

## MEMORANDUM

**DATE:** August 20, 2009

**TO:** County Development Review Committee

**FROM:** Vicente Archuleta, Design Review

**VIA:** Jack Kolkmeier, Land Use Administrator  
Shelley Cobau, Building and Development Services Manager  
Wayne Dalton, Building and Development Services Supervisor

**FILE REF.:** CDRC CASE # MIS 09-5310 Charles Breckenridge II Wind Turbine Tower

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### **ISSUE:**

Charles Breckenridge II, applicant, requests approval to install 40 foot wind turbine tower. The tower is based on a light-pole design and is constructed of tubular steel with a galvanized finish which will be mounted upon a concrete base.

The property is located at 38 Snow Moon Estates, which is off of Martin Lane and Martin Road, within Section 28, Township 10 North, Range 8 East. (Commission District 3)

### **SUMMARY:**

The Applicant requests approval for the installation of a small residential wind generator system consisting of one SkyStream 3.7 wind generator on 10.08 acres. The monopole tower will be forty (40) feet in height. The tower is based on a light-pole design and is constructed of tubular steel with a galvanized finish which will be mounted on a concrete base. This proposal consists of the following:

- SkyStream 3.7 wind generator
- 34 foot monopole
- 12 foot diameter blade

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- Grid tied to the Central NM Electrical Co-op power grid, with buried cable from tower to meter

The handbook on “Permitting Small Wind Turbines” by the American Wind Energy Association (AWEA), states that small wind turbines should be viewed as a community asset since they reduce threats of blackouts in the community, contribute to national security and reduce dependence on polluting forms of electric generation.

The wind turbine is capable of generating 400 Kw per month in a 12 MPH average wind and works in winds as low as 8 MPH. The turbine will have grounded lightning protection so that there will be no danger of a fire being started by a wind turbine.

The turbine towers are based on a light pole design and are constructed of tubular steel with a galvanized finish, which will be placed on a concrete base. The total height will be approximately forty (40) feet in height.

The Applicant has contacted the US Fish and Wildlife Service (USFWS) requesting a review of the application for the residential wind turbine. USFWS supports the generation of electricity by wind turbines, as a non-polluting technology that does not contribute to climate change (see USFWS letter as Exhibit “E”).

USFWS has no concerns about potential for wildlife mortality or loss of habitat resulting from operation of the turbine. The only recommendation is that the turbine should be unlighted, or any necessary lighting must be down-shielded to prevent attracting insects (which may in turn attract bats) or unintended attraction of birds to the rotor-swept zone during adverse weather conditions

The following issues have been discussed in communities throughout the world:

Acoustics:

The sound from small wind generators typically blends in with common outside sounds like those from cars, airplanes, barking dogs and wind blowing through trees. According to the US Department of Energy’s National Renewable Energy Laboratory (NREL), the sound pressure level generated by a small wind generator is in the range of 40-65 decibels, which is quieter than background noise in a home or office and normally below the threshold of human hearing. Skystream’s sound is unrecognizable over trees blowing in the wind.

Visual Impact:

Small wind generators are installed on towers similar to those commonly accepted in communities across the country and don’t look much different than a common light pole. The generators are designed to minimize the visual area and preserve the horizon.

Structure Safety and Climbing Hazard

As with any structure, wind generator towers must meet local building and safety requirements. In addition, this particular installation will be enclosed on private property, with no public access. Towers are installed according to manufacturer and local zoning specifications that ensure structural safety. Monopole towers, like the one proposed, have a smooth surface that is nearly impossible to climb.

According to FAA regulations, small wind turbine towers less than 200 feet and located more than 5,000 feet from an airport are not required to install warning lights.

Interference:

Small wind generators have no effect on TV communications signals since they are made from wood, fiberglass and plastic that can pass through. Small wind generators also do not electro-magnetically interfere with telecommunications or radio waves. In fact, one of the major markets for small wind generators is powering military and remote telecommunication sites.

Property Values:

According to the American Wind Energy Association (AWEA), there has been no documented evidence that small wind generators have ever lowered neighborhood property values. A 2003 study that examined property values near ten wind farms found that property values increased faster in those areas as compared to other homes within the region.

A survey of 300 California homeowners conducted for the California Energy Commission found that 50% of homeowners surveyed would be more interested in a home that has a renewable energy system already installed versus a home that does not.

Article III, Section 2.3.6c states: "Requests for residential accessory structures such as windmills and radio antennas to exceed the maximum height restrictions shall be reviewed for approval by the County Development Review Committee. When an exception to the height restrictions is desired, the applicant shall submit plans for the installation and operation of the accessory structure with a report explaining why the requested height of the structure is necessary for proper function. The County Development Review Committee shall consider: whether the requested structure is reasonably necessary to be on the proposed site; whether the applicant has demonstrated that the requested height is the minimum height necessary for the proposed structure to function properly, not to exceed a maximum height of forty-five (45) feet; and the size of the lot and impact on neighboring properties."

**REQUIRED ACTION:**

The CDRC should review the attached material and consider the recommendation of staff; take action to approve, deny, approve with conditions or modifications or to table

for further analysis of this request.

**RECOMMENDATION:**

Article III, Section 2.3.6c states that the CDRC is required to review and approve residential accessory structures such as windmills and radio antennas which exceed the maximum height restrictions. Staff feels that this request is conformance with Article III, Section 2.3.6c of the Land Development Code. Therefore, staff recommends approval of the request.

**Attachments:**

- Exhibit "A"- Letter of Request
- Exhibit "B"- Site Plan/Plans
- Exhibit "C"- Vicinity Map
- Exhibit "D"- Warranty Deed/Survey Plat
- Exhibit "E"- USFWS Letter