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To: Edward Hanlon/DC/USEPA/US@EPA

Date: 04/05/2010 09:11 AM

Subject: Environmental Engineering Committee Augmented for Hydraulic Fracturing Review (EEC-HFR)

Mr. Hanlon,

I write to you in regard to the work of the Environmental Engineering Committee Augmented for Hydraulic Fracturing Review (EEC-HFR) and their review of hydraulic fracturing. I urge the EEC-HFR to take into account the multiple impact of hydraulic fracturing wherever it takes place. I direct a transportation planning agency, the Ithaca-Tompkins County Transportation Council, out of Ithaca, NY. This area is under consideration for intense hydraulic fracturing development. As a transportation planner I am very concerned with the increased traffic impacts that can be expected from natural gas drilling in Tom-pkins County. Attached is a brief exploratory analysis I initially prepared December 2009. The potential traffic increase, much of it heavy trucks, is orders of magnitude higher than what exists currently. Much of this traffic will be using rural roads that were not designed for this volume of heavy loads. Local governments will need to address damage to their road. Quality of life impact to nearby residents will be substantial, including congestion and almost certainly an increase in traffic accidents.

Natural gas drilling using hydraulic fracturing is an intense process affecting traffic levels, water quality, scenic impacts, noise levels, air quality, etc. Any review of impact needs to be equally comprehensive.

Thank you for your attention to this message.

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Discussion Paper on Truck Traffic Impact of Hydraulic Fracturing Natural Gas Drilling Operations

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There are many unknowns as we study the potential impacts of hydraulic fracturing natural gas drilling operations under proposed regulations. The number of well pads, number of wells, well locations and rate or resource development are all unknowns.

Based on proposed regulations, i.e. 3 acre facilities at 1 mile intervals, Tompkins County could accommodate up to 510 gas drilling locations (drilling pads). The Tompkins County Planning Dept. has developed a map showing how the 510 drilling pads could be distributed in Tompkins County. Using this information as a starting point ITCTC staff identified the NY State Routes that are most likely to be used by gas drilling heavy trucks (at least NYS DOT-class F8, no single unit vehicles). The selected State Routes are the ones that provide the most direct link to regional transportation corridors such as I-81, NYS Thruway, NY Route 17. These are listed as follows:

- Rt 96 North (Ulysses) [to Thruway]
- Rt 13 South (Newfield) [to I-86]
- Rt 96B (Danby) [to I-86]
- Rt 79 (Caroline) [to I-81]
- Rt 13 North (Dryden) [to I-81]
- Rt 38 (Groton) [to Thruway]
- Rt34B (Lansing) [to Thruway]

NOTE:

- Rt 79 W, Rt 34/96 S, Rt 96B S, and Rt 89 N were not used since they don't provide direct links to interstate highways.
- Rt 34 N was not used since we don't have Class (truck) counts for that road.

It is important to note that in our analysis we found that currently traffic of heavy trucks is strongly concentrated on NY State Routes. By far the highest volumes are in SR-13, particularly the sections between the City of Ithaca and Cortland County. Local roads carry a very small number of trucks, except in a few road sections that are serving quarries or other truck intensive operations.

Although this analysis focuses on State Routes, the wide distribution of drilling allowed under proposed regulations has the potential to generate truck traffic that will affect every road in the County. As traffic moves from the drilling pads to the State Roads along County and local roads it will become more concentrated. State Roads can be expected to be carrying the traffic from multiple drilling pads.

Other assumptions:

-Up to 510 gas drilling pads/locations in Tompkins County

-Each pad can support up to 10 wells.

-The average number of wells per pad is eight (8).

-Each well will generate 1,200 heavy truck trips for every fracturing event, each of which lasts approximately 3 weeks (i.e. 400 weekly or 80 daily truck trips, assuming a five day work week). Multi-well pads are likely to be developed consecutively, one well at a time within a maximum time period of three years. Therefore, the rate of truck trips generation will correspond to that of a single well, but over an extended period of time. Depending on conditions certain wells may go through the fracturing process more than once.

Truck Counts - Current Conditions (based on traffic classification counts by NYS DOT - class F8 and above):

- Rt 96 North (Ulysses) [to Thruway] - 180 heavy trucks per day
- Rt 13 South (Newfield) [to I-86] - 510 heavy trucks per day
- Rt 96B (Danby) [to I-86] - 42 heavy trucks per day
- Rt 79 (Caroline) [to I-81] - 147 heavy trucks per day
- Rt 13 North (Dryden) [to I-81] - 531 heavy trucks per day
- Rt 38 (Groton) [to Thruway] - 206 heavy trucks per day
- Rt34B (Lansing) [to Thruway] - 209 heavy trucks per day

Based on the TCPD distribution of 510 potential gas drilling locations in Tompkins County the following number of drilling pads would load into the selected State Routes:

- Rt 96 North (Ulysses) [to Thruway] - 46 pads would load onto Rt 96 N
- Rt 13 South (Newfield) [to I-86] - 130 pads
- Rt 96B (Danby) [to I-86] - 45 pads
- Rt 79 (Caroline) [to I-81] - 75 pads
- Rt 13 North (Dryden) [to I-81] - 110 pads
- Rt 38 (Groton) [to Thruway] - 45 pads
- Rt34B (Lansing) [to Thruway] - 60 pads

The table below presents an evaluation of potential increases in heavy truck traffic on the selected State Routes due to natural gas drilling operations. Under 'Estimated Cumulative Impacts', the 'low' column represents one well per pad; the 'moderate' column 4 wells per pad; the 'high' column 8 wells per pad. The 'low', 'moderate' and 'high' figures represent expected cumulative impact of gas drilling development. The second-from-right column shows the expected truck traffic increase per day assuming that all drilling pads are developed one well at a time. The rightmost column show how many pads, operating with a single well each, will result in a doubling of traffic for each section of State Routes listed.

It is important to note that drilling operations will be phased, ie. drilling pads will not all be developed at the same time. Also, in pads with multiple wells, the wells are most likely to be developed consecutively, thus extending the duration of impact. The estimated cumulative impact of any single drilling pad will occur over periods that can vary from 3 weeks for a single well to over 6 months for facilities with eight wells developed consecutively. However, it is also likely that multi-well facilities will be developed intermittently, not consecutively one after another, extending the time that a pad remains active for a period of up to three years. The rate of implementation of drilling activity in Tompkins County, how many wells are developed per unit of time, cannot be predetermined for this discussion. For the reasons stated in this paragraph it is very difficult to estimate the duration of impact of increased truck traffic. But with a potential for over 5,000 wells in Tompkins County the drilling activity could be expected to last for many years.

The most obvious revelation in the table below is the potential for added truck traffic to be orders of magnitude greater than current daily truck traffic volumes. The last column on the table shows that, even assuming the minimal level of operation at a single well, only a fraction of the potential pads are needed before doubling existing truck traffic. The reality is that truck traffic in Tompkins County is relatively moderate, reaching substantial levels only on SR-13. Therefore, the truck activity from the proposed drilling will create a significant and noticeable change in truck traffic volumes wherever it is present. This truck traffic will affect numerous county and local rural routes depending on the distribution of drilling activity, and will have its greatest impact on State Routes which will capture truck traffic from numerous drilling facilities as reflected in the table.

Evaluation of Potential Added Heavy-Truck Traffic Due to Natural Gas Drilling Operations - Tompkins County, NY

State Route	Current Average Daily Truck Volume	Potential No. of Pads Loading to Road	Estimated Cummulative Impact			Added Truck Traffic per Day	No. of Pads Needed to Double Current Daily Truck Traffic (1well/pad)
			Low Added Truck Traffic (1well/pad)	Moderate Added Truck Traffic (4 wells/pad)	High Added Truck Traffic (8 wells/pad)		
96 North (Ulysses, Enfield)	180	46	55,200	220,800	441,600	3,680	3
13 South (Newfield)	510	130	156,000	624,000	1,248,000	10,400	7
96B (Danby)	42	45	54,000	216,000	432,000	3,600	1
79 East (Caroline)	147	75	90,000	360,000	720,000	6,000	2
13 North (Dryden)	531	110	132,000	528,000	1,056,000	8,800	7
38 (Groton)	206	45	54,000	216,000	432,000	3,600	3
34 B (Lansing)	209	60	72,000	288,000	576,000	4,800	3

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