

Memo

To: Town of Nassau Planning Board

From: Nan Stolzenburg AICP CEP

Date: February 13, 2017

Re: Review of Visual Resource and Noise Evaluation for the Proposed Hoags Corners Cell Tower

I have reviewed the document dated January 17, 2017 (Visual Resource Evaluation - Proposed 120' Tall Telecommunications Structure" and the Noise Comparison Later dated January 9, 2017. I feel that the materials submitted for the viewshed and noise impact analysis appear to be essentially complete, but I have some observations for your consideration. I note that 24 different locations were included in the analysis. Of those 24, four had views of the balloons and photosimulations were done and included in the report (points 6, 7, 8 and 17).

I offer the following more detailed comments:

Visual Resource Evaluation

1. The methodology used for the balloon float is adequate, in my opinion. The right conditions and techniques were used.
2. The source of topographic information that forms the basis for the viewshed map is correct.
3. The viewshed analysis map appears to be adequate, but I cannot verify the technique that went into making that map and what assumptions were used. There is little information provided on how that map was produced. It is unknown if this was generated by using the topographic maps to manually determine visibility and then double checked with fieldwork, or if computer tools were used. From the description on page 1 -2, it appears as if the viewshed was determined manually. This particular cell tower appears to have limited views, but if you are concerned, it may be reasonable to ask the applicant to use a computer-driven method to confirm their results in places they couldn't drive to. I do not know if that would change any of the conclusions reached, but I wanted to point out this issue.
 - a. I discussed this with visual analysis expert George Janes¹ and he commented that a manual determination of a viewshed is not typical and not considered best practice. Computer tools are generally used to produce a theoretical viewshed map, and then used to direct field work. This allows analysis of potential views that can't be driven to. This means that other locations such as trails, water surfaces or other public locations not on a road may not have

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been identified in the process since the analysis relies upon the field test from roads to determine visibility. And from the description, they did not go anywhere they couldn't drive. While computer made viewsheds are theoretical and have their limitations, they do catch everything and are useful during the field work.

4. It is unclear if the construction of the tower will cause the removal of some trees or require grading that may make the project more visible. That can't be confirmed solely through fieldwork, but use of computer tools could simulate that affect. I would ask this question of the applicant to reassure you this aspect was not missed.
5. The photo log presented on page 2-3 and the points evaluated seem adequate. It is difficult however, to match the photo log with the viewshed analysis map as they appear to be different scale maps. While this is not necessarily a completeness issue, nor would it change the results, it may be useful to have the photo log overlaid with the viewshed analysis map so that it is easier to judge the correlation of where photos were taken and areas identified as having views of the tower. Based on their viewshed map, it looks like photo 15 is closest to the location shown as visible but not at that location.
6. I recommend that the Board review the photo log and locations to make sure that all the locations you asked to be analyzed and identified by the Board at your previous meeting are contained in this list and were analyzed.
7. Regarding the photosimulations, the only concern I have is one also confirmed with my discussion with George Janes. - that the technique used is not one typically used and not up to par with the most modern practices since the method used did not include any 3D rendering tools. The technique described by Tectonic is "the digital images of the balloons and a similar tower structure were then merged and scaled through the use of image editing software, "Adobe Photoshop CS5." Mr. Janes indicates that performing these simulations solely using Photoshop is not considered current best practices in the production of photosimulations. Best practices photosimulations use a 3D CAD model of the action, which is then merged with an existing conditions photograph using references that exist in both the CAD model and the photograph. Photoshop is used when producing these simulations, but it is only used to process the image and treat the existing vegetation. Thus, I cannot judge how accurate the photosimulations provided are. Again, I am not sure it would change the results, but to address this, the Board may want to:
 - a. Ask the applicant to rely on the balloon visibility results and choose one or more of the visible points (most likely 6, 7 and/or 17) to re-do the photosimulation using the 3D CAD technique. That will ensure that the simulation gives you fully accurate results upon which to make your determination.
8. One last observation is that it appears from these results that the proposed tower has very narrow visibility. You will need to evaluate the photosimulations to determine if what is visible is an issue of concern. The results lead to a question though - While

low visibility is good from an environmental impact point of view, towers are normally visible precisely because vegetation and topography interferes with the signal. Towers are generally located where they are visible enough to send out a good signal. Because this tower has so little visibility, it does raise a question you can discuss with the applicant about whether the location is going to be adequate for sending out the signal to the distance they seek.

Noise Comparison Letter

I want to first comment that I do not have the technical expertise to evaluate the accuracy of the letter received from Tectonic detailing the noise levels of the electrical generator to be used at the cell tower. With that said, the Tectonic engineer indicates that the noise levels will be very low - and at approximately 49.2 dBA at the nearest property line. The generator is rated as having a 64.7 dBA at 23 feet. The letter notes that a running lawnmower is 107 dBA and vehicular traffic is 85 dBA. At the property line, the level of noise does not appear to be an issue. The resulting noise from the generator is estimated to be much lower than those. Further, the applicant indicates that the generator will be run regularly only for 45 minutes once a week during daytime hours.

I note that all noise measurements should be evaluated from the property line and not the nearest residence as it is improper to use non-site private properties to buffer noise impacts.

If the Board is comfortable relying on the accuracy of the applicant's consultant's report, the noise information appears to be adequate to address the concerns initially raised about noise levels.