



Cornell University

Department of Ecology and Evolutionary Biology

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To the Geneva City Council:

I am sorry I am unable to attend the meeting of the Council tomorrow night, but I write to urge to support a much more thorough analysis of the potential adverse consequences of the ethanol plant proposed on the old Seneca Army Depot. Let me start by stating my background. I am an expert on water quality and sources of pollution from watersheds. I currently represent the State of New York on the Science and Technical Committee of the Chesapeake Bay Program. I direct the Agricultural Ecology Program at Cornell (a program directed at better understanding the problems from and solutions to agricultural pollution of surface waters). And I chair a UN-funded international committee that is charged with fully and objectively assessing both the positive and negative consequences of biofuels on the environment (by appointment of ICSU, the International Council of Science, represented in the United States by the National Academy of Sciences). Last year, I served on an advisory committee to the US EPA on how to reduce nutrient pollution in the Mississippi River basin in order to help reduce the "Dead Zone" in the Gulf of Mexico. Also within the last 12 to 18 months, I have testified in Congressional hearings on this issue, and I gave a briefing to senior staff of the President at the White House. More on these efforts and on my background and experience can be found at my web site at Cornell (<http://www.eeb.cornell.edu/howarth/> or simply "google" Robert Howarth).

I am deeply concerned about one aspect of the proposed ethanol plant, an aspect that has received almost no scrutiny or discussion. A plant the size of the one proposed produces a lot of waste material, called "brewer's grain" or "distiller's grain." This byproduct is what is left from corn after it is mashed and fermented. A lot of this material will be produced, should the plant be built. What becomes of it? It could be land-filled, but that reflects a lost economic opportunity for the plant. In general, the best economic return to owners of ethanol plants comes from selling the brewer's grain as animal feed. It is a protein-rich material that serves particularly well as a feed for beef cattle or dairy cows. And the business plan for the proposed Seneca plant calls for selling 175,000 tons (dry weight) of this material each year for such uses (<http://www.senecachamber.org/pages/advocacy/>). That is enough to support 40,000 head of cattle. Note, though, that it is very expensive both in terms of dollars and energy use to dry the brewer's grain, and so it almost certainly would be sold as wet material. Generally, the economics of transport dictate that we brewer's grain be used within 20 miles of the plant. This means the plant may well encourage the creation of new confined animal feedlot operations (CAFOs) within 20 miles at the scale of 40,000 head of cows/cattle.

Our EPA advisory committee issued a report in December 2007 stating that the development of such CAFOs posed a significant water quality threat to the Mississippi River basin and Gulf of Mexico. The risk is also very substantial to Seneca and Cayuga Lakes. Some of the detailed reasoning as to why is available in the EPA report, and also in an extension of that

which has resulted in a peer-reviewed journal paper published today (Simpson, T. W., A. N. Sharpley, R. W. Howarth, H. W. Paerl, and K. R. Mankin. 2008. The new gold rush: Fueling ethanol production while protecting water quality. *Journal of Environmental Quality*, volume 37, pages 318-324). Coincidentally, the National Public Radio news this morning also ran an extended piece on the proliferation of CAFOs near new ethanol plants.

CAFOs of appropriate scale can be fine in a community. And I want to stress that I am in no way opposed to farming. My wife and I own and live on 93 acres of farmland (actively farmed), and this abuts a medium-sized CAFO; for dairy farms, this means they have between 200 and 699 cows as defined by the State Department of Environmental Conservation and by the US EPA (<http://www.dec.ny.gov/permits/36895.html>). For the past 22 years, I have considered them to be good neighbors. I also grew up next door to such a farm in New Hampshire in the 1950s and 1960s. This scale of farming is a desirable aspect of rural life, in my opinion.

However, CAFOs can also have tens of thousands of cows or cattle, and I suggest that we not encourage this level of intense industrial agriculture in the Finger Lakes without very close scrutiny. The proposed ethanol plant is likely to serve as a magnet for massive CAFO expansion between Seneca and Cayuga Lakes. What becomes of the waste manure? Regulations are still not well developed, and as much as possible of the manure seems likely to spread on local farmland. The manure from cows and cattle fed on brewer's grain is unusually rich in phosphorus. At least some of this phosphorus – perhaps much – will flow into our lakes. And both Seneca and Cayuga lakes are phosphorus sensitive.

These issues deserve much closer scrutiny. I urge you to use your power in pushing for that scrutiny as well as much more thorough and publicly open evaluation of the potential consequences of the plant.

Thank you,



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