COMMENTS ON DRAFT SGEIS
FOR BUREAU OF OIL & GAS REGULATIION,
NYSDEC DIVISION OF MINERAL RESOURCES

Dec. 29, 2009

Prepared by
Charles Geisler, PhD
Department of Development Sociology
Cornell University
Ithaca, NY 14853
607-255-1691
ccg2@cornell.edu

Overview: The following comments address the cumulative impact reasoning in the "Draft SGEIS on the Oil, Gas and Solution Mining Regulatory Program" by the NYS DEC. The absence of serious and sustained attention to cumulative impact assessment (CIA) in the DSGEIS is problematic and leaves the impression that cumulative effects are negligible. The implication is that no DEC regulation of cumulative impacts is required. I show that this is not the case. Using the SEQRA understanding of cumulative effects, I demonstrate the likelihood of such effects during the proposed Marcellus Shale drilling using mining-related truck traffic. Other compelling examples and their impact thresholds could (and should) be developed and included in the Draft SGEIS. I further show that the surface disturbance logic used in the Draft SGEIS to dismiss cumulative impacts is misleading; it compares two extreme well-pad forecasts rather than the more likely combination of single and multiple pads. This combination must then be systematically compared with the baseline disturbance on the surface at present. Such a comparison will point to multiple and incremental (i.e., cumulative) impacts accompanying the pending gas mining boom. These cumulative impacts must be taken fully into account to meet NYS law, to safeguard the citizens of the state, and to protect the state's natural habitats and ecosystems.

Table of Contents:

A. What are cumulative impacts?

The Council of Environmental Quality (CEQ) regulation define cumulative impacts (in 40
CFR Part 1508.7) as: *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."*

NYDEC states that cumulative impacts occur when multiple actions affect the same resource(s). These impacts can occur when the incremental impacts of an action, or actions, are added to other past, present and reasonably foreseeable future actions. Cumulative impacts can result from a number of individually minor but collectively significant actions taking place over a period of time. Cumulative impacts do not have to all be associated with one sponsor or applicant. They may include indirect or secondary impacts, long term impacts and synergistic effects.
Source: http://www.dec.ny.gov/permits/47716.html (See, also: Appendix B.)

B. Are cumulative impacts given due consideration in the Draft SGEIS?

Cumulative impacts carry legal weight nationally because of the National Environmental Policy Act and the Council on Environmental Quality Guidelines, as well as within NYS's State Environmental Quality Review Act (SEQRA). Despite this, Commissioner Grannis has taken the position that cumulative impacts need not be included in the Draft GSEIS on gas drilling. NYS legislation passed during the waning days of 2008 is cited by DEC as one reason for exempting Marcellus gas extraction from SEQRA requirements. Substantively, DEC believes horizontal drilling from a reduced number of single pads (one per square mile) poses less surface disruption than would the same drilling effort effected by multiple drillings (up to 16 per square mile) which itself, according to DEC, has not caused negative impacts in the past. This logic appears at DSGEIS (5.1.3 to 5.2.2) and is used to obviate the need for further comprehensive attention to CIA. That section states:

"The statewide spacing regulations for vertical shale wells of one single well pad per 40-acre spacing unit will allow no greater density for horizontal drilling with high volume hydraulic fracturing than is allowed for conventional drilling techniques. This density was anticipated in 1992 and areas of New York, including Chautauqua, Cayuga and Seneca Counties, have experienced drilling at this level without significant negative impacts to agriculture, tourism, other land uses or any of the topics discussed in this report.. As discussed earlier, the density for multi-well pads, one per 640-acre spacing unit, is significantly less than for single well pads, reducing the total number of disturbances to the landscape. While multi-well pads will be slightly larger than single well pads the reduction in number will lead to a substantial decrease in the total amount of disturbed acreage, providing additional mitigation for long term visual and land use impacts on a regional basis. The following table provides an example for a 10 square mile area (i.e., 6,400 acres), completely drilled, comparing the 640 acre spacing option with multi-well pads and horizontal drilling to the 40 acre spacing option with single well pads and vertical drilling.

TABLE

Spacing Option	Multi-Well 640-Acre	Single Well 40-Acre
Number of Pads	10	160
Total Disturbance - Drilling Phase	50 Acres (5 ac./pad)	480 Acres (3 ac./ pad)
% Disturbance - Drilling Phase	.78	7.5
Total Disturbance – Prod. Phase	30 Acres (3 ac./pad)	240 Acres (1.5 ac./pad)
% Disturbance - Production Phase	.46	3.75

"As can be seen, multi-well pads will significantly decrease the amount of disturbance on a regional basis in all phases of development. The reduction in sites should also allow for more resources to be devoted to proper siting and design of the pad and to mitigating the short-term impacts that occur during the drilling and stimulation phase. "

There are important flaws in this tabular presentation and the conclusions drawn from it. The table shows (only) the two extremes (16 vertical wells per mile versus 1 multi-well per sq. miles), thus comparing "best-case" and "worst-case" scenarios. Yet the Draft SGEIS suggests these are not the only drilling options. Though horizontal wellbores can now extend a mile in length underground and make the single well-pad scenario technically achievable, many contingencies also suggest that this approach will not apply uniformly, from shale thickness to contiguity of surface leases and the language within those leases. Where single well-pad drilling is complicated by such contingencies, infilling drilling will complement the one-pad-per-square-mile approach. DEC acknowledges this on page 5-19, presenting a hybrid situation wherein a 4000 foot horizontal wellbore called for (a multi-well common pad) is accompanied by a series of vertical infilling wells in a given spacing unit. Here the well pads per square mile are shown as nine.

This *ceteris paribus* reasoning (ignoring many contingencies across the variable 18,700 sq. mile Marcellus Shale landscape within NYS) is unwarranted. If actual hybrid drilling data were generated, a middle category would appear between the two extremes and lead to different conclusions. It would also underscore the need for CIA. The "surface disturbance" comparison used in the Draft SGEIS should not be limited to the spacing units alone, but to regional roads, infrastructure, ecosystems, and human communities that, in paying for the cumulative impacts of gas drilling, will forego other services their tax dollars would have purchased.

Most important among the conclusions (from rejecting the comparison of surface disturbance extremes shown in the above table) is that the "1-well pad bias" per square mile would disappear and a significant blind spot in the Draft SGEIS would become evident: ***the relevant comparison is not between 1 and 16 drill pads per spacing unit but between the actual (a middle column showing hybrid approaches) and the status quo ante (today's well density) as well as the no further gas development option.*** The existing single-well pads are the baseline of interest, not the worst case scenario of 16 well pads/sq. mile shown in the right-hand column of the table. The cumulative impacts of actual hybrid gas drilling with horizontal hydro-fracking are very likely to eclipse those

of the *status quo ante* and must be researched, publically aired, and regulated before Marcellus Shale is mined. [1]

Below, 3 drilling scenarios are compared for 10 square miles (as in the Draft SGEIS) and the entire Marcellus surface area (18,700 sq. mi.) given by DEC. The first scenario invokes *ceteris paribus and* is a direct extension of the DSGEIS 2-option comparison. By emphasizing extremes, it is wildly optimistic with respect to surface disturbance forecasts (see language accompanying above table). Current hydro-fracking and multi-well pad technologies make the third scenario irrelevant. It is now obsolete. The middle (hybrid) scenario is the most realistic and should be the focus of DSGEIS cumulative impact modeling. If the entire Marcellus Shale bed is mined, the disturbance footprint will be nearly twice the size of Tompkins County, without pipelines, power lines, road and off-road effects added.

F O O T P R I N T of D R I L L I N G D I S T U R B A N C E

This table shows spatial disturbance for two scales (10 square miles and for the entire 18,700 sq. miles of Marcellus Shale in NYS) and translates this into fractions/ multiples of Tompkins Co., NY, for comparison.

Drilling Pad Density	10 sq. mi.	18,700 sq. mi.	Tompkins Co. Comparison*
1. Multi-Well Drill Pad (@ 5 acres/pad)	50 acres	146 sq. mi.	32% of To. Co.
2. Hybrid Multi-Pad** (1 Multi-Well Pad @ 5 ac/pad) + 8 Infill Pads @ 3 ac/pad)	290 acres	847 sq. mi.	1.85 X To. Co.
3. Single Drill Pads (16 @ 3 ac/pad)	480 acres	1,402 sq. mi.	3 X To. Co.

*Tompkins Co. is 460 square mi.

**Innumerable hybrid well mixes may result as Marcellus gas is mined. Here the DEC illustrative example, discussed earlier, is used (see Draft SGEIS, 5-19).

1. Downspacing, or inf-filling with new wells to accommodate special circumstances, is not uncommon. See Haines, L. Jan. 1, 2006. "Downspacing for gas: the power of siting wells closer together is boosting the production numbers of tight-gas plays and operators' reserves." *Oil and Gas Investor.*
http://www.accessmylibrary.com/coms2/summary_0286-12484483_ITM

Summary: DEC has downplayed the importance of CIA in the Draft SGEIS. It has done this using a faulty comparison (erroneous baseline logic) and untenable *ceteris paribus* assumptions. Readers are led to believe that an unrealistic multi-well pad scenario will reduce mining impacts, including cumulative effects. They are not provided with comparison of hybrid well-pad disturbance information with current, pre-impact conditions (*status quo ante).* This is a fatal flaw in the Draft SGEIS. It must be corrected before accurate disturbance estimates extending to infrastructure, human communities, and ecosystems can be arrived at. *As the Draft SGEIS currently stands, thousands of well drilling permits submitted to DEC may be treated individually rather than multiple drilling activities with incremental and cumulative effects.*

C. Why it is imperative that cumulative impact assessment (CIA) be included in Draft SGEIS?:

> Generic environmental impact assessments are prime arenas for cumulative effects precisely because they are generic—addressing all permit-requiring projects of a similar kind across an expansive geography--rather than single-action in nature. See Section H-2, H-4, and H-7 in the current SEQRA Handbook. The Handbook states "A generic EIS may also be the most effective way for an agency to assess potential significant cumulative impacts from a number of small projects that individually do not have a significant impact on the environment." Individual gas drilling initiatives, depending on size, constitute "small" projects that, in the aggregate, need to be considered for their impacts. (See: http://www.dec.ny.gov/permits/56701.html)

> SEQRA: SEQRA has clear provisions for cumulative impact assessment inclusion (**§617.7; §617.9; §617.10).** See Appendix A.

> The 1992 Generic EIS on gas drilling in NYS recognized cumulative impacts. The Executive Summary states: "Aspects of high-volume hydraulic fracturing reviewed in this Draft include the potential impacts of (1) water withdrawals, (2) transportation of water to the site, (3) the use of additives in the water to enhance the hydraulic fracturing process, (4) space and facilities required at the well site to ensure proper handling of water and additives, (5) removal of spent fracturing fluid from the well site and its ultimate disposition and (6) potential impacts at well sites where multiple wells will be drilled during a three-year period. Noise, visual and air quality considerations are noted, along with the potential for cumulative and community impacts. The well permitting process is described, and regulatory coordination with other jurisdictional agencies and local governments is also discussed." There is little doubt that the absolute scale of such drilling will increase (rather than decrease) with respect to baseline conditions of 1992 or 2009, given heightened interest in transitional energies, domestic energy independence, and newly available horizontal penetration and fracking gas technologies.

> National precedent and scientific evidence of cumulative impacts are widespread. To name two examples: In 2003, the National Academy reported on the cumulative impacts of gas drilling on Alaska's North Slope (*Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope. National Academies Press*). This report attests to cumulative impacts in locations of low human settlement. Just across the NYS in the Allegheny National Forest, where oil and gas mining in the Marcellus Shale is advanced, the U.S. Forest Service's reports cumulative impacts and thereby fulfills its NEPA requirements (*2007 Forest Plan: Supplemental Environmental Impact Statement for Reserved and Outstanding Oil and Gas Design Criteria*, especially Appendix F, USFS). Marcellus gas drilling in NYS deserves no less with regard to comprehensive impact assessment. Other states experiencing gas drilling have recognized and incorporated cumulative impacts into their generic impact assessments.

> The six Scoping Meetings on Marcellus environmental impact assessment held by DEC in 2008 called explicit attention to cumulative impacts. Commissioner Grannis invited public comments on cumulative impacts (see selected comments, Appendix B).

> Written commentary and case law in NYS abounds and suggests the legal profession has (and will continue to take) the cumulative impact requirements in SEQRA seriously. CIA requirements have repeatedly the basis of environmental adjudication (a limited sample appears in Appendices C and D).

D. Cumulative impacts of Marcellus Shale drilling and development associated with truck transportation.

The cumulative impacts of moving soil, chemicals, equipment, buildings, water, etc. integral to drilling Marcellus Shale are numerous, as can be seen by this initial review of data from the Draft SGEIS. According to this draft (6-113): "NTC determined that the subject activity would require significantly more trucking than was addressed by the 1992 GEIS." DEC, as noted above, assumes multi-well pads will dominate the 18,700 square mile Marcellus landscape once drilling operations begin. The trucking requirements for drill rig mobilization, site preparation, well completion, well production, and final demobilization for a single multi-well pad (8 wells assumed) will range from 5,650 to 8,505 truckloads. (DRAFT SGEIS Sec. 6.13.1**)** This is an average of 7077 truckloads per multi-well pad (hereafter treated as "truck trips").

The Draft SGEIS should (but does not) develop cumulative impact scenarios related to these truck trips. This could be done spatially, comparing all or half of the entire 18,700 square mile Marcellus Shale footprint (see below). These macro calculations should be further disaggregated to the county level so county legislatures and residents gain full appreciation of the truck-traffic impacts of gas drilling and full-cycle extraction. When done, these data should be adjusted for in-fill drilling, discussed above, and for the likely hybrid scenario, also discussed above.

SCENARIO 1: "FULL FOOTPRINT MARCELLUS DEVELOPMENT"
(18,700 sq. mi. of Mar. Shale X 1 well per sq. mi. = 18,700 wells.
This density (18,700 wells) X 7,077 trips = 132,339,900 trips
over 3 years from inception of drilling.)

SCENARIO 2: "HALF-WAY MARCELLUS DEVELOPMENT"
(9,350 sq. mi. of Mar. Shale X 1 well per sq. mi. = 9,350 wells.
This reduced density X 7,077 trips = 66,169,950 trips over the
same period.)

The truckloads shown here or in similar county-level analyses will generate multiple, aggregate impacts largely overlooked in the Draft SGEIS. These include:

1. Greenhouse-gas generation (projected in Draft SGEIS for one year) and air particulate/dust generation;
2. Augmented bridge and infrastructure wear (NYS ranks 4th in the United States for structurally deficient bridges, both state and national; are the state's worst bridges on likely truck routes to/from well site concentrations?);
3. Higher frequency traffic delays due to slow-moving vehicles and increased truck accidents;
4. Noise and congestion from continuous truck traffic for initial three-month periods (and extended periods with multiple-fracking development approaches);
5. Land-filling of spent tires and truck parts;
6. Site compaction and segmentation of habitats, historical sites, stream beds, run-off drainages and tiled areas, wetlands and springs;
7. Inter-watershed water draw-downs and transfers for water bodies draining into the Great Lakes (e.g., northern Tompkins County and Cayuga County); and
8. Off-road vehicle traffic "spurring" from drill-pad access roads onto public and private lands.

New York has the expertise to identify, monitor, and report on these potential cumulative effects and their interactions. They should be part of DEC gas mining regulation as should other cumulative impacts not covered in these Comments.

E. Conclusions:

Wide-spread gas mining in the Southern Tier of New York will produce a rural industrial zone in which land use regulation is every bit as necessary as in urban industrial zones and industrial parks. It is imperative that the State of New York fully assess and assign value to cumulative impacts before permission to use horizontal hydro-fracking drilling technology is permitted. Potential cumulative impacts include reduced resale value of leased/mined real estate (deeds encumbered with leases are and will experience resale obstacles from both mortgage lenders and title insurance companies), loss of Agricultural District membership status, reduced state (public) land base and habitat

alteration, water diversion and aquifer depletion, groundwater contamination, residential water shortages and increased use of bottled water, impaired quality and quantity of NYS streams and rivers (NYS has over 100 major flowages and is the source of several major rivers flowing into neighboring states (see file:///Users/ccg2/Desktop/Shale%20Devel.%20NY/List%20of%20rivers%20of%20New%20York:%20Information%20from%20Answers.com.html), and well-known boom-bust effects associated with mining elsewhere in the U.S.

De facto dismissal in the Draft SGEIS of cumulative impacts likely in a new generation of gas drilling is based on erroneous and misleading logic. When such logic is examined, the case for cumulative impacts becomes compelling. In light of the centrality of cumulative impacts in all generic impact assessment, of the cumulative impacts acknowledged by reputable scientific and oversight bodies, the importance of cumulative impacts in SEQRA, and the evidence of cumulative effects from projected trucking in Marcellus Shale development, the current Draft SGEIS provides insufficient guidelines for regulating a major mining boom in our state.

Today, mining regulations at the federal level are in limbo. The hands of local towns, cities, and villages in NYS tied with respect to land use regulations pertaining to most aspects of mining. Thus, it is imperative that the state fulfill its legal mandate to protect its people and environment through a regulatory regime based on full cumulative impact assessment. It is in no one's interest, including the mining industry, to have a natural gas mining boom go forward without full transparency with respect to cumulative impacts. The industry will not benefit from stop-start operations interrupted by legal challenges and moving standards. I ask that gas drilling using horizontal hydraulic fracturing not be permitted in New York until the Draft SGEIS is revised to include reasonably foreseeable cumulative impacts related to such development.

F. Appendices:

Appendix A provides SEQRA references to cumulative effects. Appendix B reproduces what the Draft GSEIS has to say about cumulative effects plus a subset of public comments from the Scoping meetings. In Appendix C I cite several letters, articles, and documents in which DEC is challenged for its cumulative impact assessment foot-dragging. In Appendix D I note environmental cases in NYS wherein cumulative effects have been key; these don't speak directly to gas mining.

Appendix A:

SEQRA Cumulative Impact Provisions

617: State Environmental Quality Review

(Statutory Authority: Environmental Conservation Law Sections 3-0301(1)(B), 3-0301(2)(M) and 8-0113 (Applicable to All State and Local Agencies Within New York State Including All Political Subdivisions, Districts, Departments, Authorities, Boards, Commissions and Public Benefit Corporations) [Adopted: September 20, 1995; Effective: January 1, 1996]

§617.7 Determining significance

(a) The lead agency must determine the significance of any Type I or Unlisted action in writing in accordance with this section.

(1) To require an EIS for a proposed action, the lead agency must determine that the action may include the potential for at least one significant adverse environmental impact.

(2) To determine that an EIS will not be required for an action, the lead agency must determine either that there will be no adverse environmental impacts or that the identified adverse environmental impacts will not be significant.

(b) For all Type I and Unlisted actions the lead agency making a determination of significance must:

(1) consider the action as defined in subdivisions 617.2(b) and 617.3(g) of this Part;

(2) review the EAF, the criteria contained in subdivision (c) of this section and any other supporting information to identify the relevant areas of environmental concern;

(3) thoroughly analyze the identified relevant areas of environmental concern to determine if the action may have a significant adverse impact on the environment; and

(4) set forth its determination of significance in a written form containing a reasoned elaboration and providing reference to any supporting documentation.

(c) Criteria for determining significance.

(1) To determine whether a proposed Type I or Unlisted action may have a significant adverse impact on the environment, the impacts that may be reasonably expected to result from the proposed action must be compared against the criteria in this subdivision. The following list is illustrative, not exhaustive. These criteria are considered indicators of significant adverse impacts on the environment:

(i) a substantial adverse change in existing air quality, ground or surface water quality or quantity, traffic or noise levels; a substantial increase in solid waste production; a substantial increase in potential for erosion, flooding, leaching or drainage problems;

(ii) the removal or destruction of large quantities of vegetation or fauna; substantial interference with the movement of any resident or migratory fish or wildlife species; impacts on a significant habitat area; substantial adverse impacts on a threatened or endangered species of animal or plant, or the habitat of such a species; or other significant adverse impacts to natural resources;

(iii) the impairment of the environmental characteristics of a Critical Environmental Area as designated pursuant to subdivision 617.14(g) of this Part;

(iv) the creation of a material conflict with a community's current plans or goals as officially approved or adopted;

(v) the impairment of the character or quality of important historical, archeological, architectural, or aesthetic resources or of existing community or neighborhood character;

(vi) a major change in the use of either the quantity or type of energy;

(vii) the creation of a hazard to human health;

(viii) a substantial change in the use, or intensity of use, of land including agricultural, open space or recreational resources, or in its capacity to support existing uses;

(ix) the encouraging or attracting of a large number of people to a place or places for more than a few days, compared to the number of people who would come to such place absent the action;

(x) the creation of a material demand for other actions that would result in one of the above consequences;

(xi) changes in two or more elements of the environment, no one of which has a significant impact on the environment, but when considered together result in a substantial adverse impact on the environment; or

(xii) two or more related actions undertaken, funded or approved by an agency, none of which has or would have a significant impact on the environment, but when considered cumulatively would meet one or more of the criteria in this subdivision.

(2) For the purpose of determining whether an action may cause one of the consequences listed in paragraph (1) of this subdivision, the lead agency must consider

reasonably related long-term, short-term, direct, indirect and cumulative impacts, including other simultaneous or subsequent actions which are:

(i) included in any long-range plan of which the action under consideration is a part;

(ii) likely to be undertaken as a result thereof; or

(iii) dependent thereon.

§617.9 Preparation and content of environmental impact statements

(a) Environmental impact statement procedures.

(1) The project sponsor or the lead agency, at the project sponsor's option, will prepare the draft EIS. If the project sponsor does not exercise the option to prepare the draft EIS, the lead agency will prepare it, cause it to be prepared or terminate its review of the action. A fee may be charged by the lead agency for preparation or review of an EIS pursuant to section 617.13 of this Part. When the project sponsor prepares the draft EIS, the document must be submitted to the lead agency.

(2) The lead agency will use the final written scope, if any, and the standards contained in this section to determine whether to accept the draft EIS as adequate with respect to its scope and content for the purpose of commencing public review. This determination must be made in accordance with the standards in this section within 45 days of receipt of the draft EIS.

(i) If the draft EIS is determined to be inadequate, the lead agency must identify in writing the deficiencies and provide this information to the project sponsor.

(ii) The lead agency must determine whether to accept the resubmitted draft EIS within 30 days of its receipt.

(3) When the lead agency has completed a draft EIS or when it has determined that a draft EIS prepared by a project sponsor is adequate for public review, the lead agency must prepare, file and publish a notice of completion of the draft EIS and file copies of the draft EIS in accordance with the requirements set forth in section 617.12 of this Part. The minimum public comment period on the draft EIS is 30 days. The comment period begins with the first filing and circulation of the notice of completion.

(4) When the lead agency has completed a draft EIS or when it has determined that a draft EIS prepared by a project sponsor is adequate for public review, the lead agency will determine whether or not to conduct a public hearing concerning the action. In determining whether or not to hold a SEQR hearing, the lead agency will consider: the degree of interest in the action shown by the public or involved agencies; whether

substantive or significant adverse environmental impacts have been identified; the adequacy of the mitigation measures and alternatives proposed; and the extent to which a public hearing can aid the agency decision-making processes by providing a forum for, or an efficient mechanism for the collection of, public comment. If a hearing is to be held:

(i) the lead agency must prepare and file a notice of hearing in accordance with subdivisions617.12(a) and (b) of this Part. Such notice may be contained in the notice of completion of the draft EIS. The notice of hearing must be published, at least 14 calendar days in advance of the public hearing, in a newspaper of general circulation in the area of the potential impacts of the action. For state agency actions that apply statewide this requirement can be satisfied by publishing the hearing notice in the ENB and the State Register;

(ii) the hearing will commence no less than 15 calendar days or no more than 60 calendar days after the filing of the notice of completion of the draft EIS by the lead agency pursuant to subdivision 617.12(b) of this Part. When a SEQR hearing is to be held, it should be conducted with other public hearings on the proposed action, whenever practicable; and

(iii) comments will be received and considered by the lead agency for no less than 30 calendar days from the first filing and circulation of the notice of completion, or no less than 10 calendar days following a public hearing at which the environmental impacts of the proposed action are considered, whichever is later.

(5) Except as provided in subparagraph (i) of this paragraph, the lead agency must prepare or cause to be prepared and must file a final EIS, within 45 calendar days after the close of any hearing or within 60 calendar days after the filing of the draft EIS, whichever occurs later.

(i) No final EIS need be prepared if:

(a) the proposed action has been withdrawn or;

(b) on the basis of the draft EIS, and comments made thereon, the lead agency has determined that the action will not have a significant adverse impact on the environment. A negative declaration must then be prepared, filed and published in accordance section 617.12 of this Part.

(ii) The last date for preparation and filing of the final EIS may be extended:

(a) if it is determined that additional time is necessary to prepare the statement adequately; or

(b) if problems with the proposed action requiring material reconsideration or modification have been identified.

(6) When the lead agency has completed a final EIS, it must prepare, file and publish a notice of completion of the final EIS and file copies of the final EIS in accordance with section 617.12 of this Part.

(7) Supplemental EISs.

(i) The lead agency may require a supplemental EIS, limited to the specific significant adverse environmental impacts not addressed or inadequately addressed in the EIS that arise from:

(a) changes proposed for the project; or

(b) newly discovered information; or

(c) a change in circumstances related to the project.

(ii) The decision to require preparation of a supplemental EIS, in the case of newly discovered information, must be based upon the following criteria:

(a) the importance and relevance of the information; and

(b) the present state of the information in the EIS.

(iii) If a supplement is required, it will be subject to the full procedures of this Part.

(b) Environmental impact statement content.

(1) An EIS must assemble relevant and material facts upon which an agency's decision is to be made. It must analyze the significant adverse impacts and evaluate all reasonable alternatives. EISs must be analytical and not encyclopedic. The lead agency and other involved agencies must cooperate with project sponsors who are preparing EISs by making available to them information contained in their files relevant to the EIS.

(2) EISs must be clearly and concisely written in plain language that can be read and understood by the public. Within the framework presented in paragraph 617.9(b)(5) of this subdivision, EISs should address only those potential significant adverse environmental impacts that can be reasonably anticipated and/or have been identified in the scoping process. EISs should not contain more detail than is appropriate considering the nature and magnitude of the proposed action and the significance of its potential impacts. Highly technical material should be summarized and, if it must be

included in its entirety, should be referenced in the statement and included in an appendix.

(3) All draft and final EISs must be preceded by a cover sheet stating:

(i) whether it is a draft or final EIS;

(ii) the name or descriptive title of the action;

(iii) the location (county and town, village or city) and street address, if applicable, of the action;

(iv) the name and address of the lead agency and the name and telephone number of a person at the agency who can provide further information;

(v) the names of individuals or organizations that prepared any portion of the statement;

(vi) the date of its acceptance by the lead agency; and

(vii) in the case of a draft EIS, the date by which comments must be submitted.

(4) A draft or final EIS must have a table of contents following the cover sheet and a precise summary which adequately and accurately summarizes the statement.

(5) The format of the draft EIS may be flexible; however, all draft EISs must include the following elements:

(i) a concise description of the proposed action, its purpose, public need and benefits, including social and economic considerations;

(ii) a concise description of the environmental setting of the areas to be affected, sufficient to understand the impacts of the proposed action and alternatives;

(iii) a statement and evaluation of the potential significant adverse environmental impacts at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence. The draft EIS should identify and discuss the following only where applicable and significant:

(a) reasonably related short-term and long-term impacts, cumulative impacts and other associated environmental impacts;

(b) those adverse environmental impacts that cannot be avoided or adequately mitigated if the proposed action is implemented;

(c) any irreversible and irretrievable commitments of environmental resources that would be associated with the proposed action should it be implemented;

(d) any growth-inducing aspects of the proposed action;

(e) impacts of the proposed action on the use and conservation of energy (for an electric generating facility, the statement must include a demonstration that the facility will satisfy electric generating capacity needs or other electric systems needs in a manner reasonably consistent with the most recent state energy plan);

(f) impacts of the proposed action on solid waste management and its consistency with the state or locally adopted solid waste management plan;

(g) impacts of public acquisitions of land or interests in land or funding for non-farm development on lands used in agricultural production and unique and irreplaceable agricultural lands within agricultural districts pursuant to subdivision (4) of section 305 of article 25-AA of the Agriculture and Markets Law; and

(h) if the proposed action is in or involves resources in Nassau or Suffolk Counties, impacts of the proposed action on, and its consistency with, the comprehensive management plan for the special groundwater protection area program as implemented pursuant to article 55 or any plan subsequently ratified and adopted pursuant to article 57 of the Environmental Conservation Law for Nassau and Suffolk counties;

§617.10 Generic environmental impact statements

(a) Generic EISs may be broader, and more general than site or project specific EISs and should discuss the logic and rationale for the choices advanced. They may also include an assessment of specific impacts if such details are available. They may be based on conceptual information in some cases. They may identify the important elements of the natural resource base as well as the existing and projected cultural features, patterns and character. They may discuss in general terms the constraints and consequences of any narrowing of future options. They may present and analyze in general terms a few hypothetical scenarios that could and are likely to occur.

A generic EIS may be used to assess the environmental impacts of:

(1) a number of separate actions in a given geographic area which, if considered singly, may have minor impacts, but if considered together may have significant impacts; or

(2) a sequence of actions, contemplated by a single agency or individual; or

(3) separate actions having generic or common impacts; or

(4) an entire program or plan having wide application or restricting the range of future alternative policies or projects, including new or significant changes to existing land use plans, development plans, zoning regulations or agency comprehensive resource management plans.

(b) In particular agencies may prepare generic EISs on the adoption of a comprehensive plan prepared in accordance with subdivision 4, section 28-a of the General City Law; subdivision 4, section 272-a of the Town Law; or subdivision 4, section 7- 722 of the Village Law and the implementing regulations. Impacts of individual actions proposed to be carried out in conformance with these adopted plans and regulations and the thresholds or conditions identified in the generic EIS may require no or limited SEQR review as described in subdivisions (c) and (d) of this section.

(c) Generic EISs and their findings should set forth specific conditions or criteria under which future actions will be undertaken or approved, including requirements for any subsequent SEQR compliance. This may include thresholds and criteria for supplemental EISs to reflect specific significant impacts, such as site specific impacts, that were not adequately addressed or analyzed in the generic EIS.

(d) When a final generic EIS has been filed under this part:

(1) No further SEQR compliance is required if a subsequent proposed action will be carried out in conformance with the conditions and thresholds established for such actions in the generic EIS or its findings statement;

(2) An amended findings statement must be prepared if the subsequent proposed action was adequately addressed in the generic EIS but was not addressed or was not adequately addressed in the findings statement for the generic EIS;

(3) A negative declaration must be prepared if a subsequent proposed action was not addressed or was not adequately addressed in the generic EIS and the subsequent action will not result in any significant environmental impacts;

(4) A supplement to the final generic EIS must be prepared if the subsequent proposed action was not addressed or was not adequately addressed in the generic EIS and the subsequent action may have one or more significant adverse environmental impacts.

(e) In connection with projects that are to be developed in phases or stages, agencies should address not only the site specific impacts of the individual project under consideration, but also, in more general or conceptual terms, the cumulative impacts on the environment and the existing natural resource base of subsequent phases of a larger project or series of projects that may be developed in the future. In these cases, this part of the generic EIS must discuss the important elements and constraints present in

the natural and cultural environment that may bear on the conditions of an agency decision on the immediate project.

Appendix B:
Cumulative Impact References in
Draft SGEIS of 10/05/09
and
Public Comments from 2008
Scoping Meetings on the Draft SGEIS

Chapter 6 of Draft SGEIS:

6.13 on Cumulative Impact 85*

Cumulative impacts are the effects of two or more single projects considered together. Adverse cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. The 1992 GEIS defines the project scope as an individual well with a limited discussion of cumulative impacts. Chapter 18 discusses the positive economic impacts of gas development for municipalities and for the entire State. Additionally, as an unavoidable adverse impact it states: "Though the potential for severe negative impacts from any one site is low. When all activities in the State are considered together, the potential for negative impacts on water quality, land use, endangered species and sensitive habitats increases significantly."

6.13 Cumulative Impacts

Cumulative impacts are the effects of two or more single projects considered together. Adverse cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. The 1992 GEIS defines the project scope as an individual well with a limited discussion of cumulative impacts. Chapter 18 discusses the positive economic impacts of gas development for municipalities and for the entire State. Additionally, as an unavoidable adverse impact it states: "Though the potential for severe negative impacts from any one site is low. When all activities in the State are considered together, the potential for negative impacts on water quality, land use, endangered species and sensitive habitats increases significantly."

Cumulative impacts will be discussed from two perspectives;

1) **Site Specific** cumulative impacts beyond those considered in the 1992 GEIS resulting from multi-well pads and
2) **Regional** impacts which may be experienced as a result of gas development.

6.13.1 Site-Specific Cumulative Impacts

The potential for site specific cumulative impacts as a result of multi-well pads, while real, is easily quantified and can be adequately addressed during the application review process. General areas of concern with regard to noise, visual, and community character issues are the same as those of individual well pads. While the pads may be slightly larger than those used for single wells, the significant impacts are due to the cumulative time and trucking necessary to drill and stimulate each individual well.

When reviewed in 1992, it was assumed that a well pad would be constructed, drilled and reclaimed in a period measured in a few months, with the most significant activity being

measured in one or two weeks for the majority of wells. By comparison, a horizontal well takes four to five weeks of 24-hour-per-day drilling with an additional three to five days for the

*85 NTC, pp. 26-31

hydraulic fracture. This duration will be required for each well, with industry indicating that it is common for six to eight wells to be drilled on a multi-well pad. Typically, one or two wells are drilled and stimulated and then the equipment is removed. If the well(s) are economically viable, the equipment is brought back and the remaining wells drilled and stimulated. Current regulations require that all wells on a multi-well pad be drilled within three years of starting the first well. As industry gains confidence in the production of the play, there is the possibility that all wells on a pad would be drilled, stimulated and completed consecutively. This concept will shorten the time frame of noise generation and eliminate the noise generated by one rig disassembly/reassembly cycle.
The trucking requirements for rigging and equipment will not be significantly greater than for a single well pad, especially if all wells are drilled consecutively. Water and materials requirements, however, will greatly increase the amount of trucking to a multi-well pad compared to a single well pad. 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 can be seen, the vast majority of trucking is involved in delivering water and removing flow back. Multiple wells in the same location provide the potential to reduce this amount of trucking by reusing flow back water for the stimulation of other wells on the same pad. The centralized location of water impoundments may also make it economically viable to transport water via pipeline or rail in certain instances.

In the production phase, the operations at multi-well pads are similar to what was addressed in 1992. There will be a small amount of equipment, including valves, meters, dehydrators and tanks remaining on site, which may be slightly larger than what is used for single wells but is still minor and is quiet in operation. The reclamation procedures are the same as for single well pads, however, there will be more area left for production equipment and activities. It is anticipated that a multi-well pad will require up to three acres compared to one acre or less as discussed in 1992.

6.13.1.2 Site-Specific Cumulative Impacts Conclusions

A single multi-well pad on a 640-acre spacing unit will drain the same area that could contain up to 16 single well pads. As discussed earlier, the pad will be larger, the area left for production will be larger and, the duration of drilling and stimulating activities on the pad will be longer. The decrease in the number of drilling sites reduces the regional long term and short-term cumulative impacts.

6.13.2 Regional Cumulative Impacts

The level of impact on a regional basis will be determined by the amount of development and the rate at which it occurs. Accurately estimating this is inherently difficult due to the wide and variable range of the resource, rig, equipment and crew availability, permitting and oversight capacity, leasing, and most importantly, economic factors. This holds true regardless of the type of drilling and stimulation utilized. Historically in New York, and in other plays around the country, development has occurred in a sequential manner over years with development activity concentrated in one area then moving on with previously drilled sites fully or partially reclaimed as new sites are drilled. As with the development addressed in 1992, once drilling and stimulation activities are completed and the sites have been reclaimed, the long term impact will consist of widely spaced and partially re-vegetated production sites and fully reclaimed plugged and abandoned well sites.

The statewide spacing regulations for vertical shale wells of one single well pad per 40-acre spacing unit will allow no greater density for horizontal drilling with high volume hydraulic fracturing than is allowed for conventional drilling techniques. This density was anticipated in 1992 and areas of New York, including Chautauqua, Cayuga and Seneca Counties, have experienced drilling at this level without significant negative impacts to agriculture, tourism, other land uses or any of the topics discussed in this report.**.** As discussed earlier, the density for multi-well pads, one per 640-acre spacing unit, is significantly less than for single well pads, reducing the total number of disturbances to the landscape. While multi-well pads will be slightly larger than single well pads the reduction in number will lead to a substantial decrease in the total amount of disturbed acreage, providing additional mitigation for long term visual and land use impacts on a regional basis. The following table provides an example for a 10 square mile area (i.e., 6,400 acres), completely drilled, comparing the 640 acre spacing option with multi-well pads and horizontal drilling to the 40 acre spacing option with single well pads and vertical drilling.

TABLE

Spacing Option	**Multi-Well 640-Acre**	**Single Well 40-Acre**
Number of Pads	10	160
Total Disturbance - Drilling Phase	50 Acres (5 ac./pad)	480 Acres (3 ac./ pad)
% Disturbance - Drilling Phase	.78	7.5
Total Disturbance – Prod. Phase	30 Acres (3 ac./pad)	240 Acres (1.5 ac./pad)
% Disturbance - Production Phase	. 46	3.75

As can be seen, multi-well pads will significantly decrease the amount of disturbance on a regional basis in all phases of development. The reduction in sites should also allow for more resources to be devoted to proper siting and design of the pad and to mitigating the short-term impacts that occur during the drilling and stimulation phase.

6.13.2.1 Rate of Development and Thresholds

In response to questioning, a representative for one company estimated a peak activity for all of industry at 2,000 wells per year ± 25% in the New York Marcellus play. Other companies did not provide an estimate. By comparison, in Pennsylvania, where the reservoir is much more widespread, permitting activity is ongoing.

Table

Year	**Marcellus Permits Issued**

2007	**99**
2008	**510**
2009 (through 8/31)	**1127**

Source: given in original

Recent development in the Barnett play in Texas, which utilizes the same horizontal drilling with high volume hydraulic fracturing that will be used in New York, has occurred at a rapid rate over the last decade. It is an approximately 4,000 square mile play located in and around the Dallas – Fort Worth area. In the eight-year period from 2002 to 2008 approximately 10,500 wells were drilled.

The final scoping document summarizes the challenge of forecasting rates of development as follows: The number of wells which will ultimately be drilled cannot be known in advance, in large part because the productivity of any particular formation at any given location and depth is not known until drilling occurs. Changes in the market and other economic conditions also have an impact on whether and how quickly individual wells are drilled.86

Additional research has identified that "Experience developing shale gas plays in the past 20 years has demonstrated that every shale play is unique."87 Each individual play has been defined, tested and expanded based on an understanding of the resource distribution, natural fracture patterns, and limitations of the reservoir, and each play has required solutions to problems and issues required for commercial production. Many of these problems and solutions are unique to the play.88 The timing, rate and pattern of development, on either a statewide or local basis, are very difficult to accurately predict.89 As detailed in Section 2.1.6 of the Final Scoping Document, "overall site density is not likely to be greater than was experienced and envisioned when the GEIS and its Findings were finalized and certified in 1992."

Draft SGEIS 9/30/2009, Page 6-145

The rate of development cannot be predicted with any certainty based on the factors cited above and in the Final Scoping Document. Nor is it possible to define the threshold at which development results in adverse noise, visual and community character impacts. Some people will feel that one drilling rig on the landscape is too many, while others will find the changes in

86
Final Scoping Document (Page 39)
87
Fractured Shale Gas Potential in New York (Page 1)
88
Ibid
89
Final Scoping Document (Page 39) the landscape inoffensive and will want full development of the resource as quickly as possible. There is no way to objectify these inherently subjective perspectives. As a result, 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.
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.

2008 Scoping Hearings (sampling, only; more public comments pertaining to cumulative impacts are available on the DEC website).

Before making a final decision on whether environmental impacts could be significant, even after any mitigations, the decision-making body must consider not only the information in an EIS, but information provided by the public. The following comments from the public occurred during Scoping hearing on the DGEIS in 2008 and show repeated interest and concern over cumulative impacts:

ALLEGANY: (Nov. 6, Allegany Limestone Central High School. Kathy Sanford said (14). "The activities and facilities I just described could affect the environment in several ways. These are explined in Section 4 of the draft scope. Without appropriate controls, the activity could affect water resources. Noise and visioual affects will occur. They (sic) may be potential air quality impacts. Trsks will haul water on local roads. The supplement will also discuss cumulative impacts, impacts to communities and environmental justice concerns." Mr. Stanley Scobie of New Yorkers for Sustainable Energy Statewide objected to the draft scope as follows: "…the dismissal of the participation of the public service commission in the GEIS process is inappropriate. What is unacceptable is that the DEC refuses to assess the impact of gathering lines, transmission lines, and accidental spills or releases as part of the EIS process. This appears to be segmentation of an inherently integral process." (24).

Mr. Mike Hogan, representing the Independent Oil and Gas Industry states that no CIA is needed nor will there be community impacts other than job growth. Barnett Shale development in Dallas/Ft. Worth has generated 70,000 jobs in a 5 county area and is a smaller formation than Marcellus (34).

BATH (Nov. 11, 2008): Mr. Walt Franklin of Trout Unlimited: "Our concern is that water for hydraulic fracturing is likely to be obtained from surface water bodies away from the well sites including rivers and stream. We feel that the potential cumulative impacts of numerous withdrawals, especially when there is recued flow in wild trout streams, may have a major impact on fish and wildlife and to downstream wetlands and users. In addition, we're concerned about the potential transfer of invasive species from one surface water body to another as a result of water withdrawal and subsequent discharge into another surface water body. [Franklin provides photographic evidence of current water withdrawal from trout stream by gas drillers]. (33)

ELMIRA (Nov. 13, 2008): Mr. Ezra Sherman, local resident. "…there is one particular area that should be included in the GEIS that is not, and that is consideration of the cumulative impact of gas drilling in the state. Now, as the DEC Im sure is aware…., the Susquehana River Watershed Commission is predicting 1.5000 Marcellus wells in NYS beginning the first year of drilling… You can expect 1.5 billion gallons of polluted water that needs disposal in the first year, if you assume a conservative estimate of 2 million gallons of fracking fluid used per well and half it remains underground. Now, as the number of wells drilled in the state goes into the thousands, all of the stresses and problems with shale gas drilling will be exacerbated. The visual effects, the noise, the effect on infrastructure, our safety, groundwater pollution, air quality pollution. And I submit the DEC's ability to police the gas industry will be affected… [Here's what to is involved with Marcellus wells] Your're talking about a five acre industrial site that lasts decades that's fracked repeatedly. You're talking about a gas line to each well…. Now

here are the particular areas of cumulative effects of facts (sic) I think we should look at. Visual effects, as I said, if the industry is allowed to drill on the concentration that they are presently allowed to on a 40 acre spacing, that's 12 percent of the land. …Now it is incompatible with serenity to have a compressor in your back field. You're talking about a large diesel engine running 24 hours a day seven days a week, in our case [there is a well on his family's property], for around 7 months…. I submit that the DEC needs to look at what will be the cumulative effects of high concentration of Marcellus wells on the noise pollution in our area. The effect on infrastructure, for each million gallons of water that they will use in a fracking you will need to have 200 10,000 gallon tanker trucks driving down the road to service that frack job. A conservative estimate is a two million gallon frack job, that's 400 50 ton trucks rolling to one fracking at one site. I submit that the DEC needs to study what will the cumulative effects on our highways and rural roads be by the time that – rolls over. [Same speaker mentions safety impacts of greater truck traffic on rural roads and dubious job benefits if the truckers and other workers come in from other states. He ends his statement with a lengthy description of air pollution reported in other states directly associated with gas mining—Wyoming, Colorado, Texas—and asks DEC to investigate what is likely in NYS.] (45-53)

Robin D. Strombun, resident of Town of Chemung and member of non-profit organization for community preservation. Reports fall levels in the Chemung River "even before the gas companies began drawing massive amounts of water for their drilling operations. Guidance in the draft scope seems to be lacking with regards to setting overall or cumulative limits on the amount of water that can be removed from the water bodies of New York State. While there are individual limits in terms of gallons per day, we would like to see some discussion of just how much the Department considers to be too much with respect to water withdrawals from our local streams and rivers over a long specified time period." (72)

Scot Blauvelt of East Resources Inc. Foresees billions of dollars of new investment each year for the foreseeable future, gains for landowners, and "new well-paying jobs and economic advantages for many businesses and communities." Cites Penn State Ed. and Development Inititative estimates that for each billion of royalty income generated by Marcellus sale reserves, the State could gain 7,800 jobs once the Supplement to the GEIS process is completed and 8,000 the following year. Regarding cumulative impacts (pp. 112), "East Resources, Inc. believes that the Department's analysis of the 1992 GEIS remains accurate, even with respect to Marcellus shale development. Cumulative review is impractical and unnecessary given the independent nature of each well, i.e., no compounding environmental impact, and the uncertain factors that dictate when and where wells will be drilled, e.g., economics, drilling equipment availability, leaseholds, etc., in addition to the remote and non-cumulative nature of these activities."

Andrew Byers, botanist and farmer, Newfield: "…I have three issues that I do not feel are adequately addressed. The cumulative impact is flaring unrefined gas for months

while wells were proven and then well pipelines are built….Combine that flaring and the diesel exhaust from the thousands of trucks across the state as the drilling occurs, it's not going to be one well at a time times 3,000 in one country. So the diesel exhaust from thousands of trucks and then the compression of generators from the wells that have already been drilled and the compression while the wells are being drilled to force that liquid down and the generators needed to repeatedly stimulate across these different counties, that's a cumulative effect I would like to be addressed… The other cumulative effect that I think I would note…is the effect of fugitive gas. Fugitive methane, fugitive VOCs coming off of evaporation pits that wit for weeks and weeks at every sing sell… So I mean, an estimated 40 years on one Marcellus well with a generator, keeping that [well] under pressure the entire time. That's a lot of diesel exhaust and that's a lot of ozone. And that's a lot of VOCs…" (115-121)

Megan Cosgrove, Central NYS local resident: "I would like to point out the importance of a thorough cumulative impact assessment as related to health impacts. The overall issues of noise of multiple drilling sites and re-fracking at individual sites over time will have significant effects on air/water quality, environmental quality of life for human and non-human residents nearby… Children, pregnant women and the elderly are known to be particularly sensitive and susceptible to the ill effects of exposure to toxic chemicals and other environmental stressors. But we will all feel the effect of poor oversight of planting. The long-term physical and psychological effects of our families and communities will be impact by the decisions and actions of the DEC in this matter." (143-44)

Candace Mingis: On the issue of re-fracking. "This was stated by Commissioner Grannis that a well is typically fracked only one time. Either the DEC will prohibit multiple fracking on each well or it must include the maximum possible frackings, its code. This matters. Water usage, trucking, disturbance, waste disposal, of it can be multiplied by ten adding it to the cumulative impact…I urge the DEC to fully consider cumulative impact. The scope of this development is way beyond considering each well as "of independent nature" as stated in the SGEIS. The development proposed will forever change our landscap and our lives. I speak from personal experience. [She shares an prolonged, on-site experience with numerous hidden costs for her family.] "The air quality, compressors, pipeline construction, final disposition of wastes, etcetera, this all adds up to affect us." (172-73).

Julian Drix: (185) "I am deeply worried that this GEIS give us the illusion that there's someone out there protecting us, looking out for us. All 11 of their [DEC] field inspecgtorsa are going to check the tens of thousands of planned wells. Am I correct…We need to look at the cumulative impact of this. It's not about individual rights. If the Genereic EIS for these wells were to pass, we would b a mark to fall upon, it would transform our area."

John Holco, President of Lenape Energy: “When we talk about healthcacre and we talk about issues, somebody has to pay for our hospirtals, somebody has to provide the jobs to get thigns done. One of the impacts that we has is the cumulative impact on water resources. Cumulative impact of water volume stimulation treatments is being addressed by industry in its focus to advane the technology to allow the reuse of flowback fluidh. This is a serious matter to us, we ant to reuse it… The entire Southern Tier of New York was dotted with a lot of industries in the past. Well, all of those industries are gone. What we’ve tried and what we’re going to try to do in our industry is use those facilities that used water previous, use some of the processing facilities, reuse the stuff we have.” (193-94)

Becca Harbor, resident: “Let’s see, I just want to say that the issue of jobs, it sounds good, but you don’t know again what the cumulative impact—and the example with this writer from Colorado, she talked about having two years, the population who kind of struggled by all the people who kind of came in from the outside to work for the ass—and theiry’re doing, you know, like Marcellus shale hydrofracking out there. And basically the rents wen up so that the nynber of local people could not afford to live there anymore and tourims buinesses near Glenwood Srpings locally owned wen out of business because they didn’t have poepl who could work who were there to live to work there any longer.” (199)

Appendix C:

Articles Critical of DEC for Neglect of

Cumulative Impact Assessment

“If an agency makes an improper decision or allows a project that is subject to SEQR to start, and fails to undertake a proper review, citizens or groups who can demonstrate that they may be harmed by this failure may take legal action against the agency under Article 78 of the New York State Civil Practice Law and Rules. Project approvals may be rescinded by a court and a new review required under SEQR. New York State's court system has consistently ruled in favor of strong compliance with the provisions of SEQR (see also case law to be posted later).
From http://www.dec.ny.gov/permits/357.html

***

NYLPI 2002 letter to Monica L. Abreu Concley by Gail Miller and Gail Suchman criticizing DEC’s neglect of cumulative impact assessment as a matter of environmental justice by EPA. Source:

http://www.dec.ny.gov/docs/permits_ej_operations_pdf/miller.pdf

****

Deborah Goldberg's testimony (Earthjustice) on Oct. 23, 09.

Source: http://nyh2o.org/pdfs/goldberg.pdf

****

DEC's Overlooked Authority to Weigh Cumulative Impacts by Philip Weinberg and Paul M. Bray (Date?)

Source:
http://www.google.com/search?client=safari&rls=en&q=New+York+DEC+Cumulative+Impacts&ie=UTF-8&oe=UTF-8

Sandwiched in among the broad powers bestowed on DEC by the Legislature in ECL § 3-0301 is the express authority to "[c]oordinate and develop policies, planning and programs related to the environment of the state and regions thereof" and to "[p]romote and coordinate management of water, land, fish, wildlife and air resources to assure their protection, enhancement ... and balanced utilization consistent with the environmental policy of the state and take into account the cumulative impact upon all of such resources in making any determination in connection with any license, order, permit, certification or other similar action..."2 This seemingly sweeping but vastly underutilized grant of power conferring the authority to consider cumulative impacts when deciding on licenses or permits was enacted in 1975, the same year as the State Environmental Quality Review Act3 (SEQRA). Why has DEC not made use in a quarter of a century of this weapon designed to furnish authority to consider the cumulative impact of development and to foster the planning of future development that New York so sorely lacks?4

The court in the well-known *Town of Henrietta v. DEC* , which made clear that SEQRA authorizes the Department (as well as other agencies, state and local) to require project sponsors to mitigate environmental impacts, explicitly noted the powers granted DEC in § 3- 0301(l)(b) to "take into account the cumulative impact" when considering a license or permit. The Appellate Division aptly described this as a "separate grant of authority" in addition to SEQRA. Significantly, this section's applicability was, the court pointed out, "not raised by the DEC . . ."5 It is striking that DEC, the Attorney General and citizen plaintiffs have ignored the strong mandate of this language. A few reported decisions have relied on § 3-0301 generally as furnishing DEC with broad overall "responsibility to carry out the environmental policy of this State," as the Court of Appeals held in *Flacke v. Freshwater Wetlands Appeals Board6* (sustaining DEC's right to appeal from an

adverse decision of the respondent agency). Again, in *Sherwood Medical Co. v. New York State DEC,7* the court cited a related subsection of § 3- 0301 to show it "evident that the legislature intended to confer upon the Commissioner a broad based authority to implement the environmental policy of this State." Otherwise, the silence is deafening.The language regarding cumulative impacts was added, according to the State Executive Department, "[t]o confirm the authority of the Commissioner of Environmental Conservation to base determinations relating to licenses, orders, permits . . . or ... rules, regulations, standards or criteria on the cumulative impact on fish, wildlife, water, land and air resources of the State of the project or matter involved, where such factors are not otherwise required to be considered."8 The final clause of this sentence makes crystal clear that the added language was specifically intended to broaden the Department's authority.The Memorandum goes on to refer to *Ton-Da-Lay, Ltd. v. Diamond,9* where one year earlier the Appellate Division, Third Department, upheld DEC's denial of a water supply permit to a vacation home developer, but went on to rule that the Department could only examine the project's own water supply concerns, not its impacts on the environment generally - particularly the nearby Adirondack Forest Preserve. The history behind the *Ton-Da-Lay* decision is instructive. In the 1960s and early 1970s, in theaftermath of the building of the Northway interstate divided highway between Albany and Canada along the eastern side of the six million-acre Adirondack State Park, there was a boom of interest in second-home development in the Adirondack Park. One major proposed second home development, the 18,386 acre Ton-Da-Lay project in the Town of Altamont in Franklin County, would have had a significant impact on the forests, waters and mountains of the unique Adirondack Park. At the time few of the many towns and villages within the Adirondack Park had adopted zoning and planning laws and enactment of the State private land use plan for the Adirondack Park (Article 27 of the Executive Law) did not take effect until 1973. In fact, it is likely that the prospect of the State exercising some form of comprehensive land use jurisdiction in the Park hastened developers to act before it took effect.The only meaningful environmental review that most Adirondack second-home developments were subject to before 1973 was associated with permitting requirements under the Environmental Conservation Law for water supply and sewage treatment system permits under ECL §§ 15-1501 and 15-1503. These permits had essentially been subject to basic engineering standards and not to a broader review of a project's impact on natural resources or, in special places like the Adirondack and Catskill Parks, the character of the parks. The Ton-Da-Lay developer's application to DEC for a water supply and a sewage treatment system permit in 1971 marked a watershed in how DEC applied its permitting authority. Following intervention in the permitting proceeding by the Sierra Club, ably represented by attorneys Robert Kafin and the late Ed Needleman, the Department's traditional narrow consideration of permit applications was expanded to a comprehensive look at the impact of the proposed second-home development on natural resources and the character of the region over a 20-day hearing. In August 1973 DEC denied the developer's application based on the cumulative impact of the proposed project on the unique and special resources of the Adirondack Park - - the determination the Appellate Division circumscribed. This directly led to the legislation amending § 3-

0301.Gov. Hugh L. Carey's memorandum approving the 1975 bill, like the Executive Department Memorandum, noted that "[i]n the past, the Commissioner has asserted his authority to consider the overall environmental impact in making his determinations." After *Ton-Da-Lay* "raised some doubt as to the Commissioner's authority to take into consideration environmental factors other than those specifically relating to the permits applied for," this legislation "would clarify the Commissioner's authority in that regard, and insure that the total environmental impact of proposed projects will be considered by the Commissioner in making his determinations."' 10While this legislation, though enacted, languished, several cases reached the Court of Appeals raising the issue whether agencies adequately considered a project's cumulative impacts under SEQRA. That statute requires state and local agencies to prepare an environmental impact statement (EIS) describing "the environmental impact of the proposed action including short-term and long-ten-n effects," along with alternatives and mitigation measures." DEC's regulations make clear that cumulative impacts must be considered under SEQRA for actions resulting in "changes in two or more elements of the environment, no one of which has a significant effect on the environment, but when considered together result in a substantial adverse impact on the environment." 12 Similarly, these rules require an EIS for "two or more related actions [J none of which has or would have a significant effect on the environment, but whenconsidered cumulatively would meet one or more of the criteria" for significant impact. 13 Agencies are to weigh "reasonably related" cumulative effects, including actions that are "included in any long-range plan," or are likely to occur as a result of, or depend on, such a plan. 14The Court of Appeals has mandated that agencies consider cumulative impacts, notably in *Village of Westbury v. Department of Transportation'* 5 where an EIS was ordered for two related highway projects, and in *Save the Pine Bush v. City of Albany* 16 involving development of parcels in an environmentally sensitive pine barrens. But the courts' insistence that the projects be part of, or dependent on, an overall long-range plan, has led them to reject suits to require weighing of cumulative impact. For example, in *Long Island Pine Barrens Society v. Planning Bd. of Town of Brookhaven* 17 the Court of Appeals ruled an EIS to examine the cumulative impact of development in Long Island's central pine barrens, vital to the island's water supply, was not required since there was no overall plan to safeguard the pine barrens - - the very reason why weighing the cumulative impacts of that development was so important. And in *Stewart Park and Reserve Coalition v. New York State Dept. of Transportation* 18 cumulative impacts again were not required to be looked at where, the courts ruled, the impacts of two related actions - - increasing flights at an airport and expanding its size - - were different.While none of those decisions happened to involve DEC as a lead agency with primary responsibility under SEQRA, many significant environmental determinations of course do. And in those situations, ranging from air and water permits to wetland protection and land use in wilderness areas where DEC has chief responsibility, § 3-0301 imposes on the Department a clear mandate to consider the cumulative impacts on the state's environment of the action or project before it. The 1975 amendment to this statute, enacted the same year as SEQRA and for largely the same purpose, is really in pari materia with SEQRA. It is a clear, resounding mandate to DEC requiring it to weigh

projects' cumulative impacts, and one that New York's courts should enforce vigorously. Insuring that DEC shoulder this responsibility the Legislature gave it twenty-six years ago is long overdue.Philip Weinberg, a former Environmental Law Section chair, is Professor of Law at St. John'sLaw School. He writes the Practice Commentary for McKinney's Environmental Conservation Law and has written several books and many articles on environmental law.Paul M. Bray, a former bill drafter for the New York State Legislature, was involved in thedrafting of both SEQRA and ECL § 3-0301's 1975 amendment. He writes extensively on environmental subjects.1ECL §3-0101 (1) (a).2 Id. (1) (b).3 N.Y. L. 1975, ch. 532. SEQRA is ECL art.8.4 76 A.D.2d 215, 430 N.Y.S.2d 440 (4th Dept. 1980).5 76 A.D.2d at 222, 430 N.Y.S.2d at 447.6 53 N.Y.2d 537, 541, 428 N.E.2d 380, 381, 444 N.Y.S.2d 48,49 (1981).7 158 Misc.2d 281, 285, 599 N.Y.S.2d 382, 385 (Sup. Ct. Albany Co. 1993), reversed on other gds. 206 A.D.2d 819, 615 N.Y.S.2d 140 (3d Dept. 1994) (citing § 3.0301 [1] [i] empowering DEC to prevent and abate air, land and water pollution).8 Mem. Of State Exec. Dept., McK. 1975 Sess. Laws, 1668-69.9 44 A.D.2d 430, 355 N.Y.S.2d 820 (3d Dept. 1974), app. dism. 35 N.Y.2d 789, 320 N.E.2d 870, 362 N.Y.S.2d 156 (1974), 36 N.Y.2d 856, 331 N.E.2d 695, 370 N.Y.S.2d 918 (1975), and 36 N.Y.2d 646, 332 N.E.2d 362, 371 N.Y.S.2d 1027 (1975).10 Mem. of Approval, McK. 1975 Sess. Laws, 1756.11 ECL § 8-0109 (2) (b), (d), (f).12 6 NYCRR § 617.7 (c) (1) (xi).13 Id. § 617.7 (c) (1) (xii).14 Ud-I § 617.7 (c) (2).15 75 N.Y.2d 62, 549 N.E.2d 1175, 550 N.Y.S.2d 604 (1989).16 70 N.Y.2d 193, 512 N.E.2d 526, 518 N.Y.S.2d 943 (1987).17 80 N.Y.2d 500, 606 N.E.2d 1373, 591 N.Y.S.2d 982 (1992).18 157 A.D.2d 1, 555 N.Y.S.2d 481 (3d Dept. 1990), aff d mem. 77 N.Y.2d 970, 575 N.E.2d 391, 571 N.Y.S.2d 905 (1991).

Appendix D:

Cumulative Impact Case Law in NYS

Notable Court Decisions on SEQR

Source: http://www.dec.ny.gov/permits/55303.html

Chinese Staff & Workers v. City of New York 68 NY2d 359 (1986)Where the City was reviewing the first of several large-scale luxury projects to be proposed in an ethnic neighborhood that it had recently rezoned to retain the low-scale neighborhood character, it was required to consider the cumulative and secondary impacts of this inconsistent project on the area.

Save the Pine Bush v. City of Albany 70 NY2d 193 (1987)Where the City was reviewing 10 proposed projects in an ecologically unique area that it had recently rezoned to balance growth and environmental protection, it was required to review the cumulative effects of those projects in one EIS rather than review each one separately.

Long Island Pine Barrens Society, Inc. v Planning Bd. of Brookhaven, 80 NY2d 500 (1992)After acknowledging the ecological importance of the Long Island Central Pine Barrens region, the Court went on to hold that local governments in three towns separately reviewing hundreds of discreet development projects proposed in the Central Pine Barrens region were not required to consider the cumulative impact of the applications where the applications were only connected by their geography and there was no larger governmental plan compelling cumulative impact assessment. The Court determined that mere policy expressions favoring protection of the Pine Barrens and SEQR were not a substitute for a governmental plan. The Court distinguished its earlier decisions in *Save the Pine Bush v. City of Albany* (70 NY2d 193) and *Chinese Staff & Workers Assn. v. City of New York* (68 NY2d 359) where cumulative impact assessment of discreet developments were compelled by the existence of overarching, adopted governmental land use plans for the preservation of the Albany Pine Barrens region and Chinatown, respectively. As a post script, in 1993, the New York State Legislature enacted Long Island Pine Barrens Protection Act to establish a regional planning body for the Central Pine Barrens region, known as the Long Island Pine Barrens Commission, and to create of a regional plan and accompanying generic environmental impact statement that would take account of cumulative impacts (Laws of 1993, chapters 262, 263, amending Environmental Conservation Law article 57). The Long Island Pine Barrens Joint Planning and Policy Commission adopted the plan in 1995.

North Fork Environmental Council, Inc. v. Janoski, 196 AD2d 590 (2d Dept. 1993).In evaluating the potential environmental effect of a project before it, the lead agency must consider cumulative impacts of other simultaneous or subsequent actions which are included in any long-range plan of which the action under consideration is a part. Projects may be deemed related for requiring an assessment of cumulative impact if they take place in a geographic area which is subject to a larger plan for development as discussed in *Long Island Pine Barrens Society, Inc. v. Planning Board of the Town of Brookhaven* (above). In this case, the Town's designation of an area as a critical environmental area did not constitute a larger plan for requiring cumulative impact assessment of a condominium development.