Town of Danby
Marcellus Shale Gas Drilling Task Force

Response to the dSGEIS
December 1, 2009

Introduction

The Town of Danby *ad hoc* Marcellus Shale Gas Drilling Task Force has reviewed the *Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program* (dSGEIS) dated September 2009 and updated through October 26, 2009 as issued by the New York State Department of Environmental Conservation (DEC) and developed the following Response.

The Response is organized into four sections:

(1) Involvement of Local Municipalities

(2) Concerns about Local Impacts/Unfunded Mandates

(3) Cumulative Effects and Lack of State Resources for Monitoring/Enforcement

(4) Natural Resource Inventory

Each of these areas is briefly discussed below and covered in detail in the following pages. An Appendix is attached which summarizes the Town of Danby 2003 Comprehensive Plan and provides maps for the main elements of the Natural Resource Inventory.

1. Involvement of Local Municipalities

The dSGEIS states that:

> It is certain that widespread development of the Marcellus … will have community impacts that will change the quality of life in the affected areas... For purposes of this review, however, there is no sound basis for an administrative determination limiting the shale development... Accordingly, any limitation on development… is more appropriately considered in the context of policy making, primarily at the local level, outside of the SGEIS.

Local policy makers, however, have few strong mechanisms for addressing issues raised by shale gas drilling and production, and this deserves to be remedied. Local governments need to be involved in the permitting process if they are to work effectively to integrate this development with local plans and with the preservation and enhancement of environmental, health, historical, social, cultural, and economic resources. We strongly recommend strengthening the mechanisms by which local municipalities are involved in the permitting and the application of New York's State Environmental Quality Review Act (SEQRA) processes within municipal boundaries.

2. Concerns about Local Impacts/Unfunded Mandates

Here we provide specific comments regarding local impacts and unfunded mandates, including the DEC's recommendation that local County Health Departments play a central role in dealing with situations of well water contamination and with respect to local emergency services. We recommend additional training, resources, and technical support for local fire departments, EMT personnel, hospital personnel, and other first responders. We also attempt to identify the resources the Town of Danby may have to provide to mitigate adverse effects.

3. Cumulative Impacts and Lack of State Resources for Monitoring/Enforcement

Cumulative impacts (the effects of more than one project in the same environmental area considered together, as well as those that result from accumulations over a period of time) are of particular concern. The dSGEIS does not address the cumulative impacts on towns and communities likely to result from shale gas extraction.

Because current law restricts local municipalities from many regulatory activities related to shale gas extraction, localities must depend on the DEC and other state agencies to carry out monitoring and enforcement activities. Experiences with shale gas extraction in Pennsylvania demonstrate that self-regulation by gas extraction companies is not an effective strategy to protect environmental resources and public health. We have identified some areas where monitoring and enforcement by the DEC is likely to be inadequate.

4. Natural Resource Inventory

We have developed a summary resource inventory for the Town of Danby identifying assets that it is in our interest to preserve and enhance. We have grouped these resources into four sets: land resources (prime agricultural lands, and agricultural districts and steep slopes); hydrological resources (watersheds, wetlands, ponds and streams); ecological resources (protected species, bird areas, preserves); and historical resources (Finger Lakes Trails, natural heritage sites, State Forest).

We recommend that these areas of interest be specified as areas that will necessitate site-specific reviews before gas-drilling permits are given, as per SEQRA law, and that related local participation in the review and permitting process be increased.

Public Forum Regarding the dSGEIS

Finally, the Town of Danby worked with the Tompkins County Council of Governments to organize a local forum—held at the State Theater, in Ithaca, on November 19, 2009—where citizens could learn about and provide their spoken comments regarding the dSGEIS. These comments and concerns, including statements from Danby residents, were transcribed by a court reporter and have been submitted separately.

Section 1 – Involvement of Local Municipalities

The dSGEIS states in Section 6.13.2.1 that:

> It is certain that widespread development of the Marcellus shale as described in this document will have community impacts that will change the quality of life in the affected areas in the short term. For purposes of this review, however, there is no sound basis for an administrative determination limiting the shale development on the basis of those changes at this time. Accordingly, any limitation on development, aside from the mitigation measures discussed in the next chapter, is more appropriately considered ***in the context of policy making, primarily at the local level***, outside of the SGEIS. [emphasis added]

Local policy makers, however, have few strong mechanisms for addressing issues raised by shale gas development, in contrast to our powers in relation to other types of industrial development. This deserves to be remedied. Local governments must be included as involved agencies in the permitting process if they are to work effectively to integrate shale gas development with local plans, including the preservation and enhancement of environmental, historical, social, cultural and economic resources.

The current draft SGEIS recommends, but does not require, that firms seeking permits to develop shale gas resources within a municipality:

1) obtain road use agreements (Section 8.1.1.5);
2) communicate with municipal officials (Section 8.1.1.3);
3) review local comprehensive plans and other planning documents (Section 8.1.1.6); and
4) abide by local planning priorities “to the extent practicable” (e.g., Section 7.5.4).

The Town of Danby, in cooperation with other local municipalities, is developing road laws related to industrial-type access, culverts, and crossings that may help to address the potential cumulative impacts of shale gas development involving high volume hydraulic fracturing. (See Appendix, Highway Functional Classification Map, and the Town of Danby Highway Map, for information on town, county and state roads within the municipality.) As stated in Section 6.13 of the dSGEIS:

> Estimates of truck trips per multi-well pad are as follows (assumes two rig and equipment deliveries and 8 wells):
>
> Drill Pad and Road Construction Equipment: 10 – 45 Truckloads
> Drilling Rig: 60 Truckloads
> Drilling Fluid and Materials: 200 – 400 Truckloads
> Drilling Equipment (casing, drill pipe, etc.): 200 – 400 Truckloads
> Completion Rig: 30 Truckloads

Completion Fluid and Materials: 80 – 160 Truckloads
Completion Equipment (pipe, wellhead): 10 Truckloads
Hydraulic Fracture Equipment (pump trucks, tanks): 300 – 400 Truckloads
Hydraulic Fracture Water: 3,200 – 4,800 Tanker Trucks
Hydraulic Fracture Sand: 160 – 200 Trucks
Flow Back Water Removal: 1,600 – 2,400 Tanker Trucks

As of October 3, 2009, a town adjacent to Danby (Candor) already had permits pending for five well pads (potentially generating five times the truck traffic noted above), located in steep areas of the town accessed by small roads. The volume and intensity of such heavy industrial traffic from one well pad alone, not to mention the cumulative impact of several pads, will severely impact the rural roads in Danby and adjacent towns. Clearly local municipalities need to be recognized as involved agencies in the permitting process.

Our attempts to develop laws to regulate industrial road use are local attempts to patch what appears to be a weak link in the dSGEIS related to road impact assessment and mitigation. Section 8.1.1.5 of the dSGEIS states that operators are strongly encouraged to attain road use agreements with local authorities, and requires that a road use agreement or trucking plan be filed with DEC for informational purposes. This Section also indicates that DEC does not have authority to require, review, or approve such road use agreements or trucking plans, as road matters are under local authority. We request that DEC require the submission of road use agreements or trucking plans along with documentation that such have been either approved or waived by the local municipality. In addition, we find that the Environmental Assessment Form for Well Permitting (Appendix 5) and the Proposed Environmental Assessment Form (EAF) Addendum (Appendix 6) include nothing related to trucking activity and request that a description of traffic generation and routes be included.

Although the first section of the Proposed Supplementary Permit Conditions of High-Volume Hydraulic Fracturing (Appendix 10) requires mitigation plans related to visual impacts, noise impacts, greenhouse gas emissions, and invasive species, there is no discussion of or requirement for permit seekers to coordinate with or obtain input from local municipalities, planners, or citizens. These mitigation plan requirements are also stated in the Proposed EAF Addendum (Appendix 6). These mitigation plans are only required to be

made available to the DEC upon request, so that there is no clear mandate for even DEC review of these plans. Communication with local governments and planning bodies regarding development of such mitigation plans is crucial. Substantive involvement of local parties should be required and clearly documented. Mitigation plans should be required to be approved by both DEC and involved local municipalities.

Section 8.1.1.6 of the dSGEIS states that permittees are asked to affirm in the Proposed EAF Addendum that they have communicated with local municipalities and have taken existing local plans into consideration. However, there is no requirement for documentation from the local municipality that these communications have taken place or that the interactions with the permit seeker have addressed local concerns and priorities. There is no mechanism to ensure that local priorities and understanding of local conditions are reflected in the well siting or gas development plans proposed by permittees. This is a missed opportunity for obtaining valuable local input. This gap could be to some extent remedied by the inclusion in the EAF Addendum of required documentation from local officials regarding interactions with the permit seeker and by requiring the permit seeker to document which local planning materials were reviewed and in what way these planning materials influenced the proposed location of the well pad, spacing unit, access roads, etc.

The mechanism for informing local municipalities included in the draft SGEIS (Section 8.1.1.3, Local Governments – Notification to Town Supervisors) is weak, proposing active notification of the town supervisor only upon the receipt of the first application for a Marcellus shale gas development permit. It is laudable that the draft SGEIS recognizes the strong local interest in being informed about permits early in their process rather than only after they have been approved and development is imminent. Local municipalities and landowners are an asset to the DEC staff reviewing permits, but can best be mobilized with consistent and active communication about the initiation and status of permit applications. We propose that town supervisors and planners receive notice from the DEC whenever an application for a Marcellus shale gas development permit involving lands within the town is received. As stated in the same section, “Division staff welcomes input from the surface owner and neighbors during the application review, and may impose specific permit

conditions to address environmental concerns if appropriate." The most effective way of ensuring that DEC staff have access to up-to-date and comprehensive information regarding local environmental concerns would be the inclusion of municipalities as involved agencies in environmental review, and the modification of SEQRA, if needed, to allow such.

Local municipalities should be actively notified and engaged as involved agencies in any SEQRA proceedings related to shale gas development within the municipality, as noted in Section 8.1.1.1, SEQRA Participation. Further, the final SGEIS should enumerate mechanisms for local municipalities to propose SEQRA processes when necessary with regard to unique local planning and environmental considerations.

Finally, it must be noted that the Danby State Forest comprises a large proportion of the Town of Danby. While not addressed specifically in the dSGEIS, it is crucial that the town have a voice in the development and approval of the Rapid Waters State Forest Unit Management plan and in any processes related to leasing local State Forest Lands for shale gas development.

Section 2 – Concerns about Local Impacts/Unfunded Mandates

(1) Water testing follow-up delegated to public health departments

Under Section 7.1.4.1 of the dSGEIS, permits are conditioned upon the sampling and testing of residential water wells within 1,000 feet of a well pad (2,000 feet if there is no well within 1,000 feet) both before any construction begins and at intervals thereafter up to one year after operations have ceased and in response to complaints. Although the drillers are responsible for the initial testing, local health departments are to receive copies of all baseline testing and ongoing monitoring reports and must keep them on file, along with available information about the well's history, for comparisons if complaints occur. The dSGEIS provides that local county health departments will also be responsible for the initial investigation of complaints as to water supply and quality in their area. Although local public health departments are experienced in testing water for typical contaminants that occur in the absence of drilling, such as coliform, lead, nitrates, and the like, the testing required after the hydrofracking process begins includes testing for some sixteen substances identified in this section of the document, such as barium, total dissolved solids, total gross alpha activity, methane, and many chemicals and contaminants for which local departments have not tested in the past. Yet these local departments are charged with investigating complaints and referring them to the DEC when a problem has been verified and potential other causes ruled out. This investigation would be carried on solely by the local health department and include any complaints that occur more than a year after operations and complaints regarding wells more than 2,000 feet from a well pad. Complaints during and up to one year after active operations and within 2,000 feet of a well pad would be investigated jointly by the county health department and the DEC.

The testing requirements imposed upon local health departments involve specialized skills and resources they do not currently possess. Although it is impossible to predict the volume of complaints that may come in from private well owners, these tasks are certain to increase the work load of these departments considerably and exceed the capacity of their staff. It is estimated that in Broome County, 2,000 to 4,000 gas wells could be drilled, and that if just 600 well pads go up, as many as 2,500 residential drinking water wells would have to be monitored ("Footing the Bill," *Ithaca Journal,* Oct. 14, 2009; based on interview

with the Broome County Health Department director). Yet the dSGEIS contains no provision for how the costs of all this extra sampling, monitoring, and analysis are to be paid. If some mechanism is not established under which these costs will be absorbed by the drillers, they will be passed on to taxpayers in each locality, most of whom will not derive direct benefit from the gas drilling, at a time when local government revenues are at disastrous lows throughout the region and taxpayers near rebellion at the level of local taxation. In short, before any drilling operations are allowed, the SGEIS must be amended to provide some funding mechanism, such as fees paid by the companies at the time of the permit that would be set aside to compensate county health departments for the entirely new regulatory responsibilities that are being imposed upon them by the state's mandate.

(2) Impacts on local Emergency Services

There is not much useful information in the dSGEIS about emergency services. The dSGEIS stipulates that only the county-level emergency management officer is informed in advance of high-risk activities. The references to emergency services, fires, or hazardous materials state that the driller should contact the local fire department or the County if there is a question or a problem. There is no mention of training or support, or even sources of information. This does not adequately address public safety concerns, training needs, or demand for increased resources and funding presented by shale gas drilling activities.

Fire safety in Danby is provided by the all-volunteer Danby Fire District (which includes the Danby and West Danby Fire Departments) in coordination with the Tompkins County Department of Emergency Response, the Tompkins County Sheriff's Department, and the New York State Police Department. The Danby Fire District has between 20 and 25 active members who provide initial response to a fire. Emergency medical calls are initially responded to by between 4 and 6 members. The majority of the Fire District volunteers work outside of the Town, posing a limitation on response time during the work week. The need for more volunteers is one of the major concerns of the Fire District, as is the length of time required to train new recruits. The Danby and West Danby Fire Companies both respond for virtually all fire and other emergency calls, and such response is often frustrated by the 5-mile distance between fire stations and seasonally difficult access over a

steep dirt road. Sources of water for firefighting include non-pressurized (“dry”) hydrants at Jennings Pond and Stork H& E Turboblade, Inc., farm and residential ponds, creeks, the public water system in West Danby, which system provides only limited flows for firefighting, and the Town of Ithaca water system. For hazardous materials responses, the Fire District must rely on responders from the County Haz-Mat team in the City of Ithaca.

The Tompkins County Multi-Jurisdictional All Hazard Mitigation Plan was adopted by the County along with 7 municipalities in 2000. It describes the significant damages that can occur with transportation accidents which involve Haz-Mat release, including impacts to water, soil, and air quality, damages to infrastructure and vehicles associated with spills and fires, and the increased pressure on public safety agencies, including community funding of emergency response activities. Risks associated with transportation accidents which involve Haz-Mat release are considered severe. Steep topography and tight curves along roadways contribute to frequent accidents. The remoteness and steep topography of many parts of the County are a significant liability to timely response.

Contacting the County Emergency Management Officer in advance of high-risk activities may not be sufficient given the magnitude of potential well-drilling activities, and the number of rural response agencies involved. Contact information for operators and involved agencies should be provided directly to all local response organizations. A clear procedure for disclosing information on all chemicals used in all hydrofracking operations (not just those required for disclosure for open surface impoundments) is needed to assist in local response to potential on-site accidents and transportation accidents, and to meet the recommendation in dSGEIS 7.11 to establish coordination with local emergency management agencies in road use agreements and trucking plans. Gas-drilling companies (and OSHA) should be required to provide adequate training and preplanning assistance to the local responders. The ability of regulating agencies such as OSHA to provide adequate staff for oversight of gas-drilling activities should also be evaluated.

Section 3 – Cumulative Impacts and Lack of State Resources for Monitoring/Enforcement

(1) Failure to address cumulative impact of drilling

Cumulative impacts—the effects of more than one project considered together, as well as the impacts that may result over a period of time—are discussed in Chapters 6 and 7 of the dSGEIS, both as to the impact of water withdrawals required for the hydraulic fracturing process and other types of cumulative impacts.

Section 6.1.1.7 states that there are several potential cumulative impacts from the water withdrawals required for the fracking process, although the total volume of water to be withdrawn for hydraulic fracturing will not be known until applications are received, reviewed, and approved or rejected. The Delaware River Basin Commission and the Susquehanna River Basin Commission have developed regulations, policies, and procedures to assess, review, and approve such water usage, as well as monitoring and reporting requirements after the withdrawal has been approved, but there are no such regulations and no permit system and approval process in effect for Danby's water resources.

Section 6.13 of the dSGEIS discusses other types of cumulative impacts to be expected, impacts specific to the particular well site and impacts to the region, such as four to five weeks of 24-hour drilling for each well, with six to eight wells commonly drilled on a single pad either sequentially or in phases over three years, and a massive number of truck trips per pad, ranging up to 2400 tanker truck trips for removal of flowback water. Without further specification, the dSGEIS concludes that the potential for site-specific cumulative impacts as a result of multi-well pads can be adequately addressed during the application review process by the DEC.

The dSGEIS frankly admits that estimating the cumulative regional impact of the gas drilling is "inherently difficult" (Section 6.13.2). One company has estimated peak activity for all of the industry in the Marcellus shale at 2,000 wells per year, plus or minus 25 percent. The

timing, rate and pattern of development is difficult to predict. The dSGEIS also concludes that it is impossible to define the threshold at which development results in adverse noise, visual, and community character impacts. From this, it draws the following illogical conclusion: “there is no supportable basis on which to set a limit on the rate of development of the Marcellus and other low-permeability gas reservoirs,” while admitting that “widespread development of the Marcellus shale as described in this document will have community impacts that will change the quality of life in the affected areas in the short term” (6.13.2.1, Rate of Development and Thresholds).

The conclusion that there is no basis to limit this development at this time is simply not supported by the reasoning that precedes it. To the contrary, the certainty of substantial impacts upon the community, even though they are unpredictable or unquantifiable at this time, is reason to require measures to attempt to prevent or mitigate adverse impacts in advance of their occurrence; and it is the DEC that should do so, rather than leaving this, as suggested, to local communities.

The dSGEIS states, in Section 7.13, Mitigating Cumulative Impacts:

> Mitigation of cumulative impacts associated with water withdrawal for hydraulic fracturing is discussed in Section 7.1.1.8 [*sic*; actually 7.1.1.5]
>
> Regarding other types of cumulative impacts, as determined by NTC in its study for NYSERDA and paraphrased in Section 6.13.2.1, “The rate of development cannot be predicted with any certainty ... Nor is it possible to define the threshold at which development results in unacceptable adverse noise, visual and community character impacts… There is no way to objectify these inherently subjective perspectives [and] …there is no sound basis for an administrative determination limiting the shale development at this time.”
>
> The appropriate approach for minimizing cumulative impacts associated with noise, aesthetics, traffic and community character, therefore, is to encourage and adhere to the following practices:
> • careful siting of well pads,
> • use by the operators of site-specific visual and noise impact mitigation plans,
> • negotiation of road use agreements with the appropriate local governing authorities, and
> • recognition of and, to the extent practical, attention to local planning documents and policies.

“Encouragement” without any regulations or procedural requirements to put such practices into effect is entirely inadequate.

(2) Lack of adequate resources for monitoring and enforcement

In essence, the dSGEIS requires a great deal of testing but offers no details on implementation. There are a number of regulations that specify or imply a large number of DEC personnel involved in testing, monitoring, and assessment, all requiring staffing levels that NYS DEC currently does not have.

Even assuming that the dSGEIS includes adequate measures to protect the environment, which we argue it does not, the DEC does not have adequate staff and resources to undertake the tasks which it has set for itself in this document. After a careful reading and analysis of Chapter 7 of the dSGEIS regarding the protection of water resources, students from the Cornell Law School Water Law Clinic have counted hundreds of new tasks the DEC has taken upon itself with respect to protection of water resources alone from the proposed hydrofracturing. Section 7.1.4.2, for example, requires that a state inspector be present at the commencement of casing cementing operations for each well. Even with multi-well pads, this presence is an enormous commitment of state resources given that some 2,000 well permit applications are expected each year. We understand that currently there are about sixteen persons in the DEC's Division of Mineral Resources; DEC regional offices are similarly understaffed.

Chapter 7 outlines numerous extra mitigation measures that must be taken to protect the environment. Without even considering mitigation measures regarding air quality, ecosystems and wildlife, greenhouse gas emissions, naturally occurring radioactive materials, visual resources, noise, road use, community character, and cumulative impacts, it is clear that currently, the Department does not have the workforce required to engage in the mitigation measures it guarantees. The individual tasks are demanding and require significant resources for their completion. For instance, under Section 7.1.3 (Surface Spills and Releases at the Well Pad), the Department's task will be to provide "a combination of existing Department tools" and enhance them "as necessary [in order] to address the unique aspects of multi-well pad development and high-volume hydraulic fracturing." It will also ensure that such tools are provided for in "appropriate permits to prevent spills and

mitigate adverse impacts from any that do occur." If the Department is to undertake this task, who is going to design such enhanced tools and at what cost? Will someone engage in testing to determine what tools are best suited for this task? Moreover, to ensure that such tools are provided for in each permit application, the Department will have to review every application with care. Thereafter, will the Department monitor whether the companies are in fact following the procedures prescribed? How? Will the monitoring be a one-time activity or will it be recurrent? How many people will be needed to engage in this task? The rest of the tasks in Chapter 7.1 are subject to similar criticisms.

In light of these and other unanswered questions, the Department urgently needs to explain exactly how it will go about accomplishing these tasks with the limited resources that it has available.

The following points illustrate some of the areas where close monitoring by the DEC will be critical:

- It is possible that drillers will be permitted to use a "shortened, program-specific Environmental Assessment Form (EAF), which is required with every well-drilling permit application" (Section 3.2.2.1). The EAF will require operator affirmations to address major management practices regarding transport, the site, and drilling per se—but these are self-reports, and experience has shown that self-regulation by the industry is entirely inadequate.

- " Any proposed well location between 1,000 and 2,000 feet from a municipal water supply well requires a site-specific assessment and SEQRA determination, and may require a site-specific SEIS" (Section 3.2.3). But this ruling is ambiguous on the actual location of horizontal sub-aquifer well-shafts, and does not consider the potential large-scale impact on aquifers feeding public water supplies.

- Regarding interstate transport, the Federal Motor Carrier Safety Administration (FMCSA) "establishes standards for commercial motor vehicles, drivers, and companies, and

enforces 49 CFR Parts 350-399…" and the Pipeline and Hazardous Materials Safety Administration (PHMSA) regulates "the shipment of hazardous materials, fabrication, marking, maintenance, reconditioning, repair or testing of multi-modal containers"(Section 5.5.1). NYS DOT has extensive regulations on hazardous transport within the state, but the numbers of personnel for this monitoring and enforcement have been tailored for current use, not for the vast increase expected with Marcellus Shale operations.

- At well sites, the extremely dangerous process of blending concentrated fracking fluid "is conducted and monitored by qualified personnel…" and "observed practices during visits to drill sites in the northern tier of Pennsylvania included lined containments and protective barriers where chemicals were stored and blending took place…" (Section 5.6.0). The level of monitoring required on-site during the 3- to10-month process will be intensive and a matter of the highest concern for public safety. Dams and impoundments, all under the same sort of extensive regulation, will require the same sort of high-stakes, personnel-intensive monitoring and enforcement.

- It is proposed that County Health Departments undertake all oversight and coordination of water well testing. The dSGEIS calls for "baseline and monitoring analyses of residential water wells in proximity to well pads where high-volume hydraulic fracturing occurs…" and suggests that "county health departments retain responsibility for initial response to most water-well complaints, referring them to the Department when other causes have been ruled out" (Section 8.1.7). There is no detail on who does the testing; who pays for it; who catalogues the tests; or on how the test results will regulate bad drilling practices.

- NY's State Pollutant Discharge Elimination System (SPDES) "controls point source discharges to ground waters and surface waters... and ... includes specific discharge limitations and monitoring requirements" (Section 7.1.8.1). SPDES includes several types of on-site treatment; but once again, these detailed processes are susceptible to lax practices, and the necessary oversight is not plausible under current staffing. In the words of the dSGEIS:

> Hydraulic fracturing is an intensely controlled and monitored activity, with more people present on-site than at any other time during the life of the well. On-site personnel and systems would result in the detection and mitigation of any rupture, equipment failure or any other cause for release. (Section 6.1.11)

Will the DEC have the resources to adequately perform these essential tasks? Adequate financial guarantees via taxation, bonding, or similar means must be required to cover costs of enforcement, monitoring and remediation of damages.

Section 4–Natural Resource Inventory

The following Town of Danby Resource Inventory includes information and maps regarding Land Resources, Water Resources, Ecological Resources, and Historical/Cultural Resources, as well as a Resource Analysis map presenting areas with practical development constraints and areas where open space maintenance and preservation should be encouraged. This summary has bearing on any potential industrial development activities within the town.

Shale gas development is distinguished from other types of industrial development by the relatively weak role and planning authority currently allocated to local municipalities. As stated in Section 8.1.1 of the dSGEIS:

> ECL §23-0303(2) provides that DEC's Oil, Gas and Solution Mining Law supersedes all local laws relating to the regulation of oil and gas development except for local government jurisdiction over local roads or the right to collect real property taxes. Likewise, ECL §23-1901(2) provides for supercedure of all other laws enacted by local governments or agencies concerning the imposition of a fee on activities regulated by Article 23.

Because most planning authority regarding shale gas development currently resides with the state, the state, and in particular the DEC, must likewise take on the obligation of ensuring the strong engagement of local municipalities and planning boards in decision-making procedures regarding shale gas development, in order to draw on the strong informational resources and long-term comprehensive plans that reside only at the local level. The resource inventory provided below is a starting point in ensuring that the DEC has access to local planning assets as it weighs decisions regarding shale gas development permits, siting decisions, and site-specific mitigation requirements.

Local planning boards and documents are critical resources for ensuring that shale gas development activities are not inappropriately sited or operated in ways that contravene local planning priorities. Section 8.1.1.6, Local Planning Documents, states:

> The Department's exclusive authority to issue well permits supercedes local government authority relative to well siting. However, the EAF Addendum will require the applicant's affirmation of having reviewed local planning documents such as comprehensive, open space or agricultural plans. The Department strongly encourages operators to consult with local governments regarding any existing local plans, and–to the maximum extent practicable–site operations accordingly.

In addition, Section 7.9.4, Protecting Visual Resources—Conclusion, states:

> Municipalities are encouraged to identify and/or map other areas of high visual sensitivity and share this information with operators so they can potentially incorporate additional aesthetic mitigations into their visual impacts mitigation plans.

To this end, the Town of Danby has developed a summary resource inventory identifying high priority assets that it is in our interest to preserve and enhance as well as practical development constraints already identified within the town. This document draws upon and summarizes materials from the Town of Danby 2003 Comprehensive Plan as well as the Tompkins County Natural Resource Inventory (2001). Both of these more in-depth documents are available and should be reviewed by potential permit applicants in order to inform any proposed gas development activities, and to make those activities consistent with these plans. See Appendix: 2003 Danby Comprehensive Plan.

Please also refer to our previous recommendation that these resources be specified as areas that should require site-specific reviews if gas-drilling permits are applied for within them. Please also note our previous recommendations that mitigation plans related to visual, noise, greenhouse gas emissions, and invasive species be reviewed by both DEC and local municipalities, that permit applicants be required and not just encouraged to consult with municipalities, and that the official response of the municipalities be obtained.

Overview

The Town of Danby has a diversity of natural features and significant viewsheds. The central and northern parts of the Town are mainly situated on a plateau above Cayuga Lake and include most of the Town's farmland. This plateau led early settlers to call Danby the “Healthy Highlands.” Steep hills to the east and west separate the plateau from the Six Mile Creek Valley and from West Danby in the Cayuga Inlet Valley. Southern Danby is characterized by narrow north-south ridges and valleys and is heavily forested.

Approximately one-quarter of the Town land area is located within the Danby State

Forest, which dominates the southern portion of the Town. Jennings Pond, which was built as a reservoir but never used as such, is a recreational area that is part of the Buttermilk Falls State Park, located just southwest of the Central Danby hamlet. Several wetlands are located in central, southern, and West Danby, and Tompkins County has designated eleven Unique Natural Areas (UNAs) in Danby, which are areas identified by their outstanding environmental qualities.

(1) Land Resources

This category includes:

1. ***State Forest,*** the 7,498-acre Danby State Forest, which equals 22% of Danby's total land area.
2. ***Unique Natural Areas,*** including wetlands and floodplains which are regulated by other agencies.
3. ***State Parks,*** the 96.4-acre Jennings Pond, which is a discrete section of the Buttermilk Falls State Park and includes public swimming, and is managed by the NYS DEC, and another 60.6-acre portion of the Buttermilk Falls State Park with access to trails.
4. ***Private conservation land and camps,*** including the 446-acre Lindsay Parsons Biodiversity Preserve, the 39-acre Gilmore Wildlife Preserve, the 335-acre Empire State Speech and Hearing Clinic (funded by the State Dept. of Education), and other private camps.
5. ***Private Land with conservation easements.*** Some Danby property owners have given permanent easements to the Finger Lakes Land Trust.
6. ***Designated open space under zoning and other deed restrictions****.*
7. ***Private forest*** totaling 3,100 acres.

(2) Water Resources

The map Water Resources, Town of Danby (see Appendix) shows the location of major open water, DEC Freshwater Wetlands, National Wetlands, watershed boundaries, and major creeks.

a. Watershed Boundaries

The “Danby Divide” noted on this map marks the boundary between the north-flowing St. Lawrence drainage basin, which includes the Cayuga Inlet, Six Mile Creek, and Jackson Creek watersheds, and the south-flowing Susquehanna drainage basin, which includes the Willseyville and Michigan Creek watersheds. The Cayuga Inlet and Six Mile Creek watersheds are critical to the public water supplies of the greater Ithaca area to the north. The southern portion of Danby, as a headwaters area for the Susquehanna River basin, is important to a large regional population to the south.

b. Wetlands

Wetlands are important resources because they provide water for human consumption by filtering groundwater, retaining floodwaters, recharging aquifers, and removing water pollutants. Wetlands also provide habitats for wildlife, including many species classified as threatened or endangered on State and Federal endangered species lists. Designated wetlands in Danby include the DEC Freshwater Wetlands (937 acres) and the National Wetlands Inventory (1187 acres). (See Appendix, Water Resources, Town of Danby map.)

c. Aquifers

The map Surficial Aquifers, Town of Danby (see Appendix) provides an overview of the known aquifers in Danby. Most of Danby is underlain by either till or bedrock, where water is released from confined aquifers through rock fractures. Water yield in these areas is generally sufficient for residences and small farms, but is less in quantity than would be available from a sand or gravel aquifer. There are several areas in Danby where information about surficial aquifers is limited or nonexistent. The Town of Danby, Tompkins County, and the U.S. Geological Survey are conducting a Water Resources Investigation to be completed in 2010 of the valley-fill aquifer in the Upper Buttermilk Creek/Danby Creek through-valley. This through-valley is special in that it contains a watershed divide between the St. Lawrence and Susquehanna River basins. It is also a special geohydrologic setting in that it is drained by small headwater streams which are sensitive to hydrologic stresses in the through-valley; for example, they may dry up quickly due to periods of drought

conditions or by pumping wells. Please refer to the USGS Aquifer Map showing the location and extent of this aquifer along with well records compiled for the study. A similar study is needed of the unconsolidated aquifer system in the Upper Cayuga Inlet Valley.

d. Floodplains

Floodplains include 552 acres in Danby. (See Appendix, Flood Hazard Areas map.) This mapping has not been updated since the mid 1970s, and we recommend that updated mapping be obtained for any permit application near these floodplains.

e. Protected streams and fishing easements

Protected streams and fishing easements include many of the tributaries of Six Mile Creek, Jennings Pond, and several major creeks. State fishing easements for public use are located on Cayuga Inlet Creek in West Danby.

(3) Ecological Resources

Ecological resources within the Town of Danby include the following:

1. Important plant and animal species have several unique natural habitats in Danby (most are UNA sites in Tompkins County)
2. Wildlife management, including deer, coyote, rabbit, and turkey habitats
3. Working landscapes, including farms, pastures, fallow fields, managed forests, orchards, and vineyards
4. Reforested private lands (see Appendix, Land Resources map)

(4) Historical/Cultural Resources

1. Viewsheds and the Finger Lakes Trail, including 30 miles of trail in Danby, with lands around the trail included in the planned environmental protection and enhancement corridor known as the 2009 “Emerald Necklace Finger Lakes Trail Corridor Protection Plan.”
2. Cultural and historical resources. Many are important resources to Danby’s rural character, including historical structures. (See Appendix, Historical Farm Resources map.)

(5) Resource Analysis

The map Resource Analysis, Town of Danby (see Appendix) combines resource information from several maps in order to indicate lands in Danby that are less suitable for development due to ownership status, development costs, physical characteristics, or need for preservation. This map, combined with the Historical Farm Resources Map, shows what lands might be suitable for appropriate development of Danby as a rural residential and agricultural town where conservation of resources is a priority.

Summary

Some of the recommendations we have made in this document include the following:

- Include local municipalities as involved agencies in SEQRA review and the permitting process – e.g., require specific approval by municipalities of mitigation plans.
- Require local approval of road use agreements and trucking plans as a condition of permit issuance.
- Require documentation from local officials indicating consistency with local plans.
- Increase notification requirements to municipalities.
- Require site-specific reviews for activities located near or within locally identified resource areas of interest.
- Ensure adequate resources for administration, enforcement, monitoring, resource protection, and life safety, that minimize reliance on self-regulation by the industry.
- Ensure proper disposal of wastes.
- Further assess cumulative impacts, and further define mitigation measures that will be required, not just suggested.

There are many more areas of the dSGEIS than we have outlined here in this response document that are unsatisfactory, unclear, or that impose unacceptable burdens on local communities.

The environmental impact of any industrial activity should be regulated by the relevant agencies working in tandem with the affected local community. Local municipalities must be granted involved agency status in the review and permitting process.

The gas companies will extract this natural resource and the enormous profits that come with it, and the local community will be left with all the externalized costs: degradation of the environment, possibly contaminated water, degraded roads and air quality, and serious noise problems for its local residents. Some few people in the community will gain income from royalties, but the increase in tax revenues to local municipalities won't be enough to

offset the increased costs to the community as a whole. This is not acceptable. Mitigation plans need to be developed for the likely adverse impact to local municipalities related to both municipal services and compensation for damage, and taxation of the gas companies needs to be researched.

DEC's regulations can and should be used to ensure that both the drilling companies and the individual operators are very highly motivated to do an impeccable job. Before permitting begins, regulations must be in place that are strict and enforceable, with provisions that allow local municipalities to quickly shut down drilling activity when it has clearly endangered the health and welfare of the community.

The dSGEIS needs to be amended not only to assess potential cumulative impacts of gas-drilling activity, but also to demonstrate that there are adequate State, County, and local resources to administer and enforce gas-drilling activities on a cumulative basis, and to protect local resources.

The Cayuga Lake watershed provides drinking water for much of Tompkins County. Will this water actually be protected by the arbitrary 300-foot exclusion rule in the dSGEIS? Our watershed is as vital and valuable a resource as that of the watershed that provides drinking water for New York City.

Another critical issue is wastewater treatment. This matter is not properly dealt with in the dSGEIS, and there is, at present, no sustainable plan to deal with the millions and millions of gallons of highly toxic and likely highly radioactive wastewater that will be generated by the hydrofracturing process. Local wastewater treatment plants are not set up for this level of chemical pollution nor should local communities have to deal with another externalized cost of gas drilling. The gas industry should be responsible to fund, build, and operate plants for processing this water under strict environmental regulations. The dSGEIS must show a long-term plan for dealing with this waste before any permits are issued.

We expect a detailed response to our concerns and issues regarding these regulations. As it stands, the DEC will grant a permit if various “generic” criteria have been met in its opinion, without regard for the opinion of any agency responsive to the population most affected. This is not the American way of deciding land use issues. We hope the final draft of the SGEIS will remedy that.