Pennsylvania Chamber of Business & Industry
Comments on Draft Stormwater Best Management Practice Manual

March 2005

On behalf of its over 9,000 members, representing the spectrum of Pennsylvania industry, business, and commercial enterprises, the Pennsylvania Chamber of Business & Industry appreciates the opportunity to provide comments to the Pennsylvania Department of Environmental Protection (DEP) on the draft Pennsylvania Stormwater Best Management Practice Manual.

General Comments

The importance of stormwater management, both with respect to avoiding the consequences of accelerated runoff and floods, and stormwater's contribution to nonpoint pollution, is well-documented through out Pennsylvania. In fact, one of the most critical obstacles to successful restoration of the Chesapeake Bay is the lack of effective management of this pollution source. Thus, the Chamber supports the objective of developing a workable, realistic, and understandable set of guidelines and best management practices that can assist landowners, developers, contractors, farmers and others in formulating reasonable and cost-effective stormwater proposals.

The draft manual prepared by Cahill Associates Inc. ("Cahill") for the Department's Bureau of Stormwater Management is a comprehensive and detailed document. It covers the entire range of structural and nonstructural best management practices (BMP's) for reducing the environmental impacts associated with stormwater management. Properly framed and structured, such a manual could provide real benefits to the regulated community and government alike in helping to guide future stormwater efforts.

That having been said, we have serious concerns with:

- the tone of the manual and how DEP staff, and county and local government staff will use its content; i.e. its level of detail with many subjective terms and concepts;
- its focus and bias against development and focus on land use principles that have not been subject to broad public debate and acceptance by the General Assembly;
- geologic, geotechnical and public safety issues with some of the recommended practices;
- an overall view that appears to be reflective of southeastern Pennsylvania almost to the exclusion of the other geographic regions of the Commonwealth; and
- little or no consideration for the costs that ultimately will be passed on to consumers and the fact that insistence on some of the proposed BMP's may further undermine the economic competitiveness of the Commonwealth.

Tone of the Manual

The manual contains terms such as: "should consider", "may consider", "highly complex" etc throughout. The flexibility that is touted in the manual becomes on of the biggest concerns by allowing local governments, county governments and the state the ability to find the best mix of practices and procedures to maximize the control of stormwater. Unfortunately, this approach provides little predictability for the developer, contractor or engineer on what will be acceptable for a proposed development, highway, or other project.

While we acknowledge the necessity of providing flexibility to meet local conditions, care needs to be taken so that the manual does not become a vehicle for regulatory staff to pick and choose what to require based upon individual preference and bias. Such an approach could readily result in an uneven playing field when one county, DEP region, or individual reviewer chooses to become more aggressive in pushing this regulatory initiative than others. Again, the cumulative impact of these events will be to make the state less economically competitive.

Land Development

The manual appears to have a bias in favor of new land planning processes which may or may not work effectively in the more rural areas of Pennsylvania. The list of BMP's appears to reflect land use principles that are based on the needs of southeastern Pennsylvania only. Pennsylvania is a state of many regions and solutions from one region may not be desirable for another of the regions. This position is confirmed by the fact many of the examples used are only from the southeastern portion of the state.

For example, the idea of cluster developments is often appropriate in suburban counties south and east of the Appalachian mountains, especially since many of these areas are generally served with public sewer and water systems. However in the more rural areas of Pennsylvania, this is not the case and potential regulatory conflicts between programs and policies are likely to occur. For example, the idea of a cluster development is to maintain open space, reduce impervious areas and increase infiltration. When such an area is served by sewer and water this approach works; when it is not, then the lot size required for the development increases in order to account for on-lot sewage disposal and associated nitrate assimilation. Currently, at least one region and perhaps others DEP staff are requiring larger lot sizes and are not considering the benefit that open space in the cluster development affords for sewage renovation.

Further, with the requirements of the BMP's for constructing infiltration galleries, many of the current ground water flow models will need to be recalibrated to account for the increased dilution of sewage effluent from on-lot systems due to the enhanced infiltration of stormwater. At present the regions appear to be treating the concepts as mutually exclusive. They are in fact integrated. The DEP must as part of its implementation of the manual ensure that inconsistencies between regions and programs are reduced and preferably be eliminated. Otherwise the conflict between economic development and environmental protection in the Commonwealth will only increase.

Requirements to Address Differences in Pennsylvania Geology and Other Regional Conditions

One of the Chamber's most serious concerns is that areas across the Commonwealth frequently face very different geologic and other regional conditions that present special concerns or hurdles to some of the approaches advocated by the Manual, including karst formations, landslide prone areas, areas with steep slopes, perched water tables, areas near sewer laterals (where infiltration/inflow may become a problem in stormwater infiltration is too close), subsidence prone areas, and areas underlain by mine workings where contribution to acid mine drainage generation may become an issue. The Manual appears to be written largely from the perspective of experience in southeastern Pennsylvania. Indeed, we note from information currently available that only one of the 25 plus members of the DEP Work Group have a western Pennsylvania area code, and the input of representatives from western Pennsylvania appears to be very limited.

Many areas of Pennsylvania, including areas through out the ridge and valley regions, have a limestone or karst sub-base geologic formations. These areas are prone to sinkhole formation due to stormwater run-off/infiltration and fluctuating ground water tables. As noted in the manual, stormwater infiltration without causing sinkhole formation can be successful. However, there are also numerous examples where this has not been the case. Avoidance of such problems requires very careful engineering, including the mapping of solution channels and sinkhole prone areas. If the onus of performing such studies (which often affect large areas) is shifted to individual property owners, substantial costs will be added to development.

Given the risks and hazards of such geologic formations, an additional and critical concern is what will be the response and assignments of liability when regulatory agencies require stormwater infiltration in areas with limestone and karst structures, and sinkholes subsequently form. Who will assume the liability and who will perform the remediation should sinkholes develop?

In a similar light, with the increased use of infiltration galleries (as touted by the draft manual), what will be the long term effect on a structure's foundation. Generally accepted engineering and construction practices recommend getting water away from foundations. Some soils are very prone to shrinking or swelling and we know from experience that these natural processes can cause severe damage to a structure. Increasing ground water flows to soils of these types will cause the occurrence of structural problems. Finally, what will be the increased costs to the homeowner, or the impact to the architect or engineering consultants when they are sued by the property owner for such damages. These concerns and issues are not addressed sufficiently in the manual.

Neither does the manual address how these concepts play out in the coal fields of Pennsylvania, where often the environmental goal is to reduce acid mine drainage (AMD). In these areas, sheet run-off versus infiltration is the preferred option. Increased infiltration may increase the flow of water into mine voids and mine pools, which will often manifest in blow-outs or increased AMD in the receiving streams. These issues need careful consideration as the regulatory staff are trained on the application of the new principles in the manual.

Another concern is the potential for increased ground water contamination. Unfortunately, not all stormwater is "pure." Stormwater may bear a variety of contaminants, in both dissolved and sediment forms, only some of which can be removed by the soils or substrate as the water is infiltrated into the ground. Unlike surface waters, which have the ability to assimilate many of these pollutants and are much more readily capable of recovering from a temporary influx of pollutants, pollutants that enter groundwater tend to linger for a long period of time and can be harder to remove. Over the past several decades, federal and state regulatory programs have striven to eliminate the engineered "underground injection" of pollutants; yet the draft manual expends little attention to the potential risks of providing a new pathway for such pollutants to enter groundwater.

Special Areas

As a corollary to the point made in the prior section, the Chamber would suggest that the page devoted to "special areas" (§2.2) should be expanded to an entire chapter, with each type of special area being described. In turn, when a developer or regulatory staff turns to the chapters on BMP's, they should be able to identify from the first page of each BMP the areas and special areas where such BMP's are appropriate or inappropriate – such as in karst, steep slope, mudslide prone areas, etc. Such additional elucidation would avoid the problem of forcing land owners to make arguments on a case-by-case basis, where experience clearly shows that some methods are prone to create problems, exacerbate hazards or be infeasible.

In this regard, concern has been expressed that under the on-lot recharge testing concepts as presently contemplated in the Manual, some landowners/developers are being made to perc test each lot in advance of getting stormwater permit just to provide that certain post-construction BMP's are impractical or inappropriate. There should be special area designations for certain soil types and geologic conditions so that the presumption as to the availability of on-lot alternatives is lifted where real world experience indicates that conditions (such as areas with dense clay soils) are not suitable for such infiltration.

Failure to Recognize and Address Significant Stormwater Issues

Nowhere in the manual are any there any references to the contribution to stormwater runoff from farming or other non-development related stormwater runoff. According to EPA, these practices contribute to the bulk of non-point source pollution to our waterways. In fact, the Chesapeake Bay Report focuses most of its attention on this area for control and enhanced regulation.

At the same time, the manual does not make any reference to TMDL's and how the best management practices espoused by the manual may help meet these obligations.

Specific Issues

- Page 2-47. Wetland Construction. The manual praises the beneficial role that wetlands can play in nitrogen reduction. However, the manual also notes that nitrogen can be

released at the end of the growing season. In Pennsylvania, unlike areas in the south, the growing season always comes to an end. Therefore, by extrapolation the construction of the wetlands for nitrogen removal is seasonal at best and the cost will not likely out weigh the benefits.

- Many of the experiences and philosophies rely on Cahill's own personal experience. While such personal experience is useful, the manual should undergo a peer review of other experts to ensure that the final manual is well balanced and meets the Commonwealth's unique regional needs.

- Long-term maintenance costs for the BMP's are not adequately addressed. The manual focuses on short-term gains, but loses sight of long-term obligations. These long-term maintenance obligations will translate into increased O&M costs that will be passed onto consumers, and they must be considered as part of the benefit/cost balancing inherent in selecting appropriate practices.

- §3.2, pg. 3-69. Better definitions for effective, equitable and flexible are needed. These are subjective terms that are defined differently in the eyes of field staff. The manual text suggests that to be "equitable," the guidelines should apply the same in both urban and rural areas. However, in many rural areas, the impacts of development on stormwater may be minor compared to the resource involved, and imposing high costs of implementing BMP's of the type suggested in the manual may have limited benefit, while rendering it even more difficult to foster economic development in many of our depressed rural communities. One has difficultly calling that result "equitable."

- Pg. 4-90. The manual suggests that stormwater objectives (taken alone) should result in consideration for reduced road width, and use of cul-de-sacs and turnarounds rather than through roads. However, roads are not designed for stormwater objectives alone, and both safety and emergency access issues with road configurations and cul-de-sac designs must be given closer attention.

- Pg. 5-120. This section talks about the use of natural depressions for stormwater detention. In areas with karst geology, these natural depressions are often the signature of potential sinkholes. DEP regional staff currently are requiring the mapping of these areas and recommending avoidance and setbacks from such areas. In contrast to the risks recognized by DEP staff from real-world experience, this manual envisions using these depressions for wetland development and stormwater detention. There is a clear need to reconcile the details of the manual with other regulatory programs, such as the Chapter 102, 105 regulations and Act 537.

- Similarly, the draft manual recommends smaller lot sizes, where, as noted previously, in many cases DEP staff concerned with on-lot sewage facility performance are recommending larger lot sizes.

- The ground water models will need further peer review to ensure that the model results – preferably the one that is used by the submitting consultant – is acceptable to the

regulatory agency and does not result in debates over "dueling models" that delay decision making. DEP technical staff are still second guessing licensed professionals and the result is either a deadlock over the decision or further increased development costs to collect further potentially unneeded data. The manual as written will further this professional tension.

In closing, while we support the development of a manual that is comprehensive and detailed, we believe that a number of issues need to be refined and the manual needs to be adjusted to reflect more accurately conditions across the breadth of the Commonwealth. Moreover, prior to implementation of the manual, training is needed for regulatory staff at the state, county and local level. Consulting professionals will also need a period of time to assimilate the principles into their design and engineering practices. These schedules must be consistent across the state.