



# Dane County Planning and Development Department

Room 116, City-County Building, Madison, Wisconsin 53703  
Fax (608) 267-1540

*Community Development*  
(608)261-9781, Rm. 421

*Planning*  
(608)266-4251, Rm. 116

*Records & Support*  
(608)266-4251, Rm. 116

*Zoning*  
(608)266-4266, Rm. 116

## MEMORANDUM

**TO:** Dane County Zoning & Land Regulation Committee (ZLR)

**FROM:** Majid Allan, Senior Planner

**DATE:** January 11, 2015

**RE:** Conditional Use Permit (CUP) #2297 - proposed 150' US Cellular cell tower in the C-2 Commercial district, section 34, Town of Madison

**CC:** Dick Rogers (Agent for US Cellular)  
Roger Lane, Dane County Zoning Administrator  
Renee Schwass, Town of Madison Clerk



## ***Proposal Summary***

- **Tower height / type:** 150' tall monopole cell tower in the C-2 district, on a 645 square foot fenced lease area. US Cellular's equipment would be located at 150' above ground level (AGL), and the tower would accommodate at least two (2) additional collocation spots on the tower at lower heights. The tower would not requiring lighting. No equipment shelter is being proposed, as a space within the existing building will be used instead.
- **Location:** 1906 W. Beltline Highway Frontage Road, section 34, Town of Madison. The proposed tower would be located approximately 10' away from the existing commercial building located on the property. The ownership parcel abuts the city of Madison's "Cannonball" bike bath.
- **Reason for tower:** US Cellular is proposing the new tower to replace an existing self-support lattice tower of the same height (150') because it is losing its lease option at the existing site (1762 W. Beltline Hwy). There is no other existing tower or other tall structure in the vicinity that could be utilized to meet the carrier's coverage / network needs.
- **Potential for collocation:** The applicant has indicated that the tower can support the minimum two additional collocation spots required under the county tower ordinance. There are two collocators on the existing tower that will be invited to collocate on the new tower.

## ***Radio Frequency (RF) Engineering Summary***

- **RF Engineer's recommendation: Approve.**

Evans Associates has reviewed the proposal and indicated that it appears to meet the requirements of a replacement tower.

A formal RF engineering review is not required unless the tower would host high-power broadcast stations, or if the tower would not support the minimum number of required collocation spots (two).

## ***Staff Recommendations – Approve with conditions***

Pending consideration of any issues raised at the public hearing by neighboring property owners or other interested parties, staff recommends that the ZLR Committee approve CUP #2297 subject to the conditions listed below.

The following pages of this report address standard CUP considerations, common tower-related issues, and potential conditions of approval.

**Conditional Use Permit Considerations.** When granting CUPs, the ZLR and respective town board need to find that the proposed conditional use satisfies the following six standards outlined under §10.255(2)(h) of the D.C. Ords.:

1. That the establishment, maintenance, or operation of the conditional use will not be detrimental to or endanger the public health, safety, comfort or general welfare.
2. That the uses, values and enjoyment of other property in the neighborhood for purposes already permitted shall be in no foreseeable manner substantially impaired or diminished by establishment, maintenance or operation of the conditional use.
3. That the establishment of the conditional use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.
4. That adequate utilities, access roads, drainage and other necessary site improvements have been or are being made.
5. That adequate measures have been or will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public streets; and
6. That the conditional use shall conform to all applicable regulations of the district in which it is located.

**Section 10.194, Procedure and Standards for the Placement, Construction or Modification of Communication Towers.** Dane County Zoning Ordinance section 10.194 that regulates the permitting of communication towers in Dane County. The primary intent of s. 10.194 is to minimize the total number of communication towers in Dane County by utilizing, to the extent practical, all existing structures.

Section 10.194(2) states that: “No CUP shall be issued unless the applicant presents to the committee credible evidence establishing to a reasonable degree of certainty [at least one of] the following:

- (a) No existing communication tower is located within the area in which the applicant's equipment must be located; **or**
- (b) No existing communication tower within the area in which the applicant's equipment must be located is of sufficient height to meet applicant's requirements and the deficiency in height cannot be remedied at a reasonable cost; **or**
- (c) No existing communication tower within the area in which the applicant's equipment must be located has sufficient structural strength to support applicant's equipment and the deficiency in structural strength cannot be remedied at a reasonable cost; **or**
- (d) The applicant's equipment would cause electromagnetic interference with equipment on the existing communication tower(s) within the area in which the applicant's equipment must be located, or the equipment on the existing communication tower(s) would cause interference with the applicant's equipment and the interference, from whatever source, cannot be eliminated at a reasonable cost; **or**
- (e) The fees, costs or contractual provisions required by the owner in order to collocate on an existing communication tower are unreasonable relative to industry norms; **or**
- (f) The applicant demonstrates that there are other factors that render existing communication towers unsuitable or unavailable and establishes that the public interest is best served by the placement or construction of a new communication tower.”

In the section referenced above, the burden of proof is placed upon the applicant. The applicant must provide to the Committee *credible* evidence establishing *to a reasonable degree of certainty* that at least one of those six conditions above is met. The applicant is making its case under s. 10.194(2)(a) above. Given the loss of lease space on the neighboring property, there are no towers in the area where US Cellular is seeking to provide coverage.

**Common Tower Related Issues.** There are a number of issues that are commonly associated with the siting, operation, and maintenance of cell towers. Below is a brief synopsis of these issues in the context of the tower proposed under CUP #2297.

**Air navigation.** There are no public or private airports within 3 miles of the proposed CUP area. The applicant is in the process contacting the FAA and WISDOT Bureau of Aeronautics to obtain a determination of no hazard to air navigation.

**Fall-down radius.** The fall-down radius is essentially the area around a tower that could be affected in the event that the tower fell down. A conservative radius to use is 125 percent of the proposed tower height, which in this case is 187.5 feet (125 percent of 150 ft.). The existing commercial building, and respective parking areas, as well as a portion of the Cannonball bike path are located within this radius. It's important to note that the proposed monopole tower design is engineered to collapse inward, affecting a much smaller area around the base of the tower. Any catastrophic collapse would still risk affecting the existing commercial building.

**Ice-fall radius.** During the winter months, ice can build up on towers and subsequently melt and fall off the tower affecting the ground and structures in close proximity to the tower. Falling ice can drift further from the base of a structure due to strong winds. A conservative radius to evaluate for falling ice is 50 percent of the proposed height of the tower, which in this case is approximately 75 feet: portions of the existing commercial building, parking area, and bike path are within this radius and could potentially be affected by falling ice.

**Visual aesthetics.** This is a highly subjective issue and one of the most significant points of contention often associated with new communication tower requests. Due to the urban / commercial location, visual impact at this site should be minimal except to passing motorists and patrons of the businesses located in the building. The applicant has submitted photo simulations that illustrate the potential visual impact from various locations surrounding the property.

**Electromagnetic radiation.** The issue of electromagnetic radiofrequency (RF) emissions is commonly raised in response to communication tower proposals. However, an evaluation of the issue is somewhat outside of the County's jurisdiction given that there are no relevant County regulations; Department staff do not have the technical capabilities to evaluate and comment on this issue; and it is regulated and governed by the FCC through the federal licensing and permitting process. This is a low-density rural / agricultural area, which should mitigate any negative affects associated with RF emissions. If so desired, the Committee/County has the option of referring specific questions to the County's contracting RF engineering consultant, Evans Associates. Otherwise, the issue is deemed to be governed entirely by the FCC.

**Potential Conditions of Approval.** Should the Committee choose to approve the CUP application, below is a list of potential conditions.

1. The primary use of the communication tower permitted under Conditional Use Permit No. 2297 shall be for the transmission and reception of cellular/PCS wireless voice / data communications, and related telecommunications equipment.
2. The communication tower placed, constructed or modified under Conditional Use Permit No. 2297 shall accommodate the collocation of telecommunications equipment for at least two (2) additional telecommunications providers. The maximum height of the tower shall not exceed 150 feet above ground level.
3. The minimum of two (2) collocation sites required hereunder need not be available on the tower as initially placed, constructed, or modified, provided that the tower will support the later addition of the collocation sites as specified in condition #2, above.
4. Collocation sites required hereunder shall, upon request, be made available by the holder of Conditional Use Permit No. 2297 for the mounting of technologically compatible antenna arrays and equipment at the prevailing market rate in the region and upon contractual provisions which are standard in the industry.
5. The holder of Conditional Use Permit No. 2297 is permitted, if needed, to construct a building of no more than 14 feet in height (as defined in section 10.01 (8) of the Dane County Zoning Ordinance in effect in March 1997) and 314 square feet in floor area for use directly incidental and necessary to the use of the tower. Any other user collocating on the tower permitted herein is permitted to construct a building of no more than 14 feet in height (as defined in section 10.01 (8) of the Dane County Zoning Ordinance in effect in March 1997) and 314 square feet in floor area for use directly incidental and necessary to the use of the tower. Two or more users of the tower may build a single building with a floor area of no more than 314 square feet per user sharing the building. Buildings constructed or used by tower collocators shall be subject to all conditions established for Conditional Use Permit No.2297, including locational requirements contained in the site plan.
6. The holder of Conditional Use Permit No. 2297 shall, through ownership, lease, option or other means, at all times have the right to use the land associated with the permitted tower for uses related to the use of the collocation sites required hereunder, including the construction and use of buildings as permitted under paragraph 5 herein.
7. The final site plan(s) and design drawings dated 5/22/2014 and submitted with the CUP #2297 application materials, are fully incorporated herein and continued effectiveness of Conditional Use Permit No. 2297 is expressly conditioned upon compliance with those plans.
8. Upon written inquiry by the committee, the holder of Conditional Use Permit No. 2297 shall have the burden of presenting to the committee credible evidence establishing to a reasonable certainty the continued compliance with all conditions placed upon the conditional use permit. Failure to establish compliance with all conditions placed upon the conditional use permit shall be grounds for revocation of the permit. In the event the committee determines that it is necessary to consult with a third party to ascertain compliance with conditions on Conditional Use Permit No. 2297, all reasonable costs and expenses associated with such consultation shall be borne by the holder of said conditional use permit. Failure to pay such costs and expenses or provide information requested by the committee shall be grounds for revocation of the conditional use permit.
9. The holder of Conditional Use Permit No. 2297 shall within 30 days of any collocation on the permitted tower provide the committee with written notification of the identity of the collocator and the nature of the equipment installed. Within 30 days of the date on which any collocated use

ceases, the permit holder shall provide the committee with written notice of the cessation of such use. Any changes due to collocation or otherwise shall be reviewed by the Zoning Administrator prior to implementation to determine if permits are needed and to determine that such changes are in compliance with terms of the CUP and does not significantly alter the appearance or structural integrity of the tower approved and permitted under this CUP.

10. If at any time the communication tower permitted under Conditional Use Permit No. 2297 ceases to be used for the primary use, as identified in paragraph 1 above, for a continuous period of 12 months the permit holder shall, upon notification by the committee, dismantle and remove the tower. If the tower is not removed within 30 days of such notification, Dane County may enter upon the premises and remove the tower at the expense of the holder of the conditional use permit.
11. Prior to issuance of the requested conditional use permit, and as a condition of its continued validity, applicant shall provide Dane County with a bond, or evidence of an existing bond, in the amount of \$20,000 ensuring performance of applicant's obligation to remove any communication tower, array or any other equipment or structure placed or erected pursuant to the conditional use permit, including payment for such removal by Dane County or its agent, in the event the permit is revoked or the use permitted thereunder ceases for a continuous period of 12 months. Said bond shall expressly state that it will remain in full force and effect for a period of at least six months after the surety provides Dane County written notification of expiration or termination of the surety's obligation under the bond. Applicant shall remove any communication tower, array or any other equipment or structure placed or erected pursuant to the conditional use permit no less than 30 days prior to the termination or expiration of the bond required hereunder.
12. The applicant shall file a Notice of Proposed Construction on Form 7460-1 to the FAA to assure that the tower will not impact air traffic.
13. Contact with Wisconsin DOT Bureau of Aeronautics should be made prior to construction, if it has not already been done, to determine whether notification to that agency is required.
14. All tower components, appurtenances and transmission lines should be securely bonded and grounded to prevent RF interference caused by stray signals.
15. A Wisconsin-licensed Structural Engineer should approve and stamp the tower design, and certify that the tower can support up to three additional cellular/PCS voice / data antenna arrays.
16. The applicant shall utilize a galvanized or painted finish on the tower to minimize visual impact, if permitted by the FAA.
17. The applicant shall paint steel appurtenances the same color as the tower to minimize visual impact.
18. The tower lease area shall be surrounded by a security fence with fabric privacy screening.
19. Failure to comply with any of the aforesaid conditions shall be grounds for the committee to immediately revoke Conditional Use Permit No. 2297.
20. The existing US Cellular self-support lattice tower located on property at 1762 W. Beltline Hwy shall be removed within 90 days of completing construction of the new monopole tower. Evidence of the tower removal shall be provided to the Dane County Zoning Administrator within the 90 day period.