

Water Resources Advisory Committee  
Minutes of Meeting  
September 23, 2009  
Town Hall, Room 126

Members present: Barry Rosen, Ron Beck (co-chair), Joanne Bissetta (co-chair), Helen Probst, Carol Holley

Guests: Terra Friedrichs, Lauren Rosenzweig (BoS liaison), Clint Seward, Mary Michelman, Ann Sussman, Matt Mostoller (AWD Environmental Manager), Jeff Clymer, Planning liaison

Guest Presenter: Steven Roy, GeoSyntec Consultants Stormwater Management Group

The meeting opened at 7:15 pm.

Minutes of the previous meeting were reviewed and approved subject to a correction Mr. Rosen had sent in an email, by motion of Mr. Rosen seconded by Mr. Beck and unanimously voted.

Members and guests were introduced to Steve Roy. Mr. Beck asked Mr. Roy to discuss what other towns have done, and what other things he thought were good about Low Impact Development (LID). Mr. Roy described what the town of Franklin had done, noting that they had written two relatively simple regulations about sedimentation management and control and construction that referred to a guidance manual that they created for developers. Franklin allows for traditional stormwater management but expressly prefers LID. If you split the documents in this manner, you don't argue the details of the regulatory language of the ordinance, and you don't tie your ordinance to any one technology, as this field is changing fast.

Mr. Beck noted a couple of the towns that have done this have designated a party and the by-law says to create regulations to govern permitting. In essence, it's the same thing. Regulations are under the by-law. Whether the Board of Health or Planning Board, the board can amend regulations from time to time. Mr. Rosen felt it could be enforced by Health or Planning or another group, as long as the guidance package is there. Ms Rosenzweig noted that the by-law is something you don't have to want to change often – it reflects objectives, then you have the regulations.

Mr. Seward asked, how do these by-laws go with 40B or day care centers? Mr. Rosen noted that the Zoning Board of Appeals gets the final say with a 40B.

Mr. Roy introduced himself and noted that there is a lot that is changing in this field in Massachusetts. The DEP has just released draft regulations that will supplement what is in the Wetlands Protection Act – more than or equal to 5 acres of impervious surface, and more than or equal two 2 acres of impervious surface in the Charles River Basin is the trigger point.

Mr. Roy noted that the goal of LID is to mimic pre-development site hydrology, with the same volume and quality of runoff. It's an ecosystem-based approach, and relates to smart growth, etc. You never allow a subdivision to clear vegetation, then put in a road and then decide what to do with the stormwater. Mr. Roy noted that once the soil has been compacted by heavy equipment, it will never get its infiltration rate back again. You have to look at your build-out, look at your zoning. Once you get to

maximum density, it's too late. The Master Plan and development isn't LID-friendly. Bigger roads don't work. Clustering is a good approach, if you have an open space residential by-law. Ms Rosenzweig noted that Acton does have one, and Ms Holley noted that not everyone was pleased with Acton's by-law because it counted wetlands as developable space.

Mr. Roy stated that LID includes the concepts of disconnect, decentralize, and distribute. In a cul-de-sac, you can construct a bioretention area that holds six inches of water for a couple of hours. He noted that guidance from the national transportation engineers' association now says that a 20' right of way is enough.

Mr. Roy described rain gardens, which are typically around ten square feet. He noted that LID costs less if done during the initial development process. He stated that pavers are great for parking spaces; they don't heave, and the gravel bed under them is sized to retain a specific storm intensity. They are good in areas where a lot of utility work could happen in the future. He stated that pervious asphalt is about \$3-4/square foot, and pavers are about \$15/square foot. The UNH study is finding they can use 25% of the salt that would be used in typical parking areas, and they haven't had any freezing. He noted that the Interlocking Concrete Pavement Institute has been doing research on the space under the pavers, and they haven't found oil and grease two feet below the pavers yet.

Mr. Rosen noted that Iowa is measuring heavy metals, and they are finding them under pervious paving. Mr. Roy didn't think they could reach a concentration that would be considered hazardous.

Mr. Roy described raised islands that separate parking areas, and noted that they could be modified to become bioretention areas. Ms Probst asked why curbs were built in the first place; Mr. Roy replied that they direct the water into catchbasins, which was considered desirable, and they keep cars on the road. Mr. Roy noted that, per current thinking, recharge in the zone II should be a number one priority. Ms Michelman noted that the quality of recharge in the zone II, not quantity, was her highest priority. Ms Friedrich's was concerned about current recharge turning into runoff by paving sidewalks and cutting down trees near a public well on Main St.

Ms Michelman expressed concern about nutrients and hydrocarbons infiltrating groundwater if grass pavers were used, noting that hydrocarbons volatilize in traditional catchbasins. Mr. Roy replied that the hydrocarbons volatilize in the retention areas under the pavers. He noted that pervious surfaces always fail from the top down, and they are relatively easy to bring back to pervious condition.

Mr. Beck asked if there was any information that rates products. Mr. Roy replied that it's a modeling exercise – groundwater particle modeling. Mr. Beck noted types of land uses – do we know what's usually coming? Mr. Roy stated that they use pollutant load by land use types. How do you verify the model? You take samples and collect data – nobody has the money to fund the sampling.

Mr. Roy noted that gravel pave, which uses cups to stabilize the gravel, is \$15/square foot because there's only one installer. A product called Flexi-pave, which incorporates bits of old tires, runs for \$6 square foot. The Vermont DOT has a pilot pervious concrete park and ride facility it is monitoring.

Mr. Beck asked if you could put in some sort of structure in the regulation to require an activity - how do you regulate that installation is being done correctly? Mr. Roy stated that something could be put into the approval process. It depends on how you write your by-law. Mr. Beck asked how you can qualify somebody to review the process. Mr. Roy thought Franklin did this well. In Franklin, town staff

trained themselves. You can always require a third party – usually PEs or certified professionals in stormwater quality. There are some certification procedures out there. You can set a performance standard in your by-law.

Ms Michelman asked, what if the LID installation fails and you don't have a backup traditional system? It made her nervous. What we think would happen might not turn out to be the reality. Mr. Roy suggested comparing that scenario to what is happening now. Is it still better than now?

Maintenance of more traditional technologies and LID were discussed. Ms Rosenzweig noted that the town has easements to check on stormwater infrastructures in developments. Mr. Roy observed that if you put any advanced stormwater treatment boxes in the ground, you are tied to a vendor for operation and maintenance.

Ms Probst asked about constructed versus natural wetlands. Mr. Roy noted that it is illegal to discharge into a natural wetland. He noted that his company has been working with the Organization for the Assabet River on mapping impervious surfaces and levels of LID-friendliness in area communities. The end product of this effort will be available in October.

Ms Sussan asked Mr. Roy if he would recommend using LID technologies on land abutting wetlands. Mr. Roy replied affirmatively, because LID filters the water. He noted, per Ms Probst query about planting lists, that there are four planting palettes in Littleton.

Mr. Roy described a project in Wilmington where there was an EPA target watershed grant to put in residential rain gardens. He showed photos of rooftop planter boxes in Plymouth that used roof runoff to water the plants, and photos of installations at the Discovery museums.

Mr. Beck noted that the committee needed to synthesize these ideas and translate them into what would be appropriate to propose to within the framework. There are two by-laws – that is another question – the heavy loading that happens during construction projects.

Mr. Roy noted that there are six minimum controls, and erosion control is one of them. The Federal law is tied to that also – more than one acre requires a construction general permit. NPDES wants municipalities involved in the process. You are responsible for the construction oversight. Post-construction stormwater management is about operation and maintenance.

Mr. Beck asked if Mr. Roy had any recommendations as to the best models. Mr. Roy noted that the state has prepared one. Ms Probst asked how Franklin was different from Acton in terms of topography, wetlands, soils – does Acton have comparable issues? Mr. Roy replied that Acton was similar to 90% of the communities in Massachusetts, and the other 10% are on the cape.

Ms Michelman noted that there was also a factor of how different communities use their groundwater. Acton relies on its groundwater for drinking water. Mr. Roy noted that Franklin uses local water also – and there's nothing out there to treat salt. Ms Rosenzweig observed that Acton is using a new solution – Mr. Roy suggested it might be calcium chloride, and you have to control its use as well. Ms Rosenzweig noted the town had monitoring wells.

Mr. Beck observed that most guidelines encourage the LID approach. It seems like they are more money – and if they aren't, why aren't people using them now? Mr. Roy noted that developers are resistant to

change. They typically have a rubber stamp site plan. Ms Rosenzweig felt that the infrastructure used now was expensive.

It was observed that Acton will have to change its subdivision regulations to allow for LID.

Mr. Roy noted that you can write into subdivision and site plan regulations and cross reference the manual. Ms Rosenzweig noted that this group was responsible for the by-law but doesn't have to write the regulations. Mr. Rosen thought the bylaw could define the strategy but the developers could pick the tactic. Mr. Roy stated that the issue will be if you use standard controls, you will never meet the performance standards the EPA wants.

Ms Bissetta noted that in Franklin, you have to meet the standards, but the developer can choose what to do about it.

Mr. Roy observed that the new regulations, Phase 2 and Phase 3 communities are expected to handle a 95<sup>th</sup> percentile event, or 1.5 inches of rain in 24 hours, and you have to prove you can do that on site. This is for new sites and redevelopment. Massachusetts has said that your post-construction runoff volume can't be any higher than pre-construction.

Mr. Beck noted that one of the things the WRAC has to do is have public education for the town. Mr. Roy noted that last year he had worked with the Pittsfield Planning board.

Ms Rosenzweig felt that everything would have to come out with the by-law – the whole permit application structure, etc. Mr. Beck felt that this was basically an activity for the engineering department.

Ms Michelman felt that it would be great if the Water District was involved in the by-law writing process. She felt that rain gardens were a good option, and they were more comfortable to her in a zone II than pervious paving. Some protections need to be put in for zone IIs. Mr. Rosen noted that right now the state is encouraging pumping into the zone IIs as much as you can.

Mr. Beck noted that the group needs to look at the way these pay-laws are written and is there a way to steer what people do in zone IIs and IIIs, and how do we do it. In the best practices it felt like there was some part of that in the EPA guidelines – any aspects of that? This is a totally separate topic.

Mr. Rosen liked the Franklin approach and thought Acton should seriously consider it. Changing a by-law, he noted, can be a bear. Ms Probst added that changing a handbook isn't difficult.

Mr. Beck observed that the main differences he had seen in various iterations of the by-law were in the purpose clauses. It's important for the WRAC to go into that in detail. Mr. Beck suggested a working subcommittee to meet in one week – 4 p.m. on September 30. Ms Holley will secure a room at town hall. The group will take 3-6 by-laws and start splicing together a composite that will be sent out to the rest of the group.

Ms Holley moved to adjourn. Ms Bissetta seconded. All voted in favor. Meeting adjourned 9:22 p.m.

Respectfully submitted,  
Carol Holley, Clerk