

Minutes of October 6, 2005 meeting

(Third meeting)

Present:

21 members of the Stormwater Study Group

Juli Beth introduced Jack Myers, engineer from DuFresne-Henry

Jack:

- Identified sub-catchment areas which were developed from high-resolution, remote sensing information call LIDAR.
- Neighborhood mapping is important to groundtruth inferences made from the LIDAR information. For example, a small drainage ditch on the SW border of Butler Farm intercepts some runoff from a large mini-catchment that drains the golf course and redirects this to the SW corner of the neighborhood. However, in spring snowmelt, this ditch can be over-topped with drainage directly through backyards to the street.
- There are changes in microtopography caused by cattail growth and poor maintenance of grass swales
- It will be better to retain the water, hold it back and gradually let it soak in. We do not necessarily want to let the water flow as fast as possible.
- This may not be possible, because the ground has low permeability, it's clay
- Some of the pipes are filled in by sedimentation
- Very little water currently gets into either of the two detention ponds in Oak Creek. (There are no detention ponds in Butler Farm.)
- Ponds are designed for a 10 year storm, for 96% of storms these will not be functional.
- Ponds can be an esthetic benefit for the neighborhood
- It is not clear how to get the water to the pond
- There are areas that do not appear to drain at all based on the LIDAR data. (Some areas may have drainage that is not indicated on the 'as build' plans.
- But this is actually a benefit that can get us closer to compliance
- Butler Farm does not have detention ponds; stormwater rapidly runs off directly from surface areas to the drain/stream.
- The golf course pond has an overflow spill-way that was apparently designed to flow into the neighborhood. Recommendation: Redirect this emergency overflow to the north.
- Remaining over flow from this rather large mini-catchment might be easily diverted via a new connection to the western detention pond in Oak Creek.
- The pipe at this location flow east along on mini-catchment boundary, but the surface flow on the road goes in a different direction. It should be easy to redirect this flow.
- In Oak creek there are pipes that drain into the backyards from the streets. Is this an opportunity for treatment?
- In Butler Farm backyards drain into pipes and then through a long systems of elbowed pipes into the brook. The elbows impede flow and may make flooding worse.
POTENTIAL OPPORTUNITY: Break this pipe near the western boundary of the

neighborhood and treat the water on city land along Hinesburg Road. Are there potential inter-catchment transfer issues? No, this is the same catchment (Potash Brook).

- Was there a natural brook in this area? Yes but it was following a different path. See website (Intro to BF/OC -> Background)
- Slowing the water down is a piece of the puzzle
- Question: Why not just bury the stream and move the water out quickly. Jack: Most treatment solutions need maintenance. Burying infrastructures makes maintenance more time-consuming and expensive. Jack prefers to keep it on the surface. Moving the water out quickly will negatively affect people downstream and will not satisfy (is completely counter to) the state regulations for a permit.
- The long backyard drainage areas in some parts of Butler Farm might be made to function something like a long raingarden
- We will need an easement to install and maintain such common raingardens. However, the Stormwater Utility could then maintain it.
- The cost will also be an issue. We can do a raingarden for \$5000, or pipe it out for \$50,000.
- How do you define when we are fixed? Achievement of the 'fixed' state is based on inferred performance relative to state standards, not on measured performance. We need to review the permits. All permits are expired. The standard we need to achieve is the "2002 Best Fix" as per the Vermont Stormwater Management Manuals..
- The "water quality objective" is to capture 90% of annual storm events and remove 80% of total suspended solids and 40% of total phosphorus.
- The "channel protection objective" is to protect stream channels from degradation due to increased rates of runoff.
- A third standard to improve infiltration will not be imposed in this situation because Butler Farm and Oak Creek lie on "D" type soils (slowly permeable clays).
- Are we achieving compliance for BF/OC together or BF and OC separately? This is a question that needs to be put to ANR. It may be more cost effective to treat both neighborhoods as one set of linked systems. But it is also true that different opportunities are likely to be available in the two neighborhoods. We understand that the State may be willing to consider the two systems as one for permitting purposes.
- If you release slow, how much will be held? It's ration between how much is held and how much it's held
- Detention patterns also depend on the type of fishery we are releasing to. Water temperature grows as the water is held.
- We cannot rely on long-term development, but we can always use any open space that is available.
- It may help if we do some excavating close to the entrance.
- Barton: We have some data that show the response of the detention ponds to storm events.

Comment [BB1]: Alexey: Did Jack actually mention \$\$ values?? I did not think so and think we should remove this. Even if we think we know what these costs might be, I don't think we should guessimate these in the minutes.

Comment [BB2]: This does not make sense. What is the intent?

Comment [BB3]: Again, I'm not sure what this is supposed to mean.

The meeting adjourned at about 9:00 pm.

The next meeting of the Study Group will be Thursday, 10 November, at 7 pm in the South Burlington Town Hall. Preliminary agenda includes:

- discussion of neighborhood mapping results
- deciding about the rain gauging project

