

**Virginia Department of Conservation and Recreation  
Public Hearing on Proposed Impounding Structure Regulations  
(4 VAC 50-20-10 et seq.)**

**October 16, 2007 in Manassas, Virginia**

**Meeting Officer:** David C. Dowling  
Director of Policy, Planning and Budget  
Department of Conservation and Recreation

**Opening:**

**Mr. Dowling:** Good Evening, I would like to call this public hearing on the Virginia Soil and Water Conservation Board's proposed Impounding Structure Regulations to order. I am David Dowling, Director of Policy, Planning and Budget for the Department of Conservation and Recreation. I will be serving as the meeting officer this evening. I welcome you to this hearing.

I would like to thank City of Manassas for allowing us to use this facility.

***Introduce DCR Staff assisting with the meeting.***

With me tonight I have Bill Browning, Division Director for DCR's Division of Dam Safety and Floodplain Management. Also with me is Jim Robinson, DCR's Dam Safety Program Manager, and Pam Landrum, Office Manager for the DCR Director's Office. Pam will be audio taping our meeting and developing a set of minutes of the comments received tonight. Other DCR staff members with me this evening are Ryan Brown, our Policy and Planning Assistant Director (who will serve as our technical presenter), and Christine Watlington, our Policy and Budget Analyst.

Robert VanLier, our regional dam safety engineer for this area is also joining us this evening.

I hope that all of you have registered on our attendance list. If not, please do so. Those wishing to speak should note that on the attendance list. Please also make sure that your contact information, including your name and address, is legible and complete as we will be utilizing it to keep you informed on the status of the regulatory action.

**Purpose of the public hearing:**

The purpose of this hearing is to receive input from interested citizens on the Board's proposed Virginia Impounding Structure Regulations during the 60-day public comment period which opened on August 20<sup>th</sup> [Vol 23 Issue 25] and closes on October 19<sup>th</sup>. These regulations not only impact dam owners but also impact the growing number of Virginians living downstream from dams.

The Department used the participatory approach to develop the proposal. Following the publication of the Notice of Intended Regulatory Action regarding these regulations in December of 2005 and the public comment period on the NOIRA, the Department formed a Technical Advisory Committee to assist in the development of the proposed regulations. The TAC included representatives from localities owning dams, owners of both large and small private

dams, Soil and Water Conservation Districts, engineers, and federal and state regulators to name a few. The 28-member TAC met seven times between the months of May and October 2006. Following the completion of the TAC's work, the Soil and Water Conservation Board proposed these regulations at its meeting held on November 15, 2006. Copies of the proposed regulations are located on the table near the attendance list.

This concludes my introductory remarks. I would like to introduce Ryan Brown, DCR's Policy and Planning Assistant Director, who will explain in more detail what the proposed regulations do.

**Mr. Brown:** Thank you Mr. Dowling.

The Board's regulatory proposal has been developed to support and advance the goals of the Virginia Dam Safety Act, contained in § 10.1-604 et seq. of the Code of Virginia, which gives the Board the authority to adopt regulations to protect the health, safety, and welfare of citizens through ensuring that all regulated dams are properly and safely constructed, maintained, and operated.

Key provisions of this proposed regulatory action include the following:

1) First, a revision of the dam classification system found in 4VAC50-20-40 from four categories (Class I, II, III, and IV) to three hazard potential classifications (High, Significant, and Low). This conforms the classification categories contained in the regulations to those used by federal agencies and many other states.

2) Second, a specification that the Spillway Design Flood requirements found in Table 1 of 4VAC50-20-50 are applicable to all dams, and not just those constructed after July of 1982, as the currently-effective regulations state. In addition, Table 1 is revised to:

- Reflect the revised dam classifications (bullets continue on next page)
- Update spillway design requirements to enhance public safety and to move towards federal standards.
- Eliminate spillway design flood ranges within categories, which may result in inconsistency in application.
- Require that the spillway of all high-hazard dams be engineered to pass the full Probable Maximum Flood.
- Specify minimum thresholds for incremental damage assessments, which may be used to lower the required spillway design floods for dams.

3) Third, the creation of a new section, 4VAC50-20-52, that allows for the potential reduction of the spillway design flood requirement through an incremental damage assessment where the breach of a dam would not significantly worsen downstream flooding. This had previously been applicable only to dams constructed prior to July 1982, but now would be applicable to all eligible dams.

4) Fourth, the creation of a new section, 4VAC50-20-54, that sets out dam break inundation zone mapping requirements for all dams to be used in hazard potential classification determinations and in the development of Emergency Action Plans for High and Significant Hazard Potential dams.

5) Fifth, a specification in a new section, 4VAC50-20-58, that for each Operation and Maintenance certificate (Regular or Conditional) issued, the impounding structure owner shall send a copy of the certificate to the appropriate local government(s) with planning and zoning responsibilities.

6) Sixth, the development of language in a new section, 4VAC50-20-125, establishing a delayed effective date for certain dams determined to have an adequate spillway capacity prior to the effective date of these regulations but that would require modifications due to changes in the regulations. This delayed effective date section would allow upgrades to these dams to be phased in over an 8 to 11 year period.

7) Seventh, the creation of a new section, 4VAC50-20-175, expanding emergency action plan requirements for High and Significant Hazard Potential dams. The plan would be developed and periodically tested in coordination with all entities, jurisdictions, and agencies that would be affected by a dam failure or that have statutory responsibilities for warning, evacuation, and post-flood actions.

8) Eighth, the creation of a new section, 4VAC50-20-177, establishing emergency preparedness plan requirements for each Low Hazard Potential dam. These plans contain lesser requirements than the Emergency Action Plans required for High and Significant Hazard Potential dams due to the reduced threat posed by Low Hazard Potential dams.

9) Ninth, the creation of a series of new sections that establish fees for the administration of the dam safety program. These include the following new sections:

- 4VAC 50-20-340 Authority to establish fees
- 4VAC 50-20-350 Fee Submittal Procedures
- 4VAC 50-20-360 Fee Exemptions
- 4VAC 50-20-370 Construction Permit Application Fees (bullets continue on next page)
- 4VAC 50-20-380 Regular Operation and Maintenance Certificate Application Fees
- 4VAC 50-20-390 Conditional Operation and Maintenance Certificate Application Fees
- 4VAC 50-20-400 Incremental Damage Analysis Review Fees

10) Tenth, the removal of all forms currently incorporated by reference and incorporation of required elements of the forms into the regulations. Recommended forms will still be available. This will allow for the modification and improvement of forms without going through a lengthy regulatory action.

11) Eleventh, the provision of definitions or modifications to definitions in section 4VAC50-20-30 for the terms “Agricultural purpose”, “Agricultural purpose dam”, “Alteration”, “Construction”, “Dam break inundation zone”, “Department”, “Drill”, “Emergency Action Plan or EAP”, “Emergency Action Plan Exercise”, “Emergency Preparedness Plan”, “Freeboard”, “Height”, “Spillway”, “Stage I condition”, “Stage II condition”, “Stage III condition”, “Sunny Day Dam Failure”, “Tabletop Exercise”, and “Watercourse”.

12) Twelfth, updates necessary to reorganize, clarify, and expand multiple sections related to permits and the repealing of sections that are incorporated into the reorganized sections. These updates are included in:

- **4VAC50-20-70** Construction permits.
- **4VAC50-20-80** Alterations permits.
- **4VAC50-20-90** Transfer of permits.
- **4VAC50-20-105** Regular Operation and Maintenance Certificates.
- **4VAC50-20-150** Conditional Operation and Maintenance Certificate.
- **4VAC50-20-155** Extension of Operation and Maintenance Certificates.
- **4VAC50-20-160** Additional operation and maintenance requirements.

13) Thirteenth, the creation of a new section, 4VAC50-20-165, stating that dams operated primarily for agricultural purposes which are less than 25 feet in height or which create a maximum impoundment capacity smaller than 100 acre-feet are exempt from the regulations.

14) Fourteenth, and finally, updates to section 4VAC50-20-180 related to inspections, section 4VAC50-20-200 related to enforcement, and section 4VAC50-20-220 related to unsafe conditions. These updates reflect changes in the Code of Virginia made during the 2006 General Assembly.

This concludes the summary of key provisions contained in the proposed regulations.

**Mr. Dowling:** Thank you Mr. Brown.

Before we begin receiving testimony on the proposed regulations, I would like to stress that this is an information-gathering meeting. Everyone wishing to speak will be heard. If necessary, we may ask speakers questions concerning their testimony or to request additional information concerning a subject believed to be important to the process in order to help clarify and properly capture your comments. Staff will be available after this hearing to take any individual questions you may have.

We will now begin the public comment portion of the hearing. When I call your name, please come to the front and use the podium. Please state your name and who you represent. If you have an extra copy of your comments, we will be happy to accept it.

[PUBLIC COMMENT PORTION]

Mr. Dowling called the following individuals to provide comments:

*Eldon Rucker, President  
Lake of the Woods Association*

I wish to thank the Department of Conservation and Recreation for giving the public this opportunity to express its views on the proposed regulations and relevant background information. It is through this open process that input from all sectors of the community can be obtained, appropriately considered, and modifications made to reach a final product that continues to maintain dam safety and also hopefully focuses on unreasonable risk and cost-effectiveness. As Dr. Wayne Graham of the Bureau of Reclamation, Water Resources Services has noted, “blindly modifying dams to accommodate the PMF is unwise” and “Modifying existing dams to pass the latest estimated PMF is often wasteful.”

In my comments I plan to stress several key policy issues and raise specific concerns relative to the scope of the proposal. A more detailed response to the various sections will be provided in written comments submitted by the October 19<sup>th</sup> deadline.

1. The proposed regulations involve a major philosophical issue. We believe the DCR/SWCB is pushing for a regulation that requires compliance with rigid standards (Table 1) with little room for cost consideration, engineering judgment, consideration of local conditions or common sense. Further, there is no provision for fiscally responsible cost benefit analysis and no defined process that an owner can follow in an attempt to demonstrate to DCR/SWCB that a dam does not pose an unreasonable hazard to life and property.

It appears that the assumption is that if one human lives or works in the inundation zone, there is probable loss of life and the dam is therefore a high hazard dam, whatever its size. This mindset will result in modification of almost every dam built before 1985, and many that were built after that. I believe, as a matter of good public policy, the regulations should be targeting dams that clearly pose an unreasonable hazard to life and property and the regulations should provide a methodology for determining what is reasonable and unreasonable.

Specifically, the regulations should continue to recognize that existing dams built before the enactment of the Dam Safety Act, may not satisfy current criteria, but should not be required to undergo costly and disruptive modifications to meet newly established standards unless it is clearly shown that without those modifications, they constitute an unreasonable hazard to life and property.

In determining what constitutes an unreasonable hazard to life and property, I believe the regulations should provide specific criteria the Board should use in making the determination. Those criteria might include:

- The structure is performing in accordance with its design and purpose
- Operation and maintenance is satisfactory
- The approved EAP clearly demonstrates the capability for timely notification and evacuation of anyone in the inundation zone.
- Plans exist to control development and/or minimize damage in the inundation zone.
- A cost benefit analysis has been performed weighing the benefits of an increase in the SDF against the costs of modifying the spillway to accommodate a higher discharge
- The owner satisfies all special requirements imposed by the Board

2. In reviewing the proposed regulations and associated background information, it appears that a major objective of the new proposal is to remove the distinction between existing and proposed dams. One important aspect of the current dam safety regulations is recognition that judgment of competent professional engineers should weigh heavily into dam safety evaluations. Section 130 of the current regulations provides considerations for dams constructed prior to the enactment of the Virginia Dam Safety Regulations, including issuance of regular operation and maintenance certificates to dams that may not satisfy current criteria but do not pose an unreasonable hazard to life and property. Sound engineering judgment on the part of competent professional engineers has been required to make these determinations. Similarly, Table 1 of the current regulations states that it was not the intention to establish rigid design flood criteria and “Safety must be evaluation in the light of peculiarities and local conditions for each impounding

structure and in recognition of the many factors involved,” again requiring the judgment of competent and experienced professional engineers. Unfortunately, statements such as these have been removed from the proposed regulations. (Also notably absent is the alternative proposed by the Ad Hoc Safety Study Committee in its April 30, 2005 report).

3. The Economic Impact Analysis by the Virginia Department of Planning and Budget dated May 4, 2007 states: “Thus the estimated total required spillway design upgrade cost would be \$248,954,375.” Based on actual cost data from Lake of the Woods and other recent dam work in the state, it is reasonable to expect the actual cost to modify the state’s dams and those owned by local governments to the proposed regulation standards may well exceed this amount.

For example, on page 26 it is stated that inundation zone maps average \$16,417 and that the estimated cost for all dams would be \$7.6 million. We have completed this task at a cost of \$37,400 and believe that the estimate does not adequately reflect the real world. It is wasteful of economic resources to require expenditure of hundreds of millions of dollars without adequately assessing the specific risks involved.

4. The proposed regulations do not appropriately consider current operating, maintenance, and emergency action plans for dams that have been in existence for a long period of time. The LOW dam was built in 1966 and has received a number of awards for its operation from DCR. The current spillway had adequately handled runoff for a 40 year period during which time a number of significant storm events have occurred. The proposed PMP event far exceeds any reasonable design requirement and should be reevaluated based on more reasonable assumptions (i.e. 500 or 1000 year events) or use of site-specific circumstances which appropriately consider actual risk.

In conclusion, I wish to strongly encourage DCR to take a more comprehensive look at actual risk and appropriate distinction between new and existing dams. The statement, “there is sufficient data to accurately compare the magnitude of the benefits versus cost...” must be reconsidered. We as a nation compute risk of loss of life versus the cost to reduce that risk and make decisions daily in the automobile, aircraft, and drug industries. I believe that our state’s promise of a “common-sense” and “fiscally responsible” approach to government strongly suggests a similar approach in the case of the proposed regulations.

Thank you for the opportunity to speak before this hearing tonight.

**Mr. Dowling:** Thank you Mr. Rucker.

*John Bailey  
Lake of the Woods*

Good evening friends. On behalf of the 8,000 citizens who reside at Lake of the Woods, thank you for providing this opportunity to comment on the proposed regulations. LWA believes that the proposed regulations will be very much welcomed by the dam community and while the work product is very good we all know that there are topics, both great and small, that need to be addressed prior to finalizing the regulations. With this in mind I present the following.

Regarding storm durations, distribution models, etc., please make sure that we do not eliminate or place any restrictions on any of the technical methods recognized by FEMA. When one starts to specify matters in regulations such as these, history indicates that sometimes actions have

unintended consequences, so we need to be specific. This could apply to storm durations as included in the proposed regulations; however, it could also include distribution models and other technical and non-technical criteria. Once completed, regulations are obviously hard to change, so let's make sure we don't overlook anything.

It has been said that the incremental damage assessment is the same as the current Section 130. It is just putting into the regulation what the current practice is. However, the implementation of Section 130 is a far cry from how it used to actually work. Former division staff has worked jointly and creatively to resolve some of the more troublesome issues faced by dam owners and the results were not just the pouring of concrete. This is not a reflection on the expertise of the current staff; rather, it is a comment on the limitations imposed on how public policy is implemented.

The original ad hoc committee that conducted the dam safety study recommended that a process be developed for implementing what amounts to an IDA. There were five that registered strong agreement for an alternate procedure for existing dams and three that registered a strong agreement for creating new and existing dams alike, as the current proposals do. The board-chaired workgroup on this matter could not reach a consensus agreement. The Technical Advisory Committee, the TAC, also discussed this issue. A subcommittee was assigned to look at that topic and that produced some very interesting discussions. That was reflected in my earlier comment about the freedom of engineering judgment being allowed years ago. That discussion about whether or not such procedures should be incorporated in the regulations or be created as a set of internal guidelines for use by staff and the respective dam owners. It was ultimately decided to not place them in the proposed regulation, however one technical element was included in the proposal before us, and that seems to be the limit of the IDA factors to be considered. Why shouldn't other factors such as those identified by the ad hoc committee also be included in the regulations? Just because some good people could not come to an agreement on this particular matter – in the regulations or not – in what form, doesn't mean that such a process in guidelines should not be created. Without doing so, staff and dam owners have nothing to guide them. The default position will continue. However, it is the role of those chosen by those elected to represent the people to ultimately make a sound public policy that resounds with common sense.

Conspicuously missing from the proposed regulations are any mechanism that would provide for risk analysis, profiling and of ranking of dams. There approximately 1600 impoundments in the Commonwealth that fall under the regulatory authority of DCR. It was said two years ago that we were not sure of where they were located or what condition they were in. Many of those have been found and we still have more to do, and I understand that. However, once this effort is completed, risk analysis and profiling, using systems that are already being used, such as those by NRCS and as outlined in the new FEMA documents just published, should be applied to all dams in the Commonwealth. Doing so would ensure that the limited funding available for public and private dams would be spent on those dams identified as requiring the most urgent of actions to protect public safety.

In closing, we wish to note and appreciate the amount of work that has gone in to the development of the proposed regulations and wish to express our thanks to the Soil and Water Conservation Board, DCR staff and all the numerous individuals that participated in the ad hoc and the TAC.

Thank you very much.

**Mr. Dowling:** Thank you Mr. Bailey.

*Chris Allison*  
*Lake Holiday*

I am Chris Allison, representing Lake Holiday's Property Owners Association. Lake Holiday Dam is a Class "A" Dam.

Two years ago I spoke at a SWCB hearing in Richmond. At that time, my comments focused not on the recognized importance of dam safety and Lake Holiday's responsibilities, but the issue of financing spillway upgrades to assure the safety of downstream property owners.

Subsequently, Lake Holiday has responded at all SWCB requests for public comment and studies the documents as this process has unfolded.

Representing some of our efforts; Lake Holiday has developed a model EAP, to include distribution of NOAA emergency broadcast radios to downstream owners and upgrading our SCADA alert system. We've spent thousands on dam and spillway maintenance, and chartered our dam engineering firm to move ahead with preliminary engineering designs to meet SDF. On September 28, we met with Dam Safety's Rob VanLier to begin the collaborative process of defining a spillway redesign solution that will satisfy Lake Holiday's responsibilities.

Lake Holiday is again participating in this final public hearing before the new regulations are approved. Financing spillway improvements was addressed two years ago and remains the focus of our comments tonight.

- To enforce that standard of compliance while cognizant of the unanswered financial questions is, in our view, not practical.
- Financing engineering and construction to satisfy the regulations is beyond the capabilities of most public and private operators. For Lake Holiday to achieve 100% SDF it is estimated to cost between \$5.2 & 6.1 million.
- Lake Holiday is a POA and as such has no legal standing to acquire long-term financing.
- State and Federal funding to date has been earmarked for enforcement.

Lake Holiday recommends:

- That contingencies are built into the enforcement policy that requires funding legislation for grants and long term financing.
- That a SWCB-sponsored cooperative engineering program is established that will control the engineering and construction costs for all dam owners.

Lake Holiday is committed to the safety of our dam. These two suggestions are both reasonable and practical.



The problem dam owners face is not the will to comply but the means to finance compliance

Thank you.

**Mr. Dowling:** Thank you Mr. Allison

*Charles deSeve*

*Lake Barcroft Water Improvement District*

Thank you very much for giving us the opportunity to speak tonight. My name is Charles deSeve and I am chairman of the Board of Trustees for Lake Barcroft Water Improvement District. I am sure you are familiar with our dam so I don't need to belabor that point. You must know that we have a vital interest in what you are doing here. We applaud your work and your concern for safety but we have a number of issues to raise that we think haven't been fully addressed yet that affect us and because they affect us will generally affect dams throughout the state. I would just like to bring these to your attention and see if the process might not make additional considerations.

First, the planning for this required risk assessment and a full comprehensive cost benefit analysis. In the work that has been done to date, we see it pointing toward the additional work that's necessary but not the work that is complete. Let me give you some examples.

In terms of the cost benefit analysis, what would you need to know to say we are going to spend more money to do some substantial changes to dams throughout the state and expect from that an increment, an increase, an improvement in safety? In order to say what that improvement would be you would need facts which have not been assembled yet. You really need, throughout the Commonwealth, a census of persons and property that are under the areas of inundation that would exist following dam failures. We just found that out for our dam by spending some \$40,000 on inundation studies and mapping. This, by the way, is a huge amount above what was suggested in the state's economic analysis of what the cost of this would be. We have also found out that in looking at inundation mapping, there are very essential elements that are specific to each dam. It is very hard to generalize for the state. I'm not sure that anyone could sit there and say what would happen to dams on average, let alone a specific dam, like our dam.

When we look at the inundation map, as we are going to submit a very detailed report to you by Friday, we see some effect if the dam were to fail. What we notice is that even without dam failure, there is a tremendous inundation area that would affect a great many lives and properties. A plan would have to be set for those, even if the dam didn't fail. If you had a PMP or a PMF, you would have this flooding which would then be augmented to some small degree by the inundation from a dam breach. In the planning for the flooding you would be taking care of much, if not all, of the planning you would need for a failure. No matter what you do, you still have to prepare for that flooding if the PMF is the target standard that you are using. If you are doing that, then the question is, what incremental affect is there if there is a dam breach. Let me suggest, no one knows that for the Commonwealth as a whole. So no one knows exactly what the risks side of things are and certainly no one knows what the cost side of things are.

But addressing the cost – if you look at the cost of inundation mapping, the economic impact statement that was put out had a minor cost for doing this compared to the \$40,000 we have expended. Multiply that by the rest of the dams in the state and very preliminary engineering

suggest that we may have a \$15 to \$20 million cost in meeting certain standards for a very minor change in the area of inundation. Maybe there is a way to take all of that into account – to look at a specific dam and say well we can be flexible, but we don't see that in the regulations and so we worry that the rigidity of the regulations doesn't allow for this kind of consideration. In fact, when we look at our inundation maps and try to calculate the cost we don't know what standard to adhere to. What is an appropriate cost benefit analysis? Lives are worth an infinite amount, you certainly can't say that human life is to be looked at lightly. Yet, in everything we do in government, we have a cost associated for life and only a certain willingness to spend that. Look at the highway system, look at the air transport system, and look at our fire codes and our building codes. No one can spend enough to guarantee 100% protection of everyone's life and property. What percent should we be shooting for? What standard is reasonable in this case against the expense? No one can tell from the regulations. It may be when they are in place this is all worked out but from our point of view, looking at how they are stated, we don't know how to evaluate our position – how far do we have to go. I would suggest that throughout the state there is great uncertainty about all of this. I would think for each dam throughout the state you would need a census of persons and property that are in the inundation areas, in the flood areas before an inundation from a dam break before you can make an assessment of risk. How much money should you spend? Well, if you don't know the risk you don't know what its worth. You have no guidance as to what should be spent.

So that is the first thing. Gathering additional information and knowing with some greater certainty what the risk is that you are trying to overcome by spending money to change dams. Secondly, what is the estimate of this reengineering that would be done on so many dams? That requires a unique study for every dam, or at least every type of dam. The economic impact report really just threw some numbers out. There was no solid engineering behind that. We look at ours where we are talking about \$15 million, a high multiple of any number that was suggested in the study; projected throughout the state, this could be a fortune. Maybe it's worth spending the fortune to avoid some high level of risk but if you don't know what the level of risk is you don't know what is reasonable to spend. That's part of the problem. Another thing is, where is the source of funding? Some dams are public some are private. To do a new regulation and to speak to a cost benefit analysis but not have a concept of what it would cost or where the money would come from doesn't seem to be completing the task. I would suggest that is another bit of information that the Board needs to make an informed decision.

Let's say we're a dam and all we had was woods below us, no one would get killed if the dam breaks. Now, the local community changes zoning and allows all sorts of development in the flood plain and within the limits of the inundation map. The developers don't pay anything in terms of cost of the dam, government is overlooking that. All of sudden that government goes to the dam owner and say we have all these people down below and your dam isn't safe. At your own expense you need to modify your dam to take care of that. Maybe the dam does need to be modified but if governments, and in our case we have multiple jurisdictions, that allows development to take place that changes what the inundation map would look like in terms of how it affects people and property from a number of years ago till now. We are not responsible as dam owners for any of the development that took place, yet we would be asked under this regulation to meet standards that fully protect all the lives and property in that area without any source of funding for us to do that. Government has allowed this process to go on and had done nothing either via the developers or via its own purse in terms of supporting changes in the dam required because of that development. So with that in mind I would ask you to look and examine areas of funding, ways that if this standard is put in place assistance might be given to dam owners in recognition of this partnership that exists

between the local and state government and the dam owners. All of this has happened because of everyone's involvement. It may be that grandfathering and making sure, if not grandfathering completely at least grandfathering to a different standard or grandfathering with flexibility that exists now in the regulations, even if some changes had to be made each dam could be looked at in its particular circumstances and the changes be tailored to that, particularly for an existing dam. For a new dam it makes sense to have standards that the building of the dam would have to face. For an existing dam to put the standards in to recognize the changes that have been made but not fund them becomes a very difficult thing for the owner.

In conclusion, I would say we certainly applaud the effort to have more safety, to save lives and property. But until we know exactly what the risk is and what the incremental savings of lives and property can be there is no way of knowing what it worth to spend to get there. I would urge the Board engage in an additional process that gets a real census of the dams a real census of the inundation areas, knowing what the risk is before it just puts a regulation in place that might have extreme and dramatic implications for both public and private dam owners.

Thank you for the opportunity, and again applaud all of you for your efforts in promoting dam safety.

**Mr. Dowling:** Thank you Mr.deSeve

*Michael G. Moon*  
*Director of Utilities*  
*City of Manassas*

On behalf of the City of Manassas I am providing comments concerning the proposed Virginia Dam Safety Regulations which were published for public comments on August 20, 2007. I would like to first acknowledge the efforts by the Department of Conservation and Recreation (DCR) to improve Virginia dam safety by undertaking this effort to revise the dam safety regulations.

It is understood that many of the changes that are proposed reflect changes in the industry at both the State and federal level that will better identify the risks inherently associated with dam construction. The requirements to put into place emergency action plan development and persons and property located within potential dam inundation zones are much needed enhancements to the regulations. Manassas has already developed an Emergency Action Plan and has discussed it and made it available to other dam owners across the Commonwealth to assist them in their development of their own EAP.

The City is concerned primarily on two aspects of the new regulations; first the removal of flexibility of the new regulations in regard to dam classification and, secondly on the implementation strategy of the new regulations. The current regulations rely on the judgment of competent and experienced professional engineers to evaluate the dam classification in the context of various factors that apply to each dam design, including risk that should weigh heavily into dam safety evaluations. The revised Table I takes this discretionary aspect out of the process which will not allow the flexibility that has been used in the past successfully throughout the Commonwealth.

The second issue in reference to the implementation strategy is concerning from a cost standpoint and does not mirror similar initiatives in other areas of infrastructure improvement. The State regulates building construction under the Uniform Statewide Building Code (USBC) which requires

an owner to maintain a building in conformance to the Code that existed at the time of permit issuance. The owner does not have to update to the current Code until such time that he performs new work on the structure. This is to protect the owner from costly upgrades every time the Code changes.

Another public example is when roads are reconstructed, they have to meet the Code in existence at the time. Every road cannot be updated to new standards every time a new design criteria is placed into effect because this would be cost prohibitive.

It must be recognized that funding is usually a factor which must be considered alongside risk when making decisions concerning rehabilitation of the State's infrastructure. Upgrading dams to meet current design standards can often be cost prohibitive and in some cases unwarranted if a significant improvement in public safety is not achieved. In the case of the City of Manassas T. Nelson Elliott Dam project, we are being requested to spend almost \$10 million dollars in funds to achieve a full PMF storm design. This will result in higher water rates for our residents and businesses.

The City would like to see a distinction in the regulations for new dams and existing dams and to see the current regulations stay in place under Section 130 that provides for exemptions for dams that were constructed prior to July 1, 1982 that do not pose an unreasonable hazard to life and property.

In recent meetings with Virginia Department of Conservation and Recreation (DCR) staff it was noted that there are 594 state regulated dams throughout the state. It is anticipated this list will grow to well over 1,000 when the new regulations go into effect. The City's dam is one of only twenty-seven (27) Class I risk dams in the state whose sole purpose is to operate as a water supply reservoir. If the dam regulations are not changed to provide relief to the City, it is requested that the Board works closely with the Legislature and Governor on a funding strategy to assist localities that are impacted adversely by adhering to the new regulations.

Thank you for the opportunity to provide input on this matter and we would welcome the opportunity to work with DCR to address the issues noted by the City.

Mr. Dowling: Thank you Mr. Moon.

*Lisa Cahill*  
*Watershed Services*

Hi, my name is Lisa Cahill with Watershed Services. We are a dam repair contractor.

Thanks to all the people who are participating. I have been to several of the public meetings and this is the first one that so many people have spoken at. I encourage everyone to participate and not be one of those guys who doesn't vote and then complains about the administration for the next four years.

The whole process has been extremely open and fair and kudos go to the DCR staff for the way that they have handled all of this. All of you that are acting in response to these regulation changes, please also act in response to the legislation whenever it comes around. Keep your ears open and be prepared to write your legislators.

Regarding the regulations, please provide the forms in such a way that they can be filled out on the computer. And on behalf of comments from engineering firms, including some sort of mail merge or way to fill the forms out in mass would be very helpful for those who may have twenty of these to do.

In response to something said earlier, the TAC did actually examine whether one life was acceptable or not in risk. There feeling was that it was not.

At the Henrico meeting one gentleman who did speak was Mr. Delk. He experienced the 1969 flood in Nelson County. He said something that has stayed in my mind. "There were five tractor trailers parked on the shoulder, all five washed away. Despite searches by air and on the ground they only found the cab of one tractor completely buried in silt." The PMF is an unimaginably large, biblical proportion event. It is not something that any of us can imagine, but they do happen.

We've only been keeping rainfall records since the 1930's approximately, so we really don't know how often they (PMFs) do happen. It is hard to predict a multi-thousand year recurrent event with only seventy years worth of data. Even today, although we have been reporting pretty much everywhere, no one will acknowledge that the current rainfall numbers don't represent microbursts and other events that we are really concerned about.

In 2004, Tropical Storm Gaston gave a section of Hanover County 10 to 14 inches of rain in 5 hours. With a PMF being 28 inches of rain in 6 hours, I'm going to call that about half of a PMF. There are some in this room who if that occurred over their dam would have had substantial damage or perhaps even a failure. What we learned in Gaston is that we can't rely on our infrastructure. An EAP may not be as effective as we think if we are relying on phone lines, power being present and roads. Because as reliable and as major a road as Route 301 is, it was completely breached in Gaston.

There is a lot of talk here about the cost of improvements and certainly they do approach thousands of dollars. For me it is kind of like hearing people talk about quitting smoking. You'll hear some people say this is just impossible and yet there are thousands of people, probably quiet a few in this room who have quit smoking. So somehow people do it. Yes, the financing certainly is difficult but there are several dams throughout Virginia who have obtained financing from banks and from private lenders and who have stepped up to the plate and have repaired their dams.

I would also like for the dam owners here to consider the cost of not repairing their dams. In 2003 a dam in Mississippi failed. But good news, the EAP worked and not a single life was lost. However, about 100 structures were affected and the dam owner is being sued for \$100 million dollars. So definitely keep in mind the cost of not doing the work if that storm with your name on it should find you.

I was on a boat with an experienced captain who had been on all kinds of ships. As I was turning green I asked, "you don't get sea sick?" He said, "I don't say that. I've been on too many ships for too long and I've seen people who absolutely never got sea sick, get sea sick. So what I say now is that I'm okay right now and sometime somewhere there's a storm with my name on it." What I would say to the dam owners here is sometime somewhere there may be a storm with your dam's name on it. As you assess the cost of action please also assess the possible cost of inaction.

Dams exist until they fail or are torn down. That might be 200 years or more. There are certainly some in Virginia that are more than 200 years old. Also, as you assess the likelihood of a PMF at your dam, which we don't know the return event of; project that over the dams' lifetime, not just your time or experience with that dam.

Thank you.

**Mr. Dowling:** Thank you Ms. Cahill.

That completes the list of those individuals who signed up to speak. Are there other individuals who would wish to comment or leave written remarks?

**Closing:**

**Mr. Dowling:** A handout is provided on the table outlining the public comment submittal procedures I am about to cover and the dates and locations of the remaining public meetings.

Persons desiring to submit written comments pertaining to this notice and this meeting may do by mail, by the internet, or by facsimile. Comments should be sent to the Regulatory Coordinator at: Virginia Department of Conservation and Recreation, 203 Governor Street, Suite 302, Richmond, Virginia 23219. Comments also may be submitted electronically to the Regulatory TownHall. Or comments may be faxed to the Regulatory Coordinator at: (804) 786-6141. All written comments must include the name and address of the commenter. In order to be considered, comments must be received by 5:00 PM on October 19, 2007.

I would also draw your attention to the copies of the Virginia Dam Safety, Flood Prevention and Protection Assistance Fund Loan and Grant Manual and the loan round announcement on the table. The Fund is authorized to make loans and grants for qualifying dam rehabilitation, dam break inundation zone mapping, and floodplain-related projects proposed by local governments and private entities. The Department of Conservation and Recreation in cooperation with the Virginia Resources Authority intends to open a loan round on December 1, 2007 with applications due by February 1, 2008. All funding will be awarded on a competitive scoring basis, and all qualifying loan applicants must additionally undergo a financial capability analysis by the Virginia Resources Authority prior to final loan approval. I will add that we will continue to work with the legislature to obtain additional funding for the Fund so that we can continue to provide low-interest loans and, hopefully one day, grants.

The other issue that I will bring up this evening, as it was raised by one of the comments, is that we are looking at legislation that would consider development within dam break inundation zones. Some of the issues to be looked at are developers assisting with the upgrading of dams when the downstream development causes the need for an upgrade, zoning authorities, and notification responsibilities. We have been working with a citizen group on this and believe we are getting close to a bill that will be able to be introduced this year. We can't guarantee that, but certainly keep your eyes open.

With those announcements, I would like to thank each of you for attending this meeting and providing us with your views and comments. This meeting is now officially closed. Staff will be available afterwards to take any individual questions you may have.

I hope that everyone has a safe trip home.