

# STAFF RECOMMENDATION

E. Keller

NCPC File No. 6507

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## **HENRY A. WALLACE BELTSVILLE AGRICULTURAL RESEARCH CENTER REPLACE NINE ANTENNAS AND TWO NEW EQUIPMENT CABINETS AT WATER TOWER NO. 286**

5601 Sunnyside Avenue  
Beltsville, Prince George's County, Maryland

Submitted by the U.S. Department of Agriculture

February 28, 2008

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### **Abstract**

The U.S. Department of Agriculture (USDA) has submitted plans for the replacement of nine transmitting and receiving T-Mobile wireless telecommunications antennas and a microwave monitor antenna on the existing water tower at the USDA Beltsville Agricultural Research Center, in Prince George's County, Maryland. The project will also replace two equipment cabinets on the ground adjacent to other electrical cabinets within a fenced equipment area at the foot of the water tower.

### **Commission Action Requested by Applicant**

Approval of preliminary and final site and building plans pursuant to 40 U.S.C. § 8722(b)(1).

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### **Executive Director's Recommendation**

The Commission:

**Approves** the preliminary and final site and building plans for the replacement of nine T-Mobile transmitting and receiving antennas, one microwave antenna, and two associated ground-level equipment cabinets, at the Henry A. Wallace Beltsville Agricultural Research Center, as shown on NCPC Map File No. 3212.10(38.30)-42458, for a period not to exceed five years.

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## PROJECT DESCRIPTION

### Site

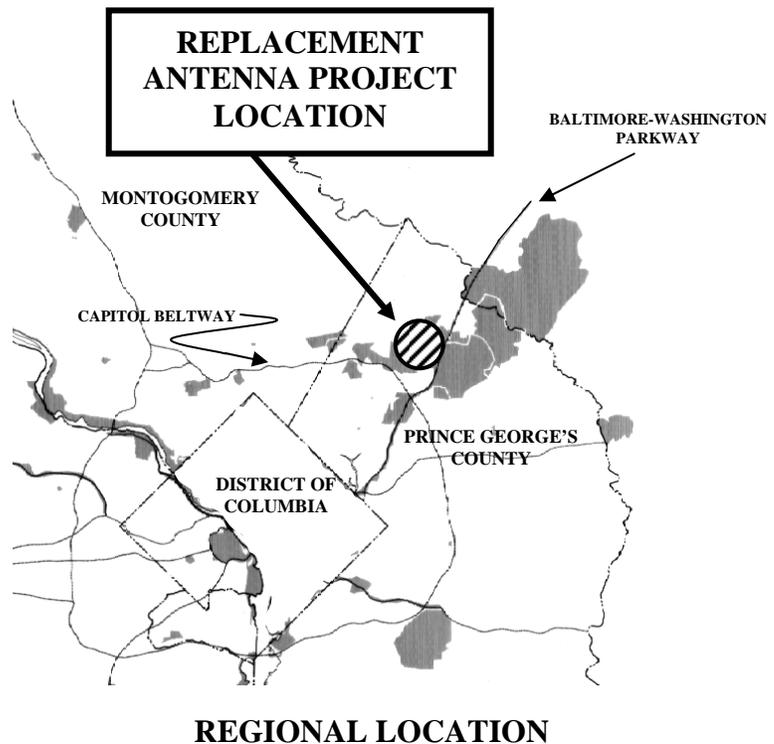
The Henry A. Wallace Beltsville Agricultural Research Center (BARC) occupies over 1,000 acres immediately north and south of the Capitol Beltway in Prince George's County, Maryland. The location of the proposed replacement T-Mobile telecommunications antennas is bounded by Baltimore-Washington Parkway on the east and Beaver Dam Road to the north, at the present location of existing T-Mobile antennas. The water tower, known as structure 286 on the BARC inventory, is 152 feet in height and has several other antennas attached to its structure.

### Background

The Commission recently reviewed the replacement of Sprint PCS antennas on this same water tank in October 2007. The applicant's Radio Frequency (RF) study for the 9 T-Mobile replacement antennas notes no operational aspects of the RF environment are altered or affected by the replacements, and the antennas operated by two other telecommunications carriers are not impacted by the replacement work. The replacement antenna locations are revised in their axial location around the tank's outside perimeter and are located approximately fifty-five degrees east of the original position of alpha sector, on an equal offset of 120 degrees from each antenna sector.

### Proposal

The submission identifies nine new replacement telecommunication antennas that would be operated by T-Mobile. The T-Mobile panel antennas will measure 4.9 feet long by approximately 11.9 inches wide and 6.2 inches deep. The antennas will be painted the same color as the water tower. This action will blend them with the existing tank structure minimizing their visibility. Other carrier antennas are mounted at the approximately 115-foot and 125-foot height-levels of the tower, while the T-Mobile antennas will be located at 135 feet above the ground. All elements can only be accessed by the tank tower ladder, which has its lowest portion barricaded and locked so that entry can be achieved only by authorized personnel.



Two required small metal equipment cabinets, containing electrical switchgear and other electrical components, will be connected to the antennas by coaxial cable, which will be aligned and attached to one leg of the water tower. The cabinets will be located adjacent to existing carriers' cabinets on the ground below the tank tower. The cabinets will measure approximately 5 feet tall, 3 feet deep and almost 4.2 feet wide. The replacement cabinets will not be visible from outside of the tower site.



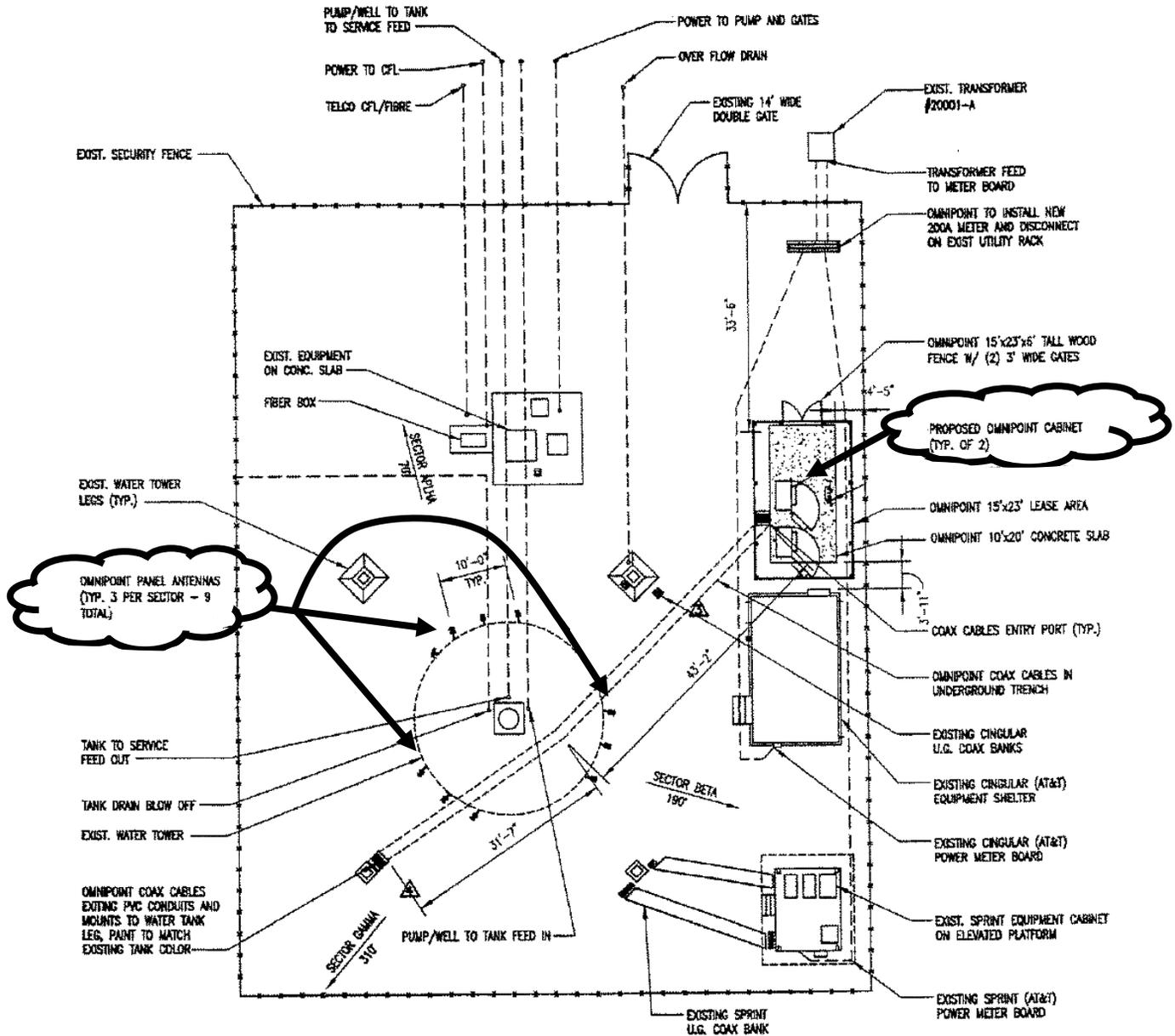
**AERIAL VIEW OF BELTSVILLE AGRICULTURAL RESEARCH CENTER  
WATER TOWER LOCATION**

## PROJECT ANALYSIS

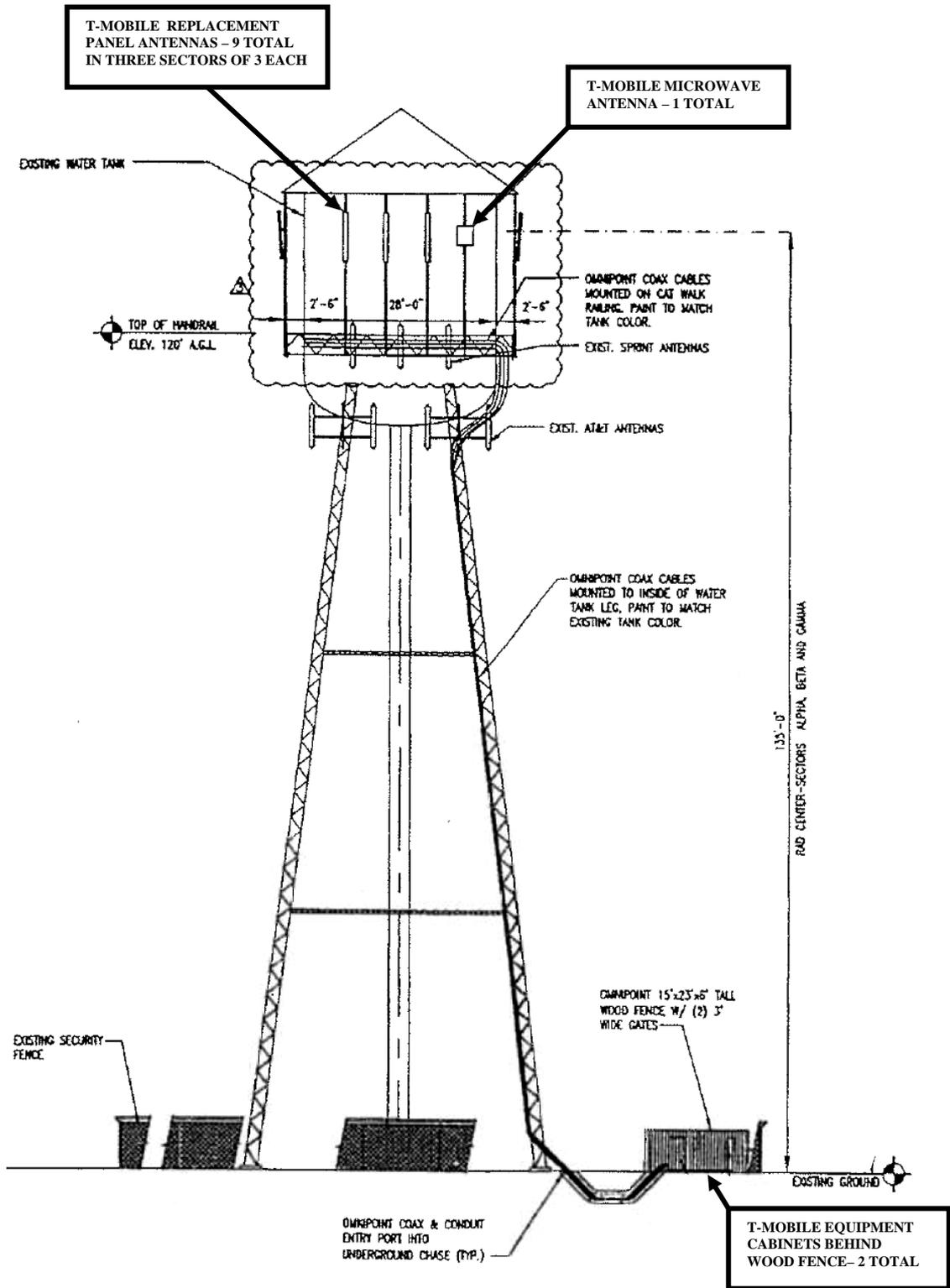
### Executive Summary

The **staff recommends approval of the proposal** for a period not to exceed five years. The proposed antennas are consistent with the Commission's Antenna Guidelines and with the Telecommunications Act of 1996 encouraging placement of commercial antennas on federal property. Furthermore the submission is consistent with the Commission's preference for collocation of antennas when possible.

All nine replacement antennas will be minimally visible – the panel antennas are similar in size to existing antennas and will be painted to blend in with the tower. Although the Commission has the authority to approve the antennas for a period of ten years, staff recommends only a five-year approval period because of the rapid progression of telecommunications technology indicative of the industry.



**WATER TOWER SITE PLAN INDICATING LOCATION OF REPLACEMENT ANTENNAS, EQUIPMENT CABINETS, AND PERIMETER SECURITY FENCE**



**WATER TOWER ELEVATION INDICATING LOCATION OF ALL SUBMITTED T-MOBILE REPLACEMENT ANTENNAS**

Radiofrequency Radiation Analysis

The USDA has submitted information about the replacement antennas, consistent with the Commission's applicable Guidelines and Submission Requirements for Antennas. Only limited new support structures will need to be constructed on the ground surface of the tower base adjacent to the other equipment shelters. None of the existing or proposed equipment structures emit radio signals.

A radio frequency environmental study, conducted by telecommunications consultants documents that the proposed antennas will not adversely affect human health and safety. The lack of potential hazards is attributed to the distance of the antennas above ground and no similarly tall, habitable, nearby structures anywhere in the vicinity of USDA water tower. Both the existing and proposed antennas are highly directional and will radiate most of the power towards the horizon rather than towards the ground. The maximum distance from the antennas for any effective high-level emission from the new panels was identified at 4-6 feet from the panel front surface. Since all antennas are located 135 feet above the ground, no adverse emission levels are encountered by the general public.

Cumulative RF effects are not significant and would not impact people on the ground or personnel working on or around the tower.



**EXAMPLE OF ONE  
PANEL OF PROPOSED  
REPLACEMENT  
ANTENNA**

CONFORMANCE

Comprehensive Plan for the National Capital

Staff review finds the proposed telecommunications antennas comply with the goals and objectives of the Plan. The following polices adopted by the Commission in the Federal Environment Element, in August 2004, indicate federal actions in the region should conform to the following policy:

“Evaluate the possibilities for joint-use of antennas and collocating antennas to reduce aesthetic impacts and limit the area of radiofrequency (RF) exposure. Federal agencies should also evaluate the cumulative effect of multiple transmitters at one location to ensure that the combined radiofrequency emissions continue to meet Federal Communications Commission guidelines”.

Staff has determined that the antenna installation would not have an effect on other federal facilities or federal interests. The Baltimore-Washington Parkway is not adversely affected because the telecommunications antennas are situated on an existing tall structure, and are colored identical to the water tank surface. Moreover, the tank tower is located 375 feet from the Parkway travel lanes behind stands of tall trees that provide a heavy canopy cover during much of the year. Consequently, the tower is not visible to users driving on the Parkway much of the

time, except from an extreme distance. At that viewpoint, the panel antennas are not distinct from the overall form of the water tank itself.

Finally, the USDA submission materials clearly indicate that RF emissions do not radiate at any significant power level that would impact any electronic facilities or operations at the Goddard Space Flight Center. That facility is located 1.2 miles southeast of the tower in Greenbelt, Maryland.

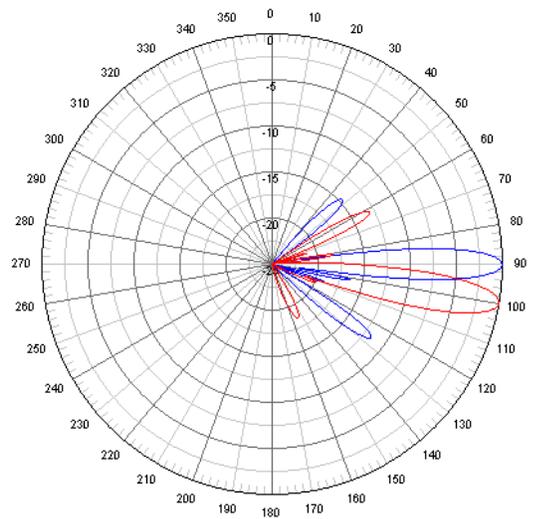
Master Plan

The Commission approved a revised master plan for BARC in June 1996. The antennas are not inconsistent with the master plan, which identifies the water tower land use for Research and Development.

National Environmental Policy Act (NEPA)

The USDA concluded that a Categorical Exclusion applies to the action in accordance with its procedures at § 520.5 (b)(2) for implementing the National Environmental Policy Act.

Frequency	Tilt	Cut	Color
1785	0	V	Blue
1785	10	V	Red



**VERTICAL SIGNAL PATTERN OF EACH ANTENNA (WITH AND WITHOUT TILT)**

Pursuant to the Commission’s Environmental and Historic Preservation Policies and Procedures, the Commission staff has reviewed the submission and has found the proposal is consistent with the Commission’s categorical exclusion provisions at Section 8 of the procedures. The staff finds the Section 8 (20) categorical exclusion applies to the proposal with the submission conforming to the criteria of co-location of communication antennae on federal property consistent with the General Services Administration Bulletin FPMR D-242, *Placement of Commercial Antennas on Federal property*. Also, the proposal adheres to all NCPC requirements for antennas at a federal facility. The submitted RF evaluation of the antennas confirms the elements of the project coincide with all environmental impact criteria of the Federal Communications Commission.

National Historic Preservation Act (NHPA)

The Maryland Historical Trust concurred with the USDA finding of no adverse effect regarding panel antennas being placed on the USDA water tower on May 6, 2004. This project to replace the existing antennas and equipment does not result in a change to that finding.