

June 11, 2008

Ted Fink
Greenplan
302 Pells Rd.
Rhinebeck, NY 12572

RE: SEQRA
Review of Visual Resource Assessment,
Depot Hill
Town of Amenia
Dutchess County, New York

Dear Mr. Fink:

On behalf of the Town of Amenia, you have asked my firm to review the Preliminary Draft Environmental Impact Statement (PDEIS) produced for Depot Hill, specifically focusing on the Visual Resource Assessment and the visual impacts of the action.

This letter reports the results of my review and expresses my opinion regarding:

- The completeness of this chapter for the purposes of commencing a public review;
- the quality of materials presented in this chapter in respect to workmanship; and
- whether these materials were produced using methods that properly follow industry best practices and guidance provided by New York State's Department of Environmental Conservation.

The focus of this letter is completeness regarding impacts on visual resources. It does not attempt to make any substantive comment, as such comments are not appropriate without a complete DEIS.

Summary

An EIS is a disclosure document that must clearly disclose the impacts of the action it describes. For the reasons described herein, it is my opinion that materials published in the PDEIS do not adequately disclose impacts of the proposed action on visual resources, and does not accurately describe the action's impact on visual resources. The Lead Agency should find this PDEIS incomplete and instruct the Applicant to produce both new and additional materials that are designed to disclose the action's impacts on visual resources.

Completeness Issues

Inventory of Visual Resources

The Applicant and its consultant team should have reviewed two documents before producing the Visual Resources chapter. The first document is the Final Scoping Document for the project, which is where the Lead Agency provides instruction to the Applicant regarding the content of the DEIS. The second document—which is clearly referenced in the Scoping Document—is *Assessing and Mitigating Visual Impacts* (hereafter referred to as the Visual Policy Document), which was produced by New York State’s Department of Environmental Conservation (DEC). The Visual Policy Document outlines some of the first steps that should occur when assessing impacts on visual resources in New York State.

The PDEIS omits basic procedures called for in the Visual Policy Document. To ensure that the action does not impact visual resources of statewide significance, the Visual Policy Document instructs applicants to perform the following steps: First, the applicant needs to inventory “aesthetic resources” within a 5-mile radius of the proposed action. As the Visual Policy Document details (Section V, Part A), these resources include:

- Properties on or eligible for the National or State Register of Historic Places;
- State parks;
- Urban cultural parks;
- State forest preserves, Catskill parks;
- National wildlife areas, State game refuges, State wildlife management areas;
- National natural landmarks;
- The National Park System, Recreation Areas, Seashores, and Forests;
- Rivers designated as National or State Wild, Scenic or Recreational;
- Sites, areas, lakes, or highways designated or eligible as “Scenic;”
- Scenic Areas of Statewide Significance (SASS);
- State or federally designated trails;
- State nature and historic preserve areas;
- Bond Act Properties purchased under “Scenic Beauty” or “Open Space” categories.

The Lead Agency is always free to add resources of local concern, which can be any publicly accessible area of local importance. The DEIS makes no report regarding an inventory of visual resources. This list may be extensive, as it includes not only areas that are actually listed, but which are *eligible* to be listed. For example, there might be quite a few properties eligible for the national or state register of historic places considering the Town was formed in 1788. All of these properties would be a part of the inventory required by the Visual Policy Document.

Once the inventory is assembled these visual resources are then mapped on top of a viewshed map to show what visual resources have theoretical visibility to the proposed action. Depending on the action and the number of visual resources, the applicant may use other techniques to demonstrate visibility (e.g. verifiable digital photomontage or photosimulation), but viewshed mapping is a typical first screen that is also useful in understanding the project’s visibility in the immediate area and is discussed in the Visual Policy Document. An example viewshed map is included as Attachment A to this letter.

The inventory of the visual resources required by the DEC and the visual assessment of those resources (e.g. viewshed mapping) are fundamental omissions and need to be completed before the PDEIS could be found complete.

Photosimulation

The Scoping Document calls for, “computer models, color renderings, photosimulations and views and potential night time light impacts.”

The applicant has provided a number of graphic exhibits including photosimulations and artist renderings to describe the project. There are problems with these graphic exhibits, the most serious of which is the image quality. Many of the images are either afflicted by poor print quality, were taken on a hazy day, or were in some other manner degraded so that they do not properly reflect the visual character of the area. For example, this is a reproduction of the photosimulation for viewpoint 3 as published in the PDEIS:

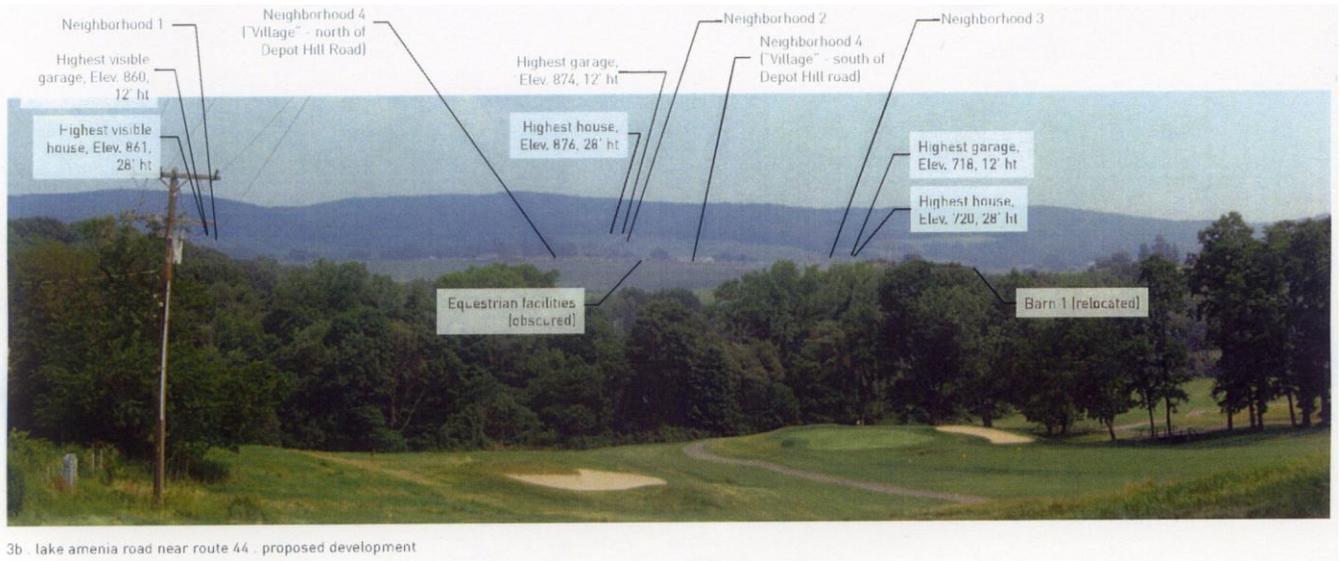


Figure 1: Reproduction of Viewpoint 3 simulation, as published

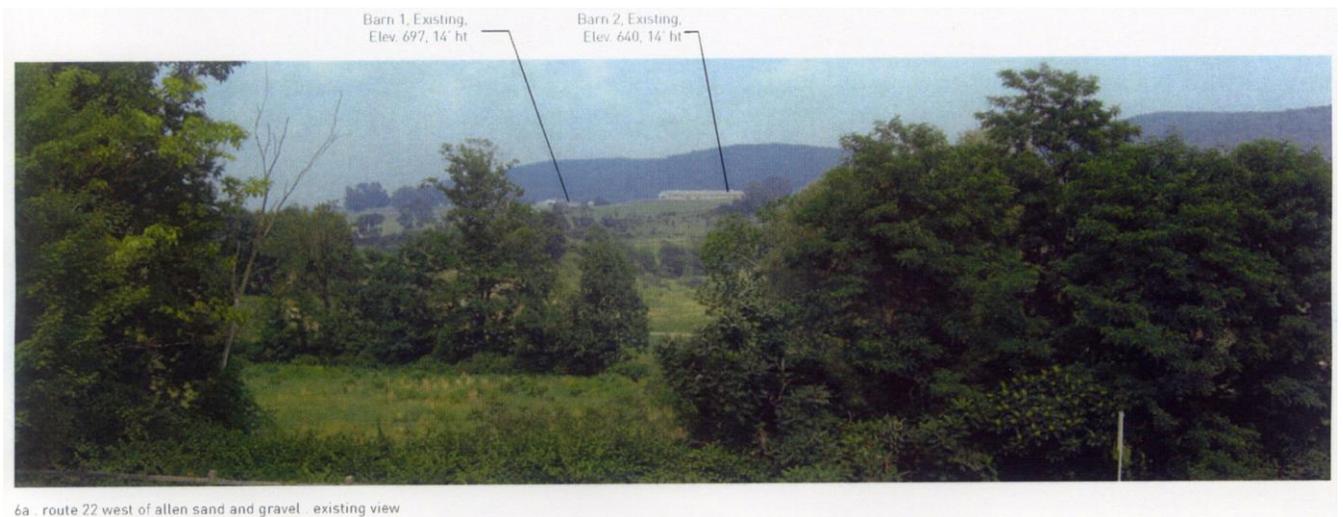
I took photographs from approximately the same viewpoint on May 7th 2008 using a 50mm lens and a Canon EOS 35mm film camera, and then using panoramic stitching software produced the following panoramic image:



Figure 2: Photograph of Viewpoint 3 taken May 7, 2008

It is very difficult to see the action in the simulation published in the PDEIS. But on a clear day, the action should be plainly visible in the field at the base of the hill in the distance, as evidenced by the above photograph.

Further, all photographs are taken in “leaf-on” conditions. The standard in SEQR is to evaluate the action using a reasonable worst-case development scenario. For the purposes of visual impacts this has come to mean that visual impacts should be assessed in leaf-off, no snow conditions, especially in a rural area where trees can provide a good deal of screening in some seasons and not in others. For example, the following is a reproduction of viewpoint 6, existing conditions, in full leaf conditions



6a route 22 west of allen sand and gravel existing view

Figure 3: Viewpoint 6 existing conditions, as published

The following image taken in partial leaf conditions shows the affect of the season on the viewpoint.



Figure 4: Photograph of Viewpoint 6 taken May, 7 2008

I am of the opinion that photographs from a variety of seasons increase the understanding of an action's impact on visual resource, and that leaf-off conditions should not be a hard rule. But if all of the photos are from full-leaf, and those full-leaf conditions effect the visibility of the action from visual resources to be evaluated, then the Applicant's materials would not fully disclose the impact of the action on visual resources, which then becomes a completeness issue for SEQR.

The PDEIS states that existing conditions photos were taken with a Canon PowerShot digital camera, but with no mention of lens used or how the panorama was constructed.

For assessing visual impacts, most photographs use a 50mm lens (or lens equivalent). This is the so-called normal lens¹. It is used in EISs because the image it creates best reproduces the relative distance relationships of the human eye. Simply, at less than 50mm objects in the image seem further away than they would to the human eye. At more than 50mm, objects seem closer than they would to the human eye. This is not to say that other lenses cannot be used in an EIS. Wide angle lenses are often better in urban environments (to show development on both sides of the street, for instance) or in viewpoints where an action is very close to the observer. Telephoto lenses can be used to simulate the acuity of the human eye, which has the ability to focus on objects in the distance. But whatever decision is made regarding lenses used in photography, it matters what decision is made, as it affects the understanding of the image. The lens used needs to be part of the documentation explaining the image. The sequence to the

¹ There is some variation in what can be considered a normal lens. My office considers any lens between 50 and 55mm a normal lens. Other offices are more generous.



28 mm lens



35 mm lens



50 mm lens



80 mm lens

left of this page shows photographs taken with different camera lenses from the same viewpoint. It is designed to show how objects in the distance that are hardly visible come into plain view simply by changing the lens used to take the photograph.

Assessment of Impacts

Photosimulations provide quantitative information regarding impacts on visual resources. For example, a photosimulation shows how much of an action is visible from a viewpoint. It may also show views that are blocked or ridgelines that are broken. By themselves, however, they do not evaluate the qualitative aspects of a project's impact. The text descriptions of the photosimulations and their visual impacts are nearly entirely quantitative and simply describe what is seen in photosimulations. The Scoping Document requires a fairly typical, "description of the changes in *visual character* of the site and surrounding areas" (emphasis added). Consequently, the text descriptions should include qualitative measures along with the quantitative.

While there is flexibility in the manner in which this evaluation is done, at minimum the text of the DEIS should describe how action will impact the existing visual character. Visual character of a landscape is most often evaluated by analyzing the project's impact on the elements that compose the landscape. These elements include form, line, color, texture, and scale/dominance, and/or other criteria as it suits the specifics of the location. Regardless of definition, the EIS needs some kind of detailed analysis of the qualitative impacts of the action; the graphic materials simply cannot speak for themselves on the issue of visual character.

Effects of lighting

In no fewer than seven places in the Scoping Document is the issue of night-time lighting and the effect of the action at night mentioned. There is a discussion of night-time lighting in the EIS. The section starts, "While there is no way to accurately simulate the appearance of the nighttime illumination of the proposed development, it is clear that it will be significantly different than the current conditions because there is currently very little nighttime illumination."

Nighttime photosimulation is a relatively new technique. Considering the character of the area and the Scoping Document's concern regarding the action's lighting, it would not have been unexpected to see a nighttime simulation in the materials published in this DEIS.

Nighttime simulations have a larger artistic component than daytime photosimulation, and they require a fair amount of work, since existing trees need to be incorporated in the 3D model of the action to capture their affect on the lighting of the action, but they can be done with a relatively high level of confidence that the results of the simulation will bear a resemblance to the photosimulation.

A nighttime photosimulation might look like the following sequence:



Figure 5: Existing conditions photo at night



Figure 6: Photosimulation without trees



Figure 7: Photosimulation with trees

This sequence comes from the Hudson Landing project in Ulster County. The blurred, dim lights in the foreground of the simulations are actually the reflection of simulated lights off of the simulated Hudson River. The filtering of light through trees is the most difficult part of a nighttime simulation so they may be done with and without trees, where the simulation without trees represents the worst-case condition.

The Scoping Document does not require nighttime simulations, but does require “illustrated exhibits, including computer models, color renderings, photosimulations and sketches of building elevations and landscaping plans to demonstrate the architecture, massing and views and, potential night time lighting impacts (glare, indirect lighting on adjacent properties) of the proposed development from the vantage points identified by the Planning Board . . .” With the exception of the lighting plan, there are no illustrated exhibits that demonstrate the lighting impact of the action. The Applicant needs to produce illustrated exhibits to demonstrate nighttime lighting effects before these materials can be found complete. According to the Scoping Document, these illustrated exhibits may or may not be nighttime photosimulation. The Lead Agency can provide the Applicant more precise direction regarding their expectations. I can provide instruction, either directly or through third parties, to assist the applicant in the production of nighttime photosimulations should it be decided that these materials would be the best way to meet the requirement of the Scoping Document. But, clearly, the Applicant’s contention that nighttime simulations cannot be performed is no longer accurate.

Design Intent

There is a section in the PDEIS called Design Intent, which has many illustrations. This review does not evaluate those illustrations, except to say that they should not be labeled photosimulations, as they are an artist’s interpretation of design intent. The DEIS should make a clear distinction between photosimulations that are designed to disclose impacts on visual resources and artist renderings--which many use photographs as a media--that attempt to communicate design intent.

Methods

Tools used to produce photosimulations have been evolving and changing since “verifiable digital photomontages,” which are commonly referred to as photosimulations, have been produced. In brief, photosimulation is the process of merging a dimensionally accurate CAD model of an action with an existing photograph of the action. This match is done using two techniques in combination. First, objects that exist in the photograph are modeled in the virtual environment using 3D software. Then, objects that exist in both the digital model and the photograph are used as matchpoints to simulate a virtual camera, which replicates the camera that took the photograph considering its location, lens, pitch, yaw and roll. Once matched, the buildings are then rendered at a specific time of

day and day of the year so that the lighting on the building properly reflects the lighting when the photograph was taken.

Most professionals currently use software produced by Autodesk called 3D StudioViz (formerly called 3D Studio Max) because it has functions required by the process described above. The photosimulations for the Depot Hill PDEIS were developed using software called Sketch-Up. Sketch-Up does not have an auto-match function for references that exist in both the photograph and the 3D model. The operator has to “eyeball” the match between the photograph and the 3D model. By “eyeball” I mean, the operator attempts to minimize the errors that exist between the references in the photograph and the references in the 3D model by making small adjustments to the virtual camera set up to match the camera that took the photograph. The camera match function in 3D Studio does this automatically and much more precisely than a human operator ever could. Before 3D Studio added a camera match function many years ago, eyeballing the camera match was how photosimulations were produced. And they can still be produced this way when the camera match function in 3D Studio fails, which can happen.

I do not believe that Scoping Documents and Lead Agencies should dictate tools that should be used, but the use of Sketch-Up as the tool used to match the photograph to the 3D model begs certain questions. What were the references used to do the camera match? How many were there in each photosimulation? Some photographs have limited hard references (e.g. existing buildings), were soft references like forested ridgelines used to produce the camera match? The Lead Agency should know the answers to these questions and if the answers are unacceptable (e.g. solely using GPS positioning on the camera) then the photosimulations cannot be considered acceptably complete for the purposes of commencing public review.

Alternatives

The Scoping Document states that the discussion of the alternatives “will be at a level of detail sufficient to permit a comparative assessment of costs (where relevant), benefits and environmental impacts for each alternative.” I was not sent the Alternatives chapter because, I was told, it does not address impacts on visual resources. While not explicit in the Alternatives section, it is difficult to make a comparative assessment of impacts on visual resources without graphic materials that can be compared in an apples-to-apples manner with the materials produced for the preferred plan. Of course, alternatives are not analyzed to the same level of detail as the preferred plan, but photosimulations showing a lower density alternative and a higher density alternative for a small handful of viewpoints could produce appropriate evidence to support assertions the Applicant makes regarding impacts on visual resources.

Grading

An action of this type can be described by its components, which are:

- Buildings,

- ancillary components (roads, parking lots, retention ponds, retaining walls, golf courses, etc.), and
- grading and site disturbance required for the buildings and ancillary components.

While not entirely clear in the written documentation, it appears that the visual analysis omits the third component of the action: the proposed grading. The plan that I have for the project shows grading required for the road, but not grading required for the home sites.

In projects that do not have extensive grading, this is not a serious omission. Parts of this development, however, step 200 feet up a relatively steep hillside. If grading for home sites have not yet been prepared, then the professional performing photosimulations must make a “stand-in” grading plan to represent reasonable worst case conditions and build the 3D model of the action on top of that stand-in grading plan. Grading can also be used to help define an area of disturbance, which assists the operator in removing existing vegetation in the photosimulations and show areas that need to be recovered. Because of the poor visual quality of the photosimulations, it is not clear how much of the existing vegetation is being removed. It is clear, however, that vegetation added as a part of the action is in full leaf and screens the visibility of portions of the action.

SEQR standards in photosimulation

There are evolving expectations regarding visual materials found in Environmental Impacts Statements in New York State. There are no requirements for photosimulation in the SEQR handbook (published in 1992) or in the Visual Policy document (published in 2000), but if the Scoping Document requires photosimulations, there are expectations as to what that means. For example, photographs need to be taken in clear, leaf-off conditions; screening vegetation should be shown at time of planting and also leaf-off; building colors and existing vegetation need to represent a reasonable worst-case condition. Should the Applicant like to demonstrate the effectiveness of a mitigation measure or show how the action may look in 20 years, with larger trees, they are free to do so, as these materials can add to the understanding of the action. But if photosimulations are performed, there must be photosimulations that show a reasonable worst-case development scenario, and while the image quality of some simulations are so poor it is hard to say with certainty, it does not appear that the photosimulations included in the PDEIS attempt to show a reasonable worst case development scenario.

The Applicant and its consultant team should not fear the visibility of its action in a reasonable worst-case development scenario. Indeed regarding visibility, the DEC Visual Policy document instructs:

Mere visibility, even startling visibility of a project proposal, should not be a threshold for decision-making. Instead, a project, by virtue of its visibility, must clearly interfere with or

reduce the public's enjoyment and/or appreciation of the appearance of an inventoried resource . . . (DEC Visual Policy, p. 9).

Nevertheless, visibility is the starting point for understanding impacts on visual resources and without accurate representation of the action's visibility it is difficult to understand impacts on the viewpoints analyzed.

Just as judicial decisions provide critical background as to the interpretation of laws, familiarity with the body of work produced for SEQR helps in understanding expectations as to the quality and nature of materials published in an EIS. The Visual Policy Document, Scoping Document and the SEQR Handbook provide little guidance as to these expectations. Rather, the evolving body of work that includes other New York State Environmental Impact Statements helps to form these expectations. Familiarity with this body of work is an important part of designing materials that are acceptable under SEQR. As evidenced by the photosimulations contained in the PDEIS, as well as the Applicant's visual consultant's stated experience, the firm that produced the visual materials found in this PDEIS has very limited experience in New York and appears to be unfamiliar with the expectations of visual materials produced for SEQR. While this is not to say that this firm would be unable to produce such materials, they may benefit from guidance as to the design of such materials so that they are consistent with SEQR expectations.

Conclusions

The Applicant produced a Visual Resources chapter that does not adequately disclose the visual impacts of the action. The materials produced omit basic information and the photos describing the area and the photosimulations used to communicate the impact of the action are fundamentally flawed. The Lead Agency should require the Applicant to produce additional materials before this PDEIS could be found complete for the purposes of commencing public review.

I appreciate the opportunity to comment on this PDEIS. Should you or the Applicant have any questions or comments, please feel free to contact me directly at 917-612-7478.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. M. Janes', written in a cursive style.

George M. Janes, AICP

Appendix A: Example viewshed map with visual resources mapped
(Taken from the DGEIS for the Landing at Kingston and Ulster)

