



Connexus Energy Communications Tower – City of Ramsey

Request for Conditional Use Permit

January 30, 2015.

This document is hereby submitted to the City of Ramsey in application for and approval of Conditional Use Permit (CUP) for construction of a telecommunications tower on Connexus Energy Headquarters property in the City of Ramsey.

Property:

Owner: Connexus Energy
Address: 14601 Ramsey Blvd, Ramsey, MN 55303
PIN: 27-32-25-23-0004
Legal Description: Section 27 T. 32 R. 25; Lot 1 Block 1 AEC Energy Park
Zoning District: E2

Applicant Primary Contact:

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Description of Project & Structure

The structure will be used to support communications apparatus needed for company operations. Structure design is planned to be a height of 199' (<200') above ground level and will be of monopole design with no supporting guy wires. The proposed placement of the structure is to the east side and to the back of the building adjacent to the building generator and mechanical and electrical facilities. Also included will be a small equipment hut approximately 10'x12' at the base of the tower, to house communications equipment.

Timeline

The intended timeline for construction of the project is in the 2nd half of 2015, subject to City of Ramsey approvals and permitting.

See Exhibit 1 below for a picture of a monopole structure similar to what is intended for Connexus' application.

Exhibit 1: Similar monopole structure



Basis for need

Connexus Energy completed a communications study in 2014 to identify solutions for areas of need:

1. Resolve issues with current communications systems
2. Develop a forward-looking strategy to enable and support forthcoming applications that require additional communications capability.

The company's existing tower located in Anoka just off Trunk Highway 10 was determined to be structurally deficient per current codes in a recent analysis. As such, no additional attachments can be added. Existing systems include the company's land mobile radio system (voice communication to trucks and hand held radios), and control and monitoring communications to customer owned Distributed Generation (DG).

Looking forward, Connexus Energy plans to add communication infrastructure for "smart grid" applications, including:

- AMI - Automated Metering Infrastructure.
- DA – (Distribution Automation) communications to devices on the electric grid to enhance grid efficiency and reliability.
- SCADA – Communications for monitoring and control of substations.
- Demand Response – enables customers to control electrical load to reduce demand and energy consumption during peak periods of use.

The proposed communications tower is an integral element of the overall plan. The study indicates the tower is ideally located on Connexus Energy property.

Location and Height

A tower height of 199 feet (just under 200') above ground level is the ideal height based on the following:

- The tower does not need to be painted (red and white) or lamped for heights under 200 feet above ground level per FCC requirements.
- Propagation analysis indicates that communications signal performance at 200' at the Ramsey location is comparable to that of the existing 300' height in Anoka. Propagation performance degrades below 200' towards 100'. "Holes" in coverage due to degradation of signal path creates additional safety risk when crews need voice communication working on power lines, and additional reliability risk if signal is lost when performing line switching operations.
- The 200' height allows for signal propagation over the Ramsey landfill (~160') for applications where direct line of site communications is needed.

Proposed placement of the structure is to the "back" of the Connexus building, near the generator enclosure and service transformers. Exhibit 2 illustrates the location of the tower on the property with approximate dimensions from the tower base to surrounding property lines. Exhibit 3 illustrates approximate placement in the general back area of the property, with approximate distances from the tower base to the building, the Eastern property edge bordering Cottonwood Park, and to the closet point of the public trail within the park. These exhibits were extracted from the Anoka County GIS base map with the aerial view included.

Addition Locational Benefits

Other benefits that will be realized with the proposed location include the following:

- Increased security by having the structure within the fenced area on Connexus property in lieu of an external site.
- Mitigation of “dig-ins” and other exposure of interruptions from locating infrastructure near road right-of-ways or property owned by Others.
- Emergency back-up power from Connexus’ onsite generator.

Other Considerations

- It is understood the City of Ramsey currently has a 100’ tower height ordinance. Applying multiple 100’ towers in lieu of a single 200’ structure is not feasible, due to the type of licensing applied by the FCC to the frequency allocated for the land mobile radio system.
- The height of the tower makes provision for co-location by other entities.

Illustrations

Trees and berms currently on the property and adjacent park property in addition to locating the structure on the “back” side to the building will provide some screening. Below are photos taken of the property from the shoulder of surrounding streets with a similar 200’ structure embedded in the photos to scale to provide illustration of what this is anticipated to look like from the public view.

The proposed height of just under 200’ is 35’ taller than the 165’ water tower to the southeast of Connexus property.

Photo 1: Street view from Ramsey Blvd northbound, north of Sunwood Drive looking east



Photo 2: Sidewalk view in front of Allina Clinic on Ramsey Blvd looking east



Photo 3: Street view from eastbound Industrial Blvd west of intersection of Sunwood Drive



Photo 4: View approaching Connexus building on Jim Paulson Parkway



Prepared and submitted by: _____

Tom Guttormson, PE; Connexus Energy