



Blue Sky Towers II, LLC  
158 Main Street #2  
Norfolk, MA 02056

August 22, 2018

Re: Response to Cape Cod Commission/Isotrope, LLC questions from report dated August 10, 2018 – Visual Impact- MA-5112- Mashpee, MA

Attached is a document detailing the balloon test process and photo simulation method used for the preparation of visual documentation for the proposed Bly Sky Towers, LLC Site MA-5112 located at 101 Red Brook Road, Mashpee, MA.

In response to question regarding Simulation/Documentation Photo # 4, VSS LLC reviewed the metadata for the original photos taken on 4/14/2018 and determined that digital equivalent focal length for Photo #4 and Photo #5 taken along Blue Castle Drive were set incorrectly.

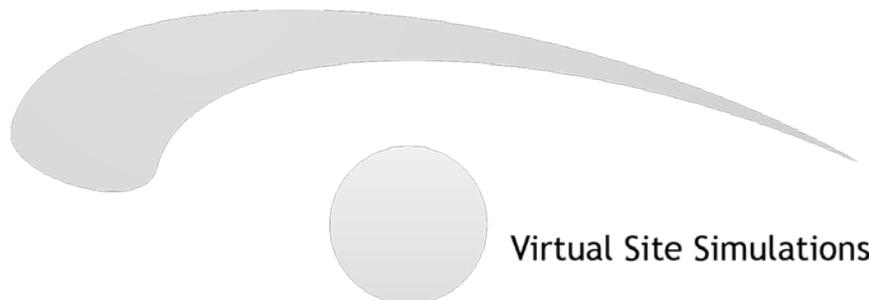
Attached is revised Simulation Package – Existing Images #4 and #5, and Photo Simulation #4 have been corrected to reflect the digital focal length equivalent of 50mm. The accepted approximation of the human eye.

It was verified that all other photos with this package were taken at the correct digital focal length equivalent.

If you would like further clarification on this issue, I can be reached in the office at 401-229-5882

Thank You

**Russ Dasta**  
President



**A balloon test was conducted on April 14<sup>th</sup>, 2018 and used as the visual reference for site observations from random locations throughout the study area. A balloon test consists of flying a 3 Ft. diameter helium filled balloon to the top elevation of the proposed tower. It was requested that a second balloon be attached for visual reference at a lower alternative height. This balloon was yellow and was inflated to the same diameter as the upper red balloon. Both balloon diameters were measured using a custom set of calipers. A red balloon was used to provide the best contrast between it and surrounding sky or vegetation. The lower elevation balloon color was yellow to provide a clear differentiation between the two float heights. The balloons were tethered to the location of the proposed tower, and its elevation was set by measuring the length of the tether. The elevation was verified using the Lieca DISTO D2 Laser distometer.**

**Balloon test accuracy is very wind dependent. The balloon test was therefore scheduled on a day with wind conditions below the acceptable threshold of 10mph. A preliminary viewshed analysis was done to determine what areas were predicted to have views of the proposed site and to verify the computer model. Drive-by visual reconnaissance of the Study Area was then conducted using the preliminary viewshed analysis as a guide. Locations where the Balloon was visible and not visible were photo documented and a GPS track of reconnaissance areas was made. Reconnaissance areas were limited to public areas/roads, no private property was used in the on-site observations of this test.**

**Photo documentation of this test was accomplished using a Nikon P800 16Mp digital camera set to use a 50mm focal length<sup>1 2</sup>. The Nikon P800 was chosen because it has built- in XMP metadata files that embed the GPS location, light conditions and bearing to target within the image source data file. These photos document the necessary location and bearing data to ensure the accuracy of simulation location. This documentation was then incorporated into a computer model prediction. The on-site observations were used to adjust model assumptions made in the 3d model as necessary.**

---

<sup>1</sup> "The lens that most closely approximates the view of the unaided human eye is known as the normal focal length lens. For the 35 mm camera format, which gives an 24 x 35mm image, the normal focal length is about 50mm" Warren Bruce Photography, West Publishing Company, Egan, MN c 1993 (page 70)

<sup>2</sup> 50 mm focal length is based on 35mm film photography. Since Digital photographic sensors are not the same size as 35mm film ALL digital photography focal lengths must be corrected

## Photographic Simulation Method

---

**A number of photographs were chosen from field review site documentation photos and used to prepare photorealistic simulations of the proposed telecommunications facility. GPS coordinates and bearing information recorded within the XMP metadata file of the documentation photos was used to generate virtual camera positions within a 3d model. The balloon in the documentation photos was used as a spatial reference to verify the proportions and height of the proposed tower. Site plan information, field observations and 3D models were then used in these simulations to portray relative scale and location of the proposed structure. The photo simulations were then created using a combination of the 3d model and photo rendering software. These simulations and the existing site photographs provided for reference are attached.**