

Part 6 - Sewers of the Land

By Doug Baird

The influence of rich and powerful interests in maintaining the status quo in the face of an ever increasing destruction of the environment, is nowhere better seen than in Tompkins County's handling of agricultural pollution.

The Tompkins County Comprehensive Plan's representation of environmental issues and policies is a careful dance around the facts — Facts that paint a very different picture of the sources of pollution in the county, and expose an elitist policy making agenda.

Water Quality in Cayuga Lake

The Tompkins County Comprehensive Plan states:

"In Tompkins County, the impacts of land use on water resources culminate primarily in Cayuga Lake."

- Since this is true of all the counties surrounding the lake, why is there no "regional cooperation" of these municipalities to enact legislation that will protect its waters from polluting land uses?

"Fall Creek, Cayuga Inlet, and Sixmile Creek play a significant role in determining the quality of water in the southern basin of Cayuga Lake as they contribute approximately 40 percent of all the surface water entering the southern end of the lake."

- Salmon Creek, located in the southern basin, is one of the largest tributaries flowing into Lake Cayuga, and drains the lake's third largest watershed. Why is this significant contributor to the "surface water entering the southern end of the lake" not even mentioned?

"Most of the phosphorus that enters the southern end of Cayuga Lake is bound up with the sediment carried by Fall Creek, Cayuga Inlet, and Sixmile Creek. This sediment is largely the result of stormwater runoff and erosion of stream banks."

- Actually, in a recent study, the percentage of bioavailable particulate phosphorus [available nutrient for algae growth] measured in Salmon Creek was more than twice that of Fall Creek, and more than three times that of both Cayuga Inlet, and Six Mile Creek. ["Phosphorus Bioavailabilty and Loads" – Upstate Freshwater Institute - 10/22/2015]

"Impaired water bodies and their related pollutants, are published by the New York State Department of Environmental Conservation (NYSDEC). The most recent list published in 2012 identified the southern end of Cayuga Lake as impaired by three pollutants: phosphorus, silt/sediment, and pathogens."

- Phosphorus

- From “Nutrient Loads to Cayuga Lake, New York: Watershed Modeling on a Budget” Haith; Hollingshead; Bell; Kreszewski; and Morey, 2012: “Mean annual TP [Total Phosphorus] load to Cayuga Lake is just under 100 Mg/year, of which 60 Mg/year is DP [Dissolved Phosphorus.] The largest source of both DP and TP is agricultural runoff, providing 45% of the DP and 47% of the TP. Urban runoff provides 13% of the TP but negligible DP. The largest urban TP source, at 8%, is high-density impervious residential land.”
- From “Owasco Lake: Waterbody and Watershed Inventory Report”: “Based on the AVGWLF model, agricultural land uses contributes most of the total annual phosphorus input to Owasco Lake; this source affects both surface water and groundwater (Table 3-9). Dr. Evans estimates the contribution to be in the range of 70%.”
- Silt/sediment
 - No mention is made of the wide-spread agricultural practice of “tiling” fields [installing subsurface drainage on the entire field] that will drain a field in minutes, rather than hours, not only causing water to flow into streams more quickly and allowing less water to replenish the groundwater, but increasing the flow of sediment and manure into Cayuga Lake tributaries.
- Pathogens
 - From “The Effects that Liquid and Solid Cattle Manure have on the Water Quality of Drainage Ditches in Putnam County, Ohio”, Bowling Green State University, Janelle Horstman, 2014: “Conclusion” – “My results allow me to conclude that the most nutrient and pathogen pollution occurs after large rainstorm events, especially after manure has been applied to land for months with no precipitation events, and after manure application on frozen ground. These results support the findings from similar studies. I can also generalize that many of the soils from the field sites that I collected from had buildups of phosphorus, which likely contributed to the high concentrations of phosphorus in the runoff samples that I collected. I can also conclude that the manure pathogens that I examined for antibiotic resistance were resistant to high levels of ampicillin. This result further supports the severity of antibiotic resistance and the negative health effects and environmental effects that they can cause.”
 - From “Antibiotic Resistance, Gene Transfer, and Water Quality Patterns Observed in Waterways near CAFO Farms and Wastewater Treatment Facilities” West; Liggitt; Clemans & Francoeur, 2009: “Increased phosphorus levels were also detected after precipitation in the agriculturally impacted areas, and fecal coliform densities were much higher after precipitation. The strong correlation of turbidity, total phosphorus, and fecal coliform densities suggests a common source for these parameters. Elevated total phosphorus, turbidity, and fecal coliform densities are presumed to be the direct result of runoff from nearby tilled fields sprayed with liquid manure as reported by MDNRE in numerous previous waste discharge infractions by the CAFO farms in close proximity to our AI sites (Michigan Department of Environmental Quality 2003a, 2004b).”

Additional Cayuga Lake findings:

- New York State DEC: “In the case of Cayuga Lake, the potential threats are due to considerable agricultural activity, wastewater sources, and other contributors of nutrients in the watershed.”
- From “Nutrient Loads to Cayuga Lake, New York: Watershed Modeling on a Budget” Haith; Hollingshead; Bell; Kreszewski; and Morey, 2012: “Yet another way to focus management efforts is to examine the relative sources within watersheds. Table 6 shows the breakdown of source categories for the three largest watersheds and the Cayuga basin as a whole. The watershed land uses range from the highly urban and forested Cayuga Inlet to the mostly agricultural Salmon Creek. With respect to N, hydrologic sources (runoff, groundwater discharge) are relatively minor in the urbanized watershed but are much more significant in the two more agricultural watersheds, Fall Creek and Salmon Creek. The high contributions from groundwater in those watersheds, 55% and 72%, respectively, pose difficult challenges for management because only long-term changes in land use can reduce these loads.”

The “Point Source” Runaround

The Tompkins County Comprehensive Plan claims:

“New York State regulates pollution discharge into waters through its State Pollutant Discharge Elimination System (SPDES) permit program, including the control of all point source discharges to surface waters. The program is designed to maintain water quality consistent with public health, public enjoyment of water bodies, protection and propagation of fish and wildlife, and industrial development in the state.”

But this program does not regulate pollution from agricultural sources:

- From “Maintaining a Healthy Water Supply While Growing a Healthy Food Supply: Legal Tools for Cleaning Up Agricultural Water Pollution” Mary Jane Angelo, Professor of Law & Director, Environmental and Land Use Law Program University of Florida Levin College of Law: “The Clean Water Act provides a comprehensive regulatory scheme for many discharges of pollutants to waters of the United States. Through the primarily regulatory NPDES permitting program, significant improvements have been made to the quality of the country’s water bodies. However, the NPDES permitting program only applies to point sources discharges, thus most agricultural discharges are not subject to permitting or other federal regulatory control. Nonpoint sources, including those from agriculture, remain the most significant water quality challenge facing the nation. Moreover, the CWA’s exemption from section 404 permitting for normal farming practices continues to allow many wetlands to be degraded by agricultural activities. Because the CWA does not provide direct federal authority for regulating many agricultural sources of water pollution and wetlands degradation, the responsibility for addressing water quality degradation from agricultural activities has fallen largely to the states. To date, most programs designed to address agricultural water pollution have been voluntary or incentive-based programs designed to

encourage farmers to implement best management practices. These programs have been only minimally successful, and agricultural pollution continues to be one of the most significant sources of water quality degradation in the United States, meaning that there is a need for a more comprehensive regulatory system to address the water impacts of farming.”

- The repeated failures of voluntary programs to address agricultural pollution in the Cayuga Lake watershed is the subject of my next post: “A Cyclic History: Pollute, Distort, Pacify, Repeat . . . the unchanging pattern of agricultural pollution.”

Stormwater Runoff and Flooding

From the Tompkins County Comprehensive Plan:

“Increased stormwater runoff has a significant impact on floodplain management. As land area is converted to more urbanized uses, the amount of impervious surface associated with that land use generally increases, causing water to flow into streams more quickly and allowing less water to replenish the groundwater.”

- Below is a photo showing the volume of snowmelt runoff from farm fields — an opaque, strong smelling liquid blend of water, sediment and agricultural contaminants that overflowed the ditch and spread across my lawn. The County’s solution . . . dig a bigger ditch and put in a larger culvert.



Wetland Protection

The Tompkins County Comprehensive Plan asserts:

“At the state level, NYSDEC regulates wetlands of at least 12.4 acres in size and smaller wetlands of unusual local importance. Taken together, these regulations have the effect of leaving responsibility for regulation of isolated wetlands of less than 12.4 acres to local governments. Identification and protection of these otherwise newly unregulated wetlands is a priority.”

- However New York State Ag Law has a different priority for agriculture and allows “grazing and watering livestock, making reasonable use of water resources, harvesting natural products of the wetlands, selectively cutting timber, draining land or wetlands for growing agricultural products and otherwise engaging in the use of wetlands or other land for growing agricultural products,” and thereby completely undercuts the authority of government to protect these wetlands.

Riparian Corridors

The Tompkins County Comprehensive Plan explains:

“Riparian corridors are the lands bordering streams and represent a transition zone from aquatic to terrestrial ecosystems. Maintaining lands adjacent to streams in their undeveloped state helps to support the natural functions associated with stream buffers, including protecting water quality, stabilizing stream banks and preventing erosion, trapping sediment and nutrients, improving floodwater retention and groundwater recharge, and shading stream channels in summer.

Riparian stream buffers in headwaters have proportionally greater impact on watershed health than buffers in downstream waters. Clean and healthy headwater streams are critical for protecting the water quality, stream stability, and wildlife habitat of an entire watershed. The downstream effects of even minimal disturbances in small upstream creeks may be compounded as waters join to feed into larger and larger streams.

Providing vegetated buffers of at least 100 feet either side of stream banks, or 50 feet from intermittent streams, is critical in achieving water quality benefits”

- Unfortunately, New York State NRCS agricultural manure spreading standards for CAFOs requires only 35-foot setback, where the entire setback width is a vegetated buffer; or a 15-foot setback with incorporation within 24 hours of application to be maintained between manure applications and surface waters and surface inlets.

Well Water

The Tompkins County Comprehensive Plan suggests:

“The amount of available drinking water is primarily an issue in rural areas that obtain drinking water from groundwater. As more homes and businesses are built in these areas, they are supported by new wells withdrawing more water from groundwater supplies. In some parts of the county it has been observed that new wells noticeably decrease the supply of water in nearby wells.”

- The Tompkins County Comp Plan deliberately ignores the massive negative impact that current “farming practices,” especially CAFOs, are increasingly having on Tompkins County’s groundwater. The profligate use of water by CAFOs can be demonstrated in the following story — during this [2016] summer’s drought, a retired Cayuga County farmer told me that his tenant was trucking 100,000 gallons of water a day from Cayuga Lake to supplement the dairy farm’s wells [the average unrestricted water use for a family of four is 320 to 400 gallons a day], with this kind of water usage by one farm, it easy to see how CAFOs threaten whole aquifers, and not just the wells of neighbors.

When the Tompkins Count Comprehensive Plan declares that “Land uses and facilities that pose the greatest threats to groundwater should be located away from areas that contribute to drinking water supplies” — they are clearly excluding agriculture.

Climate Change - Energy and Greenhouse Gas Emissions

The Tompkins County Comprehensive Plan announces:

“While global energy and climate problems cannot be solved exclusively at the local level, and leadership is needed from global, federal, and state organizations, locally we can identify, plan for, and take steps to address these issues.”

“PRINCIPLE Tompkins County should be a place where the energy system meets community needs without contributing additional greenhouse gases to the atmosphere.”

the *Comp Plan* goes on to state:

“Emissions from residential, commercial, and industrial buildings together accounted for the largest proportion of community emissions and transportation accounted for more than a third of all community emissions.”

but finally admits:

“Since 2008, many scientists have focused research on methane emissions and it appears that it would be more accurate to use a much greater GWP for methane to reflect its extreme potency in the shorter duration when reductions will most help in limiting warming that may result in a cascade of uncontrollable negative impacts. Such an analysis of methane will likely be incorporated into future energy plans, and would primarily affect the waste and agriculture sectors, as they are currently the highest emitters of methane.”

This admission that “agricultural sectors” are one of the “highest emitters of methane” is the one and only time that the Tompkins County Comprehensive Plan acknowledges the negative impact of any agricultural practice on either the environment or global warming, and then only states that it “will likely be incorporated into future energy plans.”

Methane and Climate Change

According to a recent publication “The Growing Role of Methane in Anthropogenic Climate Change” Saunio; Jackson; Bousquet; Poulter and Canadell, 2016:

- “Unlike CO₂, atmospheric methane concentrations are rising faster than at any time in the past two decades and, since 2014, are now approaching the most greenhouse-gas-intensive scenarios. New analysis suggests that the recent rapid rise in global methane concentrations is predominantly biogenic - most likely from agriculture – with smaller contributions from fossil fuel use and possibly wetlands.”
- “Methane appears to play an increasing role in on-going anthropogenic climate change, particularly in light of the slowdown of CO₂ fossil fuel emissions over the past three years. Methane emissions from increasing agricultural activities seem to be a major, possibly dominant, cause of the atmospheric growth trends of the past decade (e.g., Herrero et al 2016). The rapid increase in methane concentrations offers a growing mitigation opportunity, acknowledging the need to balance food security and environmental protection (Wollenberg et al 2016). Keeping global warming below 2° C is already a challenging target, with most of the attention placed primarily on CO₂ emissions. Such a target will become increasingly difficult if reductions in methane emissions are not also addressed strongly and rapidly.”

As for the use of distillate fuels; between 2010 and 2015, farm use increased by nearly 11% [more than 8 times the residential sector increase], while commercial and industrial use both declined [according to the U.S. Energy Information Administration.]

Open Burning

While New York State prohibits the burning of garbage or leaves year round — Agricultural open burning exemptions allow farmers to burn as much “agricultural waste” as they want, any time they want [this includes but is not limited to “Agricultural wastes generated on site, Naturally grown products, Fully organic waste generated on premise, Paper feed bags, wood shavings, baling twine, and other non-plastic materials.”] This exemption also includes “liquid petroleum fueled smudge pots.” This last is a further example of New York State’s ecological foot-dragging, since other states have already implemented incentive programs to move farmers to the much cleaner burning propane.

Conclusion

A large proportion of Tompkins County legislators represent educational districts that give them a great deal of power, but little accountability, from a constantly shifting youthful population with no history or permanent ties to the area, and no association with the county's rural communities. This leaves local government vulnerable to the influence of corporate and corporately-controlled entities like Cornell, and Cornell Cooperative Extension who are only too ready to guide the future of the county to serve their own interests. Tompkins County's refusal to acknowledge the amount or extent of agricultural pollution in their comprehensive planning is clear evidence of this influence.

The agenda of the Tompkins County Comprehensives Plan's environmental policies seems to be one of suppression of facts, blaming other parties, and forcing legislation that restricts and charges residents and independent businesses for the clean-up and reduction of the county's pollution. It will be interesting to see if Cornell's Cayuga Lake Modeling Project's results support this agenda — while leaving Cornell, Lake Source Cooling, and CCEs Big-Ag cronies as the sole legitimate users of the "Total Maximum Daily Load" [TDML] and other pollution "quotas."

Coming soon:

Part 7 – "A Cyclic History: Pollute, Distort, Pacify, Repeat . . . the unchanging pattern of agricultural pollution."