ISSUES CONFERENCE VOLUME 11

In the Matter of the Applications of

CROSSROADS VENTURES, LLC

for the Belleayre Project at Catskill Park
for permits to construct and operate pursuant to the Environmental Conservation Law

Margaretville Fire House
Margaretville, New York
June 29, 2004

B E F O R E:

HON. RICHARD WISSLER,
Administrative Law Judge

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(June 29, 2004)
(9:32 A.M.)
P R O C E E D I N G S
ALJ WISSLER: Today is June 29th, the Issues Conference in the matter of the applications of Crossroads Ventures, LLC is continued.
May I have the appearances of counsel for the record.
MR. RUZOW: For the Applicant, Dan Ruzow and Terresa Bakner.
MR. ALTIERI: Vincent Altieri for staff.
MR. GERSTMAN: Marc Gerstman, Cheryl Roberts for the Catskill Preservation Coalition.
ALJ WISSLER: Forest impacts, I believe, is the issue for this morning.
Anything preliminarily before we begin?
MR. GERSTMAN: Judge, we had -- there have been some requests for documents from Mr. Garabed concerning the location of various citations in the DEIS to the volume of the detention ponds. He has provided that here
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for me. I'd like to add it to our exhibit list. Also attached is an Article entitled, "Toxicity of Acidified Chitosan for Cultured Rainbow Trout." It's from Aquaculture, a magazine, November 7th, 1999. I would like those marked and entered as exhibits.

ALJ WISSLER: It will be CPC 65 and 66. 65 will be Mr. Garabed's references?

MR. GERSTMAN: Yes.

ALJ WISSLER: And 66 will be the article with respect to chitosan.

("CROSSROADS VENTURES LLC DRAFT EIS APPENDIX 9 - REFERENCES FROM MR. GARABED" RECEIVED AND MARKED AS CPC EXHIBIT NO. 65, THIS DATE.)

("TOXICITY OF ACIDIFIED CHITOSAN FOR CULTURED RAINBOW TROUT" - AQUACULTURE MAGAZINE - NOVEMBER 7, 1999 RECEIVED AND MARKED AS CPC EXHIBIT NO. 66, THIS DATE.)

ALJ WISSLER: Mr. Gerstman, is this presentation an exhibit that you're going to want to put in?

MR. GERSTMAN: Yes, it is, Judge, I was going to do that.

ALJ WISSLER: A handout that we'll

follow along?

MR. GERSTMAN: Yes. If your eyesight is really good, you'll be able to follow along on the handout, and we've also burned it on CD.

ALJ WISSLER: Do we want to enter that

before we begin?

MR. GERSTMAN: Yes, Judge.

ALJ WISSLER: So 67 is what?

MR. GERSTMAN: The hard copy.

ALJ WISSLER: Of?

MR. GERSTMAN: The Power Point entitled, "Forest Fragmentation and Land parcelization in the Catskill Mountains." Would you like to make it 67A as the CD?

ALJ WISSLER: Doesn't matter. 67A it is.

(HARD COPY OF POWER POINT PRESENTATION "FOREST FRAGMENTATION AND LAND PARCELIZATION IN THE CATSKILL MOUNTAINS: DOCUMENTING THE PAST & PROJECTING THE FUTURE BASED ON EMPIRICAL RELATIONS" RECEIVED AND MARKED AS CPC EXHIBIT NO. 67, THIS DATE.)

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NO. 67A, THIS DATE.)

ALJ WISSLER: Mr. Gerstman.

MR. GERSTMAN: Thank you, Judge.

Judge, I'd like to introduce you to Professor Merna Hall. Her curriculum vitae is attached to the Catskill Preservation Coalition Petition for Party Status as Exhibit M.

Professor Hall, would you please tell the Judge a little about your background.

PROFESSOR HALL: I'm a professor in

the faculty of environmental studies at the State University of New York's College of Environmental Science and Forestry. That's a half-time appointment. My other half-time, or I like to say three-quarter's time, is doing consulting work principally in the area of spatial ecology and land use change modeling.

A lot of the work I've engaged in over the past three years has been primarily looking at land use change in the tropics, working with the Nature Conservancy and Winrock International in their effort to do science on the establishment of carbon sequestration projects. Some of the parties

who are already involved in that include a number of major American corporations; so that, I hope, explains a little bit who I am.

I teach two courses at the University. One is in geographic modeling, which is the kind of work that you'll see applied here today, and the other is in urban ecology.

MR. GERSTMAN: Professor Hall, have you written any publications or have any articles published in any professional journals?

PROFESSOR HALL: I have a cover story in Bioscience Magazine this last February in which my work on the change in glaciers' extent and vegetation in Glacier National Park as a consequence of global climate change was featured.

In addition, I have a number of articles on land use change, particularly with respect to agriculture in the tropics. And I have numerous reports on the website, on various websites that are about to be publications on our work in Latin America, as well as the work that we are just completing now here in the Catskills and in the Thames

Watershed in Connecticut. It's a watershed that runs north of New Haven up into Massachusetts. It's part of this effort.

MR. GERSTMAN: For a complete list of publications, I refer you to her CV which is attached to the CPC petition.

Professor Hall, you mentioned the term "spatial ecology." Could you briefly tell us what that is.

PROFESSOR HALL: Well, ecology, for those of you who don't know, is the study of the interaction of organisms with the biotic, which would be the plants, and other organisms in their environment and the abiotic environment, which is the meteorological system and the underlying rock structure, et cetera. In particular, I focus on human-dominated ecosystems because I'm very interested in the interaction of humans and the environment, both their impacts on the environment and environmental impacts on humans.

Spatial means that we are able to analyze these relationships, looking at landscapes using what are called Geographic
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Information Systems and computer models. I do my modeling in Fortran, which some people say is an outdated language, but very efficient for modeling and understanding the interactions of all of these components of an ecosystem, including humans.

So what spatial modeling -- spatial ecology allows us to do is not just look at one place isolated, but to look at the impacts of surrounding areas on that, on each place in the landscape. I hope that adequately describes it.

MR. GERSTMAN: Are you familiar with the Draft Environmental Impact Statement for the project that we're here to talk about?

PROFESSOR HALL: Yes, I am.

MR. GERSTMAN: Have you prepared a Power Point presentation concerning the issues of forest fragmentation and land parcelization in the Catskills?

PROFESSOR HALL: Yes, I have.

MR. GERSTMAN: Was that study prepared especially for the purpose of reviewing this project?

PROFESSOR HALL: No, it was not.
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MR. GERSTMAN: When did you start the work that was done for that study?

PROFESSOR HALL: It was the autumn of 2002, I believe. I'm losing track of time. Yes, I think it was 2002, October.

MR. GERSTMAN: The Power Point is here if you would like to begin and do that presentation.

PROFESSOR HALL: This work I'm about to present to you was funded by the USDA Forest Service out of their growing concern for the loss of the working forested landscape in the United States, and that means -- relates to two factors. One, is that over the period from 1992 to 1997, 10 million acres of private forest land were lost to development.

In addition to that, they're concerned because the remaining forest land is becoming increasingly fragmented and parcelized. By parcelization, we mean there are more and more owners of forest land, and there are -- so each parcel becomes a smaller -- becomes smaller units, and it makes it difficult for the forest industry to continue in rural areas because there is less timber brought to the

mills. New forest owners, people who own typically 10 to 17 acres are no longer interested in forestry. They're generally interested in having the forest around them.

So parcelization is causing a lot of concern. It's one of the four major concerns right now listed by the Forest Service about

what's going to happen to sustaining the forest and timber industry and wood products industry in the United States.

The other issue is fragmentation. You see two different images. The upper one where you see clear-cutting of forest, we consider this still a forest. Its use is forest. It might not seem like a forest to some who are concerned about conservation, but it is nonetheless forest in terms of its use. The lower image is not a forest. The forest is no longer used as a forest. It's been converted, in this case, to a subdivision.

These are the two big issues that the Forest Service is concerned about, and there is a strong belief that parcelization is the first step leading to fragmentation. I hope I've made it clear why that's a concern, but

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basically it's because it's just harder and harder to sustain the mills and to keep providing timber to feed them. (Indicating)

Some of the potential consequences of forest fragmentation, as I said, are more than just the loss of the working forested landscape. Of course, this is the Forest Service's main concern because it makes for severe economic effects. It also causes the need to buy more timber from outside the US.

Third, of course is an issue that I know you're all dealing with, is the increase in runoff from impervious surfaces, and water

turbidity from soil erosion. Many people in this area were very interested in our study, especially those from New York City because of the impacts it might have on water quality for the City. (Indicating)

Loss of wildlife habitat, another concern, contribution to CO2 emissions from loss of forest, and making it more difficult for the US to meet some kind of carbon balance. And finally, more so in the west than here, but an issue, again, of very high concern to the Forest Service is that -- the

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more the forest becomes fragmented with development, it requires more and more initiative and dollars and manpower to fight forest fires to protect homes. (Indicating)

MR. GERSTMAN: Based upon your review of the project that's the subject of this proceeding, can you identify any of those particular issues of concern or consequences that have importance in connection with the development of these parcels?

PROFESSOR HALL: Locally you mean?

MR. GERSTMAN: Yes.

PROFESSOR HALL: Definitely the first one is, I think, very important. The local forest industry and the foresters we have spoken to here are very concerned about this issue. Also, of course locally, are the issues related to water, Nos. 3 and 4. 5,

loss of wildlife habitat is also a local concern, as this is one of the last forested landscapes in the northeast, as I'll show you in some pictures that are to follow. (Indicating)

MR. GERSTMAN: Judge, as we move forward through the Issues Conference, you

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will find, and certainly through our briefing, we expect to argue that the issues that you're hearing about today also have implications in connection with secondary growth. The Important Bird Areas, which you have already heard about from Dr. Burger, cumulative impacts, aquatic habitat, and several others, and we will make the connections as we go forward, and also in our briefing.

PROFESSOR HALL: The challenge really for the country and for communities is that usually by the time you see forest fragmentation, it's usually too late to do anything about it. Secondly, that maintaining land in forest is seldom possible unless the ability of the forest to generate revenue is also maintained.

So there is a lot of concern about tax implications for forest owners, et cetera; and that once a threshold is passed where people find that they can make more money off of selling the land than maintaining it in forestry and selling timber that -- any development in a region tends to accelerate

the process of people selling off forest land
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for other uses.

In many areas, it will require the support of urban populations to maintain working forests. By that, we mean that if communities are willing to come up with different kinds of incentives to get people to build and reinvest in urban infrastructure in order to save our wild lands, this is probably what's going to be necessary to stop what we call urban sprawl into both our agriculture and forest lands.

MR. GERSTMAN: Let me interrupt you for one second. We've heard from the Coalition of Watershed Towns concerning their perception that the Forest Preserve in the Memorandum of Agreement in connection with the New York City Watershed presents certain constraints on the ability of local developers and development to take place in the local landscape. What I believe is one of the things that we're suggesting is that the indirect benefits and the direct benefits of the forest, plus the working of the MOA, provide this area with an opportunity, essentially the golden egg as Mr. Alworth has
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previously identified it, to have a sustainable environmental development.

In addition, in connection with the

first point, in terms of the time that you see forest fragmentation, it's usually too late, we believe in this case where there's a significant land use development that has the potential to accelerate parcelization and fragmentation, and in fact should be identified as a significant adverse environmental impact, that SEQRA requires that a hard look be taken of that project, and that in fact, through SEQRA, the agency, DEC and the Commissioner, would be able to counter that particular consequence of this project with respect to forest fragmentation.

PROFESSOR HALL: The challenge, as we see it, is as population grows and concentrates, the working forests and farms dwindle, and as a result of that, we have parcelization, which I have explained, and fragmentation, less intact forest area; and many regions of the US are already approaching critical threshold densities, which this region is not so far.

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This is just to give you an idea what's happening across the United States from 1950 to 1990. We're looking here simply at the increase in dense human population. Usually it is quite impressive to people when they see it illustrated like this. This is from the University of California at Santa Barbara website. (Indicating)

Now, there is a theory, and various

investigators have been studying the effects of population density on forest fragmentation and the ability of areas to maintain a timber extraction industry. Here we're looking at New York State's population density, and from that is derived this map of forestry's future.

So you see the areas where, because of high population density, it's very unlikely, areas where it's difficult and areas where it's still considered probable; and if you look, you can see that the Catskill region we are talking about is still in the probable area. That's based on population density.

I would like to point out, however, that we do not see a clear match in the data that we've examined so far between local

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population growth and forest cover. We think that in some of the areas we're looking at here, the change in forest cover is actually being driven by people who live outside of the area, and I'll show you a slide to illustrate that. (Indicating)

The question with respect to the proposed development is do areas where population is not growing rapidly, since probably we could make the case that it isn't happening here, still exhibit significant land use change that reduces the capacity of working lands? We would argue that this is -- I'll show you the evidence that we have

examined so far that would indicate that, in fact, there is significant change even without local population growth. It seems to be driven by the predominance of ownership of this land from people who do not live here. (Indicating)

How does development that attracts non-permanent residents accelerate forest fragmentation and parcelization? Those are questions that we're asking and I hope to answer for you as we go along.

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What drives parcelization? A variety of things are being investigated, and we are taking this study further, and we're going to actually be doing surveys of local landowners, especially of land that has been parcelized, to find out what has been the driving factors here. But from the literature, and I have numerous papers on this, some of the factors that are identified are death rate. Often when people pass away, they divide their land up and give it to their children, and then the children sell it off or if the children hold on to it, they're no longer interested in forestry, as it simply becomes perhaps even a second home for them or a land that they just hold for a long time.

The need to pay inheritance taxes, often they're faced with that, so they sell off the land for that.

Uncertainty about the future of

forestry in their area. Often this is driven -- has been driven in some studies we have seen -- by people's concerns that because of limitations on how they're able to use the land, that they decide to sell it off. And

that's often in conflict with the environmental community.

Urbanization, simply just sprawling out into the landscape.

Increased income. As people have more income, they often decide that they don't need the land for forestry, and they will sell it off or no longer use it -- certainly not for timber extraction.

Locally higher land values is always an accelerator of land sales for other uses than forest. And the tax structure itself can be an impediment to people staying in forestry, and therefore parcelizing and selling their land.

I guess we started our project in October 2001 because this article is from 2002, and we saw it and took note of it. It was an article in the New York Times on May 10th, and quite interesting, and we felt it correlated a lot with the ownership data that we looked at. It reads: "Utter the words Delaware County at a party in Manhattan and you will likely get one of two very different reactions. People will either raise their

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eyebrows knowingly, and indicate they would prefer that their fellow New Yorkers never discover it; or they will give the more typical response and ask: Where's Delaware County? John Houshman [sic] knows. He discovered this part of the Catskills in 1991 when he was thinking about buying a ranch in Montana. I really wanted a place that was secluded and had mountains and wildlife, he said, but I couldn't bear the thought of only being able to go to it twice a year."

This is just an interesting ad, of course, extolling the virtues of this beautiful region from the Catskill real estate website; and Mr. Houshman goes on and says, "Trust me, buy a home up here and within five years you will be living here." This is one of the -- sort of unseen forces -- although lots of local people tell us they see it -- that's attracting people to the region, and also going to drive more and more parcelization of privately owned forest land.

Population pressures. As population density increases, the difficulty of keeping working forests intact increases as well, and

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I showed you some slides about that earlier. Some of the pressure is competition for land, but most is economic and social. When you reach a certain population density, there are often conflicts between people who have moved

into the area and those who are still trying to use the land for agriculture or forestry. People don't like to hear chainsaws. They don't like to see logging trucks. They don't like to smell pigs, and so there are a lot of reasons that as you get more and more people, it just becomes very difficult for people to continue working the land. And also the prices usually -- taxes are driven up, and so people are -- it's attractive to them, therefore, to sell their land, either because taxes become higher or because there's a good market.

MR. GERSTMAN: Professor Hall, when you talk about population density, you're talking about both the actual population residing in an area but also the second homeowners as well, people who use their -- essentially the area as their recreation or second home?

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PROFESSOR HALL: Yes. Because this is a unique area where second homes is a significant factor, definitely people who have second homes are very much annoyed sometimes by these kinds of activities.

MR. GERSTMAN: You include the second homeowners as part of the population density equation?

PROFESSOR HALL: Yes, although there are no data on that. You can't get data that

tell you how many people actually, say, are here on Fourth of July weekend. You can't get that kind of data, but you can see it in the satellite imagery, you can see that the forests -- that there are more and more homes or areas being cleared of forests.

So as I said, there's less tolerance for rural land uses, et cetera. We've been over most of these things. (Indicating)

I like this one, though, that I think is quite true. There's a decision to get out while the getting is good. And having grown up on a farm myself and watched farmers go through that where they decided to get out while the getting is good is very apropos.

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MR. GERSTMAN: Let's focus for one moment on the second bullet which has to do with higher land prices, home sites and golf courses. As you know, this project involves the proposed construction of two golf courses. It also involves the proposed construction of some residential home sites and time shares on the mountain. In your opinion, would this development increase both the secondary growth aspects of -- would result in secondary growth and also result in higher land prices in this area?

PROFESSOR HALL: This slide, by the way, was not prepared for this conference. This slide is part of our general presentation and was prepared by my colleague, Mary Tyrrell

at Yale University. I forgot to say that this project is a joint study of Yale School of Forestry and SUNY's College of Environmental Science and Forestry. So this was not prepared just with this in mind.

Now let me say, most all of these things are taken from the various studies that we have read and are reporting on here, and our principal investigator was Neil Samson,

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who at the time we started, was a Weyerhaeuser fellow at the Yale School of Forestry, and is now head of the Samson Group, and for years was the director of American Forests. So this comes from his studies, along with Lester Decouster.

The feeling is, with respect -- you're asking me how do I relate this to the local situation?

MR. GERSTMAN: Yes.

PROFESSOR HALL: First of all, higher land prices makes it attractive for people to sell their land. Secondly, people are attracted when they come to a place to play golf from elsewhere, and they are attracted to that region, and they want to build homes. As I said, I don't have any study myself showing this empirically, but I can think of hundreds of examples in the west, where I spend my summers, particularly in the Flathead Valley in Montana where when the first little golf

course went in and soon, we had home sites surrounding it. The region has just -- it's just boomed, and a recent study by Dennis Swainson [sic] showing what's happening to the
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American West, especially in regions around National Parks, and this happens to be around a National Park, where people are attracted to the region for recreation and for scenic beauty.

Because people are affluent, they see these as -- these are nodes or magnets that attract people to come and build a second home. As I said, I don't have any report at my fingertips or published paper to document that, other than Swainson's work, which is in a different landscape, it's in the West, but I think the driving forces are much the same.

Land tenure changes. We definitely have more people moving into rural areas in what we call sprawl. Forests are being used for home sites and not production of commodities, and the question is will production land uses be feasible in the future? Changing values, people inherit land, they have different values, and they will use the land differently. And the forest products industry themselves are selling their lands. You see that all over the Northeast. (Indicating)
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So the impact on forestry is we have

more and more smaller forest parcels with more neighbors, and these make it more expensive to manage for forest products. People get less money for their timber because there's sort of a threshold of efficiency. If you have a small property, it's much more costly per tree to go in and take out the trees than when you have large properties.

They may find their management activities constrained by other local concerns, and they may get taxed for development values, and these parcels are more likely to be sold for development. (Indicating)

So our objectives were, in doing this study, principally we wanted to explore what was happening in some of the last remaining forested landscapes of the Northeast. The Forest Service wanted us to do this to see if we could determine from satellite imagery the impacts on -- if we could determine the amount of fragmentation and parcelization, or both, that was taking place in these landscapes, and they wanted us to use this land use change

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model that we had used previously, principally in Latin America, but to test it here and see what it told us about what's happening to private forest land in the Northeast. (Indicating)

So we were also interested in how

these processes affect communities. We met twice with stakeholders in the Catskill region before we did the modeling and afterwards to present our results and get feedback from them, and also in Connecticut, we met with stakeholders there twice.

MR. GERSTMAN: Professor Hall, could you give us a representative sample of the some of the stakeholders you met with in this region?

PROFESSOR HALL: We met with several forest landowners, people who are engaged in timber extraction on their own land, people from local planning boards, from the Catskill Forest Landowners Association, I believe it is, from the watershed ag. counsel, from DEC, DEP, EPA, Catskill Center. That's a few.

MR. GERSTMAN: Thank you.

PROFESSOR HALL: Another one of our

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objectives was to see if we could develop from this, a tool that people could use in the planning process to help them get ahead of the situation, and to help them sustain forest environments and a forest economy. That was our goal.

Our project methods were as follows: One, to identify factors that are correlated with past patterns of land use change, to identify areas of intact forest, where those same factors are present today, and to use a dynamic modeling tool called Geomod to project

possible future scenarios based on what we have seen in the past.

Let me just talk a little about the modeling process. A good model is one that uses data collected from sometime in the past, explores, statistically or otherwise, the relation of dependent variables to independent variables; in other words, what factors are causing a certain response in a system. Then it makes a projection and validates its projection against either data that has been held out of the original set that was not used in the calibration process, or data from a

later point in time. That's what we did here. And I hope I can explain it in a way that you'll be able to understand how we built the model and why we have good confidence in it.

Our other methods were to choose sites that have large areas of intact forest, I already said that, some development pressure in an active conservation community. We hosted community workshops, as I said, and from those meetings, we derived a list of potential factors that local people thought were important in explaining what was happening in their area.

These were the two areas of our study. You see the two rectangles defining the areas that were studied, and I think the next slide gives you an idea why these areas were

selected. This is an earth nightlight satellite image showing these two forested landscapes in the Northeast. (Indicating)

One of our reasons for also looking at the Catskill-Delaware Watershed region was, of course, because of -- it's critical to New York water supply, large areas of intact forest. We assume, because of its proximity

to New York City, that it was under some threat of expanded development, and that many local and regional organizations were involved here in the preservation of forests and a forest-based economy. (Indicating)

This is a rectangle that shows the actually physical area that we analyzed. These are little pieces that were cut out of Albany County and Otsego County, so we have centered -- we hadn't included all of the Cannonsville Reservoir, but the rest are included, and the red shows you those lands that were excluded from the study because they're not candidates for change, as they are city- or state-owned lands. (Indicating)

The next slide shows you how much of each county area was included in our analysis. (Indicating)

The hypothesis we developed with the folks here were that parcelization is more of a current factor than fragmentation, but it will be hard to detect or predict. That is true, partly because of the dearth of data,

and also you can't see parcelization from a remotely sensed product like the satellite

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imagery, its changes in ownership boundaries, so it is more difficult to analyze. (Indicating)

The second theory that we developed with folks here, and as I said, these slides were prepared long before I ever knew about the issues here, were that forest land change is driven Y distance from New York City, distance from major roads, distance from growth nodes such as ski resorts and new resort development, watershed regulations, taxes, age of landowners, and the population of permanent residents versus housing units, i.e., second homes. (Indicating)

So we tried to assess the importance of these factors and either driving forest fragmentation and parcelization in this region or simply explaining where it would occur. (Indicating)

The model that we used is -- as I said, is called Geomod. It's a spatial and temporal Geographic Information System based model that quantifies factors associated with land use change, and simulates the rate and pattern of that change into the future. This

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model was developed by, actually by my husband, Dr. Charles Hall, professor at EFS,

along with graduate students under an initiative from the Department of Energy to explore the contribution of tropical deforestation to the global carbon budget.

There are two things -- what we need to build Geomod, there are two important factors in this model that we need to assess. One is how much change per time has been occurring in the past, and where? The first is possible through a variety of means. One is to look at satellite imagery and simply look at the change in forest cover, since that's what we're interested in, over time and look at the rate of change.

The second is to actually be able to compare demographic or socioeconomic data to that change in forest cover and see if there's a correlation between the two. The latter, however, it's necessary to really have more than two points in time, always you always have a linear relationship. So we only had two points in time because the classification of satellite imagery is a very expensive and

time-consuming process, so we had a 1992 image and a 2001 image. Therefore, in order to come up with the rate, looked at the rate of change between those two points in time in the satellite imagery, and projected that forward ten years.

We also didn't have economic data at a resolution that would allow us to explore the

relation between the economics of the region and changes in forest cover. We didn't even have it at the county level, so -- and people couldn't even provide it for us at the state level really -- so that was of great disappointment to us; whereas, we did have it in Connecticut.

Pattern drivers then are explained where people have historically preferred to develop the land. As ecologists, we have a theory that they tend to go where they're going to get the highest economic return on investment, and before our highly energy-subsidized era of history, that meant that energy investment was their legs and arms and a plow and a horse, and so people tended to like flat land and river valley land where

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the soils were rich. We still see that imprint so much on the landscape here that I think it's sort of overwhelming some of our other analyses of all these other factors because the historic imprint here is still very strong from that time in history. (Indicating)

These are the two images that we used. These are the classifications, which I know you can't see, but basically the classifications are open water -- we have no perennial ice and snow in these images. These are just the legends that come with a larger

image, and we windowed out our area. Low intensity residential, high intensity residential, commercial/industrial, transportation, bare rock, sand and clay, quarries, strip mines, gravel pits, transitional areas. There was none of that in the images here. Deciduous forest, evergreen forest, mixed forest, shrub land. Orchards, vineyards, grasslands, row crops -- pasture hay, row crops, fallow, urban recreational grasses, woody wetland and emergent wetlands.

So those are the classifications that

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are determined from analyzing spectral reflectance of land cover as the light. The short wave radiation is bounced back to the satellite, and then you go through a long process of ferreting out these different sectoral responses in determining what the land cover is. (Indicating)

We re-classified all of those classes into two classes -- three with water, and the woody wetlands -- or emergent wetlands. We basically included in the forest class everything that was deciduous evergreen, mixed forest or woody wetland; and in the non-forest, we included the residential, commercial, industrial -- hay, pasture, row crops, any kind of human use of the landscape other than forest. So you can see already some significant changes. (Indicating)

We have had some concern about the

absolutely immense amount of change in this region, so we went in and did an accuracy assessment of this part of our imagery, and we got -- I think it's 92 percent correct, so we feel pretty confident. That's quite good. We used aerial photography as our validation map.

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(Indicating)

The table you see here is a lot of numbers, but it's basically summarizing by county how many acres of forest there were in 1992 within these counties in the portion that's included in our study area, and how much non-forest, how much forest in 2001, how much non-forest. (Indicating)

So the percent forested in `92 total was 87 percent, by 2000, was 79 percent. That's just the private forest land. That includes some reforesting land as well, which we have in this region. Then, we look simply at -- this includes reforesting land. This tells us how much -- how many acres in each we're reforesting and what the net acres of forest were lost. (Indicating)

This is quite an interesting factor that the actual standing mature forest that we observed in `92, this much was lost. When you add back in what appears to be reforesting, then this is the net number of acres. (Indicating)

When we include the public forested

land, the area of our analysis went from
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88 percent forested to 81 percent forested in a nine-year period, which coincides with this study that I mentioned earlier that was in the Journal of Forestry showing how much private forest land had been lost in approximately the same period of time, 1992 to 1997. (Indicating)

I might say even though New York is one of the states that -- in the literature, it says that it's reforesting. That's for the whole state, and I think there are certain areas of the state, as we've seen here, where the conversion is now going the other way. (Indicating)

This is a summary simply of the change in forest, non-forest by county just done graphically to give you an idea of the impact. This is in acres. (Indicating)

MR. GERSTMAN: Professor Hall, how would you view the rate of change that you're showing from 1992 to 2001 both in the prior slide and this slide? Would you characterize it as something of concern, significant in terms of loss of forest land?

PROFESSOR HALL: I would consider it
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very significant. Everyone we've shown this presentation to has been quite alarmed, most especially the people from the Department of Environmental Protection from New York City

because they're very interested in what this may imply for water quality -- at what point they're asking is too much -- is too much too much? At what point would water quality be impacted? No, this is quite --

ALJ WISSLER: What is your answer to that question?

PROFESSOR HALL: We don't know yet. We have put forth a proposal with -- to the Department of Environmental Conservation to go forth with this study and to connect our land use change projections to a hydrological model and a fatent [sic] transport model that would look at sediment rate and nutrient delivery to the reservoirs and the streams. And we put forth that proposal, and we believe we're going to be funded to do that.

MR. RUZOW: Did you say DEC or DEP?

PROFESSOR HALL: We've put forth the proposal to DEC.

This is summarizing in the watersheds

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themselves the loss of the `92 forest. Now remember, there is some reforestation, so we see in the imagery, although you have to imagine that in a nine-year period, that for something to go from non-forest to forest, it's not very forested yet, it takes a long time for forest to grow, but it's being picked up by the satellite in a spectral reflectance that would say it's forest. (Indicating)

So we have a net change in forest from Cannonsville of 10 percent; Schoharie, 3; Pepacton, 5; Ashokan, 2; and very little in the Neversink because most of that is public land anyway in the Rondout. But then you see the loss of the `92 forest itself is generally -- between nine percent more, and as little as one percent more, so the loss of the mature standing forest is -- maybe the more important statistic to look at in terms of water quality. (Indicating)

Then we also looked at the total in all the basins and outside the basins. So we see a little bit more higher rate of change in private forest land, forest cover outside the watershed, that area that is included in our

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study, than inside the watershed, which makes sense.

MR. GERSTMAN: Just a correlation, Judge, as you heard from Dr. Kiviat and you will hear from -- further from aquatic habitat specialists -- the loss of forest land has a direct impact on the quality of the surface waters, and we believe will have a significant impact on the quality of surface waters in the area adjacent to the project.

PROFESSOR HALL: Like I said, we wanted to compare population growth to the forest cover changes, and we plotted the population growth over time from census data, and the most pronounced, of course, is in

Ulster County -- remember, not all of Ulster County is in our study area, nor are any of all of these counties -- but it's generally more flat, except in Sullivan also it's more of a rise, but the population growth is really very flat over time from 1890 to the present in three of the counties that we're looking at. (Indicating)

This slide is not in your handout, I added it last night because I have been

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wanting to do this for a long time, to put the two side by side, so we could actually see between 1990 and 2000 what the population change had been versus what the change in forest cover had been.

So there definitely seems to be something else, perhaps relating back to the article from the New York Times, that seems to be driving change in forest cover here. Even though there's a great deal of land that's reforesting in Delaware County, there is also a loss of 7 percent. (Indicating)

Then in Greene County, we see actually more population change than we see change in forest cover. (Indicating)

We see a loss of population in this period in Schoharie County, but a 3 percent loss in forest cover. (Indicating)

In Sullivan -- so again, I think local population may be decreasing, but outside

population may be actually increasing. In Sullivan, they're about neck and neck. (Indicating)

In Ulster, more population growth than change in forest cover, and they're about

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matched here. (Indicating)

From this data, it's pretty hard to say that we could predict forest cover change as a function of population growth. In some areas, we could; but in some areas, we couldn't. So it's a more complicated picture than what we might find in the developing world where we almost always find a very tight correlation between population growth and deforestation. (Indicating)

This is the work of Rene Germain, who is a professor in the forestry faculty at ESF and works with local foresters here in the Catskills working on sustainable forest practices. He and his graduate student looked at the change in parcel size by going to the tax records and comparing the change in acreage, size classes, and how many acres in each acreage size class between 1984 and 2000. There is no data base for 1984 except those musty books in the county offices that one has to go through.

So this student spent enumerable hours with the digital tax parcel map provided by the New York City DEP for just the watersheds,

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sat there with the digital maps, went to the books and digitized on screen, removed the lines from a subsample of the parcels. You couldn't possibly do all the parcels, so he selected through random sampling parcels in the entire watershed, and re-created the 1984 map by looking at where the new parcel lines were drawn. You understand? (Indicating)

So what we see in this region, that is typical around the United States, is that the large acreage is the one that makes for the most protective timber industry, are actually acreage in the 100-plus size class is dropping as it is in the 50 to 100, and the 1 to 5, 5 to 10 and 10 to 50 acreage size classes. We actually see more acreage now in those units. (Indicating)

In the next slide, we look at the number of parcels, and again, these -- the 100-plus, we have fewer parcels, and we see a huge increase in the 1 to 5 and 5 to 10 acre parcel size class in this region. (Indicating)

Finally, the study mean shows that the average went from about -- I think it's 17.5

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to about 14.3 over the entire sample data set.

MR. GERSTMAN: I notice that Delaware County is not included. Can you tell us why?

PROFESSOR HALL: Yes. Delaware County is not included because they were not able to

access any records for 1984 -- in the past. So we have the current 2000 records, tax parcel records from the DEP, but there was no data that he could use to re-create the 1984.

This is also, I believe, an inserted slide, not in your packet that I added last night, just to help clarify some things. (Indicating)

MR. GERSTMAN: These are in the Power Point that was provided?

ALJ WISSLER: The CD?

PROFESSOR HALL: This one was only for Greene County -- in fact, it still says that -- but last night I was able to finish for the whole area, so I could print this out.

ALJ WISSLER: It's not part of the CD that you gave us?

PROFESSOR HALL: In the package you have, I believe it shows these results just for Greene County.

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MS. ROBERTS: But was it burned into the CD?

PROFESSOR HALL: No, it was not.

ALJ WISSLER: There is also another page?

MR. RUZOW: The population versus forest change slide.

PROFESSOR HALL: That was also new.

MR. RUZOW: That wouldn't be in the CD either?

PROFESSOR HALL: No, it's not. Those

two things were done because we were still trying to get to them, we hadn't finished them yet, and I finished them last night, and I thought I might as well show them to you because they actually are interesting pieces of information that we had intended to do.

What this is showing us that is really very interesting, is that if you look at the sample data that was, as I said, random sampled out of all the parcel data for just within the watershed, you will see that the change in forest cover in non-divided parcels is less than that in divided parcels. (Indicating)

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So our hypothesis, in fact, that in divided parcels is 50 percent increase over what you see in the non-divided, which supports our hypothesis which was that parcelization leads to fragmentation. In other words, what you're seeing here is a loss, greater loss in forest cover in divided parcels between -- those areas that were parcelized between 1984 and 2000, then you see in the non-divided. That's a very significant finding. I don't think it's been shown by anyone else yet. This is our finding and we -- as I said, it supports our original hypothesis. (Indicating)

MR. GERSTMAN: Could you explain -- briefly again summarize how it supports that

hypothesis and how it's significant?

PROFESSOR HALL: We believe that once land is parcelized, sold off into smaller units, that this probably accelerates the change of the use from forest -- at least from forest use to some other use. Now, from satellite imagery, we can't tell what the use is when land is in forest. We don't know if it's being used for timber extraction, for

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forestry or is simply just, you know, in conservation. I mean a landowner has decided not to do that, but this allowed us to see that forest cover was lost on more land that had been parcelized than land that had not been parcelized.

So we do believe now from this -- it's a 50 percent increase, that there is some acceleration through the parcelization process. It always seemed logical to us, but we didn't really have any evidence to support that until we completed this part of the study.

MR. GERSTMAN: If one were to show that the Crossroads project that we're here today talking about would result in increased secondary growth and the purchase of home sites in this area, your professional opinion would be then that that would also accelerate -- decrease the amount of forested land in the area adjacent to the project?

PROFESSOR HALL: That is our concern,

and that is the Forest Service's concern, is that as more development comes in, there is an acceleration of the parcelization process
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because landowners see the opportunity to sell off their land, and people who are coming to the region attracted by -- whether it's a new resort or a national park or whatever, see a place and fall in love with it, and are interested in having a home there. So that is our concern there.

MR. GERSTMAN: Would you expect that type of attraction to an area to be compounded if you were going to develop, for instance, two hotels with two golf courses adjacent to an expanded ski area?

PROFESSOR HALL: As a professional, I cannot pull a peer review publication out of my pocket and say here is the proof. From my observation in many parts of the United States, I have seen that acceleration once a recreation or resort development has gone into an area.

ALJ WISSLER: So I understand it. If we took various types of recreational nodes, I think was the term you used?

PROFESSOR HALL: Yeah.

ALJ WISSLER: There's no study that would say that a particular use will draw more
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people than a particular other use?

PROFESSOR HALL: None that I'm aware of. I haven't explicitly investigated that literature to look at that. I think it would be worthwhile to do. I can point to one study I'm very familiar with about --

ALJ WISSLER: Sounds like the basis for another grant.

PROFESSOR HALL: Exactly. Another study though, the one in the West showing that National Parks definitely have accelerated the deforestation/development pattern. Every National Park gateway around the West.

MR. GERSTMAN: We will try and provide that study for you, references for you, Judge.

We also have in our -- both in the New York City DEP offers of proof, the Attorney General's offers of proof and our own, have suggested that secondary growth impacts of this project are much more significant than have been evaluated in the DEIS, and we will be exploring that further in connection with our cumulative impact argument.

PROFESSOR HALL: This is just to show you the towns that were included in the tax

parcel analysis, so you see that primarily within the watersheds, and this was DEP provided. (Indicating)

We also then looked at the ownership statistics looking at that same database, the tax parcel database, and we found that in the privately owned land, that 444,000 acres are

owned locally versus 482,000 that are owned by people whose home address listed in the data base is outside this region, as far away as Japan. So you see that the number of parcels is greater for local owners, but the actual acreage is larger for those from outside the area.

ALJ WISSLER: Do you have those kinds of statistics for other years?

PROFESSOR HALL: No, we only have it for these two because that was part of that very laborious process. There is no digital record of ownership of land of tax parcel boundaries except from 2000, and from now on, counties will be updating that information digitally, but before this database was created, there was nothing digital.

ALJ WISSLER: So we're not in a

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position at this point to suggest what, if any, trends exist?

PROFESSOR HALL: We have two points in time. Possibly, since we're already at 2004, we could do some of that.

The public land excluded from the analysis is shown in this map, just so you're aware that this was not included in our analysis, except to look at distance from it to see if that was important to determining where people have settled.

MR. RUZOW: This is city and state

lands?

PROFESSOR HALL: It does not include private conservation easement lands.

MR. RUZOW: Land held at that point in time in title by the state and the city?

PROFESSOR HALL: I don't know the word "entitled."

MR. RUZOW: No titled.

PROFESSOR HALL: Owned by.

MR. RUZOW: Owned by, that means they have the fee ownership --

PROFESSOR HALL: Yes.

MR. RUZOW: I'm trying to understand,

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Marc, to tie it into Mr. -- from Catskill Center's future accusations by the City or things in the pipeline. I'm trying to understand.

MR. GERSTMAN: These are owned as far as I understand.

PROFESSOR HALL: We only have this data because it was provided to us by the DEP.

This is our final rate then that we used based on what we saw in those two points in time. (Indicating)

ALJ WISSLER: Did we miss a slide?

MR. GERSTMAN: In terms of rate of development of divided versus non-divided parcels within the New York City Watershed?

PROFESSOR HALL: That's the one that we just saw a few minutes ago, now been completed for the whole region. I had moved

it to there. And it shouldn't say in Greene County, this is for all, the entire region. (Indicating)

MR. GERSTMAN: So the Greene County is subsumed within these statistics?

ALJ WISSLER: You're going to provide copies?

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MR. GERSTMAN: Yes.

PROFESSOR HALL: This is for all counties.

MS. BAKNER: All counties but Delaware; right?

PROFESSOR HALL: Right -- yes. Yes, because we didn't know what was parcelized in Delaware exactly. Thank you very much.

So this is just the numbers that we used in order to be transparent -- you can't see them, so it's not very transparent -- but these are the percent of private lands in forest. When we get to 2001, the satellite image, 77 percent of private lands are in forest. Each county is different. We project out by county, we did our analysis by county, and then we get to 2011, and we show that 66 percent of private land will be forested simply based on the rate of change that we observed between `92 and 2001. It's linear, because we had no other data to fit a trend line to. (Indicating)

Again, as part of this additional work

that we're hoping to do, we're hoping to have at least four points in time to analyze the
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change in the region before we start talking about changes in water quality. But we still feel that it's perfectly acceptable to project only ten years into the future by back-casting ten years, that that's not an unlikely -- that the difference in the scenarios will not be much different.

ALJ WISSLER: This also assumes that the economics of the area remains constant too; in other words, I think when you began your presentation by suggesting that people are ultimately driven by appropriate economic choices. So we chose flat land by the river because that's easier to till because that's economic demand. So this also assumes that the economic demand remains constant and does not diminish?

PROFESSOR HALL: And even more than perhaps the local economics, the state economics, New York State. That was certainly a boom period from `92 to 2001. If we are right in assuming that a lot of the economic activity here is driven by people coming from outside and the infrastructure and services to service that group of people, then we are
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assuming it is more than just local economy, that it's state economy.

How the model works. The model begins

with a Time 1 land use map, 1992. We look at each of these spatially distributed factors, like distance from local roads, distance from secondary roads, distance from growth nodes, slope of the land, elevation of the land, a whole variety of factors that you'll see, and we run each one through a calibration procedure that looks at how much in each category of, let's say, distance from roads has been developed. We always find that the first class within the first distance interval from roads has the most development in it. That's always true everywhere in the world. (Indicating)

Then from that, we create a map that we call the likelihood map. Some people in the conservation community call it the risk map. Some people in the carbon world call it the opportunity map. So it's the map that allows the model to pick based on the weightings that it determined here on the past where people had developed the land to pick

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the next cells in succession on the map to project a time to map. When I say cells, satellite imagery senses the ground at about a 30-by-30 meter resolution. So these maps are really grid cells of rows and columns, each 30 meters in width. (Indicating)

So then we go through the validation procedure. We look at the simulated map and

compare it to the actual map of 2001, and see how well we did by analyzing the Kappa statistic. The Kappa statistic is complicated, but not very.

Basically what it tells us is how much better did your model do than throwing random darts at the map. It's a mathematical calculation that's been developed, used a great deal in the spatial analysis world. But it's important here because if we simply use percent correct, you get a whole lot of cells correct simply because there is a -- because of inertia, I guess. There's a whole lot of the map that's not going to change anyway, and you're going to get that correct. If you have very little change between two points in time, you can get a very high percent correct, but

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you can really miss a lot of the actual points of change. (Indicating)

So we used the Kappa because it is a better indicator to tell us how much better the model did over what we call a random model, which would be like throwing darts. This is our calibration map for `92. (Indicating)

This is the validation map for 2001. (Indicating)

Here is how the model calibrates. This is a new slide. I put it in last night because I thought I didn't know how you would understand unless I gave you some example.

This is for one of the counties. This is looking at distance from what we call urban areas, areas that in the `92 map were in residential, commercial or industrial in that map.

We see that in the first distance class, we have about 27 percent developed, and it just goes down very nicely as you move away from those areas. (Indicating)

This is another example, distance from local roads. Again, you see quite a clear

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trend, and there is -- there were none of this in those classes. There were none of these classes in this particular county.

Now, what it does then when it creates that likelihood map that the model uses for picking, is that it gives for every cell that's still in forest that's in the first distance class from roads, it gives it a 22.

ALJ WISSLER: Excuse me, what would be a distance class?

PROFESSOR HALL: I believe -- I would have to look at my report, but I believe that the distance class for local roads was 300 meters for each class, something like that, but it's in our report. I can't remember all the details. These were probably also 300 meters, but the local roads were much more dense than what we would have called urban areas in some of these counties.

I put this in, this was distance from ski areas. This was a much less powerful predictor than something like this because it's kind of random. One of the reasons that distance from ski areas didn't give us as high a correlation as we thought we would get, is (FOREST IMPACTS ISSUE)

that, remember we include in our analysis a lot of highly developed areas in Ulster and Sullivan County that are a long way from ski areas, and they are sort of overwhelming the analysis in terms of where the majority of land use change is going to occur in this large rectangle that we analyzed. (Indicating)

If somebody would pay us to go back in and look at distance from ski areas in a smaller window, we might see a high correlation as we zoomed in closer to areas where ski areas are located. If I show you on another map, you'll see again how there's a preponderance of the development in -- the window that we windowed out is in areas outside the watershed. The preponderance of it.

MR. RUZOW: You'll supply us with a copy of this as well?

MR. GERSTMAN: Yes, you'll get all this.

PROFESSOR HALL: This is actually how it works. These would be distance classes of -- from what we call urban areas or

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urbanized areas; really it's developed areas. It's from anything that was classified as developed.

So distance from developed areas, this is the map. Then the program goes in and says -- comes up with those charts we just saw, and then it assigns those numbers to each forested cell. So the black areas are lands that are -- you know, have very little likelihood or are excluded from the analysis or are already developed -- and areas in this green are the areas most likely to be developed as we move down the roads. You see along Route 28, some of this green, and you see, of course, a lot of it down here in Ulster County, just based on one factor, one factor. We do this for each factor. Here is another one. (Indicating)

Here it is for local roads, and you see what I mean about how dense the local roads are, so there aren't nearly as many classes, but probably the same distance class. And here -- here it's saying that we used 150 meters in the first class, 250 -- 250, 250 meters in each distance class for local roads.

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(Indicating)

Then we have how it weighted the landscape. Remember, each county is being analyzed individually in the model. So the

weightings are different by county. Then the model goes in and, by county, selects which cells to change to non-forest for 2001. (Indicating)

Then we do the validation procedure. I don't even remember if this is zoomed out from this project or another project, but this is just to give you an example of what the map might look like when we zoom in. So the green would be everything that's simulated as forest and, in fact, is forest in the validation period. (Indicating)

The light green is something that the model simulated as non-forest, but in fact was still in forest. (Indicating)

The yellow is simulated as forest but in reality is non-forest. (Indicating)

And finally, the red is simulated as non-forest, and it really was non-forest in the validation period. (Indicating)

What happens is that if you analyze

pixel by pixel, we call them, these 30-meter cells, pixel by pixel, the validation procedure is very harsh because you might have come close, 30 meters off in your simulation, but you're penalized because you're 30 meters off.

So there are other methodologies developed now that allow you to expand the window of -- for close hits or close misses because there is, in fact, in spatial

analysis, a thing called spatial autocorrelation; that things that are close together tend to be alike. So what one study has shown in Massachusetts in the Ipswitch Watershed was that -- their modeling efforts there, but they only used two factors, really couldn't get -- at 1000 meters resolution, which is one kilometer, they are very high validation statistics. But as they move down to 30-meter, they actually did better with the random model than with the actual model because we don't have data that corresponds to 30-meter resolution satellite imagery. Our data is generally of a much coarser resolution, so trying to match these two

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scales makes this procedure difficult. (Indicating)

The statistics, I'll show you. If we had expanded and said: Okay, we said this would be non-forest here, but right next-door it was, would look better if we had used this other procedure. But we didn't, we took the course of most penalty in the model. (Indicating)

We have now all of these factors that we analyze. Just follow with me. Don't try to read it all. You'll just go nuts. We looked at population density, distance from these developed nodes in the `92 map; elevation, population over 65 from the census

data, distance from state lands, distance from local roads, distance from agricultural land, slope of the land, distance from secondary roads, distance from ski areas, owner-occupied housing, distance from primary roads, distance from bodies of water, distance from Route 28, distance from New York City.

Aspect, that is which way the land faces in terms of the sun. Distance from -- this is from rivers, and finally, the effect,

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whether anything could be determined by looking at which watershed basin the development occurred in. (Indicating)

There are two ways you can run the model. This is that Kappa statistic I'm talking about. So these are ranked right now in order of importance by these Kappa statistics. What this side is versus this side is that the model was written to run two ways. You can either say: Okay, now you have this likelihood map, and the model can go and pick all the high value cells on the map, and then you do the validation. Or you can say to the model: You can only pick high value cells within a specified distance of already developed areas. (Indicating)

Because in some locations, we'll find a salt and pepper kind of development; and in other areas, we find a sprawl kind of development, so the model is written to test one and the other, and see how well it does in

validation.

So we did much better in this region with the sprawl. Although we have some salt and pepper development, the overwhelming

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abundance of development happens close to land that's already developed. That's an important factor, I think, to take with you today. (Indicating)

Then we broke it down by county. So of all these factors, those top five that you saw in the last slide for the entire region, distance to developed areas, elevation, slope, distance to local roads, and secondary roads were a top five factors for the whole region, but each county sorts out a little bit differently. (Indicating)

Now, you may say, well, there's hardly any difference between 90.8 and 90.59. And one of the reasons that I think that is happening is that almost -- so many of these things are also correlated with that topography factor that dates back to the history of this region, which is where the primary development occurs in the river valleys at the lower elevations and on the flattest land. (Indicating)

So we have a high correlation among some of these independent drivers, but the important thing is that even though they seem

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close, when we got below -- when we added a sixth driver to these five, our results began to drop off. So none of these alone could produce what these five could.

Even population density, which was close to secondary roads -- when we added it to the model, it caused our validation statistic to go down. So that was true for each county, and we used the five factors in each county that gave us the best validation compared to the 2001 map. (Indicating)

I want you to notice, people often do, they say why would the distance from Route 28 be the most important factor in Sullivan County, since Route 28 doesn't run through Sullivan County? But it's because everything that's there -- you remember those graphs where things kind of went like this, or for you it was like this, everything -- the development there is all in the far distance classes from Route 28, so it actually served for some strange reason as -- gave the model ability to pick the right cells, those that were in Sullivan County farthest from Route 28, and then approaching Route 28 as you

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went northward, but that's how it worked. (Indicating)

Based on that analysis, those five factors for each county, this is the final statistically derived, best driver combination based on testing of each factor, each

combination of factors between `92 and 2001, and I zoomed in just to show you here, this is the project, Big Indian here, and Wildacres here; and you can barely see, but they're outlined in white.

So this is the likelihood map. So the red are the areas of high likelihood of development, depending on how fast development occurs. Yellow is the next class, and then green is the least likely. And the black is all the area that's already developed or excluded, so they're not candidates for change. (Indicating)

This is zoomed into a 10-mile radius, and I guess I added this and zoomed in even closer so that you can see that we show almost no area as having likelihood for development on the east side; but on the west side, we have considerable area that is likely to be

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developed. (Indicating)

We now -- want to just show you -- this is a visualization of the simulated results. I hope you can see it. The pinkish land is developed land, the brown is the protected areas, publicly-owned land, and then the green is the forest. Should I run it again? It's 2001 to 2011.

MS. ROBERTS: This is all assuming that the project is not going to be built?

PROFESSOR HALL: This is what we call

our baseline analysis. This is what we projected would happen in this area based simply on the rate of change and the location of change and the important factors determining that in the -- from `92 to 2001.

ALJ WISSLER: This is on the CD?

PROFESSOR HALL: I don't know if we burned this on.

MR. GERSTMAN: It is, yes.

PROFESSOR HALL: I zoomed in just because I thought from whole huge region, you couldn't see much about what we thought would happen in this region; but the model shows this for `92 and 2001 and 2011. Then this was another view. And there is some development projected for 2011 in here. (Indicating)

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MR. RUZOW: I think that's reversed. If you look at the slide, it's either upside-down or backwards.

PROFESSOR HALL: It's looking south. The top is south. I went around to try to get a better view. You can joystick the maps however you want them.

MR. GERSTMAN: So would you identify where Route 28 is on the map?

PROFESSOR HALL: Route 28 is here. (Indicating)

MS. BAKNER: This is baseline, you said?

PROFESSOR HALL: This is baseline. This is without any impact considered from the

project.

This is a summary of the -- just the -- again, you have seen this rate already down here. Summary of the rate of change in just the private forest land, going from a total of 77 percent to 66 percent, and for the entire region, we projected a loss of total forest of around 162,000 acres. I'll show you

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a slide that I put in at the end that summarizes what that means in terms of total forest cover. This is -- the rate you just saw was for just the private forest land, to consider how much forest for the whole region if you include the publicly owned land and the reforesting land. I'll show you that in a minute. (Indicating)

What does this mean in terms of fragmentation? The rate we projected, and the simulations that we have run, show when we calculate what we call the forest continuity index, which is an estimate of fragmentation in the forest -- is that simply using the business-as-usual scenario, we would go from a fragmentation index of 187, that's the area of forest blocks, of contiguous areas of forest divided by the perimeter of those blocks.

2001, it went to 150, and under our baseline projections given as, your Honor, you mentioned, given the same kind of economic development, which it has to be assumed if we

only use that time period, would go to perhaps 104, which means that we have almost -- landscape almost twice as fragmented as we had
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in 1992. (Indicating)

Then this is summarizing the county results for private forest lands from `92 to 2011. So we see the sharpest decreases in forest cover in Delaware County and in Ulster County empirically, and also in our simulation. (Indicating)

Then looking at the total forest per county, which includes public lands and reforestation in acres, we see, again, the sharpest declines in Ulster County and in Delaware and in -- in the Schoharie, we see very little change in terms of acres of loss. So that's summarizing for you by county. (Indicating)

I have added these conclusions. I felt it was necessary, and I just want to read it to you: "Our conclusions are that the -- based on our analysis so far -- development in the Catskills appears to be driven in some areas, but perhaps not all, by the increasing number of non-local landowners desiring a piece of rural forested America based on our analysis of ownership patterns; and the establishment of the facilities and services
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to support that weekend/vacation time population. In the five counties that

surround the heart of this region, the most important biophysical factors that explain where people select for development are elevation and slope. The socioeconomic factors are distance to already developed areas showing a tendency to cluster, population density and the economic infrastructure of roads."

MR. GERSTMAN: Let me interrupt you for a second. Your conclusion suggests that the biophysical factor that's significant for development of this region are both elevation and slope. How do you -- can you explain that further?

ALJ WISSLER: Those are the five elements you referred to before; right?

PROFESSOR HALL: Those were the five factors that gave us the highest validation between our simulated 2001 and the actual 2001. And as I said, I think there's a big imprint on this landscape from its entire history of settlement on the flattest land and in the river valleys, and at the lower

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elevations. And that was borne out by this analysis.

We could not analyze that land that had changed between `92 and 2001, and look at where that development has been occurring because that would be cheating. Now, it would be very interesting to do; but as I said, in

the good modeling procedure, you have to take data from -- you cannot take data from your validation period and use it to calibrate a model, that's a circular thing, and you would be cheating. So we only looked at the development up to `92, where it was located.

We would love now to get a 2004 land use map and just calibrate the model based on that change that happened between `92 and 2001 and see where that -- what factors are explaining where that change has occurred, and then validate against a 2004 image. That would be very, very interesting, because I think, based on the satellite imagery, when you zoom in and look, there's much more sprinkled development happening between `92 and 2001.

Again, we would speculate that in an

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energy-subsidized world, unlike our grandfathers or great-grandfathers had, people are willing to spend the money to put in a road going up a mountain, and you will find more and more homes on the mountaintop. And certainly that's true as I've flown over quite a few times in the region, you would see homes in locations that you might never have seen them back in the early 1900s.

Our further conclusion is that given the rate and pattern of fragmentation detected and projected, plus the evidence that parcelization accelerates fragmentation, the

future of forestry in the wood products industries in the Catskills could be impaired in the near future without judicious land planning efforts on the part of the community who share a stake in the forest economy.

MR. GERSTMAN: Is there a point at which population density, again, including local residents and also second homeowners, is there a point at which population density essentially bottoms out the opportunity to use land for forestry?

PROFESSOR HALL: There are a number of

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studies that address that; one I have here by David Wear, in which their findings show that somewhere between 20 people and 70 people per square mile, that timber industry shows a decline in its ability to thrive.

MS. BAKNER: Can you spell Wear?

PROFESSOR HALL: W-E-A-R. And I have another paper, too, that talks about that. So somewhere between 20 people and 70 people per square mile.

Now, the counties in our region -- but remember, we didn't analyze the full county, and there's a very large difference in these counties between the really heavy population centers, and as you move towards the center of the Catskill Park, let's say -- but in Schoharie County, the population density in the 2000 census was 49 people per square mile;

in Greene, 69; Ulster, 134; Sullivan, 67; and Delaware, 33. (Indicating)

Certainly in certain areas of those counties, I think you would say that there's no likelihood of forest extraction, timber extraction, but as I said, each of those counties -- to use those numbers is a bit --

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the population is not evenly distributed over that whole area. So you would have to analyze the less populated areas to find out what the population density is in those, and that can be done using the census data. (Indicating)

So I added that, furthermore, our projections of loss of forest cover, fragmentation, we projected for each watershed -- this percent decline in forest cover, the largest being in the Cannonsville, and also quite strong in the Pepacton, and I know the other water -- the other reservoir that's affected by the project, I believe, is the Ashokan, less pronounced, in fact, much less pronounced, the effects there based on our study of using just baseline statistics. (Indicating)

I then prepared this imagery just because I thought it would be another useful view for you looking at the `92. I hope you can see the little rusty brown is the developed land. Here is the proposed project. (Indicating)

MR. RUZOW: Is this in the CD?

PROFESSOR HALL: Yes. This is 2001,
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and this is 2011. We'll go back and do it again. Then we will -- I'll show you something else interesting, another effect of forest fragmentation that is of concern; in this case, it's the nature conservancy has delineated these forest matrix blocks which they have determined are important to the preservation of biodiversity in this region because they're defined principally by large areas of intact forest, as well as the fact that no roads run completely through them. (Indicating)

When we look at our 2011 results, the blue is the state- and city-owned land, that was non-candidate for forest change in the model; and the green is land that we projected would still be in forest; the rusty brown is land that's likely to be developed based on the past 10 years, and this is a delineation of the project location which sits within one of these areas. And also, as you can see from the projections, is a rather significant area of land. (Indicating)

MR. GERSTMAN: The Nature Conservancy blocks that you were identifying in a previous
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screen are identified here by the red outlined areas?

PROFESSOR HALL: Yes, this is just

zoomed in closer to the proposed development just to show you where their boundaries are.

MR. RUZOW: Can you just go back to the prior slide for a second?

PROFESSOR HALL: Sure. They have identified seven areas as -- of significant importance to biodiversity preservation in this region. (Indicating)

Then this slide is not included. You can have it. I put it in -- I really wasn't going to show it. I put it in in case anyone asks because I can't remember all these numbers, but this is just various ways of looking at the forest cover in this region from `92 to 2011; and I have to zoom in, but we showed -- if you want to look at total forest cover, including the already set aside lands and the reforesting land, the whole region was 87 percent forested in 1992 and -- each of these -- and those two -- so from 87 to -- can anyone see that?

MR. GERSTMAN: No.

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MR. RUZOW: No.

PROFESSOR HALL: Just a second here. 76.

MR. RUZOW: Is that the whole county or just the portion within the watershed?

PROFESSOR HALL: Of the area that we analyzed, if you include our projections and you include all the existing protected land, that's taking into account no future set aside

forest because we have no idea what it will be, and the land that's reforesting, it went from 87 percent in `92 to 76 percent in 2011. Assuming a business-as-usual scenario.

That's it.

MR. GERSTMAN: Given what you know about the project and your hypotheses as you framed them on page 13 of the handout, what would you expect the result to be in terms of forest fragmentation and parcelization in the vicinity of the proposed project?

PROFESSOR HALL: On the private forest lands which was our concern in this study, I would expect, based on a number of things that we have analyzed here -- one, because we saw a preponderance of development -- we got better

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validation statistics when we -- when the model selected cells for development that were close to a land already developed -- I would expect that we will see more development close to any nodes of new development.

Number two, I would expect, given the fact already that this area is highly attractive to people from outside the region based on our analysis of the ownership statistics within the watershed, that people will be attracted to the resort, which is good for business, but will probably be enticed, as was Mr. Houshman in the article that we showed from the New York Times, that there are a

certain number of people who will be roaming the real estate offices and looking for land to develop, and that that will in fact accelerate the process of people selling off their land or parcelizing their land when they see an opportunity to sell it to interested people who will be coming here in greater numbers attracted by the development.

MR. GERSTMAN: As you said, the increased rate of parcelization will result in the increase in fragmentation of the forest?

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PROFESSOR HALL: And we've also shown that conclusively, there's about a 50 percent increase in fragmentation on divided parcels over land that is not divided.

MR. GERSTMAN: In your evaluation of this issue, have you found that the demographic of people who own second homes and the large amount of acreage owned by people outside the area to be unique in this area? I have no way of judging. To have the use of the tax parcel database is an amazing gift to be able to analyze that, and we don't have that.

In our Thames Watershed study in Connecticut, we did not have tax parcel data that we could evaluate in terms of addresses of owners. But let me just say, in our meetings with people there, the preponderance that people there told us -- that the preponderance of people there were people who

were willing to commute now two hours to Worcester, to Portsmouth -- not Portsmouth -- in Rhode Island -- Providence, Rhode Island, and even to Boston; whereas, here when we met with people here, they were talking right from

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the beginning about the fact that they knew a lot of the land here was owned by people from outside. So that's just anecdotal evidence.

MR. GERSTMAN: May I have one moment?

ALJ WISSLER: Yes.

(11:30 - BRIEF PAUSE.)

MR. GERSTMAN: Judge, do you have any questions for Professor Hall?

ALJ WISSLER: No. I'll need a revised Exhibit 67.

MR. GERSTMAN: We'll print the entire new one.

ALJ WISSLER: And I'd like 67A to match your revised 67.

MR. GERSTMAN: We'll do printouts -- we'll provide a new CD, and we'll print out a new hard copy.

ALJ WISSLER: Okay.

We'll take a break here for 10 minutes or so.

(11:31 - 11:43 A.M. - BRIEF RECESS TAKEN.)

ALJ WISSLER: Applicant's 57 and 58.

("THE EMPIRE STATE'S FORESTS -- TRENDS IN A ROBUST RESOURCE" RECEIVED AND

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MARKED AS APPLICANT'S EXHIBIT NO. 57, THIS DATE.)

("POTENTIAL IMPORTANT BIRD AREA MAP - 6/28/04 RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 58, THIS DATE.)

ALJ WISSLER: Mr. Gerstman, I believe you had a couple more things you wanted to put in the record.

MR. GERSTMAN: Yes, thank you, Judge.

First we will submit for the record the two articles that were referred to by Professor Hall in her presentation. The first is the "Effects of Population Growth on Timber Management and Inventories in Virginia," and one of the authors is David Wear; and the second article was an article -- publication and study done by Dennis Swainson, having to do with the "Impact of Development on Forest Parcelization and Forest Fragmentation."

Professor Hall, you wanted to talk about the two further issues you wanted to just to clarify the impacts locally of this project.

ALJ WISSLER: Are you going to put those in evidence?

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MR. GERSTMAN: Yes.

ALJ WISSLER: The Wear article is 68. You just have a couple questions, and then we'll mark them. And 69 will be the second article.

MR. GERSTMAN: That's fine.

In terms of the issue of population density in Delaware County, can you comment on that issue?

PROFESSOR HALL: I think that it wasn't completely clear that we do not see a correlation between -- we see a high correlation between population growth and changes in forest cover, forest fragmentation in Ulster County, which is where part of this project is located. In Delaware County, we saw absolutely no correlation between local population growth and forest fragmentation. So we were led to believe that, based on our ownership statistics, that it's being driven by people coming from outside the area and developing second homes, particularly in that region.

Also I would say that, because we included in Ulster County, an area of both

very high population growth and development, and then also regions like up here which are much different from that which you would find down in the Hudson River Valley, we might find if we zoomed in to just the more local part of Ulster County, we might find there, too, a disjunct between population growth over time and forest fragmentation, but that part has not been done.

MR. GERSTMAN: How would you

characterize the potential impact on community character which would result from accelerated forest parcelization and fragmentation?

PROFESSOR HALL: Our concern when we started this, and the concern of the Forest Service and their willingness to fund us in this, was very much the fact that they are concerned about the loss of timber as an economic -- as being a viable -- the timber extraction and wood products industry no longer being economically viable in the United States due to these processes of fragmentation and parcelization.

When we talk about the loss of the working landscape, we talk about the loss of

the local economy, and we talk about, basically changing the whole character of a region from one that draws its livelihood, a great deal of its livelihood anyway, from the natural resources that are there to one that is based on entirely something else when you begin to have more and more development.

MR. GERSTMAN: You have heard me allude to Mr. Alworth's characterization of the forest in this area as the golden egg. Would it be fair to characterize the project as -- sort of an analogy -- that that would be the way of -- what's that expression, something about killing the goose that laid the golden egg.

MR. RUZOW: Your Honor, this is silly.

ALJ WISSLER: Yes. It's something you might want to brief.

MR. GERSTMAN: I can brief. In terms of forestry-related industries, would you also include, for instance, the use of the forest for outdoor recreation as part of that characterization of the community?

PROFESSOR HALL: I think that that is certainly one of the functions of the forest,

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and certainly one of the functions of the U.S. Forest Service, it's not simply interested in timber extraction, and we, at the forestry college, are not just training people how to be good foresters but also how to maximize the use of the forest for all kinds of purposes, including recreation.

So, yes, the forest -- and also of course we train people in wildlife management as well. We see forests as very important to the livelihood of our country, and also to the restorative service that it provides to people.

MR. GERSTMAN: You talked about the study and the acceleration of second homeownership, the use of the area by retirees with the development of the type of resort that's envisioned here, and the secondary growth that might be associated with it. Could you explain what that study -- I'm not sure if it's the Swainson study or another

one -- can you explain what that study concluded with respect to the attractiveness of an area for development of that nature?

PROFESSOR HALL: Well, Montana, I

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believe its title is: "Northern Rocky Mountain" -- I'm sorry, I don't have it here, but what he does is he looks at national parks in particular in the Rocky Mountains as nodes attracting people, first of all, for the aesthetic qualities that are there, and that as people are exposed to this, they come in and develop hotels and resorts, and then that retired people -- people retiring also see these -- there's some momentum in development as desirable places to live because they would have more of the services that might not have been there previous to development.

So it's a -- there seems to be a snowballing effect is what he points out in areas of natural beauty, and that eventually, even the people in the Chamber of Commerce who you think would have been very interested in promoting development, begin to feel that it's actually a negative because all of the aesthetic beauty that was there at one time is destroyed. And then there seems to be less attraction to people from outside.

So it's kind of a circular thing that happens. It's not -- you know, it's good for

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a lot of people in terms of -- especially

people in the building industries -- that seem to especially like the fact that there is development going on in the area, and that's understandable; but basically our concern in our study is once you pass a certain threshold of development and parcelization of land, you're just not going to have a viable timber industry any longer.

And if you look at a map of the United States, there are not a lot of timber-producing areas in the country, and timber imported from abroad is going to get more expensive because oil is getting more expensive.

MR. GERSTMAN: Would you say that the conditions that were present that led Mr. Swainson to his conclusions concerning the northern Rocky Mountains are the same types of conditions that are present in the area surrounding the vicinity of the proposed Crossroads development?

PROFESSOR HALL: They're almost identical with respect to Whiteface Mountain Ski Area, north of Kalispell, Montana -- was

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once a sleepy little ski area, and now it is an absolutely booming development of condominiums, golf courses, time shares, second home and box stores lining a four-lane highway going up to it; and that's all happened basically within 10 years.

MR. GERSTMAN: Judge, any questions from Professor Hall?

ALJ WISSLER: No.

MR. GERSTMAN: Thank you, Ms. Hall.

ALJ WISSLER: 68 and 69, why don't we put those in.

MR. GERSTMAN: We don't have 69 here. 68 would be -- 68 would be the Article entitled, "The Effects of Population Growth on Timber Management Inventories in Virginia," and David Wear is one of the authors; and we will provide copies as soon as we are able.

And the Swainson article concerning the northern Rocky Mountains would be Exhibit 69, and I don't have that with us here today, but we will provide that.

("THE EFFECTS OF POPULATION GROWTH ON TIMBER MANAGEMENT AND INVENTORIES IN VIRGINIA" - DAVID N. WEAR RECEIVED AND MARKED AS CPC (FOREST IMPACTS ISSUE)

EXHIBIT NO. 68, THIS DATE.)

ALJ WISSLER: Mr. Ruzow, Ms. Bakner.

MS. BAKNER: We're ready. The first exhibit that we entered was Applicant's -- I'm referring to 58; and I would like Mr. Kevin Frank from LA Group to please describe how this document was created.

MR. FRANKE: Basically what we have done is we've taken CPC 49 that was submitted as part of Dr. Burger's testimony, I believe it was last week or the week before, particularly the bottom portion of CPC 49, and

what we've done is we have overlaid that on top of recent aerial photography of the area, and just indicated some points of reference on the map, as well as areas of fragmented forest within the area put forth by Dr. Burger as an Important Bird Area, for the primary reason being it represented a large area of unfragmented forest.

MS. BAKNER: Could you run through some of the things that you have tagged here.

MR. FRANKE: Sure. For reference, we have indicated the location of the Pine Hill wastewater treatment plant, Lost Clove Road,

as well as the Turner mansion at Belleayre Highlands, which we stopped at during our site visit. (Indicating)

In terms of other labels on there, the Belleayre Mountain Ski Center is shown, as well as the former Highmount Ski Area, which is on the project site, as well as some open field areas off of old Baker Road which is a road off of Rider Hollow Road to the southwest -- south/southwest of the project site.

Actually by showing these, it indicates that the area shown -- at least in the vicinity of the project site -- certainly is not unfragmented forest. (Indicating)

MR. GERSTMAN: I'm sorry, I can't hear a word you're saying, Kevin.

MR. FRANKE: The figure obviously illustrates that the area previously shown on CPC 49 is not an unfragmented forest, particularly in the immediate vicinity of the project site.

MS. BAKNER: Kevin, if you could go here to the figure that's included in the Draft Environmental Impact Statement,

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Figure 2-5, and just indicate for the record what that figure shows, particularly in relation to roadways, areas to be developed, et cetera.

MR. FRANKE: DEIS Figure 2-5 illustrates the project assemblage which is the entire lands of Crossroads Ventures, and what's shown on Figure 2-5 within this assemblage are the lands proposed to be developed which are shown -- this brownish gray. Shown in green are those portions of the project assemblage to remain undeveloped. (Indicating)

This is on a USGS base map which includes the roads that we've traveled on as part of our site visit, including Woodchuck Hollow Road near Belleayre Highlands, Lost Clove Road to the southeast of Big Indian Plateau, as well as County Route 49A, Todd Mountain Road, very western portion of the -- Wildacres portion of the project site. (Indicating)

MS. BAKNER: Kevin, can you point out

what's known as the former Adelstein parcel on the western side --

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MR. FRANKE: The Adelstein parcel is the westernmost portion of the project site. We actually passed it on the eastern side; part of our driving tour, we stopped to look down the power line right-of-way. Dr. Kiviat was interested in seeing that.

So it would have been on our right-hand side as we proceeded up County Route 49A where we made the turn, came down Todd Mountain Road which essentially runs through the Adelstein parcel. (Indicating).

MS. BAKNER: Thank you very much. I'm sorry. Kevin, the areas that are in tan there, as opposed to the areas in green, what do the areas in green represent?

MR. FRANKE: The areas in green represent those areas to remain undeveloped, and as part of the project will have some kind of permanent preservation associated with them, be it conservation easement or other similar protective measure that will preclude future development on this assemblage of various tax map parcels.

MS. BAKNER: Can you point out where the former Highmount Ski Center is; it's hard

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to see that that is, in fact, tan but it is.

MR. FRANKE: It's not shown in tan

because it's not proposed -- no more existing development is proposed except for the very base area. The ski slopes are actually in this area here. (Indicating)

MS. BAKNER: So that's, in fact, not going to be subject to a conservation easement?

MR. FRANKE: That would not be. Maybe portions of it, but not the entire area.

MS. BAKNER: I just wanted to point that out since it could be misleading.

Kevin, in light of what the aerial photograph shows here, do you think that the methodology used by Dr. Burger was particularly effective at identifying unfragmented areas --

MR. FRANKE: I think the precision on the mapping could have been much greater than it was, possibly --

MR. GERSTMAN: I'm sorry. I know you're talking that way. I can't hear.

MR. FRANKE: I'm sorry. No, I don't. I think the precision of the mapping could

have been higher. Obviously there are other sources out there that clearly show the nature of the landscape more precisely than possibly the mapping that Dr. Burger had used.

MS. BAKNER: Was it hard for LA Group to come by this aerial photo?

MR. FRANKE: No, it's publicly available information.

MS. BAKNER: We have also introduced today Applicant's Exhibit 57. Can you explain where you found this?

MR. FRANKE: That, I found on an Internet search, probably within an hour's worth of time yesterday. It's a USDA Forest Service report, the New York State's Forest and Trends in Forest Resources within New York State.

MS. BAKNER: This is Applicant's Exhibit 57.

I just want to direct you to the first page of the report. I would just note for the record that it indicates, sort of consistent with the history of the Catskills: "That throughout New York, by 1880, most of the forest land was cleared for agriculture,

leaving only about 25 percent of the land in forest." Then it notes that the 1993 inventory shows 62 percent of the land in forest, and it remarks that: "In view of the population growth and development that has taken place since colonial settlement began around 1625, the present level of forest cover is remarkable."

The other thing I want to draw your attention to is the top of the next page where it says that: "The New York forest is a regrown resource. In fact, the New York forest today is 23 percent greater in area

than it was in 1953. Today, after decades of large increases, there are more acres in forest than at any time in this century. But in recent years, the amount of the New York forest has been fairly stable."

I'm sure, your Honor, that you can go ahead and read this on your own. Below, it specifically refers to the significance of state-owned preserve land within the Adirondack and Catskill Parks, noting that it is reserved from cutting, and the impact that has on the availability of timberland for

commercial purposes.

It also notes that timbering depends on private landowners, and it talks about the volume of timber increasing, and this is under large volume increases and larger diameter trees; saying that between 1980 and 1993, the total growing stock volume rose by 32 percent.

The reason -- I'm sorry, on the next page, I just want to direct your attention to the top 12 species. It's a little bar chart. We have -- I just want to note that we have American Beech at 24 percent. And I note that in relation to its occurrence on the site; beech, maple, those are very common, apparently given the total billion cubic feet in the top 12 species.

The point of bringing this here today is to show you, your Honor, that unmodeled but collected data obtained by the Forest Service,

even though it admittedly dates from 1995, shows a substantially different picture than the satellite imagery that this study that Dr. Hall has been talking about relies upon. We just want to note for the record that satellite imagery apparently has its

limitations in terms of modeling, and accurately predicting, or even seeing what's on the ground at any one time.

The biggest impact in the Town of Shandaken is clearly the ownership by the State and by DEP of property, particularly in more recent years and continuing into the foreseeable future, New York City DEP ownership of property is going to have a big impact on what's available to whatever forest industries continue to exist in this area.

Similarly, the documentation that was provided earlier by the Coalition demonstrates that there's quite a bit of acreage within the town or nearby the town that's slated for further protection as open space, presumably rendering that property also unavailable to the timber industry.

In Dr. Hall's recitation of her study, and all the new information that was presented today, she went into detail on how they looked at ownership records. Based on her testimony today, it doesn't appear that the ownership records would have covered a number of

critical issues. One is the recent
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acquisition of land by DEP in two methods, outright fee ownership which can take as long as a year to go from having a land contract to actually transferring title --

MR. RUZOW: Actually, it's more than a year, your Honor, it's anywhere from 18 months to two years, so the 2001 data of actual ownership -- and we can verify this with New York City's land acquisition data that we had -- by this spring, they indicated an acquisition of some 53,000 acres, not conservation easements, that's a separate number, of land in the New York City Watershed west of Hudson. But in 2001, which was only four years after the go-ahead from the MOA, and it took a while for the solicitation, my best estimate -- we'll check it -- was only in the 20,000 acres at that point in time, which title had actually transferred.

So a major data gap in Ms. Hall's study, not her fault, she's doing a study and picks a point a time, is the fact that there is and continues to be significant land acquisition in this area by New York City. Some 7500 acres in the Ashokan Basin alone has
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been acquired by New York City, several thousand of those since the 2001 cut-off in terms of land acquisition.

In the Pepacton, there was some 3500

acres, just within the past two years. That trend is a fundamental factor impacting this work, and you could not take it into account -- and from a trend analysis project it forward -- because it excluded publicly owned lands from that trend analysis. And that's a major underpinning of the assumptions.

MS. BAKNER: To proceed, as far as the ownership title and how you would do the title search in the county records base, we don't know because we don't have the actual data, but it doesn't seem that transfer of conservation easements would show in a typical owner-to-owner transfer. The way the county records, land transfer records work, it's usually purchase -- outright purchases that are recorded as part of the chain of title, and the conservation easements can be placed even in separate books.

So it's not clear whether they
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accounted for those numbers of acres that would have been protected. If they could, and we respectfully request that they share the full report with us, including the appendices, as well as the compilation of data for the model so that we can take a look at it and see other ways in which it may have failed to fully account for quasi public, if you will, ownership or prevention of future timbering

due to conservation easements.

MR. RUZOW: The other factor that is missing in their assumptions is that New York City doesn't have a limit on the amount of acreage that can be acquired by the City for protection of the watershed. There's a dollar amount that's set aside, and that's supplemented as they choose to, but it's not a fixed limit on what the City can acquire. It's a willing-seller/willing-buyer market, and the as long as the acreage is over ten acres, has some nexus to streams, steep slopes or water bodies, the City can acquire that land.

So forest parcels, even of the size of ten acres -- indeed, the City has acquired

many parcels -- you can look at the map. This may or may not have been included, but the shaded areas, the New York City lands in purple on Exhibit 3-B, the purple-shaded areas are the New York City lands with fee acquisitions complete as of 12/03. And you can see the relative size of these parcels, and where they are.

Many of the areas that -- based on the scale of the maps that are projected for development, in the simplistic analysis that we have heard about this morning, are encompassed in those areas of potential future growth. So without taking into account that as a projection of the City's activities, you

can't get an accurate picture.

Moreover, as we have heard, the State has -- this is when money is available. That's another issue. The State has targeted large parcels in the vicinity. All the red dots are the open space priority acquisitions. What that will do, unfortunately, and this is also true of the New York City lands is take all of that land out of timber production, because timber production isn't allowed on

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that. New York City allows timber production in an acquisition of conservation-type easement, forest easement on select lands, but that's not what we're talking about here. That's yet another category of opportunity New York City has, but all of these parcels don't fall into those. These are straight acquisitions for which forestry is not permitted, and the same would be true for any State lands acquired in the forest preserve.

So you have, indeed, one of the socioeconomic factors in affecting timber industry in the Catskill Park as it has certainly affected it in the Adirondack Park, and which has led in part to the demise of the paper mill industry. It is the absence of large tracks of forest lands that are available to them because of state ownership and other policies at play in terms of protecting those lands.

Over the course of the last 20 years, we have represented three paper companies that have had mills go out of business in the north country because of the absence of large tracks of land, both in the Catskills and in the
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southern Adirondacks, and State ownership had a great factor in that.

But since this is all argument, I feel comfortable in suggesting that to you. We will look at producing in response to this some folks from the timber industry who will talk about that that is a fundamental factor in affecting the working forest in New York.

There are very few paper mills left in New York State, and so the market for paper products is fairly limited now that IP has basically consolidated the ownership of most of the paper production in the north country. You have only one or two mills left that are actually producing and buying timber in this rather wholesale sort of way.

MS. BAKNER: One of the main points of the research, as it was expressed here today, was that there's no correlation between changes in population density which are absolutely flat in this particular area, this subset of Ulster County and Delaware County; but that somehow if data were available regarding second homeownership or out-of-towners who own homes, that that would
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somehow validate the statistical analysis.

We just want to emphasize for the record that no data on second homeownership or outsiders in the area of any sort, scientific or otherwise, has been presented in the context of this particular study. So any conclusions with respect to that would only be speculation and therefore are not admissible in the typical SEQRA proceeding.

They also try to establish a correlation between proximity of roads and likely future development. We just note for the record that we couldn't tell from the pictures that you saw up there, but in the Catskills, there are roads, different kinds of roads. There are private roads, which are not maintained by the municipalities, such as the ones that we're proposing for our resort, and there are public roads. And you have different sorts of rights and liabilities in terms of right to build associated with those roadways.

So there's not necessarily any kind of simple correlation between development and transportation corridors if you have not

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carefully identified the type of road that it is.

MR. RUZOW: There are some other factors. Again, as Ms. Hall indicated, this is Part 1 of a study. It may have its place

in certain planning circles, and indeed the report itself when you read the conclusions, its utility for microplanning purposes at a local level or a state level or a regional level, it may -- this may be good enough for looking at and forecasting, but it has no application, in our judgment, in the decisional process on an individual project. It was never intended for that. It can only give you an idea of what might happen, but it's not one that is appropriate for either adjudication -- because it's not capable of being adjudicated -- or use in a process and a procedure where the rights of an applicant to develop property are at issue.

For land use planning purposes, if planning boards and the county boards, which, by the way, which were not consulted, based on our review of the appendices to the report, none of the planning boards either in the

counties or any of the towns involved in this region were involved. There was a Roxbury Planning Committee of some kind, which is not a planning board unless it's misstated in the appendix, was consulted as part of this.

So their involvement, the officials who are either elected or appointed to positions that were responsible for land use planning in this region were not consulted in the development of this study. That is a major flaw if the study is going to be used

for purposes of planning at a local level.

On the other hand, if it's a tool to give to them at some point in the future and to say: Gee, you ought to look at this, take this into account in your own land use comprehensive planning development -- that's a different matter. I want to draw that distinction. This is not the type of a study that is appropriate.

And also, as Professor Hall indicated, this is page 1. If you look at page 16 of -- at least the appendix that was attached to Exhibit O of the CPC study, it's not included in the overhead production but in the report

itself, there's a list of independent variables on page 16, "Factors Affecting Location of New Development Areas."

You'll see included in the New York column, the X indicates that the factor was taken into account, used in some way in the analysis. And then the blank spaces, most of which concern many fundamental economic or social factors, including zoning, for example, zoning regulations, which were ignored; and then a whole list of, "Did not investigate due to project resource constraints." These are all important issues in a socioeconomic aspect of a study that they have yet had the opportunity to include -- because they couldn't fund it.

So you have a whole variety of the things that were not taken into account, most fundamental, at least in our judgment, is the zoning regulations because they and the -- in addition to the zoning regulations, the New York City Watershed Regulations which are not taken into account in this -- they have fundamentally changed. You have heard from CWT and Kevin -- Kevin Young and Jeff Baker,

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and from the town supervisors themselves -- the fundamental way in which the New York City Watershed Regulations have affected what can be developed. That's missing from this study. It may be appropriate for future aspects of it that might, in effect, validate some of the projections in 2011, but it's simply a linear projection based on the 1992 to 2001, and then through the modeling and the spatial indices, applying that to 2011. None of the factors that were at play in a meaningful way, particularly the New York City Watershed Regs were reflected in that. It took too long.

Moreover, the study doesn't take into account the sources of some of the parcelization, because that was not part of the study. If you look back in the late -- in the late 1970's and through the mid `80's, that's when Delaware County, through the federal dairy buyout lost most of the dairy industry in Delaware County. That had a fundamental consequence on the land use

development patterns in Delaware County because that area, that time in New York, you had the late 1980's with development booms;

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and if you recall from newspaper articles of those days, the subdivision of the Catskills. And through use of linear lots running along roadways, you were subdividing the Catskills. That was the time in New York when that was occurring. Because of the bust in the real estate market in 1990, and through 1992 and just until about 1993, those properties didn't get developed. But if your task was to look at the -- what in 1992 was on the books of what was subdivided and the size of parcels, you would see all those filed subdivision maps.

Post, when things improved post `97 after the watershed agreement was signed because there was a cloud over development in the watershed between 1991 and 1997, and then the post economic boom from `97 through 2001 and the 9/11 incident, which stayed developed, we heard, for a little while, but then it picked up again as people wanted to look closer to home. You have a whole bunch of socioeconomic factors that are driving the levels of development and explain where the development is going.

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Now you have a different cloud over

the action of development in subdivisions because you have New York City's Watershed Regs, which play a fundamental role in what can be developed in the future in terms of new opportunities for development.

These aspects, which all are worthy of study, at an academic level and then eventually through testing use by local planning boards -- this is premature. This is not something that will enlighten this proceeding in any meaningful way because the data isn't there, and the correlation of these very important factors, in addition to things that Professor Hall has done, will -- maybe advance the understanding of future activities. But one important thing that she said as well, and we have looked at it, development along the corridors.

The historical corridors, the hamlet areas. These were areas which are supposed to grow. You're not going to see much in terms of forest fragmentation in those areas because geographically the hamlet area is already walled in by the mountainsides.

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Along Route 28, it's an area that New York City expressed concern, we heard that in community character, that there could be areas of further development. The limitations there are zoning, and the City's Watershed Regs and distance from the water courses which run alongside. All of those factors are

inhibiting factors in terms of future development.

It's indeed why the strength of feeling by the other parties who are not here today, the Coalition and Delaware County and the two towns, is so strong, because the areas left to be developed are so limited. The use of this study -- if we were to have a voir dire -- assuming we ever got that far -- over the appropriateness of this study to be used in an adjudicatory proceeding, we would argue strenuously that it is simply not right for such consideration; and secondly, that this type of study and the kinds of issues being raised about speculative future development, with or without the project, are not things that can impact -- or should impact the Commissioner's decision on whether or not

we meet the statutory standards for issuance of a permit, or whether in some way these factors should be taken into account and, in effect, burden the project itself.

To the extent these things are relevant, they can and should be considered by the local planning boards that are responsible for the local land use changes here and by -- under statute -- directly responsible, and because SEQRA doesn't change between or among agencies, it's simply not appropriate for this proceeding to consider them any further.

We would certainly respond to these comments as part of a response in a final EIS, but it is simply not something that is appropriate for decision-making on an individual project basis.

One further factor, and this was a weakness in terms of the community character position taken by New York City's consultants, it doesn't take into account floodplains, areas that are, in effect, regulated floodplains along these corridors. Just because development has occurred in one piece doesn't mean that agencies will now allow the

next piece to be developed.

We all walked through the Village of Margaretville. The 1996 flood, the January flood, changed the dynamics of development in Margaretville because the federal buyout took out all that property for future development; and New York City, in a cooperative venture with the village, purchased that land to prevent it from any further development, and made little pocket parks out of it. That made perfect sense for that local regulatory decision to be made, both regulatory and in terms of land use planning, but it took out of all that future development or redevelopment within the hamlet areas, the immediate hamlet areas.

So floodplains play a big role here, and again, because of costs, because of

opportunity, this particular study didn't have the opportunity to factor all those things into its projection of what things might look like in 2011.

I don't want to sound too critical, and I apologize if I sound too critical of the study; it has its place, but it is a work in

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progress, and it has no place whatsoever from a regulatory point of view at this point in time. At best, it is a tool land use planners can take, and should take into account in the future and as it's further developed, and use it for that purpose. But it has no place in this regulatory forum.

Two last things. The opportunities for recreational development, intense recreational development in the Catskills are limited. The ski centers in the Catskills represent the principal source of large-scale recreational development in the Catskills. There are three large ski centers. There is Belleayre, there is Windham, and there is Hunter. Those are the sources.

If you look at those areas in the Catskills, those are the primary areas for larger-scale economic development in the Catskills in terms of reaching a balance between protecting the environment from future development or encouraging it in other places willy-nilly -- they are centers. This project

is tied to one of those ski centers as the private side of what is a public investment.
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So there really is limited opportunity in that regard.

With respect to the theorems of the study though, this is an underlying assumption that state forest preserve land and its recreational activities, and attracting people into the region is going to be bad for the forest industry. As I'm listening to what I'm hearing about the Montana experience and the Rockies experience, that somehow park lands, are sort of their own worst enemy, because they're going to encourage that sort of development. That may be a hypothesis, I may have gotten that hypothesis wrong; however, tourism is the fundamental economic opportunity for the Catskills.

Every one of the studies that we read, every one of the land use planning documents that we read, the Catskill Forest Preserve Public Access Plan that we have heard about already all presume that we want to bring people here. And as a corollary to that -- some may want to stay longer than others, some may have already done that, and that's the source of it. But that's the basis of the
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economic model that's being pitched for this region since manufacturing has gone on its way out, timbering has largely gone on its way

out. There's small-scale activities, but they're not anything that are going to expand the basic economy in any meaningful way.

Then, when you look more closely at the area that we're affecting, in particular because there's emphasis on the Big Indian side of the resort as being the more fragile areas and as part of the strategy of the opponents to the project to attack that because maybe we can live with the western parcel, the Wildacres, it ignores the fact that the Town of Shandaken is 72 percent already owned by New York State. The New York City has grown from about five percent, because of the reservoirs, to close to 6 or 7 percent, and growing, because they're continuing to acquire land.

If you look at all the other physical constraints on building, the opportunity for development is incredibly limited in terms of the percentage of land that remains. It's always been historically since the 1700's,

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along the river corridors, that that's the only place people basically have habitated in any material way, and the hamlets. Phoenicia -- we've passed through them all -- Mount Tremper, Phoenicia; on this side, Pine Hill. There's just a limit to where people can grow, so the suggestion that simply multiplying out what has happened in the last

ten years, and the assumption that it's going to continue to grow, and it's hard with the scale of the slides in here to see, but where you see most of the growth or the red areas, the projected red areas, are not to the Ashokan basin, but to the Pepacton in the north. You can see it up in this area. (Indicating)

That is the area that is northwest of the site. That is the area that begins -- and they follow out these little roads, and you can see them dotted along the little houses. By definition, in terms of that model, they just keep multiplying out along these roads, and out in this area. (Indicating)

Our project -- whether our project affects that part of the basin, which is in

the Pepacton basin -- part of it is in the Pepacton, part of it may be actually in the Schoharie basin at a certain point in there. Whether we're going to accelerate that and to what extent, it's sheer speculation on everybody's part. To the extent it occurs, it's the subject of local land use control; whether or not larger parcels are subdivided or acquired by New York City, are factors that none of us have control over.

Moreover -- your question was a good one regarding the economic factors. If you look at this period of time, we had the lowest -- at least for a portion of this

period of time -- we've had the lowest -- continuous low interest rates in the history of the country. We've had a stock market crisis that occurred in a post-2001 era where money was coming out of the markets and going into real estate.

We're going to hear probably on Friday that interest rates are going up, and God help us if they go up a lot. But those economic factors are as much a factor of -- and the cycles -- of what ten years you take, as

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anything else is. They're all cycles. You can't reliably look at only part of this picture and then rely on it for determining the rights of applicants for permits in a fair and balanced way. It doesn't work that way. And that aspect of the study which they have not had the funds for, maybe they will get the funds for and try to project it out is a meaningful and fundamental aspect. Using the words of -- no, I won't do that.

One interesting last comment I'll make is that this project has not contributed to parcelization as it's been described. We haven't been an assembly of parcels in order to get to this site. We didn't take large acreage and cut it up and divide it up. We acquired some 14 parcels on the Wildacres parcel, and some 12 parcels on Big Indian to consolidate it, and that allows us to protect,

in perpetuity, some 1370 acres of forested land in a meaningful way. That is ignored by everybody. That is important, but it's the converse of what we're hearing.

Allegedly, the parcelization is going to cause increased fragmentation of the forest

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in other places, but on this assemblage, it will help secure it -- and you can see it here. What we have done, again, looking at Figure 2-5, and we'll talk about this -- you can look at it also on Figure 3 -- CPC Exhibit 3-B -- is we have taken property that adjoins the Belleayre Ski Center intensive use area -- state policy, intensive use area -- and bordered it with lands, that some will be developed, some will be preserved. On the west side, the Big Indian, which looking at 2-5, you can see how it's configured, and consolidated this area.

The northern boundary is Route 28. It is a natural barrier for purposes of forest fragmentation because it, by definition, is an area that fragments or at least creates a line against which the forest abuts. And this is, in our judgment, a natural area to expand, and is quite limited.

If through this type of study additional parcels should be added to the Open Space Priority Plan or New York City's Acquisition Plan along what is another roadway, the only place where people live in

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this region, that's fine, but that's a land use planning concept on a macroscale that is unrelated to an individual decision on a project. We think this reinforces the appropriateness of this particular location in terms of the balances of choices that are to be made.

One further factor. We think it effects -- there are a couple of factors that we think are potentially greater influences of forest fragmentation than this project. One is New York City's Land Acquisition Program. New York City's Land Acquisition Program is raising the price of land, and also to the extent it continues to buy up developable parcels, it will push people to seek to acquire additional ag. lands, the lands that were abandoned in the federal farm buyout, many of which are, as being observed, are being restored to forest because they're left fallow and no one is tilling them.

So over the next ten-year horizon, you may see, particularly in the Canonsville basin and parts of the Pepacton, more reforestation naturally occurring unless somebody acquires

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them and starts cutting timber or putting in fields again. But it will create larger lot subdivisions because they acquire developable land, even in the 10- or 40-acre range, and

the pressure is there, irrespective of our project, for everybody to get their own back 40, from the wealthy folks from New York City because that's who's buying the land -- we agree, it's already here. They will drive more land to be parcelized. That's a factor that is present, and we are all living with.

This other thing is that our project -- we're criticized for it -- we have some 331 units, vacation units, time share units that provide opportunities for a lot of people to come to the region without having to buy their own back 40. We have clustered that development in and around the golf courses so that we're getting the double benefit of consolidating where that is. It doesn't require -- it doesn't allow people to clear other areas on the site for forest to decide what -- a lawn they want here or something else. And it consolidates them all in one place.

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While the numbers of people, visitors who will come conceivably could be fairly large, the opportunity here to have a lot of visitors and have a piece of the Catskill environment in a more efficient, from a land use perspective, a more efficient manner, because it's a lot more dense, is a very positive thing.

No one can project -- but the answer is no one can project reliably how many of

those people who will come and visit or stay at the hotel and want to get a piece of property of their own. We don't believe there's a reliable way of projecting that. Some might. Whether they can do it or not is going to be a factor of the land that is available off our property.

As we said, New York City is on a -- is a pace acquiring as much of that as they can. The reality is, being able to put in a septic system, unless you have a very large piece of property and a lot of money under the New York City regs, is a limited opportunity and window.

In the cauldron of all the things that

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are involved in this, we think that the project actually may benefit -- by providing an alternative opportunity for people to participate and have a vacation experience in this region without having to buy new lands as well. Thank you.

ALJ WISSLER: That's it?

MS. BAKNER: Yes.

MR. ALTIERI: We would like to take ten, your Honor, or take five before we present.

ALJ WISSLER: Okay.

(12:46 - 12:55 P.M. - BRIEF RECESS TAKEN.)

ALJ WISSLER: Mr. Altieri.

MR. ALTIERI: First, it is staff's view that the DEIS appropriately identified and analyzed forestry impacts in general. The DEIS also addressed the timber industry, and it's staff's view that for DEIS purposes, it was adequately addressed and analyzed. Heretofore, we don't hear a substantive or significant issue regarding forestry, although some of the comments that were raised today may be addressed in the final EIS.

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Having made these comments, I'll call on Jeff Rider just to raise two points.

MR. RIDER: We discussed here --

MR. ALTIERI: What is your position with the DEC?

MR. RIDER: My position with DEC is I'm a senior forester by title. Again, my jurisdiction, so to speak, is Sullivan and Ulster Counties, the majority of which is inside the Catskill Park blue line. I also have some properties that I manage outside of the Catskill Park for or on behalf of the State.

A couple of things, just for clarification, nothing more. We heard statements as far as DEP-owned lands and DEC-owned land and what's available for timber harvesting and what isn't. Inside the Catskill Park, in DEC forest preserve lands, they're protected by constitution, and you can not remove timber on those lands. So it is

correct that those lands cannot have timber production. However, on New York City DEP lands, both lands that they owned in fee and potentially lands that they have easements on

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can be actively managed for timber.

Many times DEP has not actively managed their timber based on public perception. They were chastised quite a number of years ago for a cutting that they did down by the Ashokan Reservoir in Boiceville. Due to that, they backed off for a number of years on a lot of timber harvesting; however, in recent history, due to blow-downs or due to studies that have shown that watershed management, watershed quality is generally increased with active management of your timbered lands, meaning a healthy forest, actively managed, healthy vibrant forest is better for watershed. So just to note, that not all DEP lands are off the books as far as the timber industry.

Lands that they own or that they purchased through easement, meaning that they don't own the lands in fee but they have an easement on there, maybe a development easement, many times the property owners are allowed or hold the right to continue timber harvesting at least for a period of time.

As far as impacts on the local timber

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industry, we see more effect on local industry based on public perception in that as we see more and more non-resident or second homeowners move into the area, maybe have come more from urban areas and urban background, they're not familiar with land management, forestry, and they were brought up with the perspective that forestry is a bad thing, that cutting trees is a bad thing -- so there's more perception, as you have more and more land owners -- you also have fragmentation and parcelization, you have more and more owners on the same pieces of land. A lot of that land is taken out of production just based on a perception.

So as Ms. Hall said, there is high demand in the forest industry for trees and timber production, and it's getting harder and harder to find areas where they can actually harvest trees and manage.

There's many things that also affect the timber industry. Their practices alone -- if a forest is not professionally managed by a forester for perpetuity, many times you have companies that will come in and, for economic

return, they take the biggest and best species, and what's left behind is species that have low value and will not increase in value over time. If it's done properly, a harvesting plan is instituted, harvest timber in perpetuity, and if done correctly, after

you harvested a stand, the per-acre value of that remaining stand is higher than what you had just removed, so in perpetuity you should increase the value of your stand over time, meaning you're leaving your biggest and best species, whether it be seed trees or crop trees that -- right now they're only 12 inches in diameter, if you let them go for another 20 years, they may be 15 or 20 inches in diameter where you increase your value on your land.

So it's a little clarification on the timber industry around the area.

MR. ALTIERI: Do you have any questions, Judge?

ALJ WISSLER: No.

MR. ALTIERI: Could you -- I think this was a question the Judge had prior regarding first forest growth. Could you define it, just for the record, and then

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identify any regulations or standards regarding the cutting of first forest growth.

ALJ WISSLER: That's a question that goes way back.

MR. RIDER: I certainly wasn't present for that. Essentially -- there's many definitions out there. You have old growth, first growth, second growth, third growth, et cetera. Typically, a lot of times, old growth and first growth people use them interchangeably, and they're not necessarily

interchangeable terms. Old growth typically is referred to growth that was here when you got here. It's something that's been around for a long time. It's the original forest that was expected that was here.

You don't necessarily see that in the Catskills, and by that I mean --

MR. ALTIERI: When you say original here when we first came here; does that mean -- is that the measurement, colonial times?

MR. RIDER: What you see in that area, irregardless of the Catskills, but using the Catskills as an example, forest is constantly

changing. It's either wind throw, ice storms, insects, disease, that type of thing changes your forest continuously. And what you saw here 300 years ago that you may have considered old growth that was here when you got here is not what you see today. The forest is constantly changing, and what you see today may not necessarily be what we see 100 years from now on these mountain tops. It's going to change just due to its own environmental factors that effect it, not only by man but the natural factors.

So old growth, essentially -- when you consider old growth, you look at Mike Kudish's work, he defines old growth as essentially what was here, what was the original growth. First growth is what has arrived after the old

growth, meaning the old growth was affected somehow, some way, whether it was environmental factors -- predominantly environmental factors before the timber industry arrived.

You have first growth. If you look at some of the maps, he has a map that's been produced, showing much of the old growth areas

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as being in the high peaks in the Catskills, predominantly on state-owned forest preserve lands. That's typically areas in high elevations, remote settings. For one reason or another, they were not timbered due to remoteness, where they were not cleared and farmed due to thin soils or remoteness, so they remained first growth which is essentially the oldest growth that we have out there.

Beyond that, generally below 2900 feet in elevation, most of the forests here in the Catskills have been inundated, to put it mildly, by man's own usage. Tan barking where the hemlock is removed, subsequent flush of hardwoods that came in after that which brought in the hoop makers and the furniture factories and the acid factories and the charcoal kilns and things like that. That's when you get into second growth.

A lot of that second growth which was your pinewood species was stripped off again

and you end up with a whole third growth. Many of the lands you see, including the applicant's lands have been logged year after
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year after year, so you end up with second growth, third growth, fourth growth, just new generations of trees that have come along, and subjective to whatever we throw at them.

MR. ALTIERI: As to first growth forest, are there any regs or standards regarding the cutting of first forest growth?

MR. RIDER: No, there's none that I'm aware of. There's no regs in New York anyway that I'm aware of, that prohibit the cutting of old growth or first growth vegetation. Many times you see local town ordinance where they may restrict clear-cutting, for instance, or they may have a timber harvesting ordinance where you need -- you're required to get a permit in order to go harvest trees on your land. But I'm not aware of any ordinance out there that prohibits the cutting of what's considered first growth.

MR. ALTIERI: Thank you.

ALJ WISSLER: That's it?

Mr. Gerstman.

MR. GERSTMAN: Only 10 or 15 minutes, your Honor. First, we would like to take Crossroads Exhibit 58 which is the map
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introduced by Mr. Franke, explained by Mr. Franke, and we weren't aware that the

issues concerning IBA were going to be raised today. I'd like to have the opportunity to send this to Dr. Burger and provide a written response if that's okay with your Honor.

ALJ WISSLER: Yes.

MR. GERSTMAN: Mr. Ruzow talked about the issue of whether or not the scientific study that was conducted by Professor Hall and her colleagues has any applicability in the evaluation of a project that has a potential adverse impact on the surrounding forest.

First, we have identified this issue pursuant to SEQRA relative to several others that we believe are relevant for adjudication and for which we believe we have made a significant offer of proof, including ones that I mentioned before: Secondary growth, the impact on Important Bird Areas, cumulative impact, impact on aquatic habitats, and the impact on community character due to the area's sensitivity to the change in the economy from a forest-based economy to a very intense use that would be envisioned and would

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be associated with the project as it's envisioned by Crossroads Ventures.

After Mr. Ruzow determines that the model has no applicability, and in fact is too vague, it might be good for macro-evaluation, land use planning, and should not be used in this type of project review, he goes on to

speculate on the types of things that have a greater impact than the model would have in predicting the impacts to the forest. He includes the issue of, for instance, the decline of the forest product industry, and Mr. Rider has correctly pointed out that DEP's holdings may allow for use of timbering and harvesting of wood.

In fact, DEC in the Adirondacks has engaged in an extensive conservation easement program, whose goal is to provide for the use of forest products and to allow for extraction of forest products from those State-owned lands or private-owned lands, I'm sorry, for which a conservation easement has been purchased by the State.

Many of the things that Mr. Ruzow was speculating about are legitimate speculation,

but they don't impact the usefulness of this model to evaluate the significant adverse impacts that this project will have on the surrounding forest. We think that is the key here. We are talking about a standard under the State Environmental Quality Review Act which requires the Commissioner to determine whether or not there are substantive and significant issues which should be adjudicated with respect to those SEQRA findings. We believe this is a relevant issue that has to be adjudicated under SEQRA. We believe that the Commissioner would not be able to make

SEQRA findings without making this evaluation.

I would like to ask Professor Hall to identify some of the issues that Mr. Ruzow and Ms. Bakner have raised concerning her study and Crossroads Exhibit 57 which is the Empire States Forest Products Trends in a Robust Resource.

PROFESSOR HALL: A couple of things that I am -- feel compelled to point out, one of which is that this data ends where our data begins. This is New York State data, and we have carefully examined the local trends in

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this region, and we have shown with satellite imagery that deforestation predominates over reforestation. In fact, the deforestation numbers far exceed the small amount of land that's reforesting. Satellite imagery was called into question, and modeling called into question. There is no difficulty in classifying satellite imagery and seeing what's forest and what's non-forest. The issues in satellite image classification where there are some problems is determining whether it's urban grass or pasture, whether it's shrub land or cropland, but the patterns are very clear in the data as to loss of forest cover. So I want to make sure you understand that's the case.

I also know that people like to call science and modeling into question frequently.

We try to be as quantitative and robust in our methods as possible. We don't use rhetoric, we use analysis, and we're peer reviewed. Our work is peer reviewed by our peers, so we can't just get up and say: This was the trend, blah, blah, blah. We have to show the data, and we have to be transparent about how

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we analyzed it. It has to be submitted for peer review before it's actually accepted, and this work will be submitted for peer review.

Perhaps that's why it was characterized as premature. I don't think it's premature in that we've applied this model, as I said, in locations all over the world, and it's being used and listened to as a good -- excellent tool for projecting future likelihood of land use change patterns -- rates and patterns. I would characterize it not as premature and not as simplistic, but rather as state of the art, and most of my colleagues -- not most of -- my colleagues would also. It's a very complicated process.

I tried to be as transparent as I could. If I had more time with you, and I could sit down with you, I could take you through everything, but you would probably be bored to death. But it's not a simplistic process. It's complex and therefore difficult perhaps, to make a person understand exactly how we derive our findings, but there's nothing hidden about it, and I can show you

quantitatively the numbers and how we get to
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those numbers. So we feel very confident in the work that we've done so far.

There was a criticism that we had not included some factors relating to zoning and other restraints on land based on the MOA; however, we asked right before we ever got started, we asked DEP officials and DEC officials both, we sat down with them. At these meetings, asked them if there were lands that we should leave out of the analysis that were not susceptible to change from forest cover to non-forest cover, were there any lands we should leave out, and with the exception of lands within a certain distance of streams, they said, "No, you should include it all. It's all candidates for change." So it's not that we left that out.

We also -- we included the newly acquired New York City Land Acquisition Plan up to 2001, and we have the digital map of that, and that was part of the land that was excluded from our analysis. There is undoubtedly more recent acquisitions. I would hate to show you -- I could show you if I had the GIS system here -- in terms of the whole
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area that we studied, those lands to date that were just identified as newly acquired lands are a very, very small percent of the

watershed, and I know they want to acquire more land, and hopefully they can, but it hardly could change the results of our modeling effort at this point.

The criticism was made that the planning boards were not involved. The planning boards were invited. People choose to come or not to come. A woman from Cornell Cooperative Extension attended our meetings, and she was working very closely with the Sullivan County Planning Board, and she said: Oh, my God, I wish we had this model about six months ago when we started this process to look at what's projected for our region. We also had a person from the Town of Roxbury Planning Board at our meetings. Much of our data that was not included in the analysis was not for funding constraints --

MR. GERSTMAN: Referring to, as Mr. Ruzow had, page 16 of Exhibit O of the CPC petition.

PROFESSOR HALL: -- but simply because the data either did not exist or did not exist spatially or does not exist at a resolution that would be comparable to the satellite imagery. Often models don't need to be more complicated. What we try to do in models actually is try to ferret out the major relationships with the least amount of data possible because you -- as I showed you today, we had 18 different factors that we analyzed,

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which is more than we have ever analyzed in any other application of this model. And after the first six factors, our ability to mimic reality actually fell off. So to add more information would not necessarily have helped us produce a model that could mimic what's actually happening in the landscape.

Something was said about development along Route 28 being appropriate; and, yes, of course it is. But we also show lots of development that was not along Route 28 which was later pointed out after that statement was made up in that northern region and that was because wherever we have nodes of development already started, the model performed better in validation when it grew off of nodes than when

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we just let it pick and choose places all over the landscape that had high likelihood of development, which is why we contend that the project will be a node that will accelerate development because we saw that looking at our two points in time. There was definitely a trend or a pattern of development that was node-based.

MR. GERSTMAN: Notwithstanding Mr. Ruzow's statement concerning the lack of available information concerning what's referenced at page 16 of Exhibit O of CPC's petition, that doesn't impact your evaluation on whether your model is valid to predict

trends in land use?

PROFESSOR HALL: Absolutely not. The pattern is visible in the satellite imagery. Perhaps the word "premature" was used because I said we would like to look at a longer time period, but we can clearly see what's happening between 1992 and 2001, and we can evaluate the pattern and what were important factors in giving us the ability to predict a 2001 landscape from `92. So we feel that all of these other things would actually probably

not have increased our ability -- increased our validation statistics.

I would ask since we have been -- we certainly didn't mean to demean -- I don't know if that was the intent -- ski areas or the importance of tourism to this region. Simply to say that wherever you have development, and if you have -- you will have fragmentation and you will have parcelization; and, yes, this impacts the forest industry. That's just a fact. We have no axe to grind, simply to present to you the facts as we have evaluated them.

I also wanted to say in response to the gentleman's comments, Jeff Rider, that we have often seen in other studies, and in our knowledge from the forestry school, that when land is parcelized, it is often high graded, which means that the biggest trees and the most valuable trees are taken off before the

land is sold off because the people buying it still get a forest and they don't really care -- they're not even aware necessarily that they have lost a $5,000 tree. And this is a very common event. Just happened in my
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neighborhood last year. I think I covered most of --

MR. GERSTMAN: I might have a couple questions for you. I believe Ms. Bakner mentioned that you did not have data concerning second homeownership; is that accurate?

PROFESSOR HALL: No, that is not accurate. We have shown, I think, to the extent where possible, that we have land that is owned by -- a great deal of land that is owned by people outside of this area. We have also shown that divided parcels are those lands that are more likely to be developed in some way. We do not have, perhaps, the real estate office data to show you where second homes have actually been built, if that's the contention. That would probably be useful.

MR. GERSTMAN: Would you say that your -- the Geomod model has applicability both on the macro and micro scale for evaluating environmental impacts, i.e., those associated with forest fragmentation and parcelization?

PROFESSOR HALL: It does. Sometimes
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you can zoom in too far. We found in what we call frontier environments where there's very little land use change, that actually when you step back and zoom out, you can see encroaching development coming toward a region, so we have sometimes struggled a bit with what's the appropriate scale. We picked this scale, in fact, for this study so that we could get some of the development, pick out some of that development that's happening in the major corridors that surround the area, and look at whether that tended to be sprawling toward -- moving toward this area -- and it did, appeared to be.

MR. GERSTMAN: I believe it was Mr. Franke sitting over there at the table with Mr. Ruzow and Ms. Bakner who suggested that this project has resulted in the assemblage of properties, and therefore represented a trend that's contrary to the one that you identified in your study. Do you have any comment on that?

PROFESSOR HALL: Well, it was like apples and oranges. The issue for us with parcelization is that it breaks the land into

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land units that are not manageable for forestry. What they're doing in consolidating land for this development project is just a wholly different kind of activity. So it seems to me that they're really somewhat

unrelated. I would say, although this wasn't in response to my talk, that it seemed to me if you were going to talk about land that you're setting aside in this project versus the land that will be developed, again, issues of fragmentation in terms of wildlife, but I am not the wildlife expert here, are important.

I would suggest that a quantitative analysis such as we did in our study calculating the forest continuity index or fragmentation index, as is commonly done in landscape ecology and wildlife studies, would be preferable to giving us some idea of what's going to be there over just simply saying certain acreage will be set aside.

MR. GERSTMAN: In fact, what Dr. Kiviat has testified to is that if you understand the nature and the scope of the wildlife and the flora and fauna on the

project, your mitigation could be designed to project against the harshest impacts of development as opposed to the mitigation really being dictated by how you want to configure your golf course, which is what's happened here.

PROFESSOR HALL: Absolutely.

MR. GERSTMAN: I also want to suggest that under no terms will the Catskill Preservation Coalition accept the mantle that

Mr. Ruzow tries to put on us, that somehow we are against development and against tourism.

In fact, many of our members have worked very hard and very diligently to promote the economy of this region, to find models that work in a sustainable manner, consistent with the forest landscapes and other aspects of community character.

To the extent that that mantle -- that he's trying to throw that label on us -- we throw it right back and suggest that, in fact, the project itself will potentially, ultimately result in significant impacts to the golden egg, which Mr. Alworth characterized as being the key to the ultimate

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sustainability of the environment and the economy in this area.

What we heard from Mr. Ruzow and Ms. Bakner essentially is speculation, legal argument, no hard and fast facts which they are putting up against the state-of-the-art science of spatial modeling that you have heard from Professor Hall, which is accepted in the professional and academic circles who are interested in this type of analysis of land use trends, and ecological preservation.

So we submit that we have established a substantive and significant issue for adjudication concerning the impacts on the forest in this vicinity, in this region. We have heard no scientific rebuttal to our offer

of proof, and we believe this issue ought to go forward to adjudication.

PROFESSOR HALL: One other thing. There was the contention that if additional land is acquired by the DEP, that this would significantly impact the results that we presented today. There's a term we use in the carbon sequestration world. It's called leakage. It means if you is you suppress

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development here, it's just going to pop up over here. So it would affect the results I showed you today if I could have put in all the land that is continuing to be acquired. But given the rate that we observed, if that were to continue at that rate, we would have just shown different lands developing.

So it's important to think about that, that we have both rate and pattern here, but pattern would just be different, and they would use the same rate; in other words, an equal amount of change.

MR. GERSTMAN: Thank you, Judge.

MS. BAKNER: On the issue of the pattern would be different, I'm not a forester, I'm not a scientist. What I am is a land use lawyer, and what's relevant to land use in New York State where we're cursed or blessed with home rule, depending on how you look at it, is zoning. You can not possibly predict what's going to happen in the future

without an examination of the local community's approved desire for how they want to move forward. And we submit, in no uncertain terms, that the absence of this,
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admittedly micro, sort of inefficient data that can't be plugged into the model easily, is a real problem here. Because what the people who didn't participate in the analysis with Dr. Hall do is simply decide what the patterns of development will be. You cannot build in New York State unless you get the requisite local approvals and building permits. And we continue to maintain that that's a very important issue.

I would state that it's also assessable, and it is, while perhaps not scientific enough for Mr. Gerstman, clearly set forth in the Draft Environmental Impact Statement in AKRF's analysis of potential future or secondary growth.

We looked in a macroscale in the Town of Shandaken and the Town of Middletown, we looked at what future growth could potentially result from our proposal. This model, for whatever reason, did not identify the Belleayre Ski Center or our property as a node of future growth. I mean, clearly it is, that's what we're proposing here, and we would submit that the precise information that was
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provided, accompanied by an economic model

prepared by AKRF, which is certainly a well-respected firm who does this kind of thing throughout New York State shows a much more complete picture of what's going to happen as a result of our project, or could happen, which is a more efficient method of speculation.

I guess what I would like to say is that Dr. Hall's comment at the end regarding wildlife and fragmentation on the site -- it seems to me that there are two competing issues here that are proposed by CPC. One is if we develop the property, it won't continue to be logged for timber purposes, and it may somehow result in other properties not being available to be timbered, which frankly I don't think is a legitimate argument given the fact that 72 percent of the land in the Town of Shandaken, putting aside DEP, is owned by New York State, and therefore incapable of being maintained as a timber resource.

Putting that aside, Dr. Kiviat is arguing that we shouldn't clear and change the topography of the land, and Dr. Hall is

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arguing that we should cut and maintain the timber for forest production, which in some cases can be clear-cutting. There's lots of different management methods. And I for one believe they're absolutely legitimate. We don't have any problems with forestry impacts

whatsoever. But you can't have your cake and eat it too. If we cut down the trees on the site, it's going to take a number of years for it to grow back. It's certainly not available for important bird habitat.

So I think what we're trying to do in our document -- which, yes, Marc -- Mr. Gerstman, is scientific and has been accepted by DEC -- is show what we feel are the likely impacts of the project. We don't feel we're burdened with the academic study of what may happen to timberland in the entire watershed and areas outside it.

MR. RUZOW: Your Honor, just two last things. Page 16 in terms of the factors considered and not considered for the study, and the headings available speak for themselves. Most of them are -- they made judgments, and you always have to do this. We

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heard this from the other modelers about making choices of what you can afford to do, what you can do now, what's easily done, but in my judgment, you can't make judgments about the validity or the usefulness of those other socioeconomic, factors; in particular, zoning, unless you have looked at them and applied them. And again, because of whatever reason -- available resources, decisions that were made along the way -- this image, this particular model chose not to use those factors.

The fact that they consulted with DEP and indeed DEC staff with regard to factors to be taken into account of the model in developing their model, and nobody piped in and said, no, you really ought to look at zoning -- doesn't go to the correctness of the judgment that was exercised. And indeed, if zoning were added and a number of the other factors were added later on, I'm willing to bet that the model would be improved, and the validity of the model would be more helpful. But the problem with the model is what CPC is seeking to have it used for, which is to help

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determine the rights of an applicant for a permit. And it's never been subject to the standards setting elements that one has to go through to create a standard for decision-making, and will never go through those standards because it's never going to be sought to be used as a determinant of someone's rights.

I think what is most troubling to me, and again -- and this is certainly argument -- is that the suggestion, the danger -- when you see a visual image, it takes on a different context, both in terms of its underlying value of being able to convey a lot of complex information, as well as it's the danger of accepting it as true. Unless a model reaches the level of sophistication and reliability,

and not just preliminary peer review by the same folks, but the socioeconomic review that occurs in standard settings, the danger is enormous for misuse and misunderstanding of the model.

It's okay that a scientist can look at this and say: Hah, I know what goes into all of these elements, I know the relative wastes

which would be attributed to each one of these things and to where it should be tweaked, et cetera. It's another thing for lay people, including your Honor, and even indeed the Commissioner of DEC, to take an image and say: Ah-hah, gee, that is a telling image, and somehow walk away from that image and say: Gee, what did I see there? How do I separate out what I have heard, et cetera?

That is why the strength of feeling and belief that we have as to the dangers of such a model at this preliminary stage of its development for use in an adjudicatory proceeding to determine someone's rights to a permit -- that's the problem. Not that models aren't appropriate in the right setting; but as applied here, they're dangerous.

MR. GERSTMAN: Judge, just --

ALJ WISSLER: I don't want you to reiterate what you already got on your record.

MR. GERSTMAN: I want to correct a mischaracterization of Dr. Kiviat's --

ALJ WISSLER: Because we're now just

getting into things that you guys can talk about in the final brief.

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Go ahead.

MR. GERSTMAN: I agree, I will not reiterate the fact that this is science and what Mr. Ruzow is saying is legal speculation, I won't do that. Dr. Kiviat did not say --

ALJ WISSLER: We're going to have him here at 2:30?

MR. GERSTMAN: Yes, we are.

ALJ WISSLER: We can ask him.

MR. GERSTMAN: That's fine. I just want you to understand that Ms. Bakner characterized what he had said in terms of the project was wrong. He was suggesting mitigation could be designed to reflect what's important on the project site. Thank you, Judge.

ALJ WISSLER: Okay.

MR. GERSTMAN: Professor Hall just has one point.

ALJ WISSLER: Go ahead.

PROFESSOR HALL: I just don't like my work misrepresented. We did include ski centers. Wherever the land shows clearing of forest, that land was included as a node, because it was an area that was non-forest, so

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it was included. We didn't decide what to use or not to use. Zoning was in effect in `92

and in 2001. We simply evaluated and re-projected the pattern that was visible was not necessary to include zoning as such because zoning was in effect, and we simply evaluated the pattern that happened on the land and determined what factors made those land parcels appealing or attractive somehow by going through all those factors, and then used the best set to project the future.

MR. GERSTMAN: Thank you, Judge.

ALJ WISSLER: Thank you. We have Dr. Kiviat at 2:30; is that it?

MR. GERSTMAN: Yes. Actually, we had wanted to have Aaron Bennett provide a statement on the record concerning Simon's Rock and a trail, and also we have a proposed itinerary for our Belleayre to Balsam hike.

ALJ WISSLER: But we can discuss that before Dr. Kiviat this afternoon?

MR. GERSTMAN: Yes. Mr. Bennett we can have potentially after lunch and before Dr. Kiviat.

ALJ WISSLER: Fine. We're going to break right now for lunch, and we'll break until 2:30.

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MR. GERSTMAN: Thank you, Judge.

(1:39 - 2:40 P.M. - LUNCHEON RECESS TAKEN.)

ALJ WISSLER: Back on the record here.

Mr. Gerstman.

MR. GERSTMAN: Yes, sir, thank you.

Ms. Roberts. Your Honor, we would like to call Dr. Kiviat for rebuttal from June 10th.

MR. ALTIERI: Marc, was the other gentleman going to go first?

MR. GERSTMAN: Did he stay for that?

MR. ALTIERI: Yes.

MR. GERSTMAN: We can. I'd like to introduce you to Aaron Bennett.

I believe this would be CPC Exhibit 70, Mr. Bennett's resume.

(RESUME OF AARON BENNETT RECEIVED AND MARKED FOR IDENTIFICATION AS CPC EXHIBIT NO. 70, THIS DATE.)

MR. GERSTMAN: I'd like to also introduce DEC Policy System -- it's a draft dated January 7th, 1998, concerning Adopt-a-Natural Resource Program. Maybe DEC

can clarify what the status of this policy is.

MR. RIDER: It's current.

MR. GERSTMAN: This is final as far as you know?

MR. RIDER: If it doesn't say draft, it should be final. Sorry, I gave you the draft, but it is a final.

MR. GERSTMAN: This is a final policy issued by DEC. It's a draft dated January 7th, 1998 entitled, "Adopt-a-Natural Resource Program."

(THE DEC POLICY SYSTEM "ADOPT-A-NATURAL RESOURCE RECEIVED AND MARKED

FOR IDENTIFICATION AS CPC EXHIBIT NO. 71, THIS DATE.)

MR. GERSTMAN: And CPC Exhibit 72 is a sheet with two photographs entitled, "View of Panther, Giant Ledge and Cornell Mountains from Simon's Rock," on the top; and "View of Slide and Balsam Mountains from Simon's Rock" on the bottom.

MS. BAKNER: Are these different ones than Dan Sundell put in before?

MR. GERSTMAN: Yes.

(PHOTOCOPY OF TWO COLOR PHOTOGRAPHS (FOREST PRESERVE ISSUE)

"VIEW OF PANTHER, GIANT LEDGE, WITTENBERG & CORNELL MOUNTAINS FROM SIMON'S ROCK AND ALSO VIEW OF SLIDE AND BALSAM MOUNTAINS FROM SIMO'S ROCK RECEIVED AND MARKED FOR IDENTIFICATION AS CPC EXHIBIT NO. 72, THIS DATE.)

MR. GERSTMAN: Your Honor, I would like to introduce you to Aaron Bennett.

Mr. Bennett is an employee of the Catskill Center for Conservation and Development. He's providing this offer of proof today not, however, as an employee, but as a person familiar with the trails through the forest preserve in the vicinity of the proposed project. And also, I understand Mr. Bennett is a certified licensed hiking guide as well.

Mr. Bennett, could you tell the Judge a little about your background.

MR. BENNETT: Sure. I grew up in

Oliveria, which is on County Route 47 there, and still reside there. My degree is in water resource management from SUNY ESF. And as Marc said, I'm employed for the last five years or so at the Catskill Center for Conservation and Development. I just love being outside hiking.

MR. GERSTMAN: Would you say you are familiar with the trails through the forest preserve in the vicinity of the proposed project?

MR. BENNETT: Yes.

MR. GERSTMAN: Particularly I want to talk -- I want you to talk today about Simon's Rock. There has been some issue concerning the view from the Pine Hill/West Branch Trail and the location that's been referred to as Simon's Rock. Can you tell me how you got interested in this area.

MR. BENNETT: The last few years, what I've been doing is once in a while after work I'll drive my car up into Rider Hollow and park it and hike up Mine Hollow Trail between Balsam and Haines and hike home from work, and then in the morning, turn around and hike back to my car. I don't know why, but I just like doing it.

MR. GERSTMAN: No better reason, Aaron.

MR. BENNETT: One day, I think the

date was September 9th of last year, 2003, I
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had a meeting in Pine Hill. I'm the president of the Board of Directors of the Pine Hill Community Center, so after work I decided to hike to Pine Hill. So I did the same thing, and then hiked up to Belleayre Ridge and hiked over Belleayre. And as I was hiking, climbing up Belleayre, I noticed -- I just enjoyed sort of exploring off trail, trying to find views or ledges or anything that would be a good place to camp, anything like that. And I came across this big boulder off next to the side of the trail, and it caught my attention, this ledge; and I walked out to the east and came upon this -- noticed it was a little open area and you could see through the trees. I went out there, and the pictures that you have are ones that I took on that day.

MR. GERSTMAN: Referring to CPC Exhibit --

MR. BENNETT: 72. And I really enjoyed that spot because it's looking back towards my house, and it's just an interesting and very unique view of Balsam and Slide and Panther Mountain that I haven't noticed from anywhere else in the forest preserve.

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MR. GERSTMAN: If you were standing at this spot looking towards Panther Mountain from the location where you took this photograph, could you tell the Judge where the

proposed Big Indian Plateau development would be.

MR. BENNETT: It would be to the left which would be to the north, and probably less than a 90-degree angle.

MR. GERSTMAN: Judge, I refer you to CPC Exhibit 5 which has Simon's Rock, has a mark from Simon's Rock noted on the map, and if you would look towards Panther Mountain, you could see the project site, the location of the project site as Mr. Bennett has described.

MR. BENNETT: So I continued on because I had a meeting, so I couldn't explore too long and ended up -- I had learned about the trail that goes down Giggle Hollow to Pine Hill, and there's a number of other trails that do that, but I had never been on the Giggle Hollow one. I cannot recall where I learned of it, if it was Belleayre's brochure for the day use area. I know the recent one

has a trail on it that leads down to the day use area from Belleayre, or if it was the event that was referred to earlier, I don't know.

Anyway, I'm walking and see the sign, "Trail to Belleayre Day Use Area," and I go down and follow the markers down to the day use area, go to my meeting, come home, and go back the next day. The whole thing with

Simon's Rock was, it sort of caught my -- it just was a very unique spot for me.

The local forest ranger -- we live about a mile and a half from one another, and I run into her quite often. And I asked her if she knew of this place, and she said she wanted to make sure we were talking about the same place. So we talked about going up there together to check it out. She told me the story of how it got its name. It was named after a forest ranger that she knew when she first started, and it was put in the UMP because of the beautiful view from that spot.

I don't remember the story quite in its entirety, but he has since either passed away or got transferred up to the Adirondacks;

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I don't remember. And ever since then, I kept asking her to take me, and her status as a forest ranger because of an injury was sort of up in the air, and she didn't know if she could do that -- we said, okay, we'll go on our spare time. We just never hooked up. And I ran into her like three times.

ALJ WISSLER: This is very interesting, Mr. Bennett.

MR. BENNETT: So I ran into her about -- it just never happened. Winter came and then -- so this year being the centennial of the Catskill Park, I decided that I really want to get this thing going. My workload is significantly lighter over the summer, and

that's when I realized also that the forest ranger is not the ranger anymore, and I decided to put a call into Region 3 and officially adopt this and maintain this because I learned that it was in the UMP and could be maintained as a vista, and the trail near it, I know, gets pretty overgrown in the summer because nobody maintains it.

MR. GERSTMAN: Is it your understanding that CPC Exhibit 71, which was

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graciously provided by the DEC, is the mechanism by which one can adopt a natural resource in order to maintain it for the purposes of the public?

MR. BENNETT: Yes.

MR. GERSTMAN: Your Honor, one of the reasons that the DEC, I believe, has undertaken this program, in addition to the statutory authorization, is that DEC is short-staffed in maintaining and enhancing -- maintaining trails and vistas from State-owned trails, and this is a good mechanism for the State to have work done on the forest preserve and for people who are interested in natural resources to work with DEC in carrying out a mutual purpose.

So Mr. Bennett has made a request to pursue this as a volunteer, not as an employee of the Catskill Center; and that process, I believe, is still in the works. It has not

been formally undertaken as yet. One of the purposes of Mr. Bennett's statement here today is to point out that the initial interest in Simon's Rock dated back to September of 2003 wasn't done in connection with this project,
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has nothing to do with the visual impact evaluation that you heard previously in the Issues Conference.

We are prepared at some point to put in photographs of this Belleayre day use trail from the day use area to the Belleayre Ridge. We do have a photograph of the sign from the ridge indicating the Belleayre day use area is -- there's a sign pointing in one direction to get down to it. It's still there.

I'm also told by Aaron that there's a sign-in register at the Belleayre day use area for the purpose of using this Giggle Hollow Trail; is that clear? Is that accurate?

MR. BENNETT: Yes.

MR. GERSTMAN: Judge, do you have any questions?

ALJ WISSLER: No.

MR. BENNETT: Thank you, Judge.

MS. BAKNER: Your Honor, we don't have any response to that, but we just want to note for the record that we'll be taking a look at the views that were submitted for the first time here today, and if we feel there's anything we can put in to enhance the record
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with respect to views, we'll be doing that at a later date.

ALJ WISSLER: So noted. Mr. Altieri, anything?

MR. ALTIERI: Based on your hike to Simon's Rock that you mentioned when you testified, or spoke last, do these photos give an accurate view of the view in general that one would have when you go to Simon's Rock?

MR. RIDER: Simon's Rock is a view that, although you can see somewhat of an opening from the main hiking trail, you have to know it's there and hike over to it. As Mr. Bennett said, you have to have the interest, you have to go to it. It's not marked, nor is there a herd path or a foot path leading to it.

I knew of it. As I say, it's marked by a couple of erratic stones, normal but abnormal for the area are there. If you go out, the view doesn't jump at you. You have to look through windows and branches because it has not been maintained. The only statement I will say here, he has some very nice views of Slide and Panther. The view --

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that's not shown here -- which I have taken, which we have not brought here today, shows the ridge in question, the Big Indian Ridge coming down and the potential for, depending on the development, potential to bear that.

But again, it's another view that you have to physically go, take your time to look between the trees to see the ridge to look down.

The view is there. It's listed in the Unit Management Plan so that it can be maintained, it just has not had the interest to be maintained until now. But there's nothing precluding us from opening that view back up to the original view by limbing of trees as opposed to cutting live trees, just taking limbs off existing trees to increase the view; but that's something, I presume, you're going to take a look at in a couple weeks.

MR. ALTIERI: That will be the closing comment. We'll be there shortly.

MR. GERSTMAN: Mr. Bennett, it's your understanding that if you were to be a volunteer in the program, and the policy speaks to itself, that you would have some

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latitude in opening the vista for views towards these mountains. And maybe Mr. Rider can add in, what's your understanding of what the limits are in terms of what you would be permitted to do in terms of your conversation with the forest ranger and Mr. Rider?

MR. BENNETT: That's why I wanted to go up there with Patty, so she could show me what was once there, what was once maintained. I think it's just a gorgeous spot. The wilderness area that it's in is the second

largest, I believe, and this was one of four vistas in this whole wilderness area. And I like vistas just as much as the next person and people that hike that trail, I think, should know about it and be able to see that.

ALJ WISSLER: I don't know about Patty anymore, but maybe you could go with Mr. Rider if that's okay.

MR. GERSTMAN: He's a close second.

MR. ALTIERI: Jeff elaborated on what could be maintained as a vista.

MR. RIDER: The only thing I would add -- the Adopt-A-Natural Resource took over what used to be Memorandum of Understandings.

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It just simplified the process, and the whole reason it's put in place is DEC sets parameters on what can and cannot be done by a volunteer, and it's overseen by us.

So it sets parameters of what you can and cannot do, and it also, because of liability, we also have volunteers register their names or Social Security number because when they're doing trail work on behalf of the State under this Adopt-A-Natural Resource, they're actually covered under Workmen's Compensation. That was the secondary reason of this Adopt-A-Natural Resource, to formalize it.

ALJ WISSLER: There has been no formal application made by Mr. Bennett pursuant to

this policy; is that correct?

MR. BENNETT: No.

MR. GERSTMAN: I think he requested a form, and it's in the works is what I understand.

ALJ WISSLER: There's nothing pending with the DEC at this point?

MR. GERSTMAN: No.

ALJ WISSLER: All right.

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MS. ROBERTS: Your Honor, I have a couple of exhibits for the record. I just wanted to make sure that -- you all had asked for a CD of Dr. Burger's presentation, and that has already been submitted.

ALJ WISSLER: 48A.

MS. ROBERTS: Then you asked Dr. Burger for the Monitoring Bird Populations by Point Counts document from the USDA, so we have a copy of that for you. That will be CPC Exhibit 73.

("MONITORING BIRD POPULATIONS BY POINT COUNTS" RECEIVED AND MARKED FOR IDENTIFICATION AS CPC EXHIBIT NO. 73, THIS DATE.)

MS. ROBERTS: Then we have a second exhibit from Dr. Burger, which is just a list of the technical committee members for the IBA to give you an idea of the breadth and experience of the people on the committee, including a DEC representative, so it's not just us making this up.

("IMPORTANT BIRD AREA TECHNICAL COMMITTEE MEMBERS SECOND ROUND OF SITE IDENTIFICATIONS 2003 - 2004 RECEIVED AND
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MARKED FOR IDENTIFICATION AS CPC EXHIBIT NO. 74, THIS DATE.)

MS. BAKNER: Can I clarify when the committee approved it?

MS. ROBERTS: They haven't approved it yet, as I think Dr. Burger -- the committee has approved it, but it has to go now to --

MS. BAKNER: The larger group.

MS. ROBERTS: Right. But the study was begun in 2002.

MS. BAKNER: When did the committee approve it? That's what we're trying to find out.

MS. ROBERTS: I will get that for you.

MR. GERSTMAN: I think Dr. Burger put that on the record.

MS. ROBERTS: I think he did too, but I don't remember.

MS. BAKNER: No, he wasn't sure. He couldn't recall. He wasn't sure if it was May or April or what the date was.

MS. ROBERTS: The point we're trying to make is this is not something we did for this project; it was done before.

MS. BAKNER: We can have differing
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opinions on that.

MS. ROBERTS: It has nothing to do with the project is the point.

ALJ WISSLER: This is CPC 74.

MS. ROBERTS: I just wanted to also point out that on Exhibit 73, the USDA study, there are notations on the exhibit, and they are from Dr. Burger to just highlight some of the salient points of the article, and to just to summarize the take-home message of the report is that they found that even -- the researchers found that even five visits per unit over two seasons really only came up with -- or failed to find 45 to 48 percent of the species in a two-year study.

So the point being that there is no definite point at which you can say this is enough or this is not enough in terms of how many times you go back, but even where these researchers did much more studies than what was done in the DEIS, they still missed 45 to 48 percent over a two-season period.

I wanted to just re-introduce Dr. Kiviat and ask him to go through some rebuttal points we would like to put on the

record.

Before you start, I have a couple questions. Ms. Bakner went through a list of citations from the DEIS on June 10th after you testified. She basically listed all the points in the DEIS that discussed habitat issues. I just want to ask you whether you

had reviewed all those sections that she had pointed out.

DR. KIVIAT: I have.

MS. ROBERTS: Does it change your opinion?

DR. KIVIAT: No.

MS. ROBERTS: Could you please go through some of your concerns on rebuttal.

DR. KIVIAT: One of the points raised by the Applicant's team is that the site has been repeatedly logged. It's mentioned in DEIS, page 3-81. I want to point out that the factor of historic logging and charcoaling and other disturbances of that sort do not mean that there can be no rare species on the site. For example, I have found rare species of state-wide significance in abandoned mines, puddles on dirt roads and post-agricultural

habitats in a number of places in southeastern New York.

Rare species are also reported to use regenerating forest. Among those are the Cooper's hawk and the common night hawk. Those are both special concern species in New York. It's also worth reemphasizing that the site has large areas of forest with numerous trees one foot or larger in diameter. These areas are habitat or potential habitat for many species of neotropical birds, neotropical migrant songbirds, reptiles, amphibians,

wildflowers, sedges and other organisms, possibly including the Indiana Bat that are associated with more or less mature forests.

The second point that the Applicant's team raised that I want to address: The DEIS discusses habitat issues -- yes, that's correct. Page 3-81 and following pages describe plant communities, but they do not analyze which rare species of plants and animals could occur or do occur in those communities. For the most part, the DEIS discusses habitats, but it does not discuss those habitats in relation to the species of

conservation interests.

Another point that they made is the DEIS proposes mitigation measures for wildlife. This is certainly true, pages 3-107 and following pages mention several mitigation measures. One is planting 4,000 indigenous trees. Planted trees are going to be small for a long time. They'll be in altered areas. They will not replace the large areas of forest to be cleared for many years.

Retaining snags at forest edges is also proposed as a mitigation measure. This doesn't make up for removing large areas of forest as far as many wildlife species are concerned.

Another measure is maintenance of understory vegetation. The forest will be fragmented by construction of golf courses and

other facilities exposing the remaining understory, maintained or otherwise, to higher rates of predation on bird eggs and nestlings, as well as greater invasion by exotic plants, such as Japanese knotweed, red-berried honeysuckles and garlic mustard.

It was striking on the site visit, at

least insofar as I was able to see the site, that many of the forested areas have quite low levels of exotic plant invasion in their current condition.

So the kind of disturbance that would be associated with a large-scale development would be very likely to have a large impact in that way. Wetland avoidance is mentioned as a mitigation measure. I don't really see that as a mitigation measure. It's very straightforward and necessary, and a normal part of development projects, and it should not be considered mitigation.

I think it also has to be noted here that many of the animals that use wetlands require large adjoining areas of forested uplands which will not necessarily be preserved if this project is built; and those species include the spotted salamander and the wood frog, both of which we found on the site visit.

Travel corridors is mentioned -- that is travel corridors for wildlife. If we don't

know which uncommon and rare species of
wildlife are present on the site and where

they are, it's not going to be possible to design travel corridors that have real conservation value. Travel corridors are very species specific. For example, a corridor for a Cooper's hawk may be very different from a corridor for a cerulean warbler or red-bellied snake or almost any other species of animal. This is because different animal species have very different ecological requirements, and therefore use habitats and the spaces between them in different ways.

The DEIS also mentions golf course habitat enhancement. Again, this won't replace intact forest habitat for many birds and other animals.

Brush piles were mentioned. Brush piles will be mostly gone after several years, but their development project will be permanent.

Bluebird nest boxes are mentioned. I think bluebirds are beautiful animals, but again, nest boxes for bluebirds do not replace lost habitat for forest interior bird species. These mitigation measures, which are all generally good things, are oriented mainly

toward species of open areas and forest edges, and will, for the most part, not help rare animals and plants of forest interiors.

The purpose of mitigation, in general, is to replace that which is lost to development. In this case, mitigation should replace lost habitat functions of extensive forest. The Applicant's team made the point that Ms. Tuttle conducted a thorough search for the timber rattlesnake, and also that there is too much canopy cover for good rattlesnake habitat on the site.

Appendix 20 of the DEIS describes how Ms. Tuttle looked for rattlesnakes. It does not say where or how much she looked. Apparently Ms. Tuttle spend about nine days on the site surveying for birds, reptiles and amphibians. She could not possibly have conducted thorough surveys for everything, and there is no real documentation of the potential habitats for rattlesnakes, their quality, and the effort expended searching those habitats.

I still do not know the location of the "Steep rock slide on the south facing

slopes of the western section of the property," mentioned in DEIS Appendix 20, also described as "Near the base of the southwestern slope of Big Indian Plateau at approximately 1600 feet elevation," on DEIS page 3-98, where Ms. Tuttle found a black rat snake, in which sounds to me very much like potential timber rattlesnake habitat.

There is evidence in the Catskills of undocumented or recently discovered den areas for timber rattlesnake. Thus locations with potential rattlesnake habitat should be carefully studied even if they are more than four miles from a known and documented den area. Building a golf course or hotel close to, I would say, e.g., within a quarter or half mile of a rattlesnake den area, it could be farther than that, because we know that snakes under some conditions move four miles and possibly farther from their dens during the season. Building this kind of project could result in the snakes migrating into areas of intensive human activity. This could pose unacceptable risks to both snakes and people.

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Two years ago, I was shown a private home built close to the Mount Tremper rattlesnake den several years previously. Rattlesnakes regularly move from the den to bask in a parking area and on outdoor stone stairs at a warm, south-facing portion of the house. The homeowners literally had to step around the rattlesnakes daily at certain times of the year. That would be pretty exciting for me, but not for the average homeowner, I assure you.

Snakes near the proposed development would be at great risk from construction machinery, internal roads, driveways and golf

cart roads. Animals move among different kinds of habitats. It is important to assess the quality and biota of the south-facing rock slide because this is an unusual type of habitat in the Catskill Mountains. It is likely to support rare species which will be affected by off-site impacts of the resort.

There is no way to judge the amount of tree canopy cover in relation to habitat quality unless the canopy cover is documented in the habitat map. Neither of these have

been done either in the DEIS or in any subsequent information that's been provided. Despite having asked during the first ten minutes of the first day of site visits, I have still not been told where the south-facing rock slide is. Even if canopy cover has become high on this rock slide, common processes such as fire, rock and soil instability, storms and insect outbreaks, one of which is progressing right now in nearby areas of the Catskills along Route 28, can reduce canopy cover and improve the quality of snake habitat.

MS. ROBERTS: Dr. Kiviat, just two questions. What is the nearby infestation? You're talking about the infestation in the trees here?

DR. KIVIAT: I'm talking about back southeast along Route 28 in the vicinity of

Boiceville, if I remember correctly. My understanding from Spider Barbour is that that browning and damage to the trees that's visible from the highway is caused by a geometrid moth, an inchworm moth. It's not caused by ten caterpillars or gypsy moths in

this particular instance.

MS. ROBERTS: The other question I had was how much of an area does the timber rattlesnake need to bask and reproduce? Do we need large areas?

DR. KIVIAT: Well, some of the snakes, this would include the small juveniles in the gravid females, which are the females carrying the young, stay very close to the winter dens, possibly within several hundred yards. There are other individuals in rattlesnake populations that move considerably greater distances; half mile to a mile is quite common according to the literature. Four miles, I believe, is the outside distance that has been documented using radio telemetry in New York State. That doesn't mean that snakes under some circumstances don't move farther than four miles.

MS. ROBERTS: But in terms of the claim that there's such a heavy canopy that there's not a lot of habitat for snakes, is it your opinion that you really don't need a lot of open area for timber rattlesnakes to bask and produce?

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DR. KIVIAT: That's correct. Small areas of open forest canopy with rocks that receive a lot of sun in the early spring, that would be April and May particularly, and the late summer/early fall, approximately September and October, are needed fairly near to the winter dens. And that area -- I'm going to make an educated guess here because I don't have the numbers firmly in my mind. That area could be as small as half this room potentially.

So we're not talking about acres and acres of open canopy. You only need relatively small pockets where the snakes can get out in the sun and not be disturbed.

MS. ROBERTS: Thank you.

DR. KIVIAT: Applicant's team claimed that the biological surveys reported in the DEIS were adequate. However, the Applicant's rebuttal witness from LMS stated that a two-day bird survey conducted by LMS on 3rd and 4th June 2004, discovered 16 species of birds not reported in Appendix 20 of the DEIS from the year 2000 survey, and that these newly documented species included the Cooper's

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hawk and cerulean warbler, both special concern species in New York. I might add that the cerulean warbler is a species of considerable conservation concern throughout

its range in North America.

The Applicant has proven my contention that the original biological surveys were inadequate by finding a number of new or newly documented species in only two days, including two rare species of conservation concern. If additional wildlife surveys were conducted, they would almost certainly result in the discovery of many more previously unreported species, including other rarities. This knowledge of rare species is needed to enable project design that is appropriate for a wild land adjoining the Catskill Park.

I want to give two examples of effort that was invested in biological surveys in southeastern New York which I consider adequate for large land use project situations, and I could find many other examples of this kind of level of effort. The Metropolitan Conservation Alliance and Hudsonia are currently conducting biological

surveys of a 1000-acre development site in Dutchess County. Eight person-days are allocated to the breeding bird survey for 1000 acres. If that were compared to Sheila Tuttle's survey of the almost 2,000-acre Belleayre Resort site, it's about four times the effort, because she was splitting her time between a reptile and amphibian survey, and a bird survey. So we'll assume for a moment that it was about half reptiles and amphibians

and half birds.

In the same Dutchess County example, significantly more time is allocated for the reptiles and amphibians because most of these animals are cryptic and secretive. Also, in the same group of studies at that site, 16 person-days are allocated to searching for rare plants on 1,000 acres.

My second example is from a 180-acre area of glassland habitat at a proposed landfill site in Oneida County, New York. Hudsonia conducted surveys for rare grassland birds. One biologist spent 27 mornings, 5.5 hours each, and five nights at six hours each, surveying for this group of birds alone.

So that -- I don't have the calculation in my head, but you can do the arithmetic, it's a very much higher level of effort to address a specific question about rare birds that might have been on that site.

MS. ROBERTS: Dr. Kiviat, considering that this site is surrounded by State-owned, protected land, would you think that a level of effort somewhere near that, or maybe a little less, but at least more than the DEIS is warranted to find rare species?

DR. KIVIAT: I think at a minimum, the level suggested by the first example I gave. And some of that question of the level of effort has to be resolved in view of the

nature of the site, very little of which I've been able to see in the site visits, so I would prefer at the moment not to give a very specific recommendation.

Another point that was made during rebuttal was the site has low habitat diversity, and thus conservation concern is diminished. I disagree with that contention. Large areas of low diversity are themselves an important component of biological diversity on

a larger scale. This is a very important and sometimes confusing point.

When we say biological diversity, we're interested in the range of different kinds of organisms and their genes and communities and so on at different levels of spatial scale. That includes small scale, like 100 acres or less; it also includes a very large scale like the entirety of the Catskill Mountains. If you look at these larger scales, which are very important in conservation, a very important component of diversity at those large scales is the presence of large areas which in and of themselves have low diversity.

So the point here is that in the larger landscape region like the Catskills, you want to have areas of low diversity and areas of high diversity because each will support to some extent different species of plants and animals. Without having large

low-diversity areas, there are some species that you're not going to have. This is why biologists are so interested in protecting large areas of interior forests, large areas

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of grasslands and large areas of salt marshes, to give three examples.

Removing 573 acres from an extensive area of forest will have a cumulative impact on the large-scale system that supports area-sensitive species; that is, species that require large areas for their home ranges and their populations, including many mammals, birds and reptiles. Despite the fact that the Belleayre Resort site is mostly covered by second growth northern hardwood forest, within that gross community description, there is considerable variation in structure, including rocky areas, different compass aspects, areas dominated by yellow birch, versus sugar maple, versus beech, versus hemlock, streams, springs and so forth. All these variations in this large, relatively low-diversity area support variations in plant and animal communities and species.

MS. ROBERTS: Dr. Kiviat, one of the things we heard on the 10th was that actually creating some edge might be a good thing, that it would be creating diversity in an area that otherwise has low diversity. Can you comment

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on that?

DR. KIVIAT: It creates a kind of diversity. It creates a diversity of mostly common species that are tolerant of human activity. Mostly these are not species which we place conservation value on, species of conservation concern.

In conservation biology in general, we're more interested in the less common species, and in the species which are less tolerant of human activities because those tend to be the species that will disappear without conservation attention. And creating edge habitat, in most cases does not favor those species, although there are certainly exceptions to that.

If you want to do good biological conservation, almost always you don't go out and create a lot of edge habitat. This is contrary to recommendations that were made for many years in, for example, wildlife biology textbooks, where wildlife biologists said: Go out and make edge habitat, it's good. Well, it was good for deer, it was good for cottontail rabbits, and lots of other species

that were game animals that hunters wanted to hunt. That was the goal of that kind of wildlife management. It's not good for general conservation of biological diversity, including non-game animals as well as game animals.

So the goal of biological conservation, particularly on a wild land site, is not to create higher diversity of wild life, per se; in other words not to make just more species of animals but to conserve uncommon and rare species in their habitats in the long-term.

Creating more edge habitat at the expense of forest interior is not a good conservation practice. The edge effect, which can extend hundreds of feet or more into the forest, increases the impacts of predators and evasive exotic plants on forest wildlife and plants.

Also when that forest habitat is reduced, the displaced wildlife cannot simply move and take up residence elsewhere. This is a statement that's commonly made in environmental impact statements for many

different projects. It's simplistic because displaced dispersing animals are at high risk of predation, road mortality and other factors that cause them to die or be unable to reproduce.

Herpetologists, people who study reptiles and amphibians, for example, are schooled to release individual captured animals where they were found so that those animals will not be subject to the risks of forest dispersal. And I'm just mentioning

that as an example of the importance of the home range to the animal that lives in it, and to the risks that accrue when that animal is forced to leave its home range.

It was stated during rebuttal that the rare tiger beetle, Cicindela ancocisconensis, is found off the site, thus is not at risk. You will recall, this is the rare animal that was reported in the letter from the New York Natural Heritage Program, or the DEC, which was produced during rebuttal. This species of tiger beetle is associated with particular soil conditions on stream beds and stream banks. The local record from the New York

Natural Heritage Program was from the junction of the Esopus Creek and Birch Creek, just downstream from the site. This is exactly where the full brunt of altered on-site hydrology, soil erosion, siltation and scouring will manifest. It's also worth noting that potential habitat exists and the beetle may occur along Birch Creek on-site and possibly elsewhere on-site. And we saw some of that potential habitat from the bridge over Birch Creek, I believe, behind the former Jake Moon's Restaurant, if I have the correct location in mind.

Ms. Bakner said that Dr. Futyma is well qualified to conduct the work he did for the DEIS. I agree. Contrary to Ms. Bakner's implication, I was not questioning

Dr. Futyma's qualifications. I was simply saying that there was no evidence in the DEIS that he conducted a rare plant survey, and that he spent enough time to find any rare plant species that may be present on the site.

During the site visit, the last day of the site visit that I participated in, Mr. Barbour found a sedge near the blue trail

that was either Carex retrorsa or Carex bullata, but was not mature enough to identify. Carex bullata is a Natural Heritage Program listed rare species in New York. Neither of these species is on Dr. Futyma's plant list in the DEIS.

I think it's worth underlining here that this site seems to have quite a bit of sedge diversity, both in the upland habitats and the wetlands. If you don't look at the sedges and identify them, you haven't done a rare plant survey, because quite a number of the rare species on the New York Natural Heritage Program list of rare species are sedges. Many of the sedges are hard to distinguish in the field, and they really require some careful attention and some time.

Although northern monkshood is a showy plant when it is in flower, at any particular time, a group of stems may not be in flower and may be inconspicuous. A biologist concentrating on wetland delineations would

not necessarily recognize non-flowering
northern monkshood, which looks much like some
of the large buttercup species. This is

another point about fieldwork that I don't
believe was conducted, and certainly there's
no evidence of it in the DEIS, that should
have been conducted given the federal listing
status of the northern monkshood.

MS. ROBERTS: Dr. Kiviat, during some
conversations that I know you had with Spider
Barbour, who I think by all accounts is a very
well-known, respected plant biologist, did he
indicate to you whether if he had seen this
plant in the wild, he would himself have
difficulty identifying the plant, unless he
was really looking for it?

DR. KIVIAT: Spider Barbour did tell
me that he has seen northern monkshood in the
Catskills several miles from here -- several
miles, excuse me, from the Belleayre Resort
site, and we did have a discussion about the
difficulty of identifying it when it was in a
non-flowering condition. And Mr. Barbour
agreed with me that it takes a good deal of
attention in the field to recognize that
species when it is non-flowering.

MS. ROBERTS: When does it flower?

DR. KIVIAT: It has a long flowering

period during the summer. I believe the
information on the New York Natural Heritage

Program web pages indicates about June to September.

MS. ROBERTS: June?

DR. KIVIAT: I believe that's correct. Another point raised during rebuttal is why should we be concerned over species that are not listed as threatened or endangered? That's a paraphrase. My contention is that biodiversity is more than just threatened and endangered species. Species that are uncommon or regionally rare become threatened or endangered in many cases because their habitats are lost or degraded. Habitat loss and degradation is considered to be the primary cause of species endangerment in North America. Both species have importance, not least of which is that human society depends on biodiversity for ecosystem services, such as maintenance of air, water and soil quality. And for products such as pharmaceuticals, which in many cases are derived from wild species.

In the southeastern New York region,

the fast pace of the development and land use change is altering and destroying habitats, and is contributing to the regional loss of species and cumulatively to species lost state-wide. It's my opinion that it behooves all organizations and individuals involved in land use planning, including all the entities

that all of us in this room represent, to do more to reduce the impacts of development on biological diversity.

Also mentioned during rebuttal was the contention that all the wetlands on the site have been delineated. When we visited during the site visit the area of Irrigation Pond 1, we observed a logging road with large puddles supporting at least two wetland plant species: Carex crinita and Carex stipata. This area needs to be examined to determine how much undelineated wetland is present. Small wetlands with important habitat functions, e.g., potentially for rare plants, may well exist elsewhere on the site. Small wetlands that have not yet been delineated may well exist elsewhere on the site.

The final point that I want to

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address -- raise during rebuttal, is that the site covers almost 2,000 acres, of which only 573 acres will be disturbed. There may be a 573-acre area proposed for development, but the actual disturbance would be far larger through the agencies of, for example, soil erosion and siltation, errant construction equipment, which is very common around construction sites, adults and children walking outside the developed areas; noise, light, dust and other impacts. I might add pesticides, de-icing salts and nutrients from fertilizers. I don't know of any other

recently built or ongoing project of that magnitude in the Catskill Mountains.

Now, the final general point that I want to make here is that the Applicant has not made enough of an effort to find and document the rare species of the development site. Without knowing where those organisms are, it is impossible to protect them and their habitats by designing the development project around them. Potentially 2,000 acres are enough land to design an economically viable project that will have relatively small

impact on biological diversity. However, that appropriate design can only be done with the right biological information in hand.

So to reiterate that, I'm not trying to say by making these points that this project should not be built, I'm simply saying we don't have the information in front of us to determine if this project has been designed in a way that will minimize its impact on wildlife habitat and on biological diversity in general, and that in a project of this magnitude, and even in much smaller projects, that's an extremely important consideration.

MS. ROBERTS: I have a couple other points, Dr. Kiviat. We talked a little about Indiana bats last time, and there was rebuttal back and forth. I just wanted to ask you: Do these bats need large stands of old growth

trees or large trees to sustain their population?

DR. KIVIAT: Well, I have limited familiarity with that information because some of it is very new information that has not yet been published, and it's coming from a presentation that was made by Al Hicks of the

DEC Endangered Species Unit at the Northeastern Natural History Conference in May of this year, of which a colleague of mine listened to.

It happened that the following week, I was conducting a survey for something else, not for Indiana bat, on a site in the town of East Fishkill in southern Dutchess County with a colleague who attended Mr. Hick's presentation of the Natural History Conference. And my colleague, John Sullivan, pointed out that the Endangered Species Unit had been radio-tracking Indiana bats that were tagged with radios at an over-wintering site in Rosendale in -- I'd say this is central Ulster County, Rosendale, southeast of here some distance -- which proceeded to fly across the Hudson River to the town of East Fishkill in southern Dutchess County, and use a group of -- as best we could determine and I want to underline this is secondhand information -- a group of large trees on an old farm, a former farm near a highway for summer roosting habitat, and potentially maternity habitat.

Those trees, again if I understand
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correctly, are not, first of all, large numbers of very large trees in the middle of a forest. They're trees that look like they were planted, or at least cared for, along a highway in a farm road in an area that's rural, becoming suburban. Just as one example, and I don't know what the other available or unavailable information on Indiana bat speaks to.

This one example indicates that this federally endangered species, federally-listed endangered species can use small groups of large trees in an area that is not a -- not an especially wild, untouched, unlogged type of area. And that led me to think that on the Belleayre Resort site, there are groups of trees that we saw during the site visit, for example, on the first day of the site visit at the location of the hotel on the western site, which are, to my eyes, large enough and numerous enough to potentially be usable by Indiana bats.

It's going to take someone with more Indiana bat expertise than me to determine how important that is, but I think it's something
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that needs to be considered during this process of planning.

MS. ROBERTS: One final question. We

had an occasion or an opportunity to talk to Michael Kudish after the last hearing about his book, and there was some question that we had, looking at the map in the book, about whether there was old growth on this site or not, and I guess the Applicant's experts quickly dismissed it as not being there, looking at the map. Can you relate the conversation we had with the author and tell us about whether he could recall about whether there's old growth on the site?

DR. KIVIAT: Dr. Kudish first looked at the small map in his book and said he wouldn't be able to tell from that small map --

MS. ROBERTS: He would not?

DR. KIVIAT: He would not be able to tell from that small map where the old growth stand is in relation to the Belleayre Resort site boundary. He then looked at the large folded map in the book and at some of his field notes, and he said he thought that most

of the old growth stand that he had identified, which was about a square mile and a half, was not on the resort site; however, because he had delineated that one-and-a-half square mile, old growth stand with a very small number of points, which he referred to as entry points in his book -- and the number doesn't stick in my mind, but I think it was 7 or 11 entry points, a very small number of

points for an area of about a thousand acres of forest -- he did that by interpolating, so he can't say that the old growth forest does not extend onto the resort site in areas in between some of those entry points.

He also said that if that were the case, it would be most likely to find old growth forest in areas of the site that are steep or rocky or otherwise which would have been difficult for logging equipment to gain access to.

In general, this is a very good point, that in most logging operations, the steep areas, the rocky areas, the areas that are hard to get to for other reasons are typically left unlogged because it's simply not

economical to get in there and build a logging road and take the logs out.

I would suggest that there are, in several places on the resort site, very steep slopes and ledgy areas that may have been difficult or impossible to log, most of which I haven't seen and which could still support old growth forest. Again, I think -- I'm not stating that this old growth forest is definitely on the site. I'm simply saying the Applicant has not definitively answered the question about whether or not there is old growth forest on the site, and I think that's one of this whole group of questions that

really does need to be addressed at this stage.

MS. ROBERTS: I have nothing further, your Honor, except a closing statement; but I don't know if there's rebuttal or not.

ALJ WISSLER: Why don't you finish.

MS. ROBERTS: Your Honor, the level of study undertaken in this DEIS is clearly, based on Dr. Kiviat's testimony and Dr. Burger's testimony, inadequate to ensure that there will be no adverse impacts to the

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wildlife habitat on the site. As an example, the bird survey which was done was not adequate in that it didn't involve enough visits to the site or enough points. The fact that another survey was done in June is, I guess, a good thing and a bad thing. The good news is that more species were found, 16 species were found, which is what we expected, as Dr. Kiviat testified, and that it included two special-concerned species is also not surprising, given the fact that this site is wedged in between thousands of acres of State-owned land that has been protected.

I guess the bad news is that the survey was done by technicians at the wrong time of the day, for the most part, and at the wrong season, so that we suspect they actually missed several more species.

Dr. Burger testified that at least five or six visits should be conducted per

site, per point over a two-year period. That was clearly not done here. We really don't know what part of Ms. Tuttle's day was spent just doing the bird survey, and we do know that the 2004 survey, that there were 32

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points, and there were two visits done for each point; but again, only one of which was done during the morning hours when you're most likely to find the birds. Again, it was not done over two seasons.

I think reasonable people could argue whether we should do five visits or six, or six or eight, but I don't think it's reasonable to suggest that what was done in the DEIS is adequate for a site that is this large and has this much potential for habitat disruption -- that has this much diversity.

Even if you take the Applicant's maps that were submitted today that show the IBA area and the site, that some of the site is not exactly in the IBA, clearly a large part of the site is in the IBA, and the other part is adjacent to it.

It's no surprise that there's an IBA here. Just to reiterate, I don't know if this really came through in Dr. Burger's testimony, but IBA's are only designated for the cream of the crop, the top ten percent of the habitats in New York are eligible for IBA, and within those IBA's, this IBA that will be designated

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soon is the best in the state, and that's really not surprising because -- again, this site was purposely, as Mr. Ruzow testified this morning, the Applicant bought over time 13 separate parcels wedged right between State-owned land in a preserve that's been here for 100 years. It is not surprising that you're going to get an IBA that happens to be the best in the state.

Given the fact that a DEC staff person was actually on the technical committee that identified the IBA, it's even more surprising that the DEC would have accepted this DEIS, based on the inadequate bird survey alone.

Much the same could be said about the habitat survey that was done. As Dr. Kiviat has found and stated, it is simply not adequate for a site this size. Dr. Kiviat himself found many species just walking around this site that were not listed on their survey lists. And as Dr. Kiviat testified, Spider Barbour also found two sedges, one of which he thinks is rare, and that's just walking around.

The suggestion that the habitat is

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homogenous and so it does not matter as much if it is disturbed, or that it might be actually a good thing to create more edge, really evidences such a fundamental lack of understanding of current sound scientific

thinking in conservation, that I think Mr. Franke's testimony in this regard should be weighed carefully, and in large measure disregarded.

The fact is that our experts, virtually all of them have Ph.D's and are scientists and do this full-time, find that that a homogenous forest habitat is a worthwhile habitat to project; and that forest edge is not a good thing, and that the idea of conservation is not to encourage more edge, but to conserve, as Dr. Kiviat said, those rare species that were not even looked for.

Again, as Dr. Kiviat said, we're not opposed to development, but we do need to know what's out there so that if a development comes to this area that is, again, wedged, and the Applicant knew that this site is wedged right between State-owned lands -- that we need to know exactly where this development is

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going to be located. You can't buy property smack dab in the middle of the State property and then cry "foul" when you're asked to perform at least an adequate environmental assessment, because the resources on that State land belong to everyone.

So we do, again, feel like we have raised substantive and significant issues because what's in here in terms of the surveys and the habitat simply is not a basis for

which you or the Commissioner can ultimately make a decision on whether or not there are adverse impacts to the habitat. We certainly contend that there are, and at least, that we don't have enough information to determine the nature of those impacts.

ALJ WISSLER: Ms. Bakner.

MS. BAKNER: Thank you, your Honor. First of all, we would like to observe with respect to CPC 73, which is the publication that Dr. Burger provided, that this does not appear to be a federal regulation or requirement, or a state regulation or requirement, and I believe the question that, perhaps it was your Honor asked of Dr. Burger

was: Is there a standard or a regulation or something that exists to tell you what the requirements are for monitoring bird populations? So I'm just observing for the record that these appear to be abstracts of studies that were done and that they can in no way be construed as a regulation or even a guidance document.

The opponents argue that we haven't proved a negative, that we haven't proved what's not on the site, all we have shown is what's on the site based on what they feel are inaccurate studies. The Department of Environmental Conservation requested that we do studies. We retained consulting engineers, people who do these studies on a regular

basis. They advised us as to how the studies should be done. We did the studies, we submitted them to DEC, and DEC determined that they were complete. Whether Dr. Kiviat agrees or disagrees does not raise an issue of -- a substantive and significant issue, or in any way indicate that the Commissioner lacks a record on which to base a decision under SEQRA. It was determined to be complete and

adequate for public review.

I'd like to turn to Dr. Futyma for a second. Dr. Futyma, you are a doctor of botany?

DR. FUTYMA: Yes.

MS. BAKNER: Dr. Futyma, did you spend 11 days on the site in the fall of `99?

DR. FUTYMA: At least 11 days, yes.

MR. RUZOW: Did you spend one day on the site in the spring of 2000?

DR. FUTYMA: At least one day, yes.

MS. BAKNER: Do you stand by your determination with respect to the plants that were found on the site as a part of your site investigations?

DR. FUTYMA: I stand by their identification, yes.

MS. BAKNER: We do have a doctor on the site. I think that Ms. Roberts forgot him, but I do want to point out that he is a doctor and has a doctorate.

MR. RUZOW: His background. You have his background.

MS. BAKNER: Mr. Ruzow asked you what is your background, where you worked.

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DR. FUTYMA: I worked at the New York State Museum as a researcher in botany.

MR. GERSTMAN: Is that current?

DR. FUTYMA: No, that was prior to working for the LA Group.

MS. BAKNER: Mr. Franke, the nearest recorded rattlesnake den, how far away from our site is that?

MR. FRANKE: Approximately ten miles.

MS. BAKNER: Did you check with DEC on their records? How did you find out where the nearest site was?

MR. FRANKE: That was information obtained from the Department.

MS. BAKNER: From the Department. In your discussions with Ms. Tuttle, who did the rattlesnake survey, did she indicate that there was any evidence of any rattlesnake presence on the site?

MR. FRANKE: No.

MS. BAKNER: I'm going to come back to the rattlesnakes in a second.

Mr. Robbins, I know you haven't been with us before.

MR. ROBBINS: Correct.

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MS. BAKNER: However, Christon

Robbins' resume was entered into the record when his colleague, Mr. Stephen Seymour, was here. He's also with Lawler, Matusky & Skelly.

Mr. Robbins, people have indicated that when you came to the site and did your survey, you saw a certain number of bird species. Do you recall what the number of bird species were?

MR. ROBBINS: We saw a total 75 different bird species.

MS. BAKNER: Of those 75 bird species, how many of those were new species that had not been put forth in the DEIS before?

MR. ROBBINS: 16 total.

MS. BAKNER: Of the 75 species that you saw -- and I'm not sure how to ask this question inside-out -- but how many species that we saw previously that the LA Group staff saw previously --

MR. RUZOW: That had been reported in the DEIS.

MS. BAKNER: -- did you not see when you were out there?

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MR. ROBBINS: There was a total of 13 that we did not see that were recorded in the DEIS.

MS. BAKNER: So essentially there were some give and take, if you will; some you saw, they didn't see; some they saw, you didn't

see?

MR. ROBBINS: That's correct.

MR. RUZOW: Is that a normal experience in terms of your experience with site visits, that on certain days you'll hear certain species or be able to observe certain species and on following days or later days not be able to observe them?

MR. ROBBINS: Yes, that is the case on occasion. And it also has to do with the years -- there's certain things that can cause observations of certain species one year that you may not see the following year.

MS. BAKNER: It was noted that somehow you all did your survey at the wrong time of the day; is that correct?

MR. ROBBINS: We conducted surveys on two consecutive days, starting early in the morning, continuing throughout the day so we

could report the species that we saw over an entire day. The surveys were initiated at no later than 7 a.m. One day we started before 6 o'clock in the morning and recorded through until noon.

MS. BAKNER: Do you recall, Mr. Robbins, how you decided you were going to set things up for those two days? Did you go out ahead of time to take a look at the site?

MR. ROBBINS: Yes, we did. We made a site visit in May, I believe May 17th, to do a reconnaissance to determine where we were

going to set up our point counts.

MS. BAKNER: It's also been suggested that you somehow -- you technicians went out at the wrong time of the year; is there any truth to that statement?

MR. ROBBINS: No, early June is a good time to record breeding birds and habitats in this area.

MS. BAKNER: Last time we heard from Mr. Seymour how many bird surveys and other surveys he has done. Have you had a limited experience in doing bird surveys, or do you do a lot of them?

MR. ROBBINS: The group that I went out with, there were four of us have done an extensive number of bird surveys -- I cannot count. And two of the folks who were out on both those days bird on their off times. They travel all over the country. They spend their vacations birding so --

MS. BAKNER: Mr. Franke, Mr. Kiviat has indicated that --

ALJ WISSLER: Dr. Kiviat.

MS. BAKNER: Sorry. Dr. Kiviat has indicated that we have somehow extolled the virtues of edge effect in our document without recognizing the importance of interior species in forested areas. Is that an accurate reflection of the Draft Environmental Impact Statement in your opinion?

MR. FRANKE: No, the Environmental Impact does state clearly, I believe it's page 3-104, where it says: "The proposed project can potentially result in a decrease in numbers of local populations of forest interior species."

MS. BAKNER: So in your opinion, did we give inappropriate deference to the

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importance of interior forests or interior species?

MR. FRANKE: It's clearly recognized in the DEIS.

MS. BAKNER: Did we ever claim anywhere in the DEIS that displaced species would fly off and happily find a home somewhere else?

MR. FRANKE: No. It's stated in here that if suitable habitat is not available, there's potential for mortality due to intraspecific or interspecific competition for habitat resources.

MS. BAKNER: In your opinion, would DEC have accepted a document that made such a ridiculous statement?

MR. FRANKE: I don't want to speak for the Department, but it's my belief they probably would have not.

MS. BAKNER: Beetle habitat. We introduced the letter into the record from the Natural Resources. I'm just going to ask you again, if you can, Mr. Franke, is this a

protected or endangered or threatened species of beetle?

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MR. FRANKE: No, it's not.

ALJ WISSLER: What is he referring to?

MS. BAKNER: Applicant's Exhibit --

ALJ WISSLER: It's something that's in?

MR. FRANKE: New York Natural Heritage Program.

MS. BAKNER: What are we doing down around Birch Creek basically in terms of the project?

MR. FRANKE: For Birch Creek, we have one bridge to be constructed for the entrance road at Friendship Road, a bridge spanning the creek itself. Second of all, would be the replacement of the existing Winding Mountain Road bridge over Birch Creek.

MS. BAKNER: So we're essentially disturbing an area that's already been disturbed; and the other area, we're merely bridging across it in order to have an access road into the site?

MR. FRANKE: That's correct.

MS. BAKNER: Was that access road into the site chosen for any particular environmental reason?

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MR. FRANKE: The exact location, there's avoidance of some wetland areas

associated with Birch Creek that was taken into consideration when siting that access road.

MS. BAKNER: Was it placed at that location due to avoidance of visual impacts from Route 28?

MR. FRANKE: An alternative access road off of Lasher Road was evaluated during the design process and was abandoned as an alternative because of potential visual impacts from Route 28, yes.

MR. RUZOW: Your Honor, he was reading from Applicant's Exhibit 13, the letter from the Natural Heritage Program.

ALJ WISSLER: Thank you.

MS. BAKNER: Mr. Franke, do you recall the Draft Environmental Impact Statement looking at the issue of Indiana bats?

MR. FRANKE: Yes, it did.

MS. BAKNER: Basically, the information that you had was that the hibernaculum was a substantial distance from our site?

MR. FRANKE: That's correct. I believe that was in response to conversations between our staff and a gentleman from DEC, Al Hicks, mentioned previously by Dr. Kiviat.

MS. BAKNER: Mr. Franke, and also Mr. Futyma, Dr. Futyma -- it's a universal problem of mine. We're back to the old growth

issue here as much as we try to -- have tried to address this on a number of occasions in a number of different ways.

Dr. Futyma, are you aware, given your extensive look at the site, of any old growth on the site; are you aware of any such thing?

DR. FUTYMA: I did not see anything that to me appeared to be old growth. I'm familiar with the higher elevation old growth, say around the top of Belleayre, did not see anything like that on the site, that kind of stunted forest, especially with a lot of yellow birch in it -- what is on the top of Belleayre -- and I didn't see anything like that on the site.

As far as a more lower elevation type of forest that would be old growth, I'm

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familiar with that kind of forest from various other sites in New York and other states, and I did not see anything that to me looked like could be old growth. Too many places all over had indications to me of logging.

MS. BAKNER: Mr. Franke, is that also consistent with your experience on the site?

MR. FRANKE: Yes, it is.

MS. BAKNER: We're going to do something a little unusual.

Mr. Frisenda, can you come up here. We're hearing again and again, we didn't look hard enough, we didn't look hard enough. We

followed all the acceptable procedures, and we had the consultants out there looking at things on site, particularly rattlesnakes, which, you know, everyone takes very seriously given their status as an endangered species.

Mr. Frisenda, I think everybody here is familiar with you. You're just a layperson. What did you do before you retired?

MR. FRISENDA: Before I retired? I didn't know I retired. I was in commercial aviation. I had my own business on a couple

of occasions, varied background.

MS. BAKNER: So up wouldn't claim to be any kind of a specialist on snakes?

MR. FRISENDA: Nope.

MS. BAKNER: Can you explain to me the familiarity that you and your family have with respect to this particular site.

MR. FRISENDA: I've been all over that mountain since 1958 on a weekend basis, and full-time for the past 30 years I've lived up here; and my wife, my children and I have been up there together and on separate occasions.

MS. BAKNER: Have you ever been to portions of the site that were sunny or open or --

MR. FRISENDA: Yes, the Lost Clove side is the sunny side, and I've been on that side of the mountain summer, spring and fall.

MS. BAKNER: Are you generally

conversant in the physical appearance of a rattlesnake?

MR. FRISENDA: I would say generally, yeah.

MS. BAKNER: Have you or any member of your family ever during any time they were out

on these properties seen anything that was -- that looked like or had any of the attributes of a rattlesnake?

MR. FRISENDA: I have neither seen, nor heard anything that would resemble a rattlesnake.

MS. BAKNER: Thank you very much, Mr. Frisenda. I really appreciate it.

Your Honor, we have done an appropriate -- we have undertaken an appropriate examination of the flora, fauna on the site. We requested LMS to go out and do an additional bird survey, not because we thought that anything that we had done before was deficient, but just because it's this time of year now, and if it was ever to be done, we really felt we had to do it now.

As I'm sure is apparent, opposition is often about delay. It's often about suggesting --

MR. GERSTMAN: Judge --

MS. BAKNER: -- suggesting that there are things that should have been done that weren't done, and for certain things you only

have a limited time frame. So what we decided
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to do was have them go out and do the survey because June only comes once a 12 months.

So I guess the only point we're making is the suggestion by even a qualified person such as Dr. Kiviat, that more should have been done does not rise to a substantive and significant issue, and there really have been no showing, including the most recent suggestion that a sedge that couldn't be identified was somehow significant. There's really been no showing that there's any species out there that we didn't adequately consider as part of the DEIS, or as part of the habitat analysis.

So with that, Mr. Ruzow, is there anything you would like to add?

MR. RUZOW: No.

MR. GERSTMAN: Can we have a minute or two?

ALJ WISSLER: Yeah, like really just a minute.

(4:42 - 4:43 P.M. - BRIEF RECESS TAKEN.)

MS. ROBERTS: Mr. Alworth, you can stay there.
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Tom Alworth has testified before, but as you know, your Honor, he has also done bird research in his other life, and we just wanted to comment on June being an acceptable time to

do bird survey work; and Dr. Burger testified that it was not an opportune time because the birds are sitting on their nests, and I just wanted Mr. Alworth to give an opinion about whether June is an acceptable time, or the best time.

MR. ALWORTH: June are resident birds. So if the question is are resident birds -- June is the time to look for them because they are, in fact, nesting at that time. That doesn't include other birds that may be moving through and using that habitat through migration, which is also important; but if you're looking for nesting resident birds, June is the time to do it.

The problem is, they do tend to be much more quiet, less territorial singing. They're secretive around their nests, so that does argue for a more intense survey in June to really identify who is using the site to nest.

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MS. ROBERTS: And Mr. Gerstman would like to make a statement.

MR. GERSTMAN: Judge, we believe we have established through the offers of proof of Dr. Kiviat, Dr. Burger and others who have testified concerning the value of this forest area habitat that it, in fact, is an important habitat area, important forest area. Homogeneous, as it is, for biodiversity over a

larger area. We believe we made the appropriate case that the Applicant's evaluation doesn't come close to being satisfactory in order for the Commissioner and yourself to make findings under SEQRA.

We believe that there is sufficient information in our offers of proof to indicate that there is extremely important value to this area, that the mitigation that is proposed has not come close to meeting the findings requirements under 617.11 of the regulations; and that we have established a substantive and significant issue based upon all of the expert offers of proof that we have put forth over the course of the Issues Conference.

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The issue, for instance, of whether or not habitat -- whether or not the wildlife that are going to be displaced from this project during construction are going to either find new habitat or compete with other members of their species for survival -- doesn't answer the question as to whether or not the mitigation that's proposed is adequate.

Dr. Kiviat has in his final, and what I believe he said, most important point, is that this project has not been designed with enough information concerning the biological record of the site, essentially, to know whether or not the mitigation is adequately

protecting the biodiversity of the site. Dr. Kiviat is suggesting that a good scientific record of the site is absolutely essential in order to determine whether the mitigation that has been proposed will minimize the adverse environmental impacts to the maximum extent applicable. Under the current record, the Commissioner does not have the opportunity to make that finding.

MR. RUZOW: Your Honor, what is

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missing from this analysis, Mr. Gerstman's argument, is an important phrase which is found following both mitigation and alternatives, consistent with social, economic and other essential considerations. There is no requirement under SEQRA that one mitigate every aspect of a potential environmental impact in a vacuum. We have done our best to identify the potential significant adverse effects. Their best claim is that we should be doing more to identify those impacts. We believe we've done enough. And at the end of the day, the Commissioner will have ample opportunity, and your Honor as a recommendation, to consider whether or not they have been mitigated to the maximum extent practicable, consistent with social, economic and other essential considerations.

There is a balancing it end of the day that SEQRA requires, and we understand that we

cannot avoid all potential impacts. We believe we've been able to avoid or mitigate the potentially significant ones, but even those are balanced against social, economic and other essential considerations, and the
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value and the benefits of this project has from an economic and a social perspective to the local governments, the local region, and the state as a whole.

So the argument that Mr. Gerstman advances is only part of the story, and the obligations of the Commissioner in decision-making.

MR. GERSTMAN: Just to complete the circle, your Honor. Again, to pick up on what Mr. Ruzow is suggesting about the balancing required under SEQRA, we would, of course, agree with the regulatory language. What Mr. Ruzow is leaving out of the analysis is that, to the extent that we have demonstrated that there are significant impacts, the issue of whether or not to -- that the Commissioner can issue findings under SEQRA must be adjudicated.

Whether or not the mitigation is satisfactory for the Commissioner to make those findings under SEQRA consistent with social, economic and other essential considerations, must be an adjudicable issue to the extent that we have demonstrated, and
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we believe we have, that this project will result in significant adverse environmental impacts to habitat, to wildlife, and to the surrounding habitat not currently on the site.

MR. RUZOW: We look forward to further briefing the issue.

MR. ALTIERI: Again, restating that the staff will -- presumably, I guess this will be more or less the end of wildlife -- and the staff will be submitting something probably in writing, or maybe something that I'll read into the record when we get together again.

MR. GERSTMAN: Thank you, Judge.

ALJ WISSLER: If you want something in addition before the record closes, you need to give me that before the record closes. I don't want to hear something new in the briefs.

MR. ALTIERI: Correct.

ALJ WISSLER: Thank you very much.

We'll be back here on July the 12th.

(4:51 P.M. - WHEREUPON, THE ABOVE PROCEEDINGS ADJOURNED FOR THE DAY.)

(WILDLIFE ISSUE)

C E R T I F I C A T I O N

I, THERESA C. VINING, hereby certify and say that I am a Shorthand Reporter and a Notary Public within and for the State of New York; that I acted as the reporter at the Issues Conference proceedings herein, and that the transcript to which this certification is annexed is a true, accurate and complete record of the minutes of the proceedings to the best of my knowledge and belief.

THERESA C. VINING

DATED: August 30, 2004.