

TCLocal Minutes

May 5, 2007

Roll Call: Jon Bosak, Josh Dolan, Ed Mickula, Denise Mooney, Rob Morache, Bethany Schroeder.

Hearing on the water plant issue (Dan Cogan): Dan followed up on last month's appearance with a complete overview of the history and issues related to the current decision. See summary appended to these minutes, which collates our sessions with another one held by the City of Ithaca Local Action Plan Energy Policy Committee. Dan is asking us to reconsider our previous recommendation to the Board of Public Works favoring the option in which the City would rebuild its water plant to bring it up to current requirements over the proposal to make the City a customer of the Bolton Point Municipal Water System.

Planning for the Ithaca Festival Sustainability Fair, June 3: Who wants to help? Josh Dolan will table early. Can we get the poster from PCI on world oil resources? Bethany will check. Do we have time for a banner? Jon will copy flyers and other information.

Planning for the Northeastern Permaculture Convergence, July 7: Josh will represent TCLocal at the planning session and apprise Angelika on her return to the country. Angelika will give a TCLocal Peak Oil presentation at the Convergence.

Discussion of the City of Portland Peak Oil Report (available on the TCLocal site, or just Google it): Jon wondered whether we could join with a legislatively sanctioned group, such as the Environmental Management Council, to produce a similar report. Advantages include getting a project completed in 6 to 9 months and working with other local concerned groups to achieve a position on the matter. Josh pointed out that environmental protection relates to peak oil and climate change. Rob said that using relocalization examples would be a good form of marketing. Jon asked whether it would be possible to keep the project associated with the residents, whether it was good rather than necessary to have buy-in from government. Denise said she mistrusts government intervention and asked why we should join with a political body. Jon said he'd like governmental blessing as a benefit in gathering essential information even if the recommendations don't get buy-in from government right away. Ed prefers straight forward governmental support. Josh promoted playing to the middle, thereby creating a level of democracy. Jon said at the least, provided the county recognizes that peak oil and climate change pose real and relatively immediate problems, we could hope to get meeting space in a county building and some level of support. Bethany said that we should continue to do the white papers as well.

Next meeting: July 14, 5-7 p.m. (no June meeting).

APPENDIX: COUNCILMAN COGAN ON ENERGY ASPECTS OF THE WATER PLANT DECISION

In April and May 2007, Ithaca City Councilman Dan Cogan met with TCLocal (7 April and 5 May) and with the City of Ithaca Local Action Plan Energy Policy Committee (15 May) to set forth the reasons for considering the Bolton Point proposal to be superior to the plan to rebuild the City's water treatment plant from the standpoint of planning for energy descent. Dan has requested TCLocal to reconsider its previous recommendation to the Board of Public Works favoring the option in which the City would rebuild its water plant to bring it up to current requirements over the proposal to make the City a customer of the Bolton Point Municipal Water System and expand that system to meet the added demand.

Following is a collation of notes taken by Jon Bosak (TCLocal and EPC chair) during those meetings. Any omissions, inaccuracies in transcription, or infelicities in the arrangement of this material are solely the responsibility of the collator.

With regard to cost, the two options are basically equal.

In the rebuild option, improvements will be needed at the reservoir, in particular, the construction of sedimentation basins to reduce turbidity as much as possible. Periodic dredging will also be required.

Choosing Bolton Point would mean that this facility would have to expand, requiring the construction of a parallel treatment system or roughly doubling the size of the existing system and also requiring the construction of three miles of new transmission main down SR 34, including about 2,000 feet cross country through a wooded area.

Regarding the claim that 70 percent of water from the existing plant "never sees a pump," the new water plant, if built, will use membrane filters, requiring 100 percent of the water to be pumped through the filters, consuming 45 kW continuously (about 27 percent of the Bolton Point electrical usage). Water at Bolton Point is pumped to the top of a hill and then flows down to the city via gravity; the additional electricity required under the Bolton Point proposal would be due to the added load of water pumped uphill from the lake.

The gravity argument in favor of the Rebuild option makes sense at first, until you start looking at the difference in chemical inputs.

Chemical use at the City water treatment plant is much greater than at the Bolton Point plant because the water from Six Mile Creek is much more turbid than water from the lake and requires chemical treatment to settle out the particulates. Compare the total for chemicals plus electricity at Bolton Point versus the cost for chemicals alone on Six Mile Creek [referring to the statistics provided]. The City plant gets 51 chemical deliveries a year versus 14 for Bolton Point; the difference in cost is about eight to one in absolute terms, or 170 vs. 29 [5.9 to 1; units not recorded] per million gallons. This would substantially increase in a new City Water plant. A graph of expenditures over time

shows the cost of oil more closely related to the cost of chemicals than to the cost of electricity.

The Bolton Point water requires less chemical treatment because it comes from 60 feet down in the lake and is very clear to begin with (the lake acting as one large sedimentation basin). It's also much less prone to the kind of contamination in Six Mile Creek that caused the 1903 Ithaca typhoid epidemic before construction of the existing water plant.

The chemicals required to treat the water from Six Mile Creek represent embedded energy, too, and transportation is a major cost factor. The long supply chain for these chemicals, which come from as far away as the Czech Republic, is an object of concern. Peak oil will affect liquid fuels and transportation before it affects electrical generation, and as the cost of oil rises, it will increase the cost of transporting chemicals at least as much or more than it will increase the cost of electricity. Also, there are many more alternative sources of electricity than there are alternative sources for chemicals. Note that the City system cannot operate entirely by gravity even now, and it will use 360 kWh per million gallons over what it uses presently -- 400,000 kWh more annually.

Bolton Point is owned by the Towns of Ithaca, Lansing, and Dryden and the Villages of Cayuga Heights and Lansing. Initially the City would be a customer, then later a partner. The Bolton Point management group works by consensus. The City would have two nonvoting representatives at the table.

Q: When would the City become a voting partner under the Bolton Point proposal?

The Memo of Understanding just says that we'll talk about that.

Q: Has the City looked at biological treatment options, such as riparian corridors or living machines?

The turbidity is the result of erosion, which periodically fills up a silt dam upstream of the current reservoir. There's been no real effort to look at biological alternatives, which are better possibilities for the wastewater plant.

Q: What would happen if the City left out the coagulant and just let the silt go, keeping the disinfectant phase?

We would be in violation of the requirements, and if you don't take out the biologicals, you get chlorinated poisons from the disinfectant.

Q: What if you left out the chlorine as well [and required people to boil water]?

The silt would foul the filters and you would have to pump harder.

Q: What if there were a power failure under the Bolton Point proposal?

Bolton Point has a backup generator; I don't know whether the current backup system is set up to provide all the energy we would need. Bolton Point uses 166 kW on average (though note in comparing with the City plant that this is not normalized per million gallons), and this would increase by about 40 percent to about 230 kW. This is about five times what will be needed to pump through the membrane filters at the Water Plant. The

new plant will require 45 kW for pumping, so it will have to have an emergency generator, etc., too, plus the periodic dredging, which is another energy use and creates a disposal problem; Bolton Point has so little sediment that it has never been enough to deal with -- it just sits there on the property.

Regarding the argument for redundancy [having two independent systems of water supply for the city], the Bolton Point proposal would still give us two separate distribution systems, and the fact is that historically the failures at Bolton Point have been in the distribution system. It's very unlikely that the Bolton Point plant would ever go offline; the City plant never does. Also, the City system is more vulnerable to drought, which is expected to be more common in the future due to global warming. We might want the City plant as a backup system but not as the primary.

Q: Would a new City plant use a smaller amount of chemicals than the old one?

Judging from cost estimates, the new City plant will use different chemicals, but not a smaller amount of them.

Q: Could Six Mile Creek be used as a power source?

If the water plant were decommissioned, we could use an old plan for hydropower that would generate electricity from water flowing through the existing main into the plant.

Q: Could the water plant be made self-sufficient in energy requirements by using this hydropower to drive the pumping and processing?

Yes, but this would not deal with the issue of chemicals. The electricity can be produced anywhere. Also, there is a concern over maintenance of the water main through a natural area.