

# STAFF RECOMMENDATION

Shane Dettman

NCPC File No. 3031

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**UNITED STATES GEOLOGICAL SURVEY (USGS),  
JOHN WESLEY POWELL BUILDING  
WIRELESS COMMUNICATIONS ANTENNAS  
12201 Sunrise Valley Drive  
Reston, Virginia**

Submitted by the General Services Administration (GSA)

October 25, 2007

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## **Abstract**

The General Services Administration (GSA) has submitted plans for the installation of wireless telecommunications antennas on the penthouse roof of the headquarters building of the United States Geological Survey (USGS). The project consists of six panel antennas and one GPS antenna mounted on the penthouse roof of the John Wesley Powell building located at 12001 Sunrise Valley Drive, Reston, Virginia. Additionally, four auxiliary cabinets will be located within the penthouse mechanical room.

## **Commission Action Requested by Applicant**

Approval of preliminary and final building plans pursuant 40 U.S.C. § 8722(b)(1) and in accordance with the Guidelines and Submission Requirements for Antennas on Federal Property, approved by the Commission on January 7, 1988 and amended on August 2, 2001.

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## **Executive Director's Recommendation**

The Commission:

**Approves** the preliminary and final building plans for the installation of six panel antennas and one GPS antenna, and associated equipment at the John Wesley Powell building, 12001 Sunrise Valley Drive, Reston, Virginia, as shown on NCPC Map File No. 2209.11(38.00)42318, for a period not to exceed 5 years.

**Recommends** to GSA that access to the penthouse roof areas should be controlled and locked if possible. Moreover, GSA should ensure that necessary RF warning signs are placed at all rooftop access points in a highly visible fashion.

**Recommends** to GSA that rooftop drawings should be posted on the penthouse walls and/or doorways indicating areas where the Maximum Permissible Exposure (MPE) for the general and occupational standards could exceed 100%.

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**PROJECT DESCRIPTION**

Site



The John Wesley Powell building is located at 12001 Sunrise Valley Drive in Reston Virginia. It is generally bounded by Sunrise Valley Drive to the north, South Lakes Drive to the west and south, and Reston Parkway to the east. The area immediately surrounding the building includes wooded areas to the north and east, and surface parking to the south and west. It is in close proximity to the Dulles Access Road and the closest federal facility is Dulles International Airport, approximately four miles away.



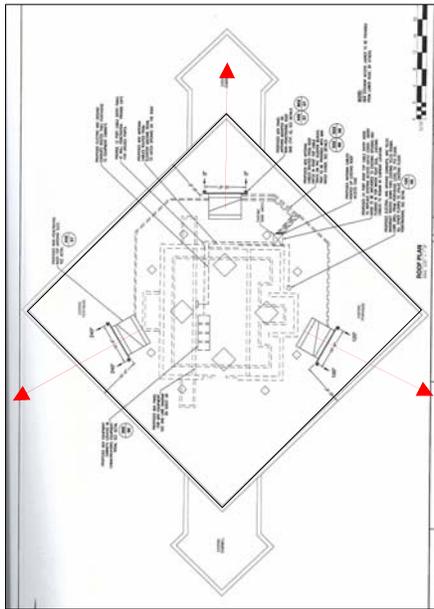
Proposal

The General Services Administration (GSA) has submitted plans on behalf of Mobile Satellite Ventures LP for the installation of wireless telecommunications antennas. The project consists of six (6) panel antennas, one (1) GPS antenna, and four (4) auxiliary cabinets which will be located within an existing penthouse mechanical room.

Six panel antennas will be ballast-mounted on sleds on the rooftop. The panel antennae

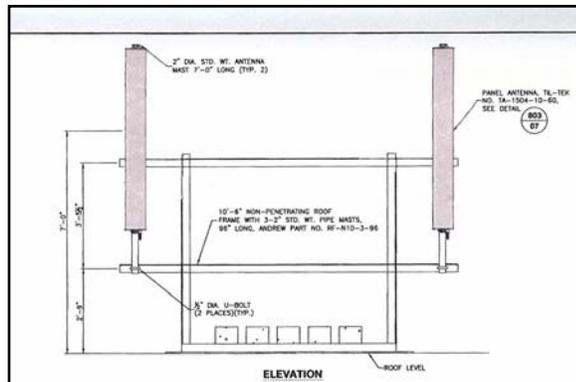
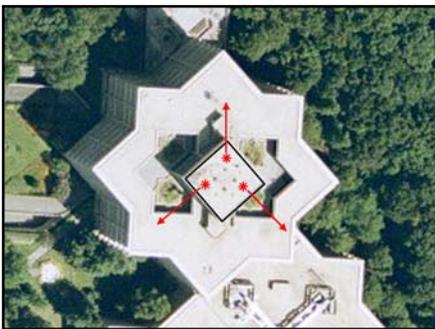
dimensions are 71”L x 8”W x 3”D. The GPS antenna dimensions are 4.75” L x 3.5” D.

Additionally, four auxiliary cabinets will be located within the existing penthouse mechanical room. According to the site plan the locations of the three panel antenna sectors, and one GPS antenna, on the penthouse rooftop will be as follow:



- One panel antenna sector at the north corner penthouse mechanical room directed to the north
- One panel antenna sector near the western corner of the penthouse mechanical room directed west-southwest
- One panel antenna sector near the eastern corner of the penthouse mechanical room directed east-southeast
- GPS antenna location not indicated other than on rooftop of penthouse mechanical room

Each panel antenna sector will be ballast mounted on non-penetrating rooftop antenna sleds. The footprint of each sled measures approximately 7'10" X 84". Each sled contains 2 (6'2") vertical masts and 2 (10'6") horizontal masts upon which the panel antennas will be mounted to. Taking into account the height of the panel antennas each sector will have a total height of approximately 9'9" above the penthouse roofline



## PROJECT ANALYSIS

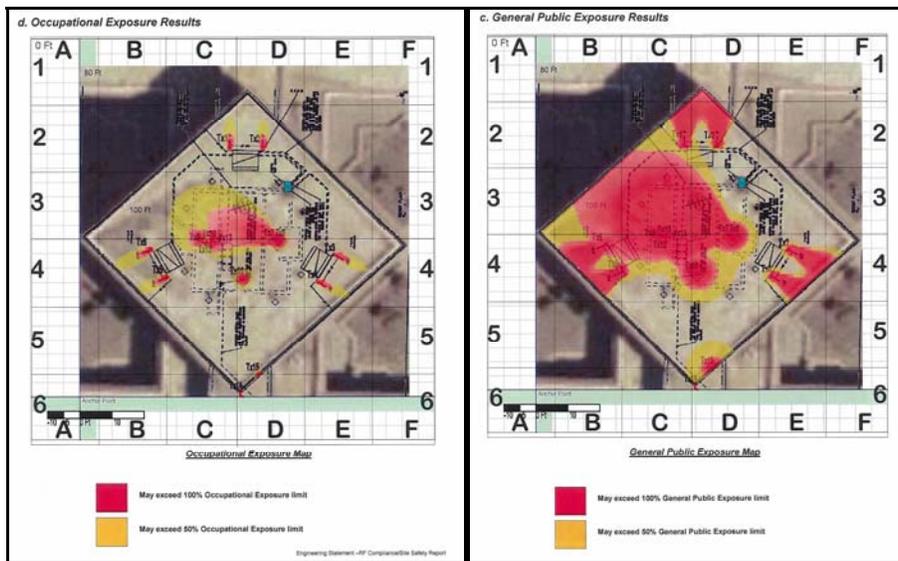
### Executive Summary

**Staff recommends that the project plans be approved.** The applicant will locate the antennas as indicated in the roof plan, and they will not be readily apparent to the public at ground level. The four associated auxiliary cabinets will be located inside the existing penthouse mechanical room and will not be visible from the street. The proposal is consistent with the Commission's Antenna Guidelines and with the Telecommunications Act of 1996 that encourages placement of commercial antennas on federal property. Staff recommends that the antennas be approved for a period of five years.

**PROPOSED ANTENNA DETAILS**

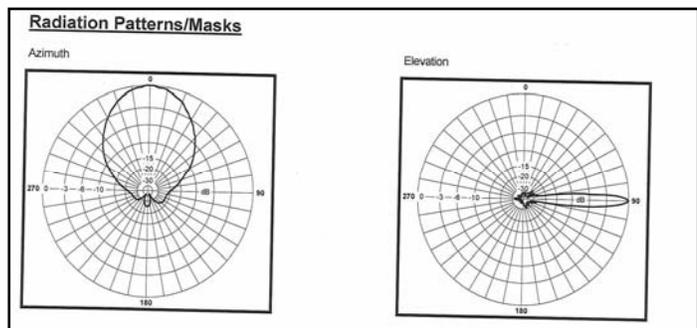
Radiofrequency Radiation

An analysis determining the potential effects of radiofrequency non-ionizing radiation on the general public and occupational personnel was prepared on July 6, 2007 to demonstrate compliance with the FCC and OSHA regulations for MSV and to provide guidance to personnel who must access the site. This report noted that the site has the following services collocated: public safety, SMR, Terrestrial, and Microwave. The report notes that although these systems may not always be on, or may only be operating at a fraction of their maximum power, the analysis was conducted, for safety reasons, under the assumption that all emitters were operating at maximum power. This analysis used a computerized evaluation program to determine the electromagnetic power surrounding the existing and proposed antennas, and measures compliance with the Maximum Permissible Exposure (MPE) limits for the general public and occupational personnel established by the federal Communications Commission (FCC).



The results of the analysis indicate that a small portion of the rooftop has the potential of exceeding 100% occupational MPE. The areas where this may occur are located immediately in front the proposed panel antennas and around some existing antennas located near the middle of the rooftop. The extent or distance of these areas away from the proposed panel antennas is minimal and will not extend past the roofline in any direction.

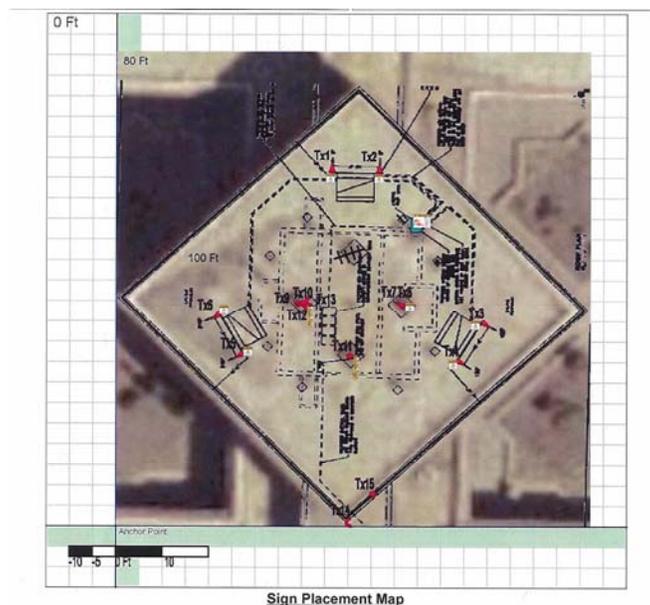
The area of the rooftop that may exceed 100% general public MPE is a bit more extensive than the occupational exposure potential and covers a significant portion of the rooftop area. It appears that most of the RF emissions in this area are attributable to already existing antennas located near the middle of the rooftop and directed to the northwest. The proposed panel antennas will add to the total area of rooftop that may exceed 100% general



public MPE. This additional area will be located immediately in front of the proposed panel antennas and will extend to the roofline. This area may extend past the roofline, however, considering the narrow horizontal radiation pattern of the proposed panel antennas exposure to areas below the roofline would be improbable.

The following are the recommendations included in the RF analysis:

- Place a Safe TMap at the rooftop access areas.
- Place Caution Stickers on the antennas indicated on the sign placement map.
- Extended work in areas particular antennas may require them to be powered down.
- Areas that exceed the General Public limit should be specifically controlled and secured using the appropriate measures such as signage or by other means. Workers should read and understand the RF Safety Plan. Persons not trained in RF Safety MUST NOT enter areas where RF exposure exceeds occupational limits.
- Use the Time Averaging Exposure Map included in the RF analysis and/or an RF personnel monitor when working in areas that may exceed occupational limits.
- RF safety training should be provided for all technicians at this site.
- Use appropriate Lock Out/Tag Out procedures while working on equipment.
- Do not operate antennas with shielding removed.
- Significant changes or upgrades may require the creation of a new RF Safety Plan.
- Personnel having or possessing any of the following conditions must not be in or around RF exposure areas regardless of limits listed: implanted medical devices, pregnant, unusual sensitivity to heat, other medical conditions that may make one sensitive to environmental conditions.



**Staff recommends** that the Commission accept the recommendations included in the RF analysis and provided above as part of its approval of this project.

**Staff recommends** that the Commission highlight to the GSA that access to the penthouse roof areas should be controlled and locked if possible. Moreover, GSA should ensure that necessary RF warning signs are placed at all rooftop access points in a highly visible fashion.

**Staff recommends** that the Commission highlight to the GSA that roof drawings should be posted on the penthouse walls and/or doorways indicating areas where the MPE for the general public and occupational standards could exceed 100%.

## CONFORMANCE

### Comprehensive Plan for the National Capital: Federal Elements

Staff has determined that the antenna installation would not have an effect on other federal facilities and is consistent with the policies set forth in the Parks and Open Space, Federal Environment, and Preservation and Historic Features Elements of the Comprehensive Plan with respect to the installation of antennas, radiofrequency radiation, and electromagnetic fields. Specifically, the proposed antennas would not have an adverse visual impact on the surrounding area due to the significant screening provided by wooded areas immediately to the North, East, and West of the project location.

### National Environmental Policy Act (NEPA)



According to the GSA this project qualifies as a categorical exclusion (CATEX) from the requirement to prepare an EA or an EIS, pursuant to paragraph 5.3 of the GSA Public Building Service NEPA Desk Guide (October 1999). Staff has reviewed GSA's CATEX documentation as part of their review of this project. NCPC does not have any independent NEPA responsibility for antenna projects in the environs of the National Capital Region.

In addition, NCPC staff has reviewed the photo simulations submitted by the applicant and has concurred that no adverse visual impacts on the surrounding areas will occur as a result of this project given the substantial vegetative buffer the site has from its surroundings.

### National Historic Preservation Act

After reviewing this project, the Virginia State Historic Preservation Office has concluded that this project is exempt from further Section 106 review per the FCC's Nationwide Programmatic Agreement and will have no adverse affect on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP) or any surrounding historic districts.

### Coordination

NCPC Staff referred this project to the Fairfax County Department of Planning and Zoning on August 8, 2007. A response was received on August 31, 2007 with recommendations that the applicant modify its design so that the panel antennas are flush-mounted to the penthouse walls, or so the skid-mounted antennas are screened or placed to be not visible from the surrounding areas. These recommendations were made so that the proposal would be “consistent with the Fairfax County guidelines for rooftop-mounted telecommunications facilities.” In addition, it was stated that the applicant’s proposal “must be reviewed by the Fairfax County Planning Commission for a determination whether the project is substantially in accord with the county’s Comprehensive Plan.” Further coordination between the Fairfax County Department of Planning and Zoning and the GSA resulted in a resolution that the county’s recommendation that the panel antennas be flushed mounted to the resolution of the county’s recommendation that the panel antennas be flush-mounted to the penthouse walls. According to a letter received by NCPC from the Fairfax County Department of Planning and Zoning, dated October 12, 2007, the GSA informed the county that “the use of flush-mounted antennas is not feasible because the penthouse façade is glass, and believes that skid-mounted antennas will be less visually obtrusive than screen panels.” A recommendation by the Fairfax County Department of Planning and Zoning staff to the Fairfax County Planning Commission was made stating that “the Planning Commission concur with [staffs] determination that the proposal by Mobile Satellite Ventures LP, as amended, to construct a telecommunications facility on the roof of an existing office building located at 12201 Sunrise Valley Drive, is substantially in accord with provisions of the adopted Comprehensive Plan, and should be considered a “feature shown” pursuant to Va. Code Section 15.2-2232, as amended. It is NCPC staff’s conclusion that this proposal has been fully coordinated with all of the necessary jurisdictions in the National Capital Region.