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July 17, 2009

Ms. Kris Pedersen
Chair
Town of Shawangunk Planning Board
PO Box 247
Wallkill, New York 12598

RE: Verizon Wireless application at
23 Twin Ponds Lane
Wallkill, New York

Dear Chairperson Pedersen:

On July 6th I received a new visual analysis for the Verizon Wireless application at 23 Twin Ponds Lane that was performed by Saratoga Associates and dated June 30th. The purpose of this letter is to express my opinion as to the quality and completeness of the materials contained therein.

Summary

The new simulations in the June 30th materials are of much higher quality than the materials that were submitted in August of 2008. While they do not strictly follow the “best practices” simulation methods described in my letter of January 2008, the new visual simulations appear to be a fair and reasonably accurate representation of how the proposed cellular tower will appear.

There are no longer any unobstructed views of the proposed tower from Old Hoagerburgh Road, however, for reasons that are explained subsequently in this letter. The Planning Board must decide if these views are a requirement for a complete visual analysis. Typically, if there are no visual resources of state or local significance, then visual simulations are not required. The Planning Board must determine if the portion of Old Hoagerburgh Road that has an unobstructed view to the tower is a visual resource of local significance and if it needs further analysis to disclose the impacts on this visual resource.

The June 30th submission only addresses the visual simulations for the tower. It does not address other omissions identified in my earlier documents including an inventory of visual resources of statewide significance. I do not believe the intention of the new visual analysis was to provide a completed application, but merely to get feedback on the visual simulations that were done most recently.

Project Review

In a letter dated January 28th 2008, I submitted comments advising the Planning Board and Verizon Wireless on the visual assessment that should be performed as a part of the application. In that letter I detailed visual simulation “best practices,” which are processes and methods that should be used in a visual assessment. On August 28th 2008 the Planning Board received an application with a visual analysis that did not follow the methods described in that letter. In a letter dated October 24th and presented to the Planning Board in November 2008, I explained why these deficiencies mattered and how the materials that were submitted should not be used as evidence as to the proposed project’s impact on visual resources.

We met with the Applicant during a Planning Board meeting in May 2009 where the applicant presented a new plan, which moved the proposed location of the tower approximately 300 feet to the south of its originally proposed location. No further visual materials were presented, but we did discuss how a new visual analysis could be performed. In that discussion we said it might be possible to use the original photographs and references because the new location may be visible in the existing photograph because of the relatively small movement. The applicant was interested in doing this to not only save on cost, but also because the photographs were taken during leaf-off conditions and, considering the season, taking new photographs would have meant a significant delay.

New visual simulations were sent to me via email on July 6th and are dated June 30th 2009. This letter discusses the quality of those materials.

Specific Findings

The new visual analysis was signed by Matt Allen of Saratoga Associates, a person that is well-known in the field of visual simulation. In my previous evaluation, I used three broad categories to discuss the quality of the visual materials:

- **Representation** (e.g. is the simulation an accurate representation of how the proposal will actually appear once it is built?)
- **Accuracy** (e.g. is the proposal simulated at the right size, in the right place?)
- **Completeness** (e.g. do the simulations show the entire project as proposed?)

Representation

The new simulations were performed using a 3D digital model representing the action on top of a terrain model for the area. This allowed for the new simulations to be rendered with day-lighting accurate to the time of day the photographs were taken. The tower itself no longer appears flat and shadow-less, but appears photo-real, as if it were already there. Because the tower was

modeled in 3D and placed in a digital landscape, its appearance appropriately changes according to the viewpoint. While the reason is not documented, the color of the tower in the new simulations is darker, presumably representing the actual conditions of the proposed tower. In total, the representation of the action is fair; reflecting how the action will appear once it is built, and is an improvement over the 2008 submission.

The following figures are presented to show some of the material differences between two simulations. Figure 1 shows the simulations for Viewpoint 16 from the old visual analysis and the new visual analysis. In the old visual analysis, the tower was barely visible. In the new visual analysis it is clearly seen.



Figure 1: Reproduction of Viewpoint 16 simulation from August 2008 submission. The proposed tower is barely visible in the distance, even though at less than $\frac{1}{2}$ a mile, it should be clearly visible.



Figure 2: Viewpoint 16 simulation from June 30, 2009 visual analysis. The proposed tower is clearly visible in the center left of the photograph

Accuracy

The new simulations have the following important footnotes:

“This rendering is based on an 80-85 MM photograph provided by Tectonic.”

“Viewpoint locations are estimated within 100 feet based on map location provided by Tectonic.”

The first footnote is important because it tells us that these photographs were taken using a telephoto lens. In my methods memo, I stated that the photographs should be taken with 35mm film, or with a full-frame digital camera using a 50mm lens. I also instructed that telephotos may be used if they better disclosed the impact of the action. The Applicant’s consultant took the photographs with a standard digital SLR camera using 50mm lens. Because of the mechanics of most standard digital cameras, this meant that all the resultant photographs were telephoto, or the equivalent of about 80mm using film. The human eye perceives distances at approximately the equivalent with a 50mm lens using a film camera (or full-frame digital). By using a telephoto lens, all the objects in the photograph appear closer to the observer than they will be perceived by the human eye. Figures 3 and 4 shown on the next page attempt to illustrate differences between a 50mm photograph and an 80mm photograph.



Figure 3: ~80mm photograph of Viewpoint 5 from the 2009 visual analysis



Figure 4: a ~50mm photograph of the approximate location of Viewpoint 5 taken by the author in May 2009.

Figure 3 is a reproduction of Viewpoint 5 from the new visual analysis with its ~80mm lens, while Figure 4 is a photograph I took shortly before the Planning Board meeting in May 2009 with a ~50mm lens. While I did not intend to do this comparison when I took the photograph, when seen together these photographs help to illustrate why lenses matter. Note the house on the extreme left in both photographs is the same house. My office added a red dot at the approximate location of where the balloon is floating in Figure 3. Compared

with the ~80mm photograph, everything in the ~50mm photograph appears further away and smaller. The human eye will perceive distances as is shown in Figure 4.

Because they use a telephoto lens, the photographs and photosimulations in the visual analysis err on the side of disclosing more and showing a larger tower (and impact). In my opinion, because they err on the side of disclosing more, the lens used is acceptable, and arguably, preferable.

The viewpoint locations, have a relatively large error of 100 feet, considering current technologies. When asked on July 9th, Tectonic said that they did use a GPS unit, but reception can be poor and so they also noted their location manually. While this error seems large, much of this error in viewpoint location can be corrected using references that exist in the photograph. Consequently, I believe the materiality of this imprecision on the visual simulations is quite low in this context. If we were looking at a specific scenic overlook and the tower was near an important feature in that viewshed, then this imprecision could be material. But context matters, and in the viewpoints analyzed a slight shift in the location of the tower would be immaterial to the impacts on visual resources.

In sum, I believe that the accuracy of the new simulations is acceptable and disclose the impacts on visual resources.

Completeness

The new simulations now show the microwave antenna and possible co-location panels that were missing from the August 2008 simulations. These additions help to show the tower using reasonable worst-case conditions that can be expected in the future. It is not clear if the storage buildings and the chain link/barbed wire fence were added as well because the base of the tower is no longer seen from any viewpoints (see below).

The most significant difference between the June 30th submission and the prior visual analysis regards Viewpoints 4 and 5, which are the unobstructed views to the tower from Old Hoagerburgh Road.

At the Planning Board meeting in May 2009 we discussed with the Applicant that it was *possible* new photographs would not be necessary for the new visual analysis because of the relatively small movement of the tower. Instead of being seen in the center of the photograph, the new tower would be shown 300 feet to the south. In far field viewpoints, this small movement would clearly not be an issue, since the field of view is quite large. In near field viewpoints it was not clear during our discussion in May what the effect would be on the closer viewpoints. The June 30th submission shows us that with the change in the location of the Tower, it is now outside the field of view of the existing photographs for Viewpoints 4 and 5, and the tower is not seen.



Figure 5: Viewpoint 5 simulation from the August 2008 submission



Figure 6: Viewpoint 5 simulation from the June 30th 2009 submission¹

The tower is visible from Old Hoagerburgh Road in Viewpoint 16 (shown as Figure 2 above), but this viewpoint is partially screened by trees. Viewpoints 4 and 5 were largely unobstructed views.

¹ These two simulations are made from the same base photograph. Figure 5 is scanned from the 2008 application, while Figure 6 was taken from the digital copy I received on earlier this month. The difference in image quality that is seen on this page is due to the poor print quality of the 2008 application and because we are comparing a purely digital image to one that was printed and scanned from paper.

Clearly, these simulations are not ideal. Had the visual analysis been performed using the current proposed location of the tower, the viewpoint/camera orientation would have been changed so that the proposed tower could be seen. Considering local concerns about the importance of these views to the community, the Planning Board needs to make the determination if further visual analysis is required from these viewpoints that show how the tower will appear from an unobstructed viewpoint along Old Hoagerburgh Road.

Other issues

Other issues identified in my comment letter regarding August 2008 submission were not addressed in the visual simulations I received. The Applicant should be reminded of these issues before a new submission is made.

- I received the materials digitally. The applicant is reminded that the visual simulations should use photo-quality paper and printing. The quality of the printed materials in the August 2008 submission was poor and made the materials difficult to read and understand.
- The inventory of visual resources of statewide significance did not appear in the materials I reviewed. This list still needs to be cross-referenced with the viewpoints analyzed to ensure that no critical viewpoint was overlooked. If there were critical visual resources of statewide significance that were missed, then additional visual analysis may be necessary.
- There is no key map showing from where the photographs were taken. The keymap that appeared in the August 2008 submission was not readable and the new submission should have a key map that is legible.
- The new submission should include some discussion of the project's impact on visual resources that use these new simulations as evidence.

Close

The 2009 visual simulations are a significant improvement over the 2008 submission and, I believe, accurately and completely depict the proposal from the viewpoints analyzed, with the exception of Viewpoints 4 and 5, where the tower is not visible. The Planning Board must instruct the applicant to either complete a visual analysis for Viewpoints 4 and 5 where the tower can be seen, or accept the visual simulations as complete without simulations from Viewpoints 4 and 5. The Planning Board should make this determination considering the importance of the unobstructed views to the distant mountains from Old Hoagerburgh Road to the local community. If the simulations are complete, then the applicant should complete the remaining materials and resubmit the application. If additional visual simulations of Viewpoints 4 and 5 are necessary, then the applicant should complete those before resubmitting the

application. Because the views to be analyzed are largely unobstructed, it is my opinion that photographs in leaf-on conditions would be acceptable if Viewpoints 4 and 5 were required to be redone.

I am attaching the June 30th submission to this letter; since it is not a part of a formal application, it is not clear to me if you have yet had an opportunity to review it yourself.

I appreciate the opportunity to comment on these materials and invite you to contact me directly should you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "G. M. Janes". The signature is fluid and cursive, with the first name "George" and last name "Janes" clearly distinguishable.

George M. Janes, AICP
Principal

Enclosure: June 30th Visual Analysis from Saratoga Associates