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To: **Chair and Members of Bernards Township Planning Board**

Subject: **Township Master Plan; Recommendations for Quarry Land**

This proposal deals with land that is now in the M-1 mining zone. Thinking about the future uses of this land should begin with the quarry pit. Quarry representatives have advised township officials for two decades that the pit would be allowed to fill up with water from precipitation. I believe this is the most likely outcome, but there are at least two alternatives.

- One is to fill the pit with solid material to an elevation a little above the water table, say 230 feet msl [relative to mean sea level]. A plan to truck in millions of cubic yards of fill for this purpose might be physically feasible. But it would be a political non-starter at this time, and I do not recommend it.
- A resident proposed that water be collected and pumped from time to time to the Passaic River. She did not elaborate her proposal. Because the river is a source of drinking water, water quality would have to be controlled and discharge to the river would have to be approved by the state. My gut says that the near-empty pit would be unattractive and that there might be some safety and or health issues. Serious consideration of this proposal would require a lot of work.

So my first master plan recommendation for the quarry land is this.

ONE: Plan for a future lake.

If the pit is allowed to fill from precipitation, then the surface of the resulting lake will rise and stabilize at some elevation. Before 2003 this was projected to be 275 feet. The 2003 rehab plan dropped the projected surface to 220 feet, the level of the surrounding water table. This would leave steep quarry faces exposed above 220 feet. The agreements and disagreements on how to deal with these "steep slopes" led to the current problems and litigation.

Because people will live near the resulting lake, and because some lake water will percolate to the surrounding ground water, township government has a responsibility to work to assure good water quality over the long term. Township officials should do two things to prepare for a lake.

- Assure that any harmful substances, that are in the fill already imported and near the future lake or ground water, are removed or remediated. This issue is part of the current litigation. In the comments that follow I assume that all issues related to fill will be resolved.
- Encourage a site design that will reduce the risks of pollution from human activities after the site is developed. Single ownership of the lake and surrounding land will facilitate this and is the reason for my second recommendation:

TWO: Encourage ownership of the lake and immediately surrounding land by a single entity: a home owners association or the township.

The concept plan for a single-family subdivision submitted with the 2008 rehab plan shows twelve houses with no barrier to flow between them and the lake. This would violate recommendation TWO.

Recommendation TWO will be facilitated if residential development is clustered on the remaining land. Put a road along the edge of the lake and the development uphill from this road. It will then serve as a barrier to overland flow to the lake. Flow will be to bioretention basins from which it will percolate into the ground or go by pipe under the road to the lake. I showed how this can be done in my letter to members of the board on August 14, 2009.

THREE: Encourage clustering of residential development so that recommendation TWO can be realized.

Recommendation TWO is for ownership of the lake by either a home owners association or the township. Experience with homeowners associations shows that they are sometimes controlled by people who do not take a responsible and long view. We don't know today all that will be required for good water quality over the long term. Successful management of the lake will require careful monitoring and analysis, and timely actions. Township government should be more motivated and able to meet these responsibilities than a home owners association.

FOUR: Encourage ownership of the lake and surrounding land by the township.

If the township owns the land, it makes sense to use it for public purposes. The proposal in my August 14 letter describes one way to do this. The public use need not compromise the goal of good lake water quality.

FIVE: Use the township owned land for a public park.

Note that the proposal for a public park is the natural outcome of a thought process that began with the quarry pit. The process did not begin with this as an explicit goal.

Note also that it is compatible with the master plan objective for non-residential development that follows:

6. Future uses for the quarry that can preserve open space and protect the Long Hill ridgeline should be explored.