

VISUAL RESOURCE EVALUATION

PROPOSED 150' TALL TELECOMMUNICATIONS STRUCTURE

**NY1136
Castle Point
110 Chelsea Road
Town of Wappinger
Dutchess County, New York**

Submitted by:



1001 3rd Ave West
Bradenton, Florida 34205

Prepared by:



PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

70 Pleasant Hill Road
Mountainville, New York 10953
845-534-5959
845-534-5999 FAX

December 17, 2019

VISUAL RESOURCE EVALUATION

Tectonic Engineering & Surveying Consultants, P.C., was contracted by Tarpon Towers II, LLC to conduct a "Visual Resource Evaluation" to determine which areas within the Town of Wappinger will contain views of the proposed 150 foot tall wireless telecommunications structure.

Setting:

The proposed site is located at 110 Chelsea Road in the Town of Wappinger, Dutchess County, New York. The surrounding land use is predominantly residential with some wooded/undeveloped areas along with small commercial uses. Within the study area the topography ranges in elevation from 5' +/- AMSL (Above Mean Sea Level) to 430' +/- AMSL. The predominant forest species are mixed deciduous and coniferous, with an estimated height of 40 to 70 feet. The field study for this visual resource evaluation was conducted in the fall season during 100% leaf off conditions. The leaf off condition represents a worst case scenario in that it is a scenario in which the visibility of the structure is maximized due to the lack of leaves on existing deciduous vegetation.

Methodology:

On Saturday, December 7, 2019, Tectonic Engineering & Surveying Consultants, P.C., conducted a field investigation for the purpose of evaluating the viewshed associated with the proposed installation of the 150 foot tall monopole tower (structure). Conditions were sunny to partially cloudy, approximately 14°-20°, with wind speeds of approximately 4-8 mph. The study area consisted of a two (2) mile radius from the project site. The two (2) mile radius is generally consistent with current industry practices. Creating a viewshed greater than a two (2) mile radius is generally unwarranted. Due to the fact that objects tend to appear smaller the farther they are from the viewer, in this case, the structure would appear very small, if visible at all, from a distance of more than two (2) miles.

The methodology utilized during this field investigation is referred to as a "balloon test." The height of the proposed structure was simulated by floating a 3' diameter, helium-filled weather balloon at 150 feet above ground level (AGL). The balloon provided reference points for height as well as location and also provides a known dimension that later aids in the production of photo simulations.

The participants then proceeded with a review of the proposed structure's visual impact by noting those areas on a USGS 7.5 Minute Series Topographic Quadrangles Map that fall within the study area and marking those points from which, in theory, one might see the structure upon its completion. The terrain represented in the topographic map, was then analyzed to determine those areas from which views would be "blocked by topography," and therefore from which one would not see the structure upon its completion.

Tectonic drove the study area to confirm the potential visibility of the structure based on the viewshed map. Areas delineated as "blocked by topography" were confirmed by viewing the site from public roadways within the two (2) mile radius and it was found that the topography only viewshed map first produced was correct and accurate, and that the balloon was in fact not visible from areas indicated to be blocked by topography. During the "in field" review, the participants conducted a second analysis to determine those areas from which views of the structure may be "visible" or "concealed by vegetation."

The resulting data from this second analysis was reviewed and referenced on the "Viewshed Analysis Map" attached. Colors are used to differentiate between areas from which the structure will be visible (White), concealed by vegetation (Yellow) and areas from which a view of the structure will be blocked by topography (Red). The viewshed analysis resulted in the discovery that the proposed structure would be visible from several locations within the two (2) mile radius. The structure will be visible from points to the west, north and south. This includes locations along E. Booth Boulevard, Chelsea Road, Chelsea Ridge Drive, Caroline Drive East, Caroline Drive West, Thorn Acres Drive, and at Castle Point Park.

Photographs were taken from various vantage points within the study area to document the actual view towards the proposed structure, as well as the general character of the viewshed. Each photograph attached includes a brief description of the location and orientation from which it was taken, and the photo number corresponds to the key number on the viewshed map.

Process:

Photographs of the weather balloon from the view points noted were taken with a Nikon D3000 using a 18-55mm focal length lens, as determined by the field personnel to best mimic the view as observed from the human eye. A three (3) foot diameter red helium filled balloon was floated to a height of 150'.

In order to analyze the potential visual impacts of the proposed structure, Tectonic took photographs of the balloons from locations within the search area for the purpose of preparing simulations of the proposed structure. Photographs for which there is a corresponding simulated view (#1, 2, 3, 5, and 6) of the proposed structure were produced by first photographing an existing similar type structure, then photographing the view towards the proposed site where the marker balloon was set to a height of 150' AGL. The digital images of the balloons and similar structure were then merged and scaled through the use of the image editing software, "Adobe Photoshop CS5." With this process, the structure is scaled to the correct height and width by scaling the similar type structure using measurements from the marker balloon. The similar type structure used has an antenna array that spans twelve feet (12'). By measuring the balloon width of 3', one can determine the proper width of the antenna array by multiplying the balloon width by a factor of 4. The composite is printed out directly on a color printer, producing the final image.

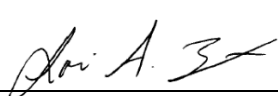
Conclusion:

The Viewshed Analysis Map presents a conservative delineation of the viewshed within the study area and along public roadways and public parks. The photo simulations have been prepared per the methodology described above and provide a general depiction of the appearance of the structure from the photographed viewpoints.

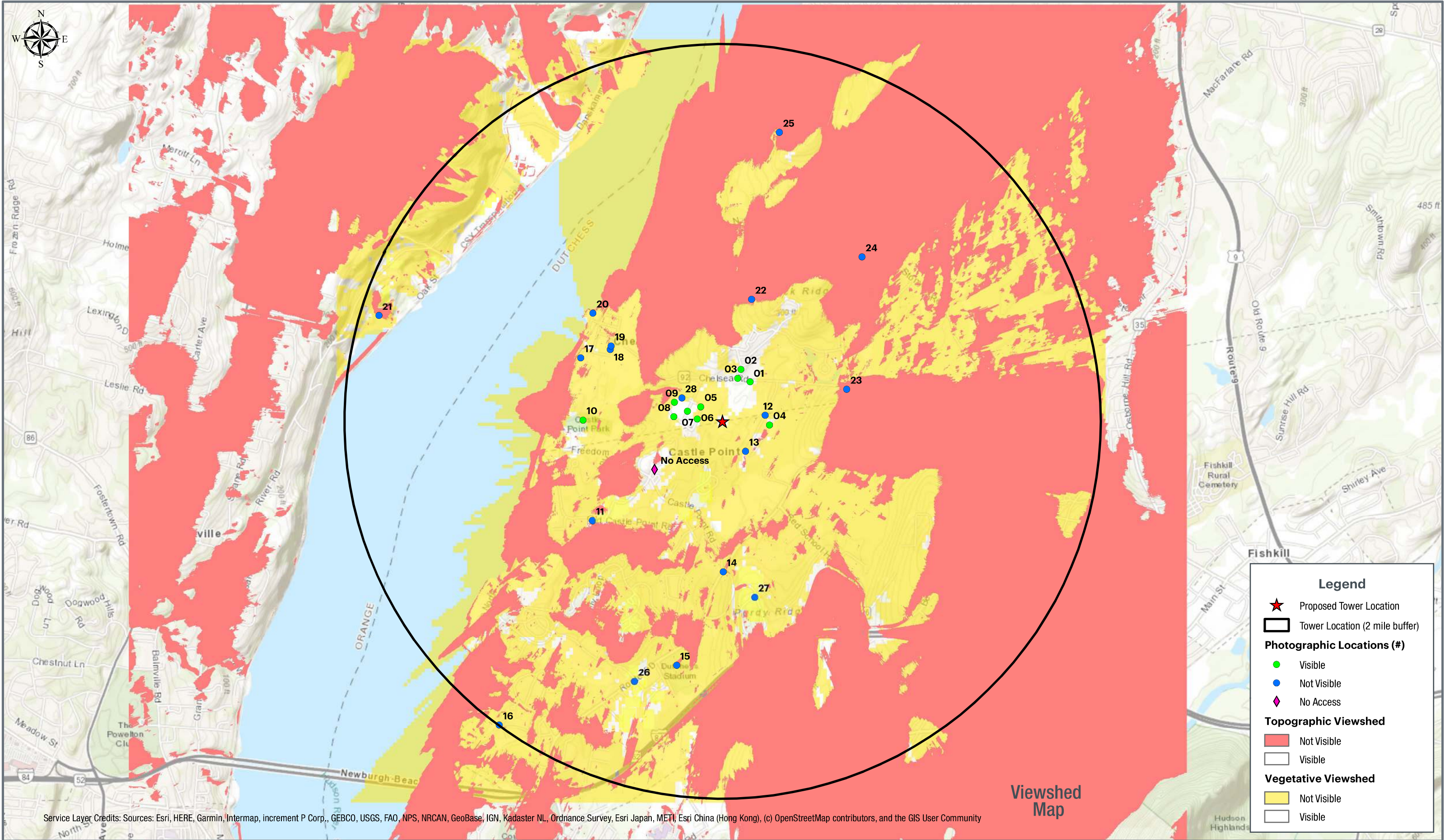
Sincerely,
TECTONIC ENGINEERING & SURVEYING CONSULTANTS, P.C.

By:  _____

Dina Peoples
GIS Specialist

Reviewed By:  _____

Lori A. Bart
Environmental Project Manager



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

