

**PROJECT JUSTIFICATION  
for  
CLEARWIRE COMMUNICATIONS  
70' Slim-line Monopole with Stealth Antennas  
Nv-lsv-186  
4850 North Jones Blvd.  
Las Vegas, Nv. 89130  
APN: 125-36-403-007**

**Design Review Request**

To: City of Las Vegas  
Community Development Department

From: Mark McGarey  
Marken Telecommunication Services

Date: 6/22/08

Re: Skywaves West Tower and Horvath Communications application for  
CLEARWIRE WIRELESS BROADBAND  
4850 North Jones Blvd.  
Las Vegas, Nv. 89130  
APN: 125-36-403-007

***ABOUT CLEARWIRE***

Clearwire Corporation ([www.clearwire.com](http://www.clearwire.com)) is a nationwide provider of next-generation wireless Internet services enabling fast, simple, portable, reliable and affordable communications anytime, anywhere within Clearwire's coverage area. Clearwire is preparing to launch this service in the Greater Las Vegas metro area. Clearwire will provide for Las Vegas area customers, an easy, off-the-shelf wireless high-speed Internet solution where customers typically have the service operating within minutes of receiving the modem without any need for a technician to visit. There is no software to load and generally no configuring or changes to the customer's computer. The fast and simple service can be accessed by simply taking the modem out of the box, plugging it in and connecting the Ethernet cord to the customer's computer.

Clearwire currently provides a next-generation, non-line-of-site WiMAX-class solution. The portable Clearwire service can be moved from place to place inside Clearwire's coverage area, which upon network launch, will allow

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customers to use the service throughout their home, office or favorite coffee house. Customers will use Clearwire to connect to the Internet using licensed spectrum, allocated and regulated by the Federal Communications Commission, eliminating the confines of traditional cable or phone wiring. For the consumer, the wireless communication facility tower equipment will transmit radio signals from a base site to a small, wireless modem, which easily connects a user's computer to the Internet.

Headquartered in Kirkland, Washington, Clearwire has launched wireless high-speed Internet service in 33 metro markets covering more than 370 cities and towns in Alaska, California, Hawaii, Idaho, Minnesota, Nevada, North Carolina, Oregon, Texas, Washington and Wisconsin. The system has been successfully launched internationally as well in countries such as Ireland, Belgium, Denmark (under the Clearwire name with Danske Telecom) and Mexico (via its partner MVSNet).

### ***THE LAS VEGAS NETWORK***

Since 2006, Clearwire has been developing a network of base station facilities to create its WiMAX network. The commercial launch of the system is scheduled for late 2008. The system works similarly to traditional cellular phone networks in that it deploys a series of antennas at geographically predetermined locations to create a "honeycomb" network of cell sites. These sites "talk" to one another providing the customer with seamless coverage and the ability to move throughout the coverage area without losing signal connectivity.

In order to provide a high quality, high capacity system, capable of transmitting the data streams Internet users are accustomed to, the system must be linked to via a microwave interconnect system that provides for large quantity data transmission. Readily available T-1 and fiber do not offer the capacity at the speeds necessary to make the system a viable alternative to cable and DSL systems. As such, the network is designed with a number of "Hub" microwave sites that will provide the necessary signal capacity to surrounding sites to make the system viable. Each "donor" site must have clear line-of-sight to the Hub site and the transmission antennas at each site must exceed the height of the surrounding buildings and vegetation in the area it is designed to serve. In order to lower the number of costly and visually obtrusive HUB sites in an area, the surrounding donor sites must be built at or around 70' in height. This ensures the microwave paths are unobstructed and the donor sites can be located further from its donor. This limits the number of HUBs required, reduces costs and limits the number of visually "high impact" sites necessary to complete the system.

The Clearwire Las Vegas engineering plan calls for 8 hub sites and for 223 sites in the entire network. This figure will increase over time as capacity requirements dictate and coverage gaps are filled in. Clearwire, through its system development partners, have been working with existing wireless carriers,

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tower owners and building owners to locate its sites on existing structures wherever possible. Of the 223 sites anticipated for launch, over 85% will be collocations or rooftop locations. This approach is designed to meet the conditions of local jurisdictions throughout City of Las Vegas.

The remaining 30 – 35 sites under development do not have available structures in the area to accommodate collocation. In these cases, Clearwire is partnering with Horvath Communications, one of the nation's largest private tower developers, to construct its stand-alone facilities. Only after a search area has been evaluated for collocation and rooftop facilities does Horvath begin its work to secure the best possible location for a new stand-alone site. Considerations given in site selection include the location of surrounding residential properties, topography, elevation, existing cell sites, Clearwire's adjacent antenna locations, ability to secure leasehold rights and coverage objectives. Once a site has been selected for consideration, Clearwire and Horvath are committed to construction of only the best designed facilities for its new stand-alone structures. In most cases, Horvath believes the 26" diameter slim-line monopole (also used in lightpole replacements or stealth flagpole sites) is the least visibly objectionable. In some cases, alternative stealth site designs such as palm trees or pine trees may be utilized. Only very rarely, and only on sites that can handle the more intense use, will monopoles be requested. In every case, in-keeping with the objectives of most area jurisdictions, collocation will be accommodated on the new stealth structures.

### ***THE REQUEST***

Clearwire and Horvath Communications respectfully request City of Las Vegas Design Review approval for a new 70' stand-alone stealth, slim-line monopole located in the City of Las Vegas zoning district at **4850 North Jones Blvd. Las Vegas, Nv. 89130 APN: 125-36-403-007** The stealth pole will utilize panel antennas, completely screened behind canisters mounted to the top of the steel pole. A Design Review is required for the new stand-alone facility.

### ***SUBJECT PARCEL***

The subject parcel is approximately 3.93 acres in size, APN# **125-36-403-007**, and is zoned "c-1". The subject parcel comprises an Existing storage company. The subject parcel is surrounded by mostly R-E and C-1 type zoning. All though there is an existing 60' high flag pole located on this parcel it does not work for us fro two reasons, first it is not high enough to meet our network design requirements and also it is structurally full with two carriers currently located within it.

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## ***SITE DETAILS***

The facility will not be manned and will not create any noticeable increase in traffic. In accordance with the City of Las Vegas wireless code, Clearwire will provide opportunities for collocation on this stealth facility to limit the need for additional wireless communication poles in the area, with the equipment located within the existing storage building out of public view.

## ***THE FACILITY***

Clearwire proposes to attach three flush-mounted panel antennas inside the 70' slim-line pole at a height of 70' and a 24" microwave dish inside the pole at a height of 70'. The pole will be limited to 26" in diameter and will be constructed to accommodate additional antennas inside the pole. Details of the plan are as follows:

- Installation of an 70' x 26" slim-line, four-carrier monopole with stealth canisters;
- Installation of three Clearwire panel antennas at the 70' center line. Future carrier antenna arrays may be added inside the pole at the 60' and 50' and 40' levels;
- Installation of a 24" high performance microwave dish inside the pole at the 68' height;
- Installation of two telecommunications cabinets mounted on a concrete pad inside a lease area measuring 19' x 25'. The cabinets will not exceed the height of the compound wall.
- The coaxial cables linking the radio cabinets to the antennas will be routed down the inside of the pole from the antennas to inside the existing building where the equipment is to be located.
- Installation of a new 100 amp service board inside the fenced compound from an existing electrical transformer.

### ***Access***

Access to the site will be from Jones Rd. through the existing driveway south of the proposed site of the parcel for site servicing, monthly.

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**Setbacks**

The 70' slim-line pole will be setback from the property lines as follows:

North	R-E	210'-0"
South	R-E	79'-1"
East	R-E	296'-0"
West	R-E	24'-0"

**Summary**

The construction of a new stand-alone communications facility in the area near Boulder Highway and Horizon is critical to the successful launch of the Clearwire WiMax network. Clearwire is eager to provide the residents in this area with an affordable, reliable and secure mobile Internet service and the development of their network is primary to this objective. In the process of developing their 150+ site network, Clearwire has successfully collocated their antennas 85% of the time. Only as a last resort do they need to construct new stand-alone towers.

In this instance, Clearwire believes a stand-alone stealth monopole is the only and best option for them to achieve their coverage objectives. In the process of securing this facility, several alternative sites were considered and ruled out. In some cases, landlord interest could not be gained, in others, engineering constraints limited relocating to other properties. In requesting a Design Review for this site, Clearwire has attempted to limit the impact of the site through careful selection of the site and in offering a slim, stealth design. The installation of this site will not increase traffic, generate noise, dust or light or have any other significant impact on surrounding property owners. In addition there is no hardship created on the infrastructure in place, nor will there be a need to increase capacity of any public service. There is no known negative impact on property values. And the site will not negatively impact the natural environment. The site will be constructed to provide stealth sitting options for future carriers.

Horvath Communications and Clearwire appreciate your consideration of this request. Should you have any questions, or require additional information, please contact me at (602) 432-1736.

Thank you.

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