* from a combination of sources, including the emissions from a co-located antenna from this proposal. A person exposed to multiple WiFi antennas (where they would be co-located) could be exposed to 6 $\mu\text{W}/\text{cm}^2$ from those antennas alone, and a person exposed to just one antenna could be exposed to 1 $\mu\text{W}/\text{cm}^2$ just from that antenna. (Zenzic Research Report (“Zenzic Report”), p. 5, last paragraph.)² None of these potential exposures includes radiofrequency radiation emissions from any outside sources other than those of the WiFi antennas, such as those from cell phone antennas or broadcast television and radio signals. From a list of studies compiled by Dr. Henry Lai of the University of Washington that provide power density data, eleven of twelve show negative health effects below 41 $\mu\text{W}/\text{cm}^2$; seven show those effects below 6 $\mu\text{W}/\text{cm}^2$; and four show those effects at or below 1 $\mu\text{W}/\text{cm}^2$. (Exh. A, p. 14, citing Zenzic Report, p. 5,

¹ There have been no studies to date on effects of radiofrequency radiation emitted by WiFi antennas. Because the radiofrequency radiation emitted by cell phone antennas is the closest type, those studies are used here.

² The Zenzic Report was provided as exhibit B in the original letter.

last two paragraphs.)³ At $.11\mu\text{W}/\text{cm}^2$, symptoms of radiofrequency exposure include headaches, sleep disturbances, irritability, difficulty concentrating, discomfort, depression, dizziness, appetite loss, and nausea. (Exh. A, p. 7, ¶ 1; see p. 23, Reference 25.) Someone near a co-located antenna would be exposed to $6\mu\text{W}/\text{cm}^2$ from this proposal alone while on his or her balcony and even a person on a balcony near a single antenna would be exposed to $1\mu\text{W}/\text{cm}^2$, which is almost ten times the level of exposure at which the symptoms listed immediately above were caused.

Moreover, this proposal would place transmitters on, inter alia, utility poles that connect power lines. “Placing antennas near or on utility power lines may result in the wires acting as antennas and redirecting the radio frequency radiation.” (Exh. A, p. 19, “Certificate of Determination,” ¶ 2, referring to Exh. B, p. 1, “Abstract, p. 2, “Data Transmission ...,” ¶ 1.) Therefore, this proposal may cause radiation to be emitted in directions not anticipated, exposing people and animals to radiation that has not been accounted for. This is a further reason that CEQA review of this proposal is both necessary and legally required.

B. The Proposal May Have Significant Environmental Effects Due To Its Cumulative Impacts.

An agency must find that a proposed project may have a significant effect on the environment where “[t]he possible effects of a project are individually limited but cumulatively considerable. As used in this paragraph, ‘cumulatively considerable’ means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” (Pub. Resources Code, § 21083(b)(2).)

While it might seem that the levels of exposure to radiation emissions that would be caused by this proposal per se are minimal, the addition of emissions that would be created by the proposal to those already existing and those that likely will exist in the near future in San Francisco due to other projects are cumulatively considerable, because the already existing levels of emissions are sufficient to cause significant health impacts, as discussed above. Where levels are already beyond those that could cause significant environmental harm, additional levels that seem small in comparison to those already existing might be significant. (See *Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1024-1025; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 720-721.) CEQA review is thus required to determine whether the emissions that would be added by this proposal may have a significant environmental effect.

³ See Table 2, pp. 11-14: studies 2, 6, 9, 10, 16, 17, 21-23, 27, and 28 show effects below $41\mu\text{W}/\text{mc}^2$; studies 2, 6, 9, 16, 22, 23, and 28 show effects below $6\mu\text{W}/\text{mc}^2$; studies 9, 16, 22, and 23 show effects at or below $1\mu\text{W}/\text{mc}^2$.

C. This Proposal May Have A Significant Environmental Impact On Persons With Electro Hypersensitivity, Because They Experience Substantial Health Effects At Much Lower Levels Than At The Levels Where The General Population Experiences Them.

Electro hypersensitivity (“EHS”) is recognized by the World Health Organization as “a phenomenon where individuals experience adverse health effects while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields.... Their exposures are generally several orders of magnitude under the limits in internationally accepted standards.” (Exh. A, p. 7, ¶ 5.) EHS affects 37% of all persons. Of that 37%, 2% are severely affected, and the remaining 35% have moderate symptoms, such as impaired immune systems and chronic illnesses. (*Id.*, last paragraph.) Symptoms of EHS include “cognitive dysfunction (memory, concentration, problem-solving); balance, dizziness & vertigo; facial flushing, skin rash; chest pressure, rapid heart rate; depression, anxiety, irritability, frustration, temper; fatigue, poor sleep; body aches, headaches; ringing in the ear (tinnitus) and are consistent with chronic fatigue and fibromyalgia” (fibromyalgia is a chronic condition of widespread pain, fatigue, and multiple tender points). (*Id.*, p. 8, ¶ 1.) There may be 15,000 persons in San Francisco who are severely affected by EHS and 260,000 who are moderately affected. (*Id.*, ¶ 4.) These large numbers of persons invoke CEQA, because it cannot be claimed that these are mere individuals to whom CEQA does not apply. Because these persons suffer substantial health impacts from levels of radiofrequency radiation well below the standards for the general population, this proposal clearly may cause significant environmental impacts by causing substantial health impacts to these numerous persons, and CEQA review should take place in order to protect these potentially vulnerable persons.

D. The Proposal May Have A Significant Environmental Impact, Because Its Radiofrequency Radiation Emissions May Cause A Substantial Reduction In Population Of A Threatened Species At The Proposed Emission Levels.

A lead agency must find that a project that “substantially reduce[s] the number or restrict[s] the range of an endangered, rare or threatened species” “may have a significant effect on the environment.” (Cal. Code Regs., tit. 14 (“14 CCR”), § 15065(a)(1).)

Bank swallows are listed as “threatened” pursuant to the California Endangered Species Act. (14 CCR, § 670.5(b)(5)(E).) They also currently exist in significant numbers in San Francisco. (Exh. C, p. 2, first full paragraph.)

Bank swallows often perch on telephone wires. (Exh. D, p. 2, ¶ 1.) The proposal would place antennas emitting radiofrequency radiation on street poles that, inter alia, connect telephone wires. Because of their tendency to perch on these wires, bank swallows could be exposed to a much higher level of radiation than humans or other animals, because they could perch very close or even right next to the transmitters.

A study has shown that the number of chicks per nest of birds nesting within 200 meters of cell phone antennas was reduced by 50%, and that nests without chicks

increased from 3.3% to 40%. (Exh. A, p. 9, “BIRDS,” ¶ 1, citing and explaining Exh. E, p. 111, last paragraph.) Another study showed that the number of male house sparrows substantially declined where they were exposed to radiofrequency radiation at levels below those that would be experienced within 16 feet of the proposed WiFi antennas. (Exh. F, ¶ 1, citing Exh. G, p. 66 and Zenzic Report.) Because bank swallows often perch on telephone wires, because doing so could easily place them within 200 meters of the proposed WiFi antennas, because the swallows will then be in the danger zone where breeding pairs had 50% fewer chicks, and because being exposed to a level of radiation emitted by the antennas from of this proposal significantly higher than that of the public, this proposal, implementation of this proposal may cause a substantial reduction in threatened bank swallows and San Francisco must find that this proposal may have a significant effect on the environment. Therefore, this proposal is not exempt and proper CEQA review must take place.

E. The Proposal May Cause Exposures To Levels Of Radiofrequency Radiation Above The FCC Limits Due To The Time Of Exposure.

For members of the public, the Federal Communications Commission’s (“FCC”) limit for exposure to radiofrequency radiation from transmitters regulated by the FCC is 1 mW/cm² for 30 minutes of exposure. (FCC Office of Engineering and Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01, August 1997, p. 6, ¶ 1, p. 10, ¶ 3.) This is the level at which the radiation would cause thermal effects on living tissue. (Zenzic Report, p. 1, “Executive Summary.”) The FCC has no limits for long term exposure. (Exh. A, p. 4, last paragraph.) However, extrapolating the radiation exposure limit of 1 mW/cm² for 30 minutes over a one year period, the radiation exposure limit would be .33 µW/cm². (Exh. A, p. 4, second to last paragraph.)⁴ Over a ten year period, that exposure would be limited to .03 µW/cm². (*Ibid.*)

San Francisco’s WiFi proposal could cause persons within San Francisco to be exposed to a level of radiofrequency radiation as high as 6 µW/cm² from the emissions of a co-located antennal pursuant to this proposal, and to a level as high as 1 µW/cm² from a single antenna, in both situations *while sitting in their own homes*. None of these potential exposures include radiofrequency radiation emissions from any other outside sources, such as those from cell phone antennas or broadcast television and radio signals, or from personal devices such as cordless phones, cell phones, or laptop computers. (Zenzic Report, p. 5, last two paragraphs.)

Even without any additional sources of radiofrequency radiation, the emissions from the antennas for this proposal *alone* could expose members of the public to a greater amount of radiofrequency radiation than allowed by the FCC regulations extrapolated to consider long term exposure to that radiation. In the examples provided, the woman sitting on her balcony would be exposed to 1 µW/cm² from a single antenna and to 6 µW/cm² from co-located antennas. (Zenzic Report, p. 5, last two paragraphs; Exh A. p. 4, last two paragraphs.) Over a period of one year, this exposure would exceed the 1

⁴ See Exh. A, p. 6, Table 1 for a calculation extrapolating the FCC limits for long term exposure to these emissions.

mW/cm² limit for 30 minutes set by the FCC, extrapolated to .33 μW/cm², and may cause significant medical impacts. Because this potential exposure presents a strong chance of a significant effect on the environment in the form of potential harm to public health, this proposal does not qualify for a CEQA exemption, and CEQA review of it is required.

CONCLUSION

If the FCC had long term limits to account for the exposure to radiofrequency radiation that everyone will endure, and were those limits set by extrapolating the current limits, the radiofrequency radiation emissions from this proposal alone would exceed the FCC limits. Even if the FCC limits would not be exceeded by this proposal, studies show that significant medical harms are caused by lower levels of radiofrequency radiation emissions. Because San Francisco would be acting as a proprietor and not as a regulator for this proposal, the City is not preempted by the Federal Telecommunications Act from undertaking CEQA review. (*Sprint Spectrum L.P. v. Mills*, 283 F.3d 404, 418 (2d Cir. 2002).) San Francisco thus has complete discretion over whether and how to implement this proposal, and it should follow its own Precautionary Principle by undertaking CEQA review.