REPORT OF THE VIRGINIA DEPARTMENT
OF CONSERVATION AND HISTORIC RESOURCES
DIVISION OF SOIL AND WATER CONSERVATION

Implementation Effectiveness of the Virginia Erosion and Sediment Control Program

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

House Document No. 15

COMMONWEALTH OF VIRGINIA
RICHMOND
1988

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EXECUTIVE SUMMARY

The 1986 General Assembly required that a study of local compliance with the Virginia Erosion and Sediment Control Law (ESCL, Sec. 21-89.1 et seq., Code of Virginia) in the Chesapeake Bay Drainage Basin be conducted by the Division of Soil and Water Conservation (DSWC) of the Virginia Department of Conservation and Historic Resources (DCHR), and that a report of the findings be made to the 1988 General Assembly identifying financial, technical and statutory impediments to compliance with the law.

Since this regulatory program had never been thoroughly evaluated in the 14 years of its existence, the DSWC expanded the scope of the study to include the entire state. While the bulk of effort was concentrated on the Chesapeake Bay Drainage Area, the study was designed so that the results could be extrapolated statewide.

The study scope was also expanded to address closely related issues of stormwater management including prevention of localized flooding and control of nonpoint source (NPS) pollution produced by increased surface runoff from urban development.

A parallel but independent study report, funded by the Virginia Water Resources Research Center and conducted by Dr. William E. Cox of the Civil Engineering Department at Virginia Tech, has been circulated recently in draft form. That study concentrated on the ESC Program as the only regulatory program in the state that addresses NPS control issues to any degree.

Those two studies, as well as previous studies and surveys by the DSWC and the Chesapeake Bay Commission, draw many of the same conclusions, which may be summarized as follows:

1. While there is a great range of effectiveness among the 171 local ESC programs, from very effective and well run programs to those that do little, the studies have suggested that the basic structure is sound and should continue to operate as it does, with some additions and clarification of authorities.

2. The biggest problems regarding noncompliance occur at the construction sites, generally due to inadequate regulatory oversight due to insufficient inspection personnel and ineffective enforcement techniques (or the ineffective application of available techniques).

3. The studies have all recommended significant increases in staffing at all levels of government in order to improve implementation and ensure compliance.

4. Both current studies as well as the Chesapeake Bay Commission study done in 1984 recommended that periodic state reviews of local programs be required with penalties for noncompliance.

5. Additional enforcement options and strengthening of current options are considered necessary in all of the studies and surveys.

6. Numerous exempted activities cause ESC problems. Most of the studies have recommended the reassessment or removal of some exemptions and further qualification or clarification of others.

7. Training programs need to become more accessible and some level of certification needs to be required from certain regulatory officials.

8. While the program standards found in the Virginia Erosion and Sediment Control Handbook are considered effective, some minor changes are recommended, as well as a clear distinction between regulations and guidelines.

9. The Bay Commission and the current studies recommend the addition of legislative authority and regulatory standards for stormwater management, both for flood control and NPS control.

10. There are no apparent differences in implementation effectiveness between local ESC programs within the Chesapeake Bay drainage basin and programs outside the basin. Obviously uncontrolled sediments have more direct access to the Bay in coastal plain localities than in the rest of the state, particularly from waterfront development.

The following groups have been contacted or involved in this study:

1. Virginia ESC Handbook review committee (met during the winter of 1985-86).

2. All 171 local ESC programs.

3. Numerous environmental and citizen organizations.

4. State agencies involved in ESC, including VDOT.

5. Commonwealth and municipal attorneys.

6. Virginia Department of Forestry, Virginia Board of Forestry and the Virginia Forestry Association.

7. Virginia Department of Agriculture and Consumer Services and the Virginia Farm Bureau.

8. Virginia Department of Mines, Minerals and Energy.

9. Homebuilders of Virginia.

10. Virginia Association of General Contractors.

11. Railroad companies.

12. Public electric utility companies.

13. The Virginia Telephone Association.

As a result of the findings of these studies, the DCHR/DSWC is recommending that the following general actions be taken with regard to the Virginia Erosion and Sediment Control Program to improve the effectiveness of its implementation by state agencies and local governments.

1. Clean up confusing or ambiguous language in the Law.

2. Eliminate or further qualify problem exemptions.

3. Increase DSWC's ESC staff by 20 FTEs (which have been included in this Department's budget initiative).

4. Establish clear authority for state oversight of local ESC programs.

5. Improve enforcement capabilities by:

   a. Improving language concerning performance sureties.
   b. Clarifying who may be held responsible for compliance.
   c. Improving application of stop-work orders and performance guarantees.
   d. Establishing that each day of violation constitutes a separate violation.
   e. Adding enforcement options such as civil penalties and administrative fines.

6. Remove the processing fee limit so that local programs can better recover the costs of program administration.

7. Establish mandatory certification of inspectors.

8. More clearly distinguish between regulations and guidelines in the Virginia ESC Handbook.

9. Provide additional legislative authority for managing stormwater runoff to prevent localized flooding and nonpoint source pollution. This issue warrants further study.

The following report elaborates considerably on the law, the operation of the program as it was designed, the current effectiveness of program implementation and the complex issues of stormwater management. More specific conclusions and recommendations may be found at the report's end.

I. INTRODUCTION

The Virginia Erosion and Sediment Control Law (ESCL)[1] was passed by the General Assembly in 1973. Since then the state program under which the law is administered has evolved considerably, and yet there have been allegations of inconsistent program implementation and enforcement across the state. Such concerns became focused during legislative hearings in 1986 concerning the addition to the law of stop-work authority. As a result, the following language was included in the 1986 Appropriations Act:

> "The Division of Soil and Water Conservation shall conduct a review of local compliance with the provisions of the Erosion and Sediment Control Law in the Chesapeake Bay Region. A report shall be submitted to the 1988 Session of the General Assembly which identifies the financial, technical, and statutory impediments to compliance with the Law."[2]

The purpose of the review was to determine what, if any, changes are necessary to improve compliance with the ESCL.

Presumably the designation of the study for the Chesapeake Bay region was an outgrowth of the recent focus on returning the Chesapeake Bay to a higher level of water quality and productivity. However, the problems with implementation of this program extend across the entire state. In addition, the program had never been thoroughly evaluated in the 14 years of its existence. Therefore, the Department of Conservation and Historic Resources (DCHR), Division of Soil and Water Conservation (DSWC) decided to design the study so that its findings may be extrapolated to the entire state.

The DSWC included the subject of stormwater management in the study, as well. Environmental impacts from stormwater runoff include erosion, minor flooding and pollution from various nonpoint sources (NPS). These impacts have been the subject of growing concern over the past several years, as expressed by the Chesapeake Bay Commission and various levels of government. Erosion impacts are currently addressed under the ESCL, but the other impacts are currently not regulated in Virginia. Since all these impacts are so closely related, the DSWC determined to assess the need for more comprehensive stormwater management statutes and regulations.

In early September 1986 the DSWC published a Request for Proposals to accomplish this evaluation. The firm of Smith Demer Normann (SDN) of Hampton, Virginia, was selected as the principal contractor and the study began on November 1, 1986. Participating as subcontractors were the firm of GKY and Associates, Inc. of Springfield, Virginia, and Dr. N. Bartlett Theberge, professor and chairman of the Department of Ocean and Coastal Law, School of Marine Science, College of William and Mary. This study team provided a good mix of experience in planning and design, engineering economics, professional training and Virginia environmental law as well as the geographic distribution to efficiently cover the area involved. The study was completed and a report was submitted to the DSWC on June 22, 1987.

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[1] Erosion and Sediment Control Law, Virginia Code Annotated Secs. 21-89.1 et seq. (1983 and Supp. 1986).

[2] Item 121 of Chapter 643 of the Acts of the General Assembly, 1986.

1.1 STUDY METHODOLOGY

First, the project team reviewed the ESCL, the general criteria, the technical standards and technical publications from many sources. Virginia court cases, opinions and interpretations of the Attorney General's office and articles in newspapers and periodicals were also examined. Many of these publications were furnished by the Division. Information was also gathered on ESC programs and stormwater management regulations from other surrounding states for comparison.

Questionnaires were then developed to canvas a wide range of groups and solicit their views on the Program. Included were the municipalities responsible for implementation of the program, the Virginia Soil and Water Conservation Districts (SWCDs), Commonwealth and municipal attorneys, State agencies, environmental groups, home builders, contractors and planners.

The Homebuilders Association of Virginia (HBAV) and the Associated General Contractors of Virginia (AGCV), as the principle regulated organizations, were sent questionnaires to circulate among their memberships. It was interesting that only two responses were submitted by AGCV members, and none were submitted by members of HBAV.

DSWC personnel were also requested to provide input. The development, distribution, collection, tabulation and assessment of the many different questionnaires constituted a major effort of the project. Tabulation and analysis of the results was facilitated by the use of computer data management software. Attendance patterns and course evaluations from the DSWC's Erosion and Sediment Control training seminars were also tabulated and analyzed by computer.

Interviews were held with six selected municipalities representing an appropriate mix of geographical regions, population and degrees of urbanization. In addition, the Division arranged meetings with environmental groups, citizen organizations and state agencies to describe the study, solicit verbal comment and distribute questionnaires. The combination of questionnaires, interviews and telephone calls to a wide range of groups facilitated a good understanding of differing opinions of the program.

During the course of the interviews and during other travels throughout the state, observations were made of land disturbing projects. Of special interest was a comparison of the opinions of municipal personnel regarding specific projects and the observed conditions at the sites during construction.

One recommendation of the consultant's report is to reassess the exemptions from this law of certain special interests, including agriculture, forest harvesting, railroads, and electric and telephone utility lines. Following the receipt of the report, the DSWC staff contacted each of these exempted interest groups to solicit comment or position statements regarding their exemptions. Those responses are included in Appendix A of this report.

1.2 OTHER SOURCES OF DATA

Several related studies have been performed in the past several years, revealing much concurrence in both conclusions and recommendations. Included as references for this report are the following:

1. Chesapeake Bay Commission Response to Virginia General Assembly HJR 137, January, 1985 (House Document No. 28). In this study, the Chesapeake Bay Commission was requested to:

a. Assess the adequacy of staff resources of SWCDs and local governments to deal with nonpoint source pollution control, including implementation of the state sediment control law; implementation of the state 208 Agricultural Plan; and the provision of technical assistance to all farmers in critical or priority watersheds as determined by the Virginia Soil and Water Conservation Commission (now the DCHR/DSWC).

b. Assess the role and responsibility of state government in providing for adequate, trained staff to implement the erosion and sediment control law and to implement an agricultural Best Management Practices program.

c. Assess the role and responsibility of local government in providing for adequate, trained staff to implement these programs.

d. Examine potential revenue sources to provide for such staff and training.

2. A Report on the Implementation Effectiveness of Local Erosion and Sediment Control Programs in Virginia, October 1, 1985.
This was a quick survey performed by the DSWC technical staff for former Secretary of Commerce and Resources Betty Diener.

3. Stormwater Management in Virginia: Evaluation of the Institutional Framework, January 1986.
This report, performed by Dr. William E. Cox and graduate student Gordon M. Wells of the Civil Engineering Department at Virginia Tech, was part of a study funded by the DCHR under the Chesapeake Bay Initiatives. The study focused on stormwater management in urbanizing watersheds.

4. Control of Nonpoint Source Pollution in Virginia: An Assessment of the Local Role, February 1987, draft of a report in the publication process at the Virginia Water Resources Research Center.
This study, also performed by Dr. Cox and some graduate students, focused on the ESCL as the only regulatory program that addresses NPS pollution in Virginia at this time.

5. Effectiveness of BMPs for Stormwater Management in Urbanized Watersheds, June 1987, draft of a report in the publication process at the Virginia Water Resources Research Center.
Chapter 5 of this report, also written by Dr. Cox, deals again with the institutional framework for urban stormwater management. It provides the most comprehensive overview to date of current interaction between federal, state and local governments to resolve stormwater management issues, including the impacts of the 1987 Clean Water Act.

This report is an attempt to distill and summarize the voluminous information generated as a result of the consultant study, to incorporate relevant findings of the other referenced studies and to present independent conclusions and recommendations of the DCHR/DSWC regarding the operation of the Virginia Erosion and Sediment Control Program.

1.3 ORGANIZATION OF THE REPORT

This report is organized into sections and subsections in a logical progression to provide a clear picture of the current state of Virginia's ESC program. The next section describes the program by discussing the law, local program administration, state agency procedures and the tasks and involvement of the DSWC staff. Following that is a lengthy evaluation of program effectiveness based to a large extent upon the recently completed DCHR and Water Center studies as well as the other referenced sources. Next there is an evaluation of the training effort followed by a discussion of stormwater management in Virginia. Finally, there are sections summarizing the conclusions and recommendations of the Department of Conservation and Historic Resources regarding the Virginia ESC Program and related issues of stormwater management.

II. DESCRIPTION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL PROGRAM

2.1 THE LAW

The Virginia Erosion and Sediment Control Law (ESCL) was enacted to deal with soil erosion and sediment deposition, but it also has important water quality benefits. In addition, it provides the supplementary benefits of protecting landowners from property damage caused by erosion and sedimentation and thus the transfer of cost that often occurs as a result of noncompliance with regulations. The regulatory control program created by the ESCL involves both state and local governments with primary responsibility for program administration exercised by local governments.

ESCL requires erosion and sediment control programs to be administered by either the counties and municipalities or the state's soil and water conservation districts. But through the Virginia Department of Conservation and Historic Resources, Division of Soil and Water Conservation (DCHR/DSWC), which performs administrative functions for the Virginia Soil and Water Conservation Board -- previously the Soil and Water Conservation Commission and hereafter referred to as "the Board" -- State government exercises certain responsibilities.[3] The primary state responsibility is the establishment of guidelines for erosion and sediment control. Legislation requires the Board to "establish minimum standards, guidelines and criteria. . . which must be met in any control program."[4] These are available in the current edition of the Virginia Erosion and Sediment Control Handbook (1980).

Local control programs must be consistent with the standards contained in state guidelines. The Board is responsible for development of local control programs where the appropriate soil and water conservation districts or local governmental units fail to act.[5] However, the state does not administer such a program after development but instead turns it over to the appropriate political subdivision.

ESCL requires that either counties and municipalities or soil and water conservation districts adopt erosion and sediment control programs consistent with state guidelines. The option was provided for programs to be adopted by counties, cities and towns (town and county programs can be combined) with district programs authorized in the absence of county or municipal programs.[6] Most of the localities have elected to adopt their own programs; consequently, district programs have not been widespread.

The primary purpose of local erosion and sediment control programs is control of "land disturbing activity," a term defined to exclude agricultural, silvicultural and horticultural activities; mining; disturbed areas for developments less than 10,000 square feet; construction areas disturbed for single-family homes unless constructed as part of a subdivision development; and certain

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[3]The Commission was renamed the Virginia Soil and Water Conservation Board as of Jan. 1, 1985, with the Division of Soil and Water Conservation of the Department of Conservation and Historic Resources to provide administrative and technical functions (Virginia Code Annotated secs. 21-6 and 21-7 Supp. 1985).

[4]ESCL supra n. 1, sec. 21-89.4 (1983).

[5]Id. sec. 21-89.5(d).

[6]Id. sec. 21-89.5(c)

utilities, among other things.[7] Any party engaging in a "land disturbing activity" must submit and receive approval for an erosion and sediment control plan before the work can proceed. No other permits for the project may be issued without an approved plan. Localities may charge a processing fee (up to $300) to defray costs.[8] Local governments may require security for performance such as a "reasonable performance bond, cash escrow, letter of credit, any combination thereof, or such other legal arrangement acceptable to the agency, to ensure that measures could be taken by the county, city or town at the applicant's expense should he fail to initiate or maintain appropriate conservation action...."[9]

Violations of this law "shall be deemed a misdemeanor and upon conviction shall be subject to a fine not exceeding $1,000 or 30 days imprisonment for each violation or both."[10] ESCL contains no provision for imposition of civil penalties. An additional enforcement option was added by a 1986 amendment authorizing issuance of administrative stop-work orders. The stop-work order generally can only be issued where a permittee has failed to meet a Notice-to-Comply. Such a notice must identify measures needed for compliance with the erosion and sediment control plan and must specify a time limit for completion. However, the stop-work order may be issued without regard to whether the notice to comply has been issued in situations where "... the alleged noncompliance is causing or is in imminent danger of causing harmful erosion of lands or sediment deposition in waters within the watersheds of the Commonwealth..."[11] The stop-work order is limited in application only to the land disturbance part of the project.

The state also has limited powers under the act regarding administration of control. The Board is directly responsible for reviewing and approving plans for land-disturbing activities in two situations: (1) state agency projects, and (2) other projects involving lands under the jurisdiction of more than one program, provided the applicant elects to apply directly to the Board rather than to the individual jurisdictions.[12]

The Board is authorized upon appeal to review local program decisions where a local program is administered by a soil and water conservation district,[13] but the review powers of the Board do not encompass decisions of counties and municipalities. This potential review function has not become a significant state responsibility since most counties and municipalities have adopted control programs in lieu of district administration. The Board is authorized to request the Attorney General to take legal action to enforce provisions of ESCL.[14]

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[7] Id. sec. 21-89.6(a)

[8] Id. sec. 21-89.5(e).

[9] Id. sec. 21-89.7.

[10] Id. sec. 21-89.11(a).

[11] Id. sec. 21-89.8(d)(Supp. 1986).

[12] Id. sec. 21-89.6(a,f).

[13] Id. sec. 21-89.10(b)(Supp. 1986).

[14] Id. sec. 21-89.11(c).

2.2 LOCAL PROGRAM ADMINISTRATION

Based on provisions of the law, there are currently 171 independent local ESC programs covering all non-federal land in Virginia (95 counties, 41 cities and 35 towns). The programs rely, to varying degrees, on the 45 SWCDs for review and, in some cases, approval of ESC plans, inspection and enforcement. The reliance ranges from total dependence on the Lonesome Pine SWCD in Buchanan County to no SWCD involvement at all.

Each local ordinance designates a local official as the "Program Administrator" and an official or agency as the "Plan approval Authority." Depending on the size and sophistication of the local government staff, those positions may be held by the same person or different people, ranging from the building official through engineers or planners to the Chief Administrative Officer of the local governing body or Chairman of the local SWCD.

The program administrator is ultimately responsible for implementation of the entire ESC process. The plan approval authority is responsible for comparing the submitted control plans with the established local technical standards, which may be more stringent than the state's minimum standards.[15] Plans are approved if they are in compliance. Local governments with little or no technical expertise among their staffs generally rely on the SWCDs for plan approval. Fifty-seven local programs have SWCDs approving plans. If review/comment time for a particular plan exceeds 45 days, the plan becomes approved by default.

The ESCL authorizes local programs to issue permits which may be revoked for noncompliance.[16] Over 85 percent of the programs do issue permits for land-disturbing activities.

The ESCL requires either the plan approval authority or the permit issuing authority to provide for periodic inspections to ensure compliance with the approved plans.[17] Where permits are not issued, the person responsible for carrying out the plan may be required to submit periodic reports of compliance, though this option is not used often.[18]

When violations of a plan are discovered, the Notice-to-Comply is the first enforcement action called for in the ESCL. Often local inspectors give verbal warnings and deadlines before any formal action is taken. If the formal notice is not satisfied, several enforcement options may be exercised, including revoking the permit, executing the performance bond, issuing a stop-work order, requesting an injunction or filing criminal charges.

The ESCL designates the Commonwealth Attorney to pursue legal remedies on behalf of the local government or SWCD, [19] but in practice, City and County attorneys also view themselves as having authority to enforce the statute. The use of the word "shall" in regard to Commonwealth Attorneys and the State Attorney General taking enforcement action can be misleading in that both appear to consider a request to enforce simply a request upon which they have discretionary

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[15] Id. sec. 21-89.12.

[16] Id. sec. 21-89.7.

[17] Id. sec. 21-89.8(a)

[18] Id. sec. 21-89.8(b).

[19] Id. sec. 21-89.11(c).

authority either to act or not act, depending upon the merit of the case.

In the case of multi-jurisdictional projects that elect to have control plans approved by the Board, the local governments involved are provided an opportunity to comment on the plans. Following plan approval, the local governments are responsible for inspection and enforcement for the portion of such a project that falls within their jurisdictions.

Sometimes the DSWC staff will be called upon to mediate ESC complaints or disputes that are not resolved by local program officials. Local officials also occasionally request limited technical assistance from the DSWC staff when situations are considered beyond their capabilities.

2.3 STATE AGENCY COMPLIANCE

The ESCL requires state agencies to submit to the Board either a conservation plan for each project or a set of specifications which are consistently followed by each of the agency's projects.[20] Such specifications are submitted and reviewed annually. Conservation plans for individual projects are submitted on a case by case basis. Currently the Virginia Department of Transportation (VDOT) is the only agency that has chosen to submit ESC specifications. The Board has 60 days to review and comment on either specifications or individual conservation plans, after which they become approved by default.

The law requires the state agency sponsoring the construction to ensure compliance. State agency contracts for capital construction generally require the contractors to comply with all approved plans and specifications and applicable regulations. Therefore, ESC enforcement on such projects is geared more toward getting contractors to honor their contracts than toward the use of enforcement techniques provided in the ESCL. In practice, the Board has held the agencies responsible for both inspection and enforcement, with occasional oversight and complaint response provided by DSWC personnel. However, as plan approval authority for individual state projects not under separate specifications, the Board could conceivably assume a greater authority for inspection of those projects, since there are no permits issued for state land disturbing projects.

As a holder of annually approved ESC specifications, the VDOT enjoys a great deal of freedom in implementing erosion and sediment control on road construction projects. Plans and specifications are applied to individual projects with little or no further oversight. As with private projects, the DSWC staff is called upon occasionally to mediate complaints that VDOT officials have been unable to resolve.

2.4 DSWC STAFF INVOLVEMENT

As previously noted, the ESCL is administered at the state level by the Soil and Water Conservation Board. The Board retains the authority to approve local ESC programs, state agency ESC specifications and state minimum technical standards. It also has the authority to review appeals of local program decisions rendered by SWCDs and to initiate enforcement actions through the office of the Attorney General.

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[20] Id. sec. 21-89.6(f).

The Director of the Department of Conservation and Historic Resources provides professional staff for functions of the Board[21] through the staff of the DSWC. The majority of administrative functions for the ESC program are carried out by the technical staff of the DSWC. Originally that staff had a maximum of six professional employees whose sole objective was the administration of the ESCL. Through state employee cutbacks, staff reassignments and the addition of responsibilities under the Chesapeake Bay Initiatives, the DSWC currently has two professional employees whose primary responsibilities are the administration of this program.

The two technical staff members assigned to this program are responsible for the following program activities:

1. Monitoring and communicating amendments to the ESCL.

2. Keeping abreast of the latest technology and procedures regarding erosion and sediment control.

3. Coordinating review and revision of technical standards and guidelines in accordance with the Virginia Administrative Processes Act.

4. Providing legal and technical advice and assistance to local ESC programs and SWCDs.

5. Reviewing and approving state agency project plans and, in the case of VDOT, the annual submission of ESC specifications.

6. Monitoring state project compliance with approved plans and specifications.

7. Providing technical training in erosion and sediment control administration and technology.

8. Resolving citizen complaints when called upon.

One item no longer on the above list due to the staff reductions is the performance of periodic local program reviews. In addition to the above activities, those two individuals act as project officers for various urban best management practice (BMP) research and demonstration projects undertaken as part of the Chesapeake Bay Initiatives.

The DSWC has a number of regionally-located personnel, called Field Specialists, who traditionally acted as liaisons between the agency and the SWCDs within their regions. Several years ago, as part of the agency reorganization, the number of Field Specialists was increased from four to six by reassigning two members from the technical staff. The intention was that these six personnel would, in exchange for smaller individual areas of responsibility, assume some aspects of the Division's ESC program implementation. Specifically, they were to become involved in local program reviews, state project inspections and ESC complaint responses.

However, shortly after that staff realignment, the DSWC assumed significant responsibilities for urban and agricultural NPS pollution control efforts under the Chesapeake Bay Initiatives. The additional workload for the Field Specialists has resulted in a lower priority and level of effort for ESC issues than originally planned. The priority and level of effort varies among the six Field

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[21] Soil and Water Conservation District's Law, Virginia Code Annotated, sec. 21-7 (1983 and Supp. 1987).

Specialists depending on the intensity of urban development within their regions. However, their involvement in the ESC program is basically confined to occasional inspections of state construction projects within their areas and responding to citizen complaints when their schedules allow. The technical staff responds to citizen complaints if the Field Specialists are unable to address them.

III. EVALUATION OF THE PROGRAM

3.1 THE LAW

To evaluate the adequacy of the ESCL, Virginia statutes dealing with erosion were collected and reviewed. The subjects addressed by statute in Virginia included agricultural soil conservation and erosion, erosion of privately owned shorelines, erosion of public beaches and urban erosion and sediment control.

Precedent specifically dealing with the statute at the highest court levels is nonexistent in Virginia. One federal case involving the statute was found and examined. A total of 33 local Virginia court cases were examined. Of these cases, 20 resulted in convictions (a lower rate of conviction than Commonwealth Attorneys usually enjoy) with penalties ranging from court-ordered compliance (no fine) to a $300 fine. Penalties were fines rather than incarceration, and the average fines was slightly less than $90. Penalties of such magnitude provide little deterrent to a developer.

Under Section 21-89.11(c) of ESCL, only the Commonwealth Attorneys and the State Attorney General, have specific authority to enforce the provisions of the statute. Yet, in practice, as borne out by survey, City and County attorneys view themselves as also having the authority to enforce the statute. Under the statute, a Commonwealth Attorney, at the request of a SWCD, county, city, town or the permit-issuing authority, shall take legal action to enforce the statute. Similarly, the State Attorney General, upon request of the Board, shall take action to enforce the statute. As mentioned earlier, the use of "shall" in regard to the Commonwealth Attorneys and the State Attorney General taking enforcement action can be misleading in that both appear to consider a request to enforce simply a request upon which they have discretionary authority either to act or not act, depending upon the merit of the case.

Based on a detailed study of Virginia's ESCL and a comparison of the national model act, statutes, regulations, guidelines and other supplementary materials from Maryland, Pennsylvania, North Carolina and Ohio, the following conclusions were drawn with regard to items which should be considered for Virginia's program:

1. Virginia's guidelines and minimum standards appear to address stormwater without specific statutory basis. The ESCL requires that the Board establish "minimum standards,guidelines and criteria for the effective control of soil erosion, sediment deposition and nonagricultural runoff..."[22] The law is not specific about the objectives of runoff control or the degree to which it can be controlled. This issue will be discussed further in the section of this report entitled "Stormwater Management."

2. The model act and two other state acts provide for the identification of critical resource or erosion areas, an activity not currently authorized by Virginia's ESCL.

3. Virginia's minimum standards appear to be anomalous in that they permit, unsupported by statute, less stringent standards to be applied on a case-by-case basis through a variance procedure. However, the standards do require both that each performance requirement be considered in the planning stage and that the applicant must request and justify variances from specific criteria. Such flexibility was considered reasonable since ESC requirements vary so much from both site to site and region to region.

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[22]ESCL Supra n.1, sec. 21-89.4(a).

Also, the program standards may be perceived to conflict with a section of the law that requires mutual approval by the plan approval authority and the applicant of any plan changes made following plan approval.[23] The standards establish that compliance with the General Criteria is automatically presumed to be included in the approved plan. Therefore, an inspector could require a plan change on the site to achieve compliance with a violated criterion without the approval of the applicant.

4. The model statute and the acts of states other than Virginia averaged seven exemptions. Virginia has approximately three times as many exemptions as the other programs.

5. ESC Standards are applicable to agriculture in the model act and in one other state act and to silviculture in the model act and in the acts of three other states, but not in Virginia's statute.

6. Several states specifically provide that federal land disturbing activities shall be approved at the state level. In addition, since 1972 the Federal Clean Water Act has required agencies of the federal government to comply with state and local pollution control requirements, including payment of reasonable service charges. Virginia has large federal land holdings present within its borders, many of which border the Bay or its tributaries, but construction on federal land is currently exempt under the ESCL.

7. Virginia is the only state surveyed with a "grandfather clause."[24] This provision is of questionable value in a program that is 14 years old.

8. ESC programs examined from other states indicate two major implementation philosophies. One gives all authority to the state government, allowing that authority to be delegated down to the local level provided the local government can prove its capability to implement the program according to the state's standards. The other approach, as followed in Virginia, assigns most of the authority for implementation to local governments, with the state government maintaining some implied or specified authority to be applied as necessary. In either case, several states have specific provisions for state implementation at the local level if the local government fails to do so.

9. Mandatory periodic inspections are required by statute for general land disturbing activities in only one other state. A statute should generally permit inspection and reporting requirements to be placed on the person responsible for the project. Virginia's statutes permit this in limited circumstances.

10. There is some question concerning whether Virginia's "guidelines" clearly have the force of law.

11. Fees should reflect the costs of program administration. The ESCL is unique among land-development regulatory programs in its imposition of an upper limit for fees. For instance, state Subdivision Law provides for the collection of "reasonable fees" with no specified limit.[25] Likewise, the State Building Code Law authorizes fee recovery for necessary enforcement

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[23] Id. sec. 21-89.6(d)(1a).

[24] Id. sec. 21-89.15.

[25] Land Subdivision and Development Law, Virginia Code Annotated, sec. 15.1-466(i)(1981).

actions,[26] and the Building Code itself authorizes a fee schedule for administration of that program,[27] neither with a specified limit.

12. Virginia's guidelines provide for state review of local programs without a statutory basis. Periodic review of local programs is very important in achieving program effectiveness. This issue should be clearly addressed in the statute.

13. Education and training are addressed in the Virginia guidelines but not in the Virginia statute. The importance of education and training warrants statutory provisions requiring that a mandatory education and training program for land disturbers and/or ESC program officials be carried out according to state requirements. In addition, consideration should be given to certifying ESC inspectors in a manner similar to certification of building inspectors. Such a certification program should result in more credibility for the inspector, better quality control for projects and more consistency in program implementation from one locality to another.

14. Performance guarantees contingent upon project compliance should be generally mandatory. In the Virginia statute, performance guarantees are not available for some land disturbing activities and are optional for others. The guarantees are not related to the project as a whole but only to the land disturbing activity.

15. In the model act and in the acts of two other states, citizens may bring injunctions under the statute. This option is not available in the Virginia statute.

16. Three states provide for both criminal and civil enforcement. In one state a schedule of administrative fines was promulgated so that violators could pay an automatic fine in lieu of going to court. Civil penalties may address failure to install, failure to maintain and the cost of maintaining erosion and sediment control structures. One state's statute provides for a civil penalty that is twice the cost of installation and maintenance. Two states' statutes provide that damage awards be placed in a special fund to be used for control plan implementation/maintenance, program administration or education and training.

17. Virginia's law is not clear in terms of what constitutes a "separate violation" subject to criminal penalties. Several other states consider each separate day of an uncorrected violation as a separate violation.

18. In the absence of clear state authority over local programs, consideration should be given to granting the Board concurrent enforcement authority over locally regulated projects. This would enable the Board to intervene when local governments fail to pursue necessary enforcement.

19. The Board should be authorized by statute to delegate specific day-to-day administration authority for the ESCL to the Director of the DCHR, with the Board retaining more general authority and ultimate responsibility for the program. For example, such delegation is authorized under the State Water Control Law.[28]

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[26]Uniform Statewide Building Code Law, Virginia Code Annotated, sec. 36-105(1981).

[27]Virginia Uniform Statewide Building Code, Vol. 1, sec. 103.9.2(1984).

[28]State Water Control Law, Virginia Code Annotated, sec. 62.1-44.14(1982 and Supp. 1986).

20. Language in the ESCL authorizing establishment of local programs can probably be simplified now that all programs are in place. Under the current legal structure, the only local governments that might still wish to establish independent programs are incorporated towns currently subject to county regulations. There is also a confusing issue regarding the Board's requirement to adopt a program for local implementation by any town that neither adopted a program on its own initiative nor agreed by resolution to become subject to the county program.[29] Under most state law, such a town which initiated no action would automatically be subject to the county program.

21. Several Code Commission-type changes in the law would remove some confusion. Certain agency names have changed, certain terminology should be made consistent and references to guidelines, standards and criteria should be changed to "regulations" to conform with the Administrative Processes Act, which did not exist when the ESCL was drafted.

22. Additional definitions would clarify the meaning of certain terms and perhaps eliminate some perceived loopholes in the law.

3.2 TECHNICAL GUIDELINES

The Virginia Erosion and Sediment Control Handbook was first published in 1974 and revised in 1980 to satisfy the requirement in the law for guidelines, standards, criteria, techniques and methods. The 1980 revision occurred before the passage in 1984 of the Virginia Administrative Processes Act (APA). However, there was considerable public contribution and review in that revision process through requirements in the ESCL for an advisory board[30] and public hearings.[31] The format of the Handbook, although based on 15 years of tradition and familiarity among users of such documents up and down the eastern seaboard, is probably not consistent with the APA requirements. Furthermore, the entire Handbook is currently listed by the Code Commission as regulation when, in fact, only one chapter contains true regulatory language. Guidelines constitute the rest of the material.

In anticipation of another revision, the Board formed an advisory committee and conducted meetings during the winter of 1985-86. The committee was composed of 20 members, representing the state homebuilders and general contractors, professional design consultants, academia, county and municipal governments, SWCDs, interested state and federal agencies, environmental organizations, private citizens and the General Assembly. A public participation mailing list of nearly 150 interested persons was also solicited. That process resulted in a list of recommended revisions to the technical standards, reflecting improvements in technology and experience in application of the available methods. Action on those recommendations was delayed pending the completion of this study.

The questionnaires for this study included a number of questions concerned with the adequacy of the program's technical standards. The consultants determined that there do not appear to be any critical omissions in the Handbook. Questionnaires revealed that 85 percent of the respondents, across all subcategories, consider the criteria, standards and specifications to be "clear and understandable" and the regulations to be "reasonable to implement." Also, 95 percent said that the

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[29] ESCL Supra. n.1, sec. 21-89.5(c).

[30] Id. sec. 21-89.4(a).

[31] Id. sec. 21-89.4(b).

current regulations are "effective in reducing erosion and sedimentation problems if properly implemented." Over 70 percent felt that changing the format of the Handbook would "hinder understanding" or "create confusion." Over 90 percent of the respondents do not believe ESC standards are in conflict with other state or local regulations.

Such support generates concern about forcing the Handbook into a new and strange (to the users) format, in the sense of, "if it ain't broke, why fix it?" Based on a limited understanding of the APA, DSWC personnel believe that the regulatory language could be extracted and codified appropriately within the current Handbook format. Such a compromise could satisfy the APA requirements sufficiently while continuing a format that works for the users. This would allow the continuation along with the regulations of guidelines which are important aides for effective implementation.

Maryland's equivalent Handbook is officially considered to be a set of "guidelines" rather than regulations, even though the various control methods contain requirements to do things in specified ways (i.e., regulations). But the Maryland "guidelines" are promulgated and revised with the involvement of an advisory committee and public hearings, as is currently done in Virginia; thus, the Maryland legislature has deemed that process sufficient in providing public involvement and review.

3.3 LOCAL PROGRAM EFFECTIVENESS

SDN sent questionnaires to all 171 local ESC programs in the state, the 44 SWCDs, and approximately 300 Commonwealth, City and County Attorneys. The questionnaires sent to local programs and SWCDs included 128 questions covering all aspects of program implementation. The questionnaires sent to the attorneys included 50 questions, dealing mainly with the law and enforcement issues. Approximately 42 percent of the local program questionnaires and 45 percent of the SWCD questionnaires were returned. The response from the attorneys was only 18 percent because, usually, only the attorney responsible for ESC issues responded. In some cases the attorneys may have answered the legal and enforcement questions on the local program questionnaire and not returned their own. Additional data was drawn from the findings of a short questionnaire distributed by the DSWC in 1985 (referenced in the Introduction of this report).

In addition to the questionnaires, SDN and DSWC staff members selected six local programs for on-site interviews similar to the local program reviews conducted by the DSWC several years ago. In these interviews SDN and GKY professionals obtained more varied and detailed information about the local program implementation than could be derived from questionnaires alone. The interviewers also looked at examples of typical control plans approved by the locality and visited sites under construction to assess compliance with approved plans. Those construction site visits resulted in eight "case studies" described in the consultant report. The six local programs interviewed were as follows:

1. Lancaster County (rural, coastal plain)

2. Page County (rural, mountain-valley)

3. Culpeper County (moderate development, piedmont)

4. James City County (moderate development, coastal plain)

5. Chesterfield County (intense development, fall line)

6. Prince William County (intense development, fall line)

Another important source of information was a draft report entitled Control of Nonpoint Source Pollution in Virginia: An Assessment of the Local Role, currently being prepared for publication by the Virginia Water Resources Research Center. Included as a major component of that study were on-site interviews with eighteen local ESC programs, sixteen of them different from the six selected for this study. Those programs were also selected to represent a mix of geographical regions, population and degrees of urbanization. Included in that study were the following local programs:

1.	Town of Abingdon	10.	City of Manassas
2.	City of Chesapeake	11.	City of Martinsville
3.	Chesterfield County	12.	Rappahannock County
4.	Town of Culpeper	13.	City of Richmond
5.	City of Fredericksburg	14.	Roanoke County
6.	Gloucester County	15.	Rockingham County
7.	Henry County	16.	Russell County
8.	James City County	17.	Stafford County
9.	City of Lexington	18.	Wise County

The questionnaire for the Water Center study was much shorter and the interviewers did not review plans or assess on-site compliance. Otherwise, the interviewers sought similar information.

3.3.1 General Administration

In a majority of cases (65 percent), the ESC program is administered entirely by the local government. However, 23 percent of the responses indicated that ESC plan approval was the responsibility of the SWCD. Generally, it is felt that good coordination exists between the state and local agencies as well as among the various local offices charged with ESC responsibilities. Most of the respondents did not want to see the responsibility for the ESC program given to another agency. Based on the SDN study, Table 1 shows the variety of local offices involved in the ESC program in municipalities.

Most local governments do not have a line item in their budgets for the ESC program. The issue of processing fees is paradoxical. While most municipalities charge a nominal fee for processing ESC plans, 71 percent of the responses indicate that the fee is not adequate to cover the expenses involved in program implementation. However, few municipalities charge the maximum allowable fee of $300, and most municipalities indicate that the fee should be below $200. They feel the developer should bear the cost of erosion and sediment control, but they do not charge adequate fees. This trend has created perceptual problems for legislators being asked by aggressive local programs to raise or, preferably, remove the fee limit so that they can recover their administration costs.

There appears to be substantial variation among localities in perceptions of regulatory powers granted by existing enabling legislation. In addition to differences in interpretation of enabling legislation, differences in level of support by local elected officials is a significant factor in this

TABLE 1
Municipal Offices With Responsiblities
For E&S Control Program

	County Admin. City or Town Manager	Building Inspector	Engineering	Commonwealth Attorney	City/County Attorney	Planning	Zoning	Community Development	SWCD	Others
Overall Admin.	11	13	28	0	0	7	15	3	1	5
Permitting	5	28	20	0	0	6	5	4	1	13
Approval	4	7	24	0	0	9	4	4	2	9
Inspection	4	28	26	0	0	6	4	2	4	11
Enforcement	6	24	23	1	0	7	5	3	0	13
Litigation	7	6	7	13	19	4	2	2	0	9

variation. Political influence in the administration of programs is generally subtle and difficult to document, but the case studies produced various indications of political influence in certain local programs. Examples of political influence included apparently arbitrary mandates which shortened plan review times in an effort to reduce burdens placed on developers; intercession on behalf of a particular development project; and creation of a general climate adverse to rigorous enforcement of program requirements. On the other hand, political influence has resulted in more vigorous enforcement in communities wishing to control growth.

The list of exempted activities in the ESCL has been the source of a number of "loophole" claims on the part of land developers. Some of those claims have been allowed from time to time by local programs which don't understand the law. For instance:

1. Sawmills have been developed in several counties without ESC compliance, claiming the silviculture exemption. However, the silviculture exemption applies only to tilling, planting and harvesting of the crops.

2. Many individuals claim that their soil borrow pits are exempt as "surface mines" of soil. Of course, no effort is made to comply with similar regulations for surface mining either.

3. In Southwest Virginia, the feeder pipelines from new natural gas wells were being built without ESC plans until recently because they were not specifically included in the Section 45.1-311(e) of the Virginia Oil and Gas Act and such projects have not traditionally required permits from local governments.

4. Land developers have bought large farms, cleared timberland and built ponds claiming various agricultural exemptions and then subdivided and developed the land for other uses.

5. Many people have claimed that their particular sites were grandfathered, even after a dozen years of the law's existence.

6. Subdivisions have been constructed claiming the single-family dwelling exemption by recording single-lot subdivisions or developing non-adjacent lots.

7. The utility exemption has often been interpreted to include <u>all</u> utility projects, not just those specified.

Variations in program effectiveness reflect, in part, differences in development rates and corresponding program workloads. In rural areas, program administrators are less confident about their authority to encourage early compliance with the law. The interviews conducted by the study consultants indicate that systematic procedures for evaluating program performance toward specific objectives and program development are essentially nonexistent at the local level although individual attempts to introduce program improvements have occurred. In rural communities, program objectives often appear vague. General perceptions of ineffectiveness were sometimes expressed without accompanying suggestions for improvement. In one rural locality where no erosion and sediment control plans had been submitted, the program administrator described his approach to the program as "letting sleeping dogs lie." General attitudes toward program improvement appeared more positive in urban and semi-urban localities.

Few of the rural communities utilize checklists to educate developers regarding requirements of the law. In localities in which plan review is conducted by the SWCD, confusion sometimes exists concerning responsibility for enforcing plan submittal. The methods used to identify

developers who failed to submit a plan frequently are haphazard and do not involve cross-compliance procedures. Grading is often allowed to occur prior to site plan approval.

In the urban and semi-urban areas, general attitudes toward program improvement appeared to be more positive. Use of checklists to ensure understanding among developers of the requirements of the law is common. Grading is more likely to be delayed until the submittal of an erosion and sediment control plan through the use of a conditioned grading permit. Cross-compliance measures are frequently used to insure compliance with various land-use regulations.

The nature of procedures for initiation of controls generally indicate the overall approach to administrative procedures. Localities with well-defined procedures for initiation of controls usually have standardized decision steps while those without such procedures generally lack substantial standardization. In spite of the provision of a sample checklist provided by the Board in the State Handbook, few rural communities use this procedure. Enforcement procedures frequently appear haphazard and non-uniform. In comparison, most of the urban localities have adopted standardized procedures.

In general, lack of manpower, too many exemptions, weak penalties, and lack of judicial support were identified as significant impediments to effective program implementation.

3.3.2 Plan Review

Of those responding, 38 percent spent one week or less (duration) interviewing plans and 38 percent spent one to two weeks in the review process. Only seven percent spent more than four weeks in the review process.

Most of the municipalities (37 percent) process less than one ESC plan per month. Only four percent process more than 100 per month. About two-thirds felt that the majority of the plans were technically adequate, although the approval rate upon first submission of the plans is low. In general, only minor revisions are needed before plan approval. Almost all of the plans viewed by the study consultants during the on-site interviews were of good quality.

Lack of standardization appears to create problems in the areas of variances and dispute resolution. Provisions for granting variances of program standards often appear vague and largely depend on the discretion of the official involved. The most commonly mentioned approach was development of a compromise between the initial positions of the program official and the developer. Procedures for resolving disputes sometimes take the form of open-ended negotiations not subject to time limits or other specific guidelines.

It is important to note that most municipalities (69 percent) do not want others to assume responsibility for review and approval of ESC plans or authority for administrative review of local ESC permit decisions. Slightly more than one-third of the localities assessed in the Water Center study indicated a willingness to accept such a review if the authority were limited to consideration of effects of greater than local (interjurisdictional) concern. Of those localities who did wish to place the ESC responsibilities elsewhere, the state agencies or SWCDs were suggested, and lack of time was the reason cited.

Some problems have surfaced regarding communication between some SWCDs who approve plans and their related municipalities. In some areas the local governments are allowing land disturbance to occur prior to SWCD plan approval or without a plan altogether. In other cases, municipalities are not enforcing compliance with SWCD-approved plans. Some of the affected SWCDs have expressed the concern that the time committed to reviewing plans not implemented is wasted and

could be more effectively applied to more aggressive agricultural conservation programs enacted under the 1985 federal Food Security Act (farm bill) and the Chesapeake Bay Initiatives.

3.3.3 Inspection

Adequacy of inspection and enforcement is especially dependent upon two of the factors considered previously: adequacy of staffing and the extent to which systematic procedures are employed. Inadequacies in staffing generally are reflected in inadequate inspection. Several program administrators acknowledge inspection weaknesses as a significant program deficiency.

In most municipalities, ESC site inspections are made by personnel who have other duties of equal or more importance (97 percent). In 54 percent of the responses, ESC inspection is a minor function.

Usually (49 percent) three or more inspections of a site are conducted after construction is initiated, although some municipalities never inspect a construction site. Many inspect on an "as-needed" or complaint basis. Most site inspections require one-half hour to an hour, including travel and report preparation.

During a site inspection, about 50 percent of those responding request to see the ESC plan, and it is generally available. If the plan is unavailable, a variety of excuses are given by the contractor, including not knowing that the ESC plan is supposed to be kept on site.

The extent of the use of systematic, documented inspection procedures varies substantially among local programs. Documentation of inspections is rarely used in rural localities except where violations are found. Procedures for remedying violations are often informal and undocumented. This is true despite recommendations in the ESC Handbook and training seminars concerning use of standardized forms. The semi-urban and urban programs more commonly document inspections and use standard written notices to correct noncompliance. Larger programs typically document all inspections by using an inspection log.

ESC plans are usually (78 percent) at least partly implemented in the field. One indication of this is that visible control practices are much more widespread now than they were even two or three years ago. However, looks can be deceiving. Control measures are often installed improperly, and even those that are correctly installed are usually not properly maintained. Maintenance is widely judged to range from acceptable to poor. Residential and commercial projects generally give the municipality the most ESC problems. The eight site inspections described in the SDN report as case studies included various types and sizes of development. Many of those sites exhibited serious deficiencies in ESC compliance.

3.3.4 Enforcement

The majority (54 percent) of the respondents indicated that enforcement poses problems, with the lack of manpower listed as the overwhelming reason for such problems. Such a response obviously links enforcement to the inspection process. Other reasons included lack of support by municipal administration, elected officials and the judiciary.

The range of available remedies is also considered a factor limiting effective enforcement. As Al Capone once said, "You can accomplish a lot more with a kind word and a gun than with a kind word alone."

The problem with verbal warnings and the Notice-to-Comply is that they are mere notices that a violation exists. Such a violation doesn't become subject to true enforcement until the

compliance deadline is passed. Likewise a permit revocation, which is seldom used, accomplishes little if the contractor chooses to continue working.

Most municipalities require some type of performance surety to insure that ESC plans are properly installed and maintained. Rural areas generally do not require sureties as a condition of plan approval. Reliance on the reputation of local contractors is frequently mentioned as a reason for not securing sureties for the proposed projects. Only one of the rural communities interviewed requires sureties, with only fifty percent of the total estimated costs of implementing the ESC plan covered. The same community stated that although no bonds had been forfeited, letters of credit had been called upon at least twice. Generally, performance bonds seem to present the greatest problems in obtaining release.

The semi-urban localities see a greater need for sureties. One locality varies the amount based on the size of the project, but the rest of the semi-urban localities require sureties in an amount of 100-115 percent of the estimated plan costs. Developers in only about one-half of the semi-urban communities had forfeited sureties due to inadequate implementation of ESC plans, but most localities stated that threats of forfeiture had been made. The majority of the officials feel the threat of losing financial standing is a greater concern to the developers than the actual loss of a specific surety. As an example, one official spoke of a "blacklist" that circulates among developers and bondsmen identifying parties with poor reputations.

The established urban communities vary in their bonding requirements. While four of the six cities surveyed in the Water Center study require bonding, only one frequently uses bonding as an incentive to complete plans. In the smaller cities in which development occurs at a lower level, the reputation of contractors is seen as a form of insurance against default on implementation of ESC plans.

A number of localities consider sureties more important if dealing with an unfamiliar developer or contractor, especially those from outside Virginia. However, even then the process can backfire. In a prominent case in one county, an improperly constructed sediment basin dam washed out causing damage estimated from $90,000 to $100,000 to the downstream property. The ESC officials had been limited to collection of a maximum of $250 per acre for ESC bonds. The total ESC bond for that 18.6 acre project was $4,750. Replacement costs for the dam were estimated to exceed $100,000. The damage occurred prior to the adoption of the stop-work order, so that remedy was unavailable. The county's previous experience in ESC court cases had discouraged them from prosecuting cases. In the absence of clear, effective enforcement remedies, the county had to resort to a sequence of letters and ultimately withholding occupancy permits (a method of cross-compliance which is not currently authorized as an enforcement method). This case stretched out for two years before the dam, which will remain as a permanent fixture, was finally repaired.

Most respondents felt that performance sureties should be authorized for all land-disturbing projects, whether they involve permits or not. Ninety-four percent felt that the use of such guarantees should be allowed to repair damages. Others suggested that the ESCL should authorize local programs to bill the responsible person(s) for the difference of the actual cost of an action and a smaller performance surety that may have been used.

Performance guarantees are released within a widely varying number of days after the final inspection (from one to 365 days). The ESCL requires the release of the bond within "60 days of the completion of the land disturbing activity ..."[32] The Board has traditionally interpreted

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[32]Id. sec. 21-89.7.

"completion" to mean adequate restabilization of the disturbed area, which accounts for the variation. In addition, one performance standard concerning slope stabilization requires that a slope be designed and constructed so that it will remain stable for at least one year. This implies, then, that at least a portion of a performance surety might be withheld to ensure compliance.

Adoption of the administrative stop-work order satisfied to some degree the need for a more effective intermediate enforcement technique. However, a sizable number of respondents expressed concern that the stop-work order is related to the land disturbance part of the project only, and not the project as a whole. That limitation can inhibit its use. Typically, rough grading of a project, including installation of ESC measures, occurs as the first part of development. Grading often stops while the buildings and roads are built; then final grading is done. If violations, particularly neglect of maintenance, occur during the time between grading operations, there is no land disturbance activity to stop. This is also true of disturbed sites that are abandoned or left dormant for an extended period due to developer bankruptcy or other circumstances. A small number of respondents felt that the effectiveness of the stop-work order was further limited by its short duration of a only seven days.

Most felt that the $1,000 criminal penalty should not be changed. Those who desired a change suggested that the maximum fine be raised to $5,000. Also, the majority felt that the fine should be applied on a daily basis. The jail sentence of up to 30 days imprisonment was felt to be an effective deterrent, although there was no evidence that it has ever been applied.

An authorization for civil penalties which could be imposed by any unit of government with plan approval authority was overwhelmingly endorsed as a separate option, not just as a replacement for the criminal penalties. Most felt that civil penalties should also be imposed on a daily basis, with suggested penalties ranging from $100 to $1,000 daily. It is interesting to note that the U.S. Army Corps of Engineers recently assessed a $15,000 fine (of a maximum $30,000) on one of the contractors building the Powhite Parkway extension in Richmond due to his failure to install ESC measures and the resulting impact on some streams and wetlands. Also, Section 62.1-44.32 of the State Water Control Law provides for civil penalties of up to $10,000 per violation, with each day of non-compliance considered a separate violation. Penalties of similar severity are not currently available for similar violations under the ESCL. Many local officials felt that the penalty should be related to the nature or severity of the violation or the resultant off-site damages, while others have suggested that a schedule of administrative fines should be made available for violators who would prefer to pay an automatic fine rather than go to court (similar to traffic tickets).

No matter what type of enforcement mechanisms are ultimately authorized, there should be provision for the repair off-site damages as well as the repair or installation of ESC measures on the violating site. Repair costs can easily become excessive. For example, the costs resulting from erosion and downstream siltation, assume that removal of one cubic yard of silt from a downstream channel costs $20. If a one acre site erodes just one inch, that could deposit about 130 cubic yards of material downstream, and the removal cost would be about $2,600. This removal cost does not include other damages resulting from the downstream deposition. Therefore, to be commensurate with the damages, fines should be substantial.

There appears to be considerable confusion among local officials concerning who is actually subject to enforcement actions regarding plan violations. The law holds the landowner ultimately responsible for preparation and submission of an ESC plan.[33] A Notice-to-Comply is to be issued

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[33] Id. sec. 21-89.6(g).

to the "permittee"[34] or, where there is no permit, the "person who is responsible for carrying out the plan", [35] but those terms are not defined. Localities have expressed confusion as to whether the culprit is the property owner, the contractor, a sub-contractor or the developer. In some cases, local officials, including some attorneys, have expressed the frustration that ignorance of the intricacies of corporate law has made it difficult to identify and prosecute developers.

A number of local officials have indicated that their Commonwealth Attorneys are less than cooperative in assisting with ESC enforcement, usually due to the higher priority and time commitment given to more serious crimes. One Commonwealth Attorney was coaxed to write a letter warning a violator who had been out of compliance for over year that he must comply within 30 days or face prosecution. The deadline passed with no further action. The DSWC staff had been following that particular project due to citizen complaints, and noted that six to eight months later the areas in question were finally becoming stabilized as a result of some active seeding and some natural intrusion of weed species. In another case in which a DSWC staff member was subpoenaed to testify in court, the Commonwealth Attorney's preparation consisted of approximately 15 minutes of discussion prior to the trial, during which the state employee was asked by the attorney to explain the relevant issues. The case resulted in dismissal.

Lack of support for the erosion and sediment control program by the judiciary appears to be an obstacle to effective enforcement. Although many municipalities cited ESC violations during the last year (a total of over 2,000), only two criminal prosecutions and one conviction resulted. Fines levied in such cases are generally insignificant. Program administrators are generally dissatisfied with penalties imposed on violators. Typical fines levied in one county in which the program administrator has been active in litigation have ranged from $25 to $50. Such penalties have little deterrent value, even for the small contractor. As a result of the lack of judicial support and other problems, program administrators often indicate disappointment with enforcement of program requirements.

There is little evidence of the use of injunctions as authorized in the law.[36] And yet, the DSWC staff considers the injunctive process to be potentially one of the most effective enforcement tools available. The DSWC intends to develop and circulate some training aids concerning effective enforcement, in which injunctions will be more clearly explained and stressed.

Finally, most municipalities (65 percent) do not want another agency to assume responsibility for inspections and enforcement of ESC plans. However, there appears to be a clear dilemma about what action can be taken if an enforcement action is clearly called for and the local program refuses to act. No provision is made for state override of individual program decisions made at the local level (except in the case of decisions made by SWCDs, and then only on official appeal) or assumption of local enforcement authority by the state. One solution to this dilemma may be to give the state concurrent enforcement authority with local governments. Those local programs which wanted to see inspection and enforcement authority shifted altogether often cited lack of staff as the reason and recommended that the responsibility be given to the SWCD or a state agency.

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[34] Id. sec. 21-89.8(a).

[35] Id. sec. 21-89.8(b).

[36] Id. sec. 21-89.11(b).

3.3.5 Staffing

The evaluation of staffing information related to the erosion and sediment control program was based on the literature, the questionnaires, and interviews and site visits. Each of these sources provided significant and sometimes conflicting information on the current staffing situation, anticipated needs and the state/local relationship. In the survey conducted in 1985 by the DSWC staff, 54 percent of the respondents cited "lack of manpower" to be a "major or moderate" problem.

With respect to the number of personnel assigned to review and approve ESC plans, 41 percent of respondents claim to have from two to four people for review and approval while 32 percent claim the use of a single person. The number of personnel used for site inspection is also low with one person used a majority of the time (51 percent) followed by two to four people (33 percent). In comparing whether the same individuals who review the plans also make the site inspections, municipal respondents were equally divided between having no overlap among the individuals (42 percent) and actually using the same individuals for both tasks (45 percent). SWCD respondents, however, contend that some overlap exists between individuals performing each task (50 percent) or the same individuals performing both tasks (36 percent).

Respondents also provided data on what portion of the above personnel's time was spent performing plan review/approval functions and site inspections. A majority of respondents (56 percent) stated that ESC plan reviews were only a minor part of the individual's job. Nearly as many (40 percent) stated that the individuals spent equal time on plan review as on other duties. The same breakdown held true for individuals performing site inspections. These findings support the contention in the Water Center study that many ESC duties were thrust upon existing positions (building/zoning inspectors) instead of creating new positions.

In related matters, a large majority (70 percent) of respondents stated that they do not have consultants to assist them with plan review or site inspections. When consultants are used, they are generally hired on a case-by-case basis. Several questions dealt specifically with the training and experience of ESC plan review and inspection personnel. In municipalities, the largest single group (36 percent) are trained as engineers. The second largest group (22 percent) are trained as technicians. The third (19 percent), is the "other" category and contains a variety of titles including building inspectors, soil conservationists and those trained specifically for plan review. In the SWCDs, most plan reviewers are trained as technicians (33 percent), followed by the same type of titles found under the "other" category in municipalities (28 percent), and finally, as engineers (19 percent). The largest group of individuals performing site inspections are trained in inspection (42 percent). Many are also trained in construction (35 percent), as well as various "other" areas (23 percent), including erosion control, soil conservation, and landscape architecture, to name a few.

Typically, review time involves about five hours per plan and tends to require about 62 hours per month for each staff member (about 36 percent of staff time). This varies from county to county, but is generally regarded as being a greater burden than can be effectively accommodated given other staff responsibilities.

On an average, inspection time ranged from 30 minutes per site to three hours per site with each site visited from two to more than three times a month depending on need. Total inspector effort per month could not be estimated without data on average project length.

In general, the jurisdictions with larger staffs tended to want to control all elements of their ESC program with the state serving as a clearinghouse for information. The area with smaller

staffs recognized the importance of direct state help in the plan review process. Both types of jurisdictions hoped for larger staffs to more effectively fulfill current and anticipated workloads.

The following recommendations regarding staffing are based on observations of effective ESC programs in Virginia and elsewhere. The numbers stated should be used as guidelines and can be modified based on local conditions such as travel time to sites and terrain. The recommended staffing is for the ESC program only. Other duties will require additional staff hours. These staffing recommendations are based on the assumption that the ESC program will continue to function essentially as at present. That is, the counties and municipalities will administer the local programs and the state will furnish technical support and periodic local program reviews.

1. Plan Review and Approval
   At the local level, staff is required for plan review and approval. Based on survey results, it appears that eight hours per plan review, including travel to the site and time for ESC administration should be adequate. This assumes a mix of project sizes and complexities, moderate travel time, and some staff inefficiency. Also, some plans are resubmissions. Therefore, municipalities should provide a staff adequate to provide eight hours per plan review. For example, if the municipality receives an average of ten new ESC plan applications per month, they should provide eighty hours of qualified staff time for review and approval.

2. Inspection
   Inspection is related to the average number of active land disturbing projects ongoing at any given time. Based on two to three visits per site per month, a single inspector solely devoted to ESC activities should be able to oversee about 60 projects. This amounts to about 2.5 hours per project per month, and assumes a mix of site activity from active to dormant.

3. Enforcement
   Some projects will require more time for enforcement than others. Both the inspector and the reviewer will be involved. In assessing enforcement time, assume that about ten percent of the new projects require some type of enforcement action and that each action will require a total of ten hours of reviewer time and twenty hours of inspector time. Enforcement should be calculated as one hour per project application per month for the reviewer and two hours for the inspector.

4. Summary
   To summarize, the following monthly staff requirements are recommended for the E&S control program.

	Reviewer	Inspector
Plan Reviewer	8 hrs/application	---
Inspector	---	2.5 hrs/active project
Enforcement	1 hr/application	2 hrs/application

Example: On an average, a municipality receives 20 applications for E&S control permits per month. There are an average of 90 projects in various stages of completion at any given time. What are the municipal staffing requirements for ESC activities?

	Staff Hours Per Month	
	Reviewer	Inspector
Plan Review	8 x 20 = 160	---
Inspector	---	2.5 x 90 = 225
Enforcement	1 x 20 = 20	2 x 20 = 40
Total	180	265

Based on 160 hours of productive time per person per month (which assumes 10 percent staff inefficiency), the municipality would require about 1.1 full-time reviewers and 1.75 inspectors, each devoted entirely to ESC activities. For rural communities, the inspector and reviewer times would often be combined. The single person assigned to ESC activities should devote the appropriate total amount of time to the project.
Supervisory time is not included in the above hours. In larger ESC programs, a supervisor may be required for the review personnel and/or for the inspectors.

3.3.6 Training

Regarding training in either ESC plan review or site inspection, the majority (80 percent) of individuals performing these functions have had relevant training. This training most often comes from state ESC courses (51 percent) and on the job training (34 percent). Of those that did not receive training, many (46 percent) did not because: 1) they did not know courses were offered, 2) the courses are not offered at a convenient time, 3) the training was too time consuming or 4) the training is a low priority.

In response to whether or not a certification program for training in ESC should be required, a large majority (89 percent) agreed that there should be such a program. This feeling that certification is important corresponds to the strong recommendation made to Pennsylvania's Bureau of Soil and Water Conservation that certification be required as a way to increase ESC program effectiveness. It was also expressed (38 percent) that plan preparers, plan reviewers, site inspectors, and contractors should all be approved. This "all of the above" category was followed by respondents separately identifying the site inspector (22 percent), plan reviewer (16 percent) and plan preparer (13 percent).

3.4 EFFECTIVENESS ON STATE AGENCY PROJECTS

The Board, as plan approval authority for state construction projects, has promulgated guidelines for agency compliance. These guidelines are published in Chapter Seven of the State Handbook. In addition, the Bureau of Engineering and Architecture of the Division of Engineering and Buildings, Department of General Services, circulates to state agencies lists of regulations with which agencies must comply.

The Board requires that ESC plans be approved prior to land disturbance. The agency is asked to notify the DSWC staff at least one week prior to the beginning of construction so that the appropriate Division Field Specialist can be notified that the project is about to be activated. Field Specialists usually try to visit each project during the initial grading to monitor installation of the ESC measures; at least once during the remainder of construction; and to perform a final inspection to check the adequacy of stabilization and the proper removal of temporary controls.

The responsible agencies should, of course, provide more frequent inspections. Field Specialists notify a designated agency contact person about any plan violations or other concerns. The agency is then responsible to see that violations are corrected.

These procedures are occasionally circumvented by various agencies. Projects have been commenced without approved plans. Since the DSWC staff only learns of projects through plan submission, some projects have been nearly completed before Division personnel became aware of them through other sources. Often the construction commencement date is not reported, so there is no DSWC oversight during the critical phase of control measure installation. Field Specialists have also reported difficulty in getting agencies to correct violations.

In order to clarify procedures and provide an opportunity to resolve difficulties in achieving agency compliance, a half-day workshop was held during the period of study for state agencies involved in construction. Fifteen agencies were represented. At that meeting, agency representatives received their version of the study questionnaire. Only seven agencies returned questionnaires.

3.4.1 Plan Review Compliance

Four of the seven responding agencies indicated that they submit and receive approval of the ECS plans. Those who do not obtain approval cite undue delays as the reason. The DSWC staff contends that the non-compliant agencies must be confused about the process, since plan reviews usually occur within days of submission and approvals are usually achieved within two weeks. Three of seven agencies indicated that they notify the Division at least one week prior to beginning construction. Other than VDOT, the others cite too many projects, the need for immediate action, and lack of awareness of the requirement as reasons.

3.4.2 Inspection

Inspection of state agency projects is generally performed by agency personnel (40 percent), consultants (27 percent), and professional inspectors (20 percent). VDOT performs their own inspections, with over 700 employees involved in checking compliance. When inspection is performed by personnel of agencies sponsoring construction, two to three individuals are usually assigned to inspection. The individuals are assigned ESC site inspection in addition to other duties, with ESC responsibilities serving a minor function. Most are trained in construction or inspection.

Sites are inspected at least once per month, but some inspections are on-going and some projects receive more than three inspections per month. Inspections usually take one-half to one hour. The ESC plan is usually available on site.

Regarding implementation, half of the agencies thought the ESC plans were totally implemented on-site and half felt they were being partially implemented. Improper maintenance and lack of interest were cited as the problems resulting in improper implementation. The contractors' excuses for not installing ESC measures as designed are that they feel the measures are not necessary, they are not interested, or they have revised the ESC plan to fit "existing conditions." (DSWC plan review personnel are supposed to be informed of any suggested changes in approved plans and approve such changes prior to their implementation). Sites are always or selectively inspected after a large storm. All of the responding agencies claim to perform a final inspection for each project. Each of those agencies consider ESC matters to have a high priority, and according to the agencies, DSWC comments are addressed promptly by their ESC officers. As noted in Section 3.5, DSWC staff contend that a number of state agencies are not sufficiently responsive in correcting violations.

3.4.3 Enforcement

Half of the responding state agencies feel that enforcement of the ESCL presents a problem. Many reasons were cited, but lack of support and lack of concern were often cited. Those who do not receive adequate assistance, think that additional help should be provided by the DSWC or that they should have adequate in-house expertise.

Most felt that the $1,000 misdemeanor fine should be revised upward to as much as $5,000. Feelings were mixed on what constitutes a violation, but the majority (38 percent) felt that each day of an inadequacy constitutes a separate violation. Most did not consider the jail sentence to be an effective enforcement tool.

All felt that civil penalties would improve enforcement, and most felt that both civil and criminal penalties should be available. Daily civil penalties were favored, in the range of $500 to $5,000 per day. Agencies seem to favor basing the amount of the fine on the nature and severity of the violation or off-site damages.

DSWC staff have relied upon persuasion through the chain-of-command to get state agencies to enforce compliance with ESC plans. However, there have been situations where serious violations have taken considerable time to resolve, resulting in some environmental degradation. Such incidents have also resulted in criticism of state agencies by private citizens, private developers who must comply with similar regulations and local governments who must enforce them. There is a perception that state agencies should set a proper example in state-mandated regulatory programs. To achieve quicker attention to such violations, there is some sympathy among DSWC staff for use of the stop-work order on state agency projects.

3.4.4 Training

Most respondents (5 out of 6) stated that individuals that perform ESC inspections have had training. The source of this training was equally divided among state ESC courses, college, and on-the-job training.

The training they receive is in either construction or inspection (50/50). A majority of the respondents (4 out of 7) state that the individuals performing the inspection have been trained in this function. Those that did not receive training cited the following: too time consuming, not offered at a convenient time, and/or they were not aware of a training program.

All respondents expressing a preference did not want others to assume responsibility for inspection and enforcement of ESC plans. They also expressed that there should be a certification program for training in ESC activities (4 out of 7) and that the site inspector should be the one certified.

3.4.5 Virginia Department of Transportation

As described earlier, VDOT administers a self-contained ESC program through the annual review of its ESC specifications by the Board. Control plans are seldom developed in the same manner as plans for other state projects. Road construction is linear in nature and subject to tremendous changes in grading over the course of a project. For those reasons, erosion control is not only very site-specific but also subject to significant change during the construction process.

VDOT has developed specifications for the installation of appropriate ESC measures, but rather than "freeze" controls on a state plan sheet, the Department allows the project inspector and the

contractor to determine which on-site measures should be used and where they should be placed. Another significant difference is that the inspector is present at the project site each day.

Two of the eight project site case studies described in the SDN report involved highway construction. The consultants felt that the measures selected for those sites were not adequate and much sediment was escaping. Based on their observations of statewide conditions, the consultants suspect that too much dependence is being placed on a few widely-used control methods that are not always adequate for the site conditions. Proper maintenance of controls has also been identified as a problem on highway projects. Such concerns are distressing when considering the number of streams and rivers crossed by the state's highway network.

The DSWC staff has been working with VDOT officials for the last several years to improve ESC on no-plan projects, routine roadway maintenance and minor reconstruction projects. Also, more attention is being requested concerning VDOT compliance with the program's stormwater management criteria. VDOT is considered among the nation's best at revegetating roadway construction. The DSWC staff has developed a very positive working relationship with VDOT environmental officials so that problems are almost always resolved quickly and effectively.

3.5 DIVISION OF SOIL AND WATER CONSERVATION

The responsibilities of DSWC personnel have been described previously. A significant factor influencing their effectiveness is that during the last several years, as the demands of the ESC program have increased, the effective Division staffing for the program has been cut by roughly 50 to 60 percent.

State project plan submissions for 1987 have significantly exceeded the submissions for 1986. Requests for training seminars and information presentations have increased dramatically in 1987. State highway construction is about to triple its pace. More complaints and requests for assistance are being recorded by DSWC staff than ever before due to growing public awareness of the program, recognition of problems and local program need for assistance in order to keep pace with increasing development. This list of activities does not include a major additional responsibility that is not currently being addressed: state oversight of local ESC programs. The DSWC staff contend that they are not able to effectively satisfy all the current demands due to insufficient manpower, much less assume additional responsibilities.

The existing approach appears to be irrational since it purports to mandate operation of local programs consistent with state criteria but does not establish workable procedures that ensure such operation. The 1985 Chesapeake Bay Commission report, the Water Center study and the DSWC-funded study performed by SDN have all recommended periodic review of each local ESC programs by DSWC personnel. The issue of state oversight must involve consideration of state program staffing. Assignment of oversight responsibilities to the Board without provision for sufficient staff to perform the additional duties would be essentially meaningless. Thorough analysis of the personnel issue should be part of the process of creating an expanded state oversight function.

Frustrations were expressed by the Division's Field Specialists. Their lack of training and experience and inability to develop a feeling of competence in their ESC activities were of great concern. This is partly attributable to the fact that ESC activities are generally infrequent due to the volume of other more important responsibilities. Due to the travel distances involved, project inspections usually take an entire day, and Field Specialists contend that most of the violations they report to other state agencies are not corrected. For these reasons, coupled with their lack of enforcement authority, Field Specialists feel that they could make better use their time attending to other responsibilities.

Based on their assessment of the entire ESC program, SDN has made the following recommendations regarding DSWC staffing for this program:

1. Field Personnel

Field assistance to the municipalities and to state agencies should be furnished by trained state personnel in field offices. In order to minimize travel time and provide adequate assistance, it is recommended that, on an average, one field ESC specialist be provided for every four municipal programs. Therefore, a total of 44 field ESC specialists should be provided. This number can include specialists presently in the SWCDs, if they meet the following criteria:

a. They are trained in a physical science or engineering and in ESC technology.

b. Their time is 100 percent devoted to the ESC program.

The recommended number of field specialists equates to the present number of SWCDs, but it is not necessary that the field ESC specialists be tied to or located in the SWCDs. Depending on the local programs, some specialists can handle more than four municipalities, while some may handle less.

The 44 field ESC specialists should also provide monitoring on state projects within their areas, including oversight and assistance with VDOT projects and local program reviews. It is recommended that the six current Division Field Specialists be relieved of ESC program responsibilities.

2. Central Office Personnel

The Division office should perform at least the following ESC functions:

a. Supervision of field ESC specialists
b. Assistance with difficult and unusual technical problems from the field
c. Review of state agency projects
d. Coordination of local program reviews
e. Training
f. Preparation of publications

To perform these functions, at least three technical personnel and one publications specialist should be located in the Division headquarters, along with staff support such as graphic artists, secretaries, etc. With the possible exception of the publications specialist, the technical personnel should be engineers or senior technicians with in-depth knowledge of ESC technology.

One person should be assigned full-time to coordinate the monitoring and review of the 171 municipal ESC programs. An audit should be conducted on each local program every two years.

One staff person should be responsible for statewide ESC training programs and technical publications, and another should oversee state agency compliance. All of the staff should be involved with special problems from the field.

3.6 COMMENTS OF ENVIRONMENTAL AND CITIZEN ORGANIZATIONS

During the course of this study, a one-day workshop was held for environmental and citizen organizations to clarify program procedures and solicit comment from the citizenry. Fifteen organizations were represented, including national, regional, state-wide and local groups. Each group was given a questionnaire about the ESC program, to which 14 of the 15 groups responded.

A number of specific comments were recorded at the meeting, and those concerns were reiterated in the questionnaire responses. To summarize their concerns, the environmental and citizen groups are concerned about the lack of manpower devoted to the ESC program. They perceive a lack of commitment by the administration, elected officials, and legal staffs and a failure of the courts to take the ESCL seriously. They believe that too many land disturbing activities are exempt and that enforcement options are limited. What's more, penalties are too lenient. They favor control of erosion and stormwater problems on a watershed-wide basis. Finally, they believe that more citizen education is sorely needed, and ESC professionals and contractors should be subject to mandatory certification.

3.7 SPECIAL INTEREST GROUPS

As mentioned earlier, certain special interest groups that are currently exempt from the ESCL are subject to having those exemptions reassessed. Organizations benefitting from those exemptions were contacted by the DSWC staff and asked to comment on this issue. All submitted comments are included in Appendix A of this report.

IV. EROSION AND SEDIMENT CONTROL TRAINING

An issue apparently perceived as an impediment to effective implementation of ESC programs is the lack of training of involved personnel. Interviews and site visits indicated that many ESC problems were related to improper installation and maintenance of control measures. During the site visits, it was obvious that careful attention to ESC issues during the planning stages resulted in faster plan approvals and the most effectively controlled projects. In the 1985 DSWC survey, a significant number of respondents (39 percent) cited a lack of training as being a major or moderate problem.

Other states have echoed the need for adequate training of ESC personnel. The number one recommendation of the evaluators of Pennsylvania's ESC program was to revise their training program to include "additional technical employees." It was recommended that this training program should describe how to effectively review and interpret ESC plans, conduct site inspections and suggest "remedial actions to resolve problems at earthmoving sites." It was hoped that this training program would result in formal certification for ESC inspectors. Maryland has a certification program for contractors, and four other states have mandatory training in their statutes.

The Virginia ESC Program has provided some type of formal ESC training since 1976, when two community college courses were developed under a grant from the U.S.E.P.A. with assistance from the National Association of Conservation Districts. One of those courses was targeted at professional people who need engineering and technical information either to plan and design adequate erosion and sediment control systems or review those plans for compliance with applicable regulations. The other course was offered to construction superintendents and inspectors who must see that ESC measures are properly installed and maintained on the job sites.

The demand for the community college courses had dropped so significantly by 1980 that the courses were rarely offered. There were indications that the remaining untrained professionals were unwilling to commit to the expenses and time involved in a 30-hour college course. Therefore, the DSWC technical staff developed condensed versions of both courses. Those two-day seminars began in late 1981 and were taught four times a year each in Blacksburg, Virginia, because the DSWC had arranged for the use of some Virginia Tech land as a demonstration site for properly installed ESC measures. By 1984 enrollment began to decline for those seminars also. Surveys indicated that many in the targeted audience considered the Blacksburg location, travel time and expense too inconvenient, despite the presence of the demonstration site. It had also become apparent that the two seminars were similar enough that keeping them separate was creating inefficiency in the use of diminishing DSWC technical staff.

The DSWC combined the two seminars into one two-day workshop taught four times a year at rotating regional locations. To compensate for teaching fewer seminars, the enrollment limit was raised to 50 persons per seminar. The seminar provided a general introduction to the ESC program by covering background, the law, erosion processes and principles of control, the minimum standards, vegetative and structural control methods, control plan design and review, and plan implementation and inspection. The DSWC was able to keep the cost of the seminar down to $25 to $35 per student by absorbing its overhead.

In addition, the DSWC developed a Stormwater Management Seminar in 1982 to teach design and regulatory professionals how to comply with the ESC program's new stormwater management criteria. That course covers the performance standard and the basic calculation procedures necessary for compliance. It is also taught four times annually at rotating regional locations to a maximum of 50 persons per seminar. The $75 to $85 per student cost of this student is higher than the ESC seminar cost because consulting engineers are used as instructors. But the cost is

far lower than the $300-$500 cost of competitive seminars. Since the inception of the DSWC seminars, 650 students have attended one of the ESC seminars and approximately 750 have attended the stormwater management seminar. The courses have attracted participants from 17 other states as far away as Maine, Texas and Washington. However, even with the DSWC seminars in operation and fairly accessible, surveys continued to indicate that local ESC program staffs were not adequately trained. In addition, the quality of plans reviewed and control measures installed continued to indicate a lack of understanding by design consultants and contractors. The DSWC was also aware that many local programs had never sent anyone to one of the seminars, despite the regional locations and relatively low cost. Some local program administrators surveyed in 1985 by the DSWC stated that they could not afford the time for their inspectors to be away from the job to attend the DSWC's two-day seminar. They also cited a lack of funds to pay for attendance at training programs. Another problem is the rate of personnel turnover in some local ESC programs.

The DSWC decided to temporarily discontinue the ESC seminars pending the results of this study, with the idea of improving the training format and increasing the number and locations of offerings to better address the needs of the target audience. The stormwater management seminars have continued because their more narrow focus has not changed.

The questionnaire responses indicate that local ESC program officials consider the provision of adequate training and technical assistance to be among the most important functions of the DSWC. Some respondents claimed to be unaware of the availability of training, indicating a need for more care in assuring sufficient advertisement of seminars.

Investment in education and training for all participants in the ESC program would appear to be profitable in terms of better control on the ground. Many problems seem to result either from ignorance or denial of the potential damage. Developers and contractors, along with the plan preparers and inspectors, must be encouraged to participate in the education process, and consideration should be given to voluntary and mandatory mechanisms to facilitate this process. State education programs could be provided in association with various Developer/Contractor organization meetings and conference events. Furthermore, a method for providing information and training to the state's judiciary and attorneys should be developed because the DSWC's previous efforts to address judges' and attorneys' professional organizations concerning these issues have been rebuffed. The DSWC seminars should continue to be presented at various locations throughout the Commonwealth because the analysis of attendance patterns within this study suggest higher participation levels when courses are provided at nearby locations.

In addition, alternative delivery systems for training have been proposed. Local program staffs, engineers and contractors have suggested the development of video-taped training modules. More general press releases might increase public understanding of the ESC program. And finally, a renewed training effort through the community colleges may be expedient.

There was considerable support among questionnaire respondents for some type of mandatory certification of persons involved in ESC activities. The majority of respondents appeared to favor certification of ESC inspectors, an action which Maryland is also considering. One mechanism for achieving such an objective is to create or renew the community college courses. A passing grade would merit certification. The state could also administer an exam periodically to provide opportunities for testing out in lieu of taking the course. In fact, Maryland Community Colleges are considering establishing an "environmental technologies" curriculum to include basic ESC technology, basic stormwater management technology and basic solid and hazardous waste technologies among several other environmental courses. Such knowledge is becoming more and more necessary for local government staffs.

Several recommendations specific to the DSWC seminars have arisen from this study. First, a provision should be made to create more opportunities for the presentation of and student participation in the understanding and application of sound planning, engineering and implementation techniques for erosion and sediment control. The course content should be expanded to include more actual case study situations, problem solving techniques and student participation in the solution of sample problems. Problem examples should reflect situations that are typical within the geographic area in which the seminar is held. The use of coastal plain examples when the seminar is being held in the Piedmont physiographic province would be inappropriate, unless a variety of situations are presented. Finally, additional qualified instructors should participate in the training sessions.

V. STORMWATER MANAGEMENT

Although the exposure of soil during land disturbing activity ordinarily will be temporary, the effect on storm water runoff will remain permanently following the completion of construction. The temporary erosion and sedimentation effects will be concluded when the activity is terminated and the disturbed area is restabilized. The development activity, however, will usually result in the construction of impervious land cover such as roofs, paved areas or the like. Where rainwater once soaked into the soil to a certain extent, it is now forced to flow across the ground surface to engineered drainage structures or natural streams. The hydraulic roughness of smooth, straightened channels and impervious land covers is lower than that of natural watershed conditions. Smoother surfaces are associated with higher runoff velocities, which means that storm event response times (i.e., times of concentration) are reduced in comparison to natural conditions. The increased runoff volumes and decreased travel times also cause the maximum flow for any given storm to increase. Such changes in drainage on a site also can lead to off-site erosion and siltation, increased local flood damages, and continuous water quality effects because of the pollutants (e.g., sediments, grease, oils, nutrients and heavy metals) borne by that runoff, to off-site erosion and siltation, and to increased local flood damages.

Since these impacts are so closely related through the mechanism of stormwater runoff, controlling them should be accomplished through a comprehensive program. The goals of such a program should be grouped logically into three basic categories: off-site erosion control, flood control and nonpoint source (NPS) pollution control. Off-site erosion control is now required on all non-federal lands in Virginia through standards of the ESCL. Flood control is also a common goal of a number of local governments, but NPS control has been addressed in only a few localities.

Flood control methods are similar to those for off-site erosion control except for the statistical frequency of the control storm. Basically, control of the two-year statistical storm results in protection of stream channel integrity and prevention of off-site erosion. Flood control results from control of storms of greater than the two-year statistical frequency. NPS pollution control is best achieved by controlling the very small, frequent storms that regularly wash pollutants from the land surface. Few localities in Virginia are involved currently in regulatory control of NPS pollution. It is important to understand that control of a specific large storm, such as the 10-year storm, does not necessarily result in the desired control of smaller storms, such as the two-year storm.

Virginia's program for managing urban stormwater illustrates a fragmented approach involving several types of controls administered by several entities. Of prime interest are government programs with potential to impose constraints on activities that modify natural drainage patterns. In the absence of a separate comprehensive stormwater management program, the relevant constraints in Virginia consist primarily of water quality controls originally focusing on point source waste discharges and controls over the development and use of land. Administrative responsibilities for relevant programs are exercised at the federal, state and local levels of government.

5.1 EXISTING FRAMEWORK

5.1.1 Federal Role

The federal role in water quality protection traditionally has focused on control of point source waste discharge. After a relatively long period of evolution, federal controls in this area

have developed into a comprehensive regulatory system.[37] Prior to 1987, however, federal control of NPS pollution, including urban stormwater discharges, had consisted primarily of indirect measures which delegated the control responsibility to the states. The Water Quality Management (WQM) regulations developed under the Clean Water Act (CWA) in 1979 did not require a regulatory approach for NPS control, but stated that "regulatory programs shall be identified where they are determined to be necessary by the State to attain or maintain an approved water use or where non-regulatory approaches are inappropriate in accomplishing that objective."[38] The regulations require that state WQM plans be updated as needed. EPA has apparently left itself the option to require a regulatory approach in abating NPS pollution where non-regulatory programs are ineffective.

A major exception to EPA's indirect approach to NPS pollution control has developed in the area of urban runoff. As a result of a court order to regulate such discharges as individual point sources,[39] EPA issued regulations requiring submittal of applications for permits for "urban stormwater point sources" under the National Pollutant Discharge Elimination System (NPDES) program.[40] The EPA urban stormwater proposals generated substantial controversy.[41]

Before questions concerning the final form of this regulatory program were resolved, amendments[42] to CWA were adopted (by means of congressional override of a presidential veto) in early 1987. These amendments established regulatory controls over urban stormwater discharges, and these provisions [43] mandate a sequence of steps which ultimately permit stormwater discharges from municipalities with a population of 250,000 or more by 1994 and those from municipalities with populations from 100,000 to 250,000 by 1996. Permits for stormwater discharges from municipalities with populations under 100,000 can be required on an individual basis upon a determination that "...stormwater discharge contributes to a violation of water quality standards or is a significant contribution of pollutants to waters of the United States."[44] Regulations for control of other stormwater discharges are to be developed on the basis of results from studies prescribed in the legislation.

Detailed stormwater management requirements to be imposed during the permitting process will be developed by EPA. The 1987 legislative provisions establish the following general conditions for permitting:

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[37]Authorized primarily by the Clean Water Act, 33 United States Code Annotated sec. 1251 et seq. (1986).

[38]40 Code of Federal Regulations sec. 130.8(a)(1985).

[39]NRDC vs Costle, 568 F.2d 1369 (D.C. Cir. 1977).

[40]Code of Regulations sec. 122.26 (1985).

[41]For information concerning the historical development of EPA's urban stormwater regulations, see 49 Federal Register p. 38010 (1984),49 Federal Register p. 9362 (1985), and 50 Federal Register p. 32548 (1985).

[42]Clean Water Act, 33 United States Code Annotated, sec. 1342(p)(supp. 1987).

[43]id. sec. 1342(p).

[44]Id. sec. 1342(p)(2)(E).

Permits for discharges from municipal storm sewers -

(i) May be issued on a system or jurisdiction-wide basis;

(ii) Shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers;

(iii) Shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.[45]

The 1987 CWA amendments also contain other provisions of potential relevance to urban stormwater management in the form of additional requirements for state NPS pollution management.[46] Provision is made for state identification of waters that cannot attain or maintain applicable water quality standards or other CWA requirements without additional action to control NPS pollution. This state assessment is also required to identify the categories of NPS pollution (or particular NPSs where appropriate) responsible for such pollution. This assessment is to be followed by development of a state management plan to reduce pollutant loadings from the NPS categories and individual NPSs identified. The plan also must contain an identification of the best management practices (BMPs) for achieving such pollutant reductions and the programs necessary for BMP implementation. These programs may include "...non-regulatory or regulatory programs for enforcement, technical assistance, education, training, technology transfer and demonstration projects..."[47]

States are encouraged to conduct the prescribed assessment and prepare the necessary management plan by establishing of a grant program for assisting in the implementation of plans approved by EPA under guidelines specified in the legislation. The federal share of the costs of plan implementation cannot exceed 60 percent.[48]

Alternative procedures for development and implementation of a NPS management plan are provided for cases where a state does not develop and submit such a plan to EPA. Provision is made for EPA to identify waters in need of additional NPS pollution controls and the NPS categories or individual sources in need of control.[49] EPA is authorized to assist local public agencies or organizations with developing and implementing NPS management plans under certain conditions after a state fails to submit a management program or fails to attain EPA approval of its program. With approval of state government, EPA may provide technical assistance to such local entities in developing a management program, and such entities are eligible for financial assistance for program implementation.[50]

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[45] Id. sec. 1342(p)(3)(B).

[46] Id. sec. 1329.

[47] Id. sec. 1329(b)(2)(B).

[48] Id. sec. 1329(h).

[49] Id. sec. 1329(d)(3).

[50] Id. sec. 1329(e).

5.1.2 State Role

The current state role in urban stormwater management consists primarily of five areas of activities:

1. The state water quality management program administered under the State Water Control Law (SWCL)[51] consistent with federal requirements.

2. The ESCL.

3. The Virginia Flood Damage Reduction Act (FDRA)[52] administered by DCHR as of July 1, 1987.

4. The financial assistance program for NPS management.

5. State involvement in the administration of land use controls, which are primarily implemented by the state's localities.

5.1.2.1 State Water Control Law

The SWCL provides broad authority for the State Water Control Board (SWCB) to conduct a water quality management program. The purpose of SWCL is stated in the following quotation:

> It is the policy of the Commonwealth of Virginia and the purpose of this law to: (1) protect existing high quality state waters and restore all other state waters to such a condition of quality that any such waters will permit all reasonable public uses and will support the propagation and growth of all aquatic life, including game fish, which might reasonably be expected to inhabit them, (2) safeguard the clean waters of the State from pollution, (3) prevent any increase in pollution, (4) reduce existing pollution[53].

The broad scope of coverage is indicated by SWCL's definition of "state waters," which includes "all water, on the surface and under the ground, wholly or partially within or bordering the State or within its jurisdiction..."[54]

SWCL does not explicitly address NPS pollution control, but it authorizes SWCB "(t)o establish policies and programs for effective areawide or basinwide water quality control and management."[55] Effective water quality control in many geographical areas is likely to be impossible without NPS

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[51] State Water Control Law, Virginia Code Annotated sec. 62.1-44.15 et seq. (1982 and Supp. 1986).

[52] Flood Damage Reduction Act, Virginia Code Annotated sec. 62.1-44.108 et seq. (1982).

[53] SWCL supra, n.50, sec. 62.1-44.2 (1982).

[54] Id. sec. 62.1-44.3(4).

[55] Id. sec. 62.1-44.15(13)(Supp. 1986).

control. Thus, the authority conveyed by the act appears to provide a basis for control of NPS pollution. SWCB itself views this authority as an adequate basis for developing such controls.[56] Nevertheless, exercise of authority to impose direct controls on NPS pollution has been limited (see Section 5.1.4 of this report).

Development of a management program in Virginia as in much of the nation has been closely associated with the CWA's planning activities focusing on NPS pollution. SWCB's initial planning efforts included an assessment of local perceptions of the NPS problem, development of a series of BMP Handbooks, a statewide public participation program, and a series of technical studies of NPS pollution. The BMP handbooks are the heart of Virginia's current State NPS Pollution Control and Abatement Program.[57] A handbook covers each of five categories of NPS pollution: agriculture, forestry, hydrologic modifications, sources affecting groundwater and urban activities.[58] These five handbooks describe structural and non-structural BMPs for mitigating the NPS pollution addressed. In addition, a Management Handbook sets forth the overall strategy for implementing the state program.

A significant characteristic of Virginia's NPS management program is its voluntary status. SWCD's decision to adopt this approach is explained in the following statement:

> In the absence of a demonstrated cause and effect relationship between land use activities and NPS pollution, the SWCB has elected to pursue a non-regulatory NPS control strategy for those sources not already controlled by regulatory programs.[59]

However, SWCB has issued a warning: "If substantial progress is not made under the voluntary approach, it is probable that a regulatory program will be initiated under the law.[60]

Little information is available to gauge the success of SWCB's voluntary program. One indicator, however, is the number of localities agreeing to implement programs. In order to encourage local governments to support the voluntary NPS abatement program, the Executive Director of SWCB has asked each local government to support by resolution the voluntary

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[56]Virginia State Water Control Board, "Best Management Practices Management Handbook" (Planning Publication 322), p. 1-5 (1981).

[57]Virginia State Water Control Board, Water Quality Management Planning in Virginia Under Section 208, Public Law 92-500 --- 1973-1983 (State Water Control Board Information Bulletin 555), pp. iii-v (1984).

[58]A sixth handbook on surface mining was deleted from consideration after federal enactment of the Surface Mining and Reclamation Act of 1977. This act initiated a regulatory (rather than voluntary) program over pollution stemming from surface mining operations. Virginia State Water Control Board, 1984 Annual Report: Best Management Practices Program for Abatement of Nonpoint Source Pollution in Virginia (State Water Control Board Information Bulletin 562), pp. 2-3 (June, 1985).

[59]Virginia State Water Control Board, "Best Management Practices Management Handbook" (Planning Publication 322), p. 1-2 (1981).

[60]Id. p. iii.

implementation of BMPs throughout their jurisdictions. [61]

In a 1984 report, [62] SWCB indicated that, since 1980, 44 of Virginia's 224 local governments had responded–20 counties, 8 cities and 16 towns. Of these, 21 localities had agreed to "direct" the locality's chief executive officer to employ BMP "whenever practical." An additional 17 local governments had adopted resolutions "authorizing" the chief executive officer to ensure BMPs use when practical; four localities had adopted resolutions "encouraging local citizens to use BMPs;" and two local jurisdictions had simply endorsed the state plan by resolution. The fact that over 80 percent of Virginia's local governments did not respond in the four-year period indicates an initial low level of support for the voluntary state program.

Although SWCB has overall responsibility for the state NPS program, specific aspects of the program have been delegated to other state agencies. The Soil and Water Conservation Board has been designated as lead agency for implementing the Virginia Agriculture Water Quality Management Plan. State responsibility for management of stormwater from urban areas is divided between SWCB and the Board. SWCB maintains responsibility for already developed urban areas, while the Board is the lead agency for those urbanizing areas undergoing construction and development. Responsibility for developing areas was granted to the Board because it was already involved in the program to control construction-site runoff. [63]

The Board's responsibilities under a memorandum of understanding with SWCB include implementation of the Virginia Urban Water Quality Management Plan as it pertains to urban land disturbing activities. The memorandum states that "the Board will promote the use of Urban BMPs for erosion and sediment control and stormwater management through its administration of the ESCL and through the implementation of an education program." [64]

Within developed areas where the NPS program is administered by SWCB, local governments are " ... encouraged to sign a Memorandum of Understanding with the SWCB to develop and implement a program to reduce nonpoint pollution from areas of existing development under its jurisdiction." [65] This agreement requires the local government to make an annual report to SWCB indicating progress toward control of NPS pollution. Although this program only applies to "areas of existing development," [66] SWCB nevertheless encourages localities to take advantage of the "greater flexibility involved in dealing with the problem when the time and opportunity are available to plan for and incorporate BMPs and other measures into new development." [67] SWCB recommends the use of a variety of techniques such as land use controls under zoning and subdivision ordinances, tax incentives and planning for capital improvements.

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[61] Virginia Water Control Board, "Water Quality Management Planning in Virginia under Section 208, Public Law 92-500–1973-1983" (Information Bulletin 555) (1984) pp. 16-18.

[62] Id. p. 18.

[63] Id. p. IV-3.

[64] Id. p. IV-14.

[65] Id. p. IV-4.

[66] Id. p. IV-3.

[67] Id. p. IV-5.

In a recent action resulting from adverse effects of NPS pollutants on shellfish, the Virginia Marine Resources Commission adopted a policy requiring large waterfront projects to be designed and built incorporating appropriate BMPs as a condition of granting a permit.

5.1.2.2 Virginia ESCL

Stormwater management provisions of the ESCL were described earlier in this report.

5.1.2.3 Virginia Flood Damage Reduction Act

The FDRA was enacted in 1977 to "reduce flood damage through management of floodplain use by means such as floodplain zoning and to assure that land use in flood hazard or flood plain areas is appropriate."[68] While the responsibility and authority for zoning in the Commonwealth, including the adoption of floodplain zoning, rests with the local governing bodies, the FDRA provided the state with authority for the following:

1. To provide state coordination and assistance to local political subdivisions in floodplain management.

2. To encourage local governmental units to adopt, enforce and administer normal floodplain management ordinances.

3. To provide the authority necessary to carry out a floodplain management program for the State, and...

4. To coordinate federal, state and local floodplain management activities in this State in such a manner that will enable all local governmental units subject to recurring flooding to qualify for participation in the National Flood Insurance Program.[69]

The FDRA was originally administered by the SWCB, but on July 1, 1987, the administrative authority was transferred to the DCHR/DSWC without accompanying personnel and financial resources. This law is intended to be implemented through local governments in coordination with the ESCL.[70] The law is currently limited to reducing flood hazards by keeping development out of designated flood plains (land use control) rather than by mitigating the impact of large storm flows (flow control).

5.1.2.4 Virginia's Financial Assistance Program for NPS Control

The state of Virginia has employed cost sharing as a means to encourage compliance with voluntary BMPs. After an initial effort during 1983 that focused on encouragement of filter strips adjacent to waterways within selected areas of the state,[71] the 1984 session of the General Assembly made substantial appropriations for urban and agricultural NPS pollution control within the Chesapeake Bay's drainage area. The DCHR/DSWC is responsible for administration of these

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[68]FHRA supra, n. 51, sec. 62.1-44.109 (1982).

[69]Id. sec. 62.1-44.109.

[70]Id sec. 62.1-44.111.

[71]See Virginia State Water Control Board, "Water Quality Inventory (305(b)Report) - Virginia" (Information Bulletin 558), Vol. 1, p. 50 (1984).

funds. Planned use of the funds designated for urban areas includes cost sharing of technical specialist positions at the local governmental level and implementation of research and demonstration projects to determine the effectiveness of innovative urban BMPs. Unlike the urban case, part of the funds for agricultural NPS control is scheduled for direct cost-sharing to facilitate implementation of BMPs by individual landowners. The state financial assistance program also encompasses the Chowan River Basin where water quality problems have become an interstate issue.

5.1.2.5 Land Use Controls

Land-use controls traditionally have been administered by Virginia's political subdivisions, but state enabling legislation for such controls in some cases provides for state influence in their implementation. General land use control measures of interest include provisions for local comprehensive planning, zoning, and subdivision regulation. Legal provisions for assessment of property taxes are also of interest, since taxation can influence development decisions. However, state input into the implementation of enabling legislation in these areas is negligible.

In the absence of direct state authority in the administration of land use controls, the primary mechanisms for state influence are education, persuasion and financial assistance. These activities have increased significantly in recent years. Substantial efforts to provide education about NPS pollution control through such means as distribution of educational materials, presentation of seminars and implementation of demonstration projects have been undertaken by SWCB, DCHR and others. Direct financial assistance has involved a significant commitment of state resources with primary emphasis focused on regions of special concern such as Chesapeake Bay drainage.

5.1.3 The Local Role

The preceding discussion of the state role in stormwater management has identified several delegations of authority for land-use control to local government. This section examines the individual control measures in more detail to assess the extent of local authority in controlling land use activities in efforts to protect water quality and prevent off-site erosion and flooding. Since much of the enabling legislation was adopted prior to development of concern over stormwater management, a question may arise in some cases as to whether such protection is a valid objective or implementation.

5.1.3.1 Virginia ESCL

The local role in the ESC program was described earlier in this report.

5.1.3.2 The Comprehensive Plan

The comprehensive plan required of each county, city and town[72] is intended to indicate general recommendations for the development of the area covered. The following statement indicates the broad scope of considerations to be incorporated into the plan:

> The comprehensive plan shall be made with the purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the territory which will, in accordance with present and probably future needs and

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[72] Virginia Code Annotated sec. 15.1-446.1 (1981).

> resources, best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants.[73]

Although the enabling legislation is silent with respect to water quality protection, it does provide that the plan may include designation of areas for "conservation, recreation, public service, flood plain and drainage and other areas."[74] Thus, water quality protection also appears to be an implicit objective.

The comprehensive plan generally is not used as a direct regulatory device, but it acts to constrain development. For example, it provides potential restrictions on future location of public facilities. The pattern of providing public services such as transportation and sewage facilities exerts a major influence on land use. Local decisions concerning public facilities are subject to substantial influence by state and federal governments because of the various programs of financial assistance. Decisions regarding public facilities have the potential to reinforce regulatory programs of land-use controls if the two decision processes are coordinated.

However, since comprehensive plans are developed along jurisdictional lines, there are opportunities for interjurisdictional impacts. It may be difficult for an upstream locality to justify (under current law) requirements that its citizens and developers implement programs at their own cost when the primary benefits are derived by a downstream locality. It seems that some type of state oversight of such interjurisdictional issues would be prudent.

5.1.3.3 Zoning

Any Virginia county, city or town is given the discretionary authority to adopt a zoning ordinance.[75] The specific considerations to be included in a zoning ordinance include a diverse list of factors. Although the list of factors addresses flood protection, it does not specifically include water quality protection. The enabling legislation elsewhere provides for zoning to consider"...conservation of natural resources..."[76]

Due to the lack of specific reference to water quality protection as an objective of zoning, a recent attempt by Fairfax County to apply zoning toward this end was challenged in court. This 1985 case[77] arose from a decision by the Fairfax County Board of Supervisors to modify zoning in the Fairfax County portion of the Occoquan watershed to allow one dwelling per five-acre lot in place of the previous one dwelling per acre. This downzoning action followed a study concluding that further degradation of the quality of the reservoir would be inevitable if development were to proceed according to the existing zoning.[78] This action occurred during a period when downzoning

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[73] Id.

[74] Id. sec. 1329.

[75] Id. sec. 15.1-486.

[76] Id. sec. 15.1-490.

[77] Aldre Properties, Inc. v. Board of Supervisors of Fairfax County, Chancery No. 78425, p. 2 (19th Judicial Circuit of Va., slip opinion, 1985.

[78] Fairfax County Office of Comprehensive Planning, "Occoquan Basin Study" (March 1982).

actions also were taken by other political subdivisions for much of their lands located within the Occoquan Basin. Defense of the case by Fairfax County was made more difficult by the fact that the rezoning, although covering about 41,000 acres, was a "piecemeal" action since it did not cover the entire County. A piecemeal rezoning to be upheld under Virginia law must be shown to be justified by a change of circumstance since the last general rezoning.

The County's downzoning action was upheld by the court. Citing several planning studies focusing on development trends and alternative approaches to water quality protection, the court agreed that additional information indicated changed circumstances justifying the piecemeal approach. The decision upheld the use of land-use controls as a valid approach to water quality protection and rejected arguments by the challenges that the rezoning was exclusionary and confiscatory. However, the decision excluded specified properties of three of the challengers because plan approval prior to the downzoning action created "grandfathered" status exempting them from the five-acre minimum lot size requirement. The usefulness of the decision is limited by the status of the court involved; no appeal to the Virginia Supreme Court was taken. Nevertheless, the decision is significant since it upholds the most widespread application of land use controls for NPS pollution control in Virginia to date. The case therefore has important implications for localities considering a broad-based NPS management strategy.

5.1.3.4 Subdivision Regulation

Each county, city and town is required to adopt an ordinance to control land subdivision and development.[79] Enabling legislation sets forth several requirements for such ordinances, including adequate provisions for "...drainage and flood control and other public purposes ..."[80] Water quality protection is not specifically addressed in these requirements but would appear to be encompassed implicitly.

The enabling legislation addresses the issue of financing off-site drainage facilities. Where the locality has established a "...general sewer and drainage improvement program for an area ...," the locality may require a subdivider or developer of land to pay "...his pro rata share of the cost of providing reasonable and necessary sewerage and drainage facilities, located outside the property limits of land owned or controlled by him but necessitated or required, at least in part, by the construction or improvement of his subdivision or development..."[81]

5.1.3.5 Tax Law

The Virginia Constitution states that "[a]ll property, except as hereinafter provided, shall be taxed."[82] This power has been delegated to Virginia's local governments.[83] Provision is made for local governments to impose special assessments for the purpose of preserving natural resources.[84]

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[79] Virginia Code Annotated sec. 15.1-465 (1981).

[80] Id. sec. 15.1-466(d)(Supp. 1986).

[81] Id. sec. 15.1-466(j).

[82] Constitution of Virginia, Art. X, Sec. 1.

[83] Virginia Code Annotated sec. 58.1-3000 et seq. (1984 and Supp. 1986).

[84] Id. sec. 58.1-3229.

5.1.4 Attorney General and the Courts

In 1984, Senator Joseph V. Gartlan, on behalf of the Chesapeake Bay Commission, requested that the Attorney General provide advice concerning the ability of the Soil and Water Conservation Commission (now the Soil and Water Conservation Board) and the State Water Control Board (SWCB), under existing regulatory authority, to control water quality impacts from storm water.

With respect to the authority of the Board to control water quality impacts of storm water runoff under the ESCL, the Attorney General opined that the ESCL and regulations under it "address storm water runoff only as it affects water quality by fostering increased sedimentation or off-site erosion either during or after the land disturbing activity.[85] He confirmed the Board's interpretation of its authority to manage stormwater under the ESCL as "consonant with the purpose of the law to control 'soil erosion, sediment deposition, and nonagricultural runoff...'"[86]

In addressing the ability of the SWCB to control similar impacts, the Attorney General referred to the SWCB's established regulations to control point source discharges in contrast to its non-regulatory approach to the control of nonpoint sources (including stormwater runoff from agricultural, silvicultural and urban areas). In fact, he noted that "while it is arguable that the water control law is broad enough to confer upon the (SWCB) authority to adopt specific nonpoint source regulations, it should be noted that the General Assembly has not granted such specific authority to the (SWCB)."[87] In addition, "beyond its development of (voluntary) BMPs as part of areawide plans, the (SWCB) has not attempted to construe this general authority or authorize it to regulate stormwater runoff."[88] Both the SWCB and the Board have traditionally "deferred to Virginia's municipal governments and to such authority as those local governments may have (through various land use controls) to require control of nonpoint pollution."[89] In conclusion, he stated the following:

> "In the light of (1) this lack of specific authority of the (SWCB), (2) the particular program for storm water management under the Erosion and Sediment Control Law, (3) the long standing use of zoning and other land use controls to regulate storm water runoff, and (4) the (SWCB's) nonassertion of such authority, I have grave reservations whether the General Assembly intended for the (SWCB) to directly regulate storm water runoff... Accordingly, if the General Assembly should wish for either the (SWCB) or the (Board) to undertake a mandatory, regulatory program to regulate other water quality impacts of storm water runoff, it would be appropriate to enact a statute specifically authorizing the new program."[90]

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[85] "Water. State Water Control Board. Soil and Water Conservation Commission. Authority to Impose Controls on Storm Water Runoff to Protect Water Quality," 1983-1984 Report of the Attorney General, p. 464.

[86] Id. p. 464.

[87] Id., p. 465.

[88] Id., p. 465.

[89] Id., p. 465.

[90] Id., p. 465.

5.1.4.1 The Courts

According to a recent study[91] of land use decisions by the courts, the earlier tendency of the courts to grant local government considerable discretion in applying land-use controls is less in evidence. That analysis found that the state supreme court has increased its level of scrutiny of local decisions and generally decreased the deference granted to local discretion. The study suggests that the court's review process has become so broad as to constitute judicial exercise of the zoning function and the effective repeal of the enabling legislation granting local authority.[92]

With regard to the substance of the court's recent decisions, the study finds a high degree of protection for the rights of private land developers. The court has frequently overturned local controls in conflict with plans of developers.[93] The position indicated by those decisions suggests that the court may take a restrictive view of the use of land use controls for achieving environmental quality goals if such use involves a substantial impact on development.

5.1.5 Conclusions Regarding the Existing Institutional Framework for Stormwater Management

The institutional framework for urban stormwater management is in a state of flux due to the decision to apply the NPDES permit program established under CWA to certain urban stormwater discharges. Implementation of the mandate contained in the 1987 CWA amendments will involve a major transformation in the management of urban stormwater.

At present, the state role in managing stormwater from developed urban areas is limited. The state's water quality program under the State Water Control Law focuses on voluntary use of BMPs, and does not aggressively encourage local action nor contain a reporting requirement for local government. State involvement in the implementation of land-use controls is greatest under the ESCL, but that program is primarily directed toward land disturbing activities associated with the urbanization process. Thus state government exercises little direct control over urban stormwater discharge and there is little or no enabling legislation specifically authorizing local governments to regulate the control of water quantity and quality problems. This lack of control is accompanied by incomplete information concerning the extent of the water quality problem associated with runoff from urbanized areas. A pending revision of the Chesapeake Bay Agreement between the states of Virginia, Maryland and Pennsylvania, the District of Columbia and the U.S.E.P.A. suggests greater involvement of the State in local land use decisions and a more focused approach to the control of nutrient pollution.

Implementation of the 1987 CWA amendments will affect both the status of information on the extent of the water quality problem associated with urban stormwater and the management strategy employed by the state. The assessment required under the general NPS pollution control provisions will better delineate those waters adversely affected by urban runoff and other NPSs. The urban stormwater management provisions will substantially expand state involvement in control of runoff from currently urbanized areas. As administrator of the NPDES program under a delegation of authority from EPA, the SWCB will exercise direct regulatory authority over a variety of stormwater discharges now subjected largely to the discretionary management authority of local governments.

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[91] Lillian R. beVier and Denis J. Brion, "Judicial Review of Local Land-Use Decisions in Virginia," University of Virginia Institute of Government, Charlottesville, VA, pp. 19-37 (1981).

[92] Id., pp. 105-113.

[93] Id., pp. 105-106.

Considerable uncertainty exists at present regarding the particular requirements to be imposed under the new CWA stormwater provisions. The nature of the controls will be developed within EPA's rule promulgation process. Statutory guidelines provide substantial flexibility regarding such controls, making predictions regarding their form difficult.

5.2 OPINIONS CONCERNING A REGULATORY APPROACH FOR STORMWATER MANAGEMENT

The questionnaires distributed by SDN in the recent DCHR-funded evaluation of the ESC Program included a number of questions related to regulating stormwater to accomplish flood control and NPS pollution control.

With respect to the perceived problem of "stormwater induced or aggravated flooding problems in Virginia," 69 percent of the municipal respondents, 83 percent of the state agency respondents and all of the citizen/environmental group respondents considered the problem to be either "important" or "very serious and widespread."

A similar question asked about the seriousness and extent of stormwater quality problems in Virginia revealed that 99 percent of the municipal respondents, "most" of the state agency respondents and all of the citizen/environmental group respondents considered such problems to be "important" or "serious and widespread."

There was general support for establishing state regulatory authority for the control of both flooding problems (municipal: 64 percent; state agencies: 47 percent; environmental citizen groups: 67 percent) and NPS pollution problems (municipal: 55 percent; state agencies: 50 percent; environmental/citizen groups: 78 percent).

Some interesting and varied responses were provided concerning which state agency should be given administrative authority over such regulations. With regard to flood control regulations the DSWC was the first choice and the SWCB the second choice of the municipalities and the citizen/environmental groups. Those positions were reversed by state agency respondents. Other choices include subdivision and zoning laws and ordinances. Regarding potential NPS pollution control regulations, the SWCB was a slight favorite over the DSWC among local governments and a unanimous choice among state agencies, while the DSWC was first choice among the environmental/citizen groups.

During the on-site interviews, the consultants asked whether or not the local officials considered erosion control, NPS pollution control and flood control to have closely related impacts and objectives and, if so, if it would be sensible to have the same state agency administering all of those programs. Most of the respondents agreed with both points, but some still preferred that the SWCB have the responsibilities for flood or NPS controls. When pressed to explain this paradox, several stated that if the DSWC administered the program it would be delegated to the municipalities for implementation, increasing their workload. They perceived that the SWCB would exercise implementation authority through its own staff and thus preferred that arrangement.

Responses were quite mixed concerning whether or not adequate technical standards exist for flood control and NPS control. More people felt that flood control standards currently exist than felt that NPS control standards exist. However, there was strong support from all the groups for establishing state standards for both flood control and NPS control, although some would choose that such standards be advisory or administered on the local level. A few respondents said the NPS problem is too complex to be managed and enforced using a set of technical practices.

The potential need for permanent urban runoff controls is also illustrated by findings of EPA's Nationwide Urban Runoff Program (NURP). A number of NURP research projects were conducted in Virginia. NURP found significant instances of high levels of heavy metals (especially copper, lead and zinc) in urban runoff. Water quality standards were exceeded for lead (94 percent of all samples), copper (82 percent), zinc (77 percent) and cadmium (48 percent). Nationwide, Biological Oxygen Demand (BOD) loads from runoff were estimated as comparable to loadings from publicly owned treatment works (POTWs) using secondary treatment, and total suspended solids loadings were estimated to be a factor of 10 higher than loadings from POTWs. Fecal coliform levels also indicated significant impacts from urban storm runoff.[94]

Installation of BMPs within urban areas after development is complete poses special difficulties. Much of the flexibility for accommodating needed facilities has been lost by the time development is complete, and space for structures will generally be limited. As a result, post-development implementation of an effective management plan is likely to be more costly than implementation during the development process. A program for requiring retrofitting of urban areas with BMPs for runoff control should incorporate procedures for comparing the associated benefits and costs. Consideration may need to be given to cost-sharing arrangements to avoid or lessen economic impacts on established land uses.

The mandatory incorporation of BMPs for permanent stormwater management is generally more feasible during the development process because of the greater flexibility presented. The greatest contribution of a regulatory program for urban stormwater control would be to ensure that new development does not lead to additional flooding and water quality degradation. In fact, the pending revision of the Chesapeake Bay Agreement includes requirements to reduce nutrient pollution of the bay by 40 percent by the year 2000, with a reevaluation of that target during 1991. Such a goal suggests that the time has come for a comprehensive stormwater management program, including NPS pollution control.

Finally, the 1987 Annual Report of Virginia's River Basin Committees for the Chesapeake Bay has endorsed improved implementation of urban NPS pollution control programs. These River Basin Committees are composed of 185 members representing local government, industry, agriculture, private non-point groups and marine trades. In April 1987, their chairmen met with Governor Baliles to preview the Committee's developing recommendations. The following was listed in the Annual Report among "Shared Concerns and Points of Consensus," and was further developed in the body of the report:

> "Urban nonpoint source pollution - As growth and development increases in Virginia, water degradation from this source will be of increasing importance. The committee chairmen feel it should be the policy of the commonwealth as well as each of the localities to recognize urban nonpoint source pollution as a problem of significant magnitude requiring a greater commitment of resources to combat and control it. Most of the committees gave this issue high priority and expressed dissatisfaction with Virginia's level of effort regarding urban nonpoint source pollution control..."

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[94]Federal Register p. 38013 (1984).

5.3 ALTERNATIVE FORMS FOR MANDATORY STORMWATER MANAGEMENT

Mandatory stormwater controls could be imposed through amendment of existing statutes such as the ESCL, the Flood Hazard Reduction Act, enabling legislation for local controls over land subdivision and development and state water quality legislation. Alternatively, separate comprehensive stormwater management legislation could be adopted. Also, controls could be imposed by means of SWCB regulations adopted under existing state water quality legislation.

It was highly recommended by both the recent DCHR study and the Water Center Study that ESC, flood control and stormwater quality control programs all be placed within one agency. The three areas are so closely related that it is impractical to separate them administratively.

Since the Board/DCHR/DSWC already administers the ESCL and urban and agricultural NPS efforts and has recently consolidated the State Dam Safety Act and the State Flood Damage Reduction Act (FDRA) under its administration, it would appear to be the logical home for a comprehensive state stormwater management program. As noted earlier, there was strong support by study respondents for DCHR/DSWC administration of stormwater controls.

Because of the advantages of integrating urban stormwater controls into the existing system of land use controls, the option preferred by study respondents for creating mandatory stormwater controls appears to be amendment of the ESCL to add provisions for mandatory controls within local programs. The new legislative provisions might include statutory language explicitly recognizing water quality protection as an objective of the ESCL and requiring the Board (in consultation with SWCB and others) to develop state criteria for local programs. In that case, the ESCL's title should be modified to reflect its expanded scope. Other reasonable alternatives are to incorporate authority for control of NPS pollution into the ESCL and new flood control provisions into the FDRA or to create a new comprehensive stormwater management law.

Technical standards for the design and construction of stormwater management controls should be developed and promulgated similar to those for ESC in the State Handbook. Additional staffing will be required in order to implement the stormwater management program. The personnel requirements for those involved in NPS pollution control in the state will be slightly different than for ESC or flood control. Therefore, special training or background should be sought so that expertise will be available to the municipalities to control NPS pollution.

5.4 GENERAL ISSUES CONCERNING VIRGINIA'S STORMWATER MANAGEMENT PROGRAM

In addition to the foregoing issues concerning individual components of the state's stormwater management program, several broader issues relate to overall program operation and direction: the funding of program activities, the nature of the program requirements, enhancing general awareness and understanding of stormwater-related problems and program coordination and direction.

5.4.1 Funding of Stormwater Management Activities

To achieve the benefits of clean water and reduced flooding, large expenditures of public and private funds have been made and will continue to be necessary. In Virginia, recent appropriations for the Chesapeake Bay Program are the most notable expenditures for NPS pollution control in particular, but other significant costs are incurred by both local and state governmental entities responsible for program implementation.

A special area of concern relative to program effectiveness is the funding of local programs. Program resources traditionally have been limited in many localities to an extent that jeopardizes effective implementation. While willingness and capability to fund local programs may be difficult to distinguish in some cases, the funding issue should not be overlooked. Experience with local

governmental assistance within the Chesapeake Bay Program will provide insight into the potential amounts of funding needed and the impact of a given level of funding on program effectiveness. This experience will be useful in assessing the need for and costs of a statewide assistance program.

Another basic funding issue is cost-sharing to assist landowners in the implementation of necessary control measures. Again, the Chesapeake Bay Program will provide a basis for assessing the amount of funding needed and the effectiveness of a cost-sharing program.

A third basic funding issue is the level of appropriations for state program operations. Performance of program responsibilities requires an adequately trained staff of a size commensurate with the scope of duties assigned and workload imposed. Particularly detrimental to effective performance is the addition of new responsibilities without corresponding increase in staff. Such actions are understandable in view of budget restrictions but are adverse to achievement of the desired objectives.

The recommendations in this report propose an increased state role in the administration of NPS and flood controls. Proper exercise of these new responsibilities will not be possible without appropriate staff adjustments. Evaluation of additional staff requirements should accompany development of proposals for accomplishing the recommended changes and necessary expansions initiated when new responsibilities are created.

Funding of an expanded stormwater management program may require development of new sources of revenue due to competing claims on traditional resources. Recovery of program costs through permit processing fees should be expanded, and consideration should be given to special charges on products and activities that contribute to NPS pollution. To the extent possible under existing law, expenditures for point source and NPS pollution control should be continually reviewed and the appropriate balance maintained to produce maximum returns in the form of water quality benefits.

5.4.1.1 Stormwater Utility Fees

A relatively novel application of user charges for financing planning, installation and maintenance of stormwater management facilities has been established in a number of areas of the U.S. Called stormwater "utilities," these programs bill residents a regular fee based on their contributions to stormwater runoff.

In 1982, State Senators Madison E. Marye asked the Attorney General for an opinion concerning whether Virginia law authorized a unit of local government to charge a separate fee to finance and maintain storm water and surface drainage facilities based upon the area of impervious surface (a factor in the amount and quality of surface runoff) a property owner has. In summarizing his opinion, the Attorney General stated the following:

> The authority of the local governing body to impose a separate fee to finance the cost of construction and maintenance of storm water and surface drainage facilities depends in large measure upon the locality's having adopted a subdivision ordinance, or creating a sanitary district. The answer to your second inquiry is in the negative, inasmuch as the participation cost in surface drainage facilities must have some relationship to the benefits to be derived from the facility, and not be based upon the single factor of the amount of impervious surface owned by an individual within the area served."

This opinion appears to leave the option of such user fees open to use under authorized conditions. However, stormwater runoff problems are so widespread in urban areas and the benefits to the community-at-large so widely recognized, that the limitations of current state law may be archaic. In such a management program, a fee based upon the "users" contribution to the problem rather than his derived benefits appears to be equally or more valid. Virginia legislators have traditionally supported funding of such programs by user fees.

The Sediment and Stormwater Division of Maryland's Department of Environmental Management, under the Chesapeake Bay Initiatives, is currently funding a study to develop a fair and reasonable formula for determining user fees in such a program, based upon the user's contribution to the problem. That study has assessed over 50 stormwater utility fee programs in the U.S. Stormwater utilities should be considered as an alternative source of funding for county and municipal stormwater management programs.

5.4.2 The Nature of the Regulations

A number of questions arise in considering exactly what to require in order to effectively reduce the likelihood of flooding and prevent water quality degradation from NPS pollutants. Who will implement the regulations? Will the programs apply only to urban development or to agriculture and other land uses as well? At what thresholds will controls be required? Upon what scientific and practical issues are those thresholds based? What mechanisms will be used to ensure compliance with program requirements?

As noted earlier, since these stormwater issues are so interrelated with the land development process, it seems impractical to separate a stormwater management program from other development controls such as the ESCL. In that sense, the programs should probably be implemented by the local governments with some degree of state oversight and assistance. Ideally there should be enough flexibility to apply controls consistent with the level of need. "Regional" control measures, which are more cost-effective than small on-site controls, should be encouraged.

5.4.3 Enhancing Awareness of Stormwater-Related Problems

The interviews conducted as part of the DCHR and Water Center studies have indicated that effective stormwater management is hindered by widespread lack of knowledge and understanding of the associated problems. Ignorance or misunderstanding of such problems on the part of persons associated with program implementation, such as locally elected officials and the judiciary, often results in a lack of support from such parties, obstructing aggressive enforcement of program requirements. Although the impact is less direct, lack of awareness among the general public is also a hindrance. Program goals are achieved only in part through enforcement of regulations. Achievement depends to a large extent on voluntary decisions based on perceptions of socially acceptable behavior. The climate most conducive to successful control is one where a broadly diffused perception exists that such impacts are a social problem to be avoided.

The need for enhancing awareness should be addressed at several levels. Broad dissemination of a generalized message of the importance of control should be accompanied by more intensive communication directed toward parties closely involved in the implementation of controls. Mandatory training programs for all program personnel and contractors and others responsible for implementation of control measures should be included.

5.4.4 Program Coordination and Direction

Virginia's programs related to stormwater management are comprised of a variety of interacting components. Because of the diversity of impacts encompassed, consolidation to a single, centralized control program is unlikely to be feasible or desirable. Coordination, therefore, is an essential program consideration.

At present, coordination among program elements is hindered by the large measure of local autonomy exercised by local governments in the implementation of land use controls. Expanded state oversight as recommended in this report would provide a basis for improved coordination. At the state level, coordination between DSWC and SWCB is essential because of the close relationship between the responsibilities of the two agencies. Some consolidation of NPS and flood control activities within DSWC appears desirable as discussed previously, but DSWC activities must continue to be closely coordinated with other SWCB activities such as point source pollution control and water quality planning.

In order to maximize water quality protection, the stormwater management program must operate with central guidance, including the assignment of program priorities. Such priorities depend on an assessment of water quality and flooding problems and the potential for stormwater management to reduce or eliminate such problems. To date, the highest priority has at least implicitly been assigned to the Chesapeake Bay (including its tributary waters) and the Chowan River. For the remainder of the state's waters, stormwater management has varying potential to produce water quality benefits and prevent flooding and erosion, so program emphasis should be placed in areas where potential is greatest. This approach requires substantial planning activity and central guidance from the state level of government. Proper exercise of other program responsibilities cannot ensure overall program effectiveness without attention to this aspect of the stormwater management program.

VI. CONCLUSIONS

6.1 GENERAL

The administration of the Erosion and Sediment Control Program is an important function serving to protect the vital resources of the state. The priority of the program should be high enough to warrant adequate administration of the program.

At present, the Virginia ESC program is made up of a mosaic of 171 local municipal programs. The local programs vary widely in effectiveness, from programs that do little to very effective and well managed programs. Overlaying and supplementing the municipal programs are Soil and Water Conservation District programs and Soil and Water Conservation Board responsibilities for state agency projects and programs. Again, these programs vary in quality across the state.

The effectiveness of the local program is directly related to the municipal attitude toward development and urbanization. If a community favors development, it tends to weaken the ESC program. The reverse is also true. Local politics always play a part in the quality of municipal programs.

6.2 STAFFING

There are dedicated and effective personnel involved in the programs, and the effectiveness of the local and state programs is directly related to their efforts. However, in almost all cases, and at all levels, staffing is inadequate to carry out the objectives of the ESCL. The most adequate staffing levels are found in the urban municipalities. The most inadequate staffing levels are found in the rural areas, where often only one individual is responsible for the total administration of the program. In addition, the ESC program usually has a low priority compared with numerous other responsibilities.

6.3 STATE OVERSIGHT

With the practically unanimous realization that more people are necessary, the main questions then becomes at what level should the work force be bolstered? Some suggest that the state should take more control of the program; thus, any additional personnel should be placed at the state level. A difficulty arises with this approach due to the fact that a majority of the respondents in this study do not want responsibility for ESC program implementation to be placed elsewhere. This, coupled with a feeling of genuine desire to effectively control erosion and sedimentation as expressed by local program administrators, leads to the recognition that additional ESC personnel at the local level should result in improved implementation effectiveness. An increase in state staffing is also necessary to provide guidance, coordination and technical assistance in the administrative and technical areas of the ESC program. Such assistance should be provided by personnel located conveniently around the state.

Better overall orchestration of the program, including more reviews of local programs by the DSWC staff, would help in developing a uniformly administered and effective ESC program in Virginia. As a minimum, the Board should be given explicit authority to evaluate local programs according to a prescribed schedule and to issue legally enforceable orders needed to remedy documented program inadequacies. If, after a reasonable amount of time, ESC program implementation does not improve, then perhaps increased state control will prove necessary. However, providing local program administrators the opportunity to effectively carry out the program, as they desire, should be the first step.

6.4 LOCAL FEE LIMITS

Fees charged for reviewing the ESC plans and performing the site inspections should be high enough to cover the costs of administering the program. Therefore, the upper limit on fees charged should be removed from the statute and municipalities should be given the option of charging the actual cost of administration. If the municipality decides to subsidize the administration of the ESC program, the funding for that subsidy should come from municipal sources.

6.5 TECHNICAL STANDARDS

In general, the questionnaires and interviews demonstrated a high level of confidence in the effectiveness of the technical standards and controls in the State Handbook. Although there is still more to learn, much of the literature supports this belief. Therefore, improvement of the ESC program is largely not a technical issue.

6.6 TRAINING

Investment in education and training for all participants in the ESC program would appear to be profitable in terms of better on-site control. This includes more training of designers, plan reviewers, inspectors, contractors and developers. Consideration should be given to voluntary and mandatory mechanisms to facilitate this process. State education programs could be provided in association with various Developer/Contractor organization meetings and conference events. Classes, seminars and presentations should continue to be presented at various locations throughout the Commonwealth. Analysis of attendance patterns within this study suggests higher participation levels when courses are provided at nearby locations.

Interviews and site visits indicated that many ESC problems were related to improper installation and maintenance of practices. Effective installation of ESC measures costs no more than ineffective installation, and a strategy of proper installation and maintenance is critical to effectiveness. Spending money on "window dressing" is a waste of resources. Also, many of the plans submitted must be revised and resubmitted. ESC training provided to the designers could reduce the multiple submissions required prior to the approval of an acceptable ESC plan.

The individuals who perform ESC plan review and approval need to be trained as engineers or upper level technicians. The study consultants recommend at least a two year technical college certificate. Inspectors need to be trained in construction and inspection. Other personnel involved in the local program need to have appropriate technical training and backgrounds to carry out their responsibilities.

6.7 EXEMPTIONS

Federal land use is a significant factor in the welfare of Virginia's coastal rivers and bay. Virginia now has a federally approved coastal zone management program under a Federal act mandating Federal consistency with the state coastal zone management program. The degree of required federal consistency with the state ESC program should be assessed along with the continuation of the federal land exemption under the Virginia ESCL.

Exemptions for single family residences and special interests such as silviculture, agriculture, railroads, and utilities were most frequently identified as creating problems in achieving effective erosion and sediment control. The single-family dwelling and special interest exemptions need to be reassessed and perhaps further qualified to prevent opportunities for avoidance of the law's

provisions. It seems reasonable that land disturbances that create similar problems should be controlled according to the same standards. However, it should be noted that the DSWC staff has received very few ESC complaints about railroad and electric/telephone utility construction, and the few that were recorded were apparently resolved quickly by the companies.

The studies indicate the principal concern regarding exemptions to be the lack of controls over agriculture. Agricultural and silvicultural activities are significant in terms of erosion and sedimentation effects on Virginia's rivers and bays, yet subject to relatively little in the way of binding regulation. Recognition of the importance of agriculture as a NPS in the drainage areas of the Chesapeake Bay and the Chowan River has been reflected in establishment of a state cost-sharing program for BMP implementation. However, agricultural activities in the remainder of the state continue to be subject only to the voluntary BMP program established by SWCB under water quality legislation, although a statewide cost-share program has been recommended.

The feasibility of regulatory programs for control of runoff from agricultural lands has been at least tentatively demonstrated by programs in such states as Pennsylvania and Iowa. However, the Iowa program is complemented by a significant cost-sharing program, and the Pennsylvania program has not seen intensive enforcement, making difficult the assessment of long-range feasibility and effectiveness.

The need to regulate agriculture in Virginia will depend on the success of the cost-sharing approach, an evaluation that will become possible only after more experience is acquired under the Chesapeake Bay Program. Continuance of a cost-sharing program in combination with any regulatory approach that may be adopted could be viewed as desirable to mitigate resulting financial hardship.

Timber harvesting activities can also create serious erosion and sedimentation problems if they are not properly controlled. There are indications that many of the small logging operations in the state function with little or no use of ESC controls. Many respondents from citizen and environmental organizations and some local ESC Program Administrators felt that logging activities should no longer be exempted because of degradation that has resulted from a lack of voluntary BMP implementation. In addition, some of the large forest products companies support regulation of the logging industry because the additional costs of their own voluntary BMP implementation place them at a competitive disadvantage with independent loggers.

However, the DCHR/DSWC is not aware of any recent studies of the effectiveness of voluntary compliance within the silvicultural industry. It would be wise to collect objective evidence prior to deciding to impose regulations. If regulation of the silvicultural industry is considered, the ESCL is probably not the best vehicle for applying such regulations. The laws, regulations and infrastructure of the Virginia Department of Forestry would appear to be more appropriate. If the General Assembly enacts legislation to protect non-tidal wetlands, it would be appropriate to require the implementation of logging BMPs at harvest sites in areas identified as wetlands.

6.8 ENFORCEMENT

Enforcement of ESC programs is the most frustrating part of the program to the ESC personnel. It is imperative that the local programs be given adequate enforcement tools in order to insure adequate compliance with the ESCL. In the municipal programs, personnel are using a variety of tools to enforce ESC including withholding occupancy permits, tying ESC to utility service authorization, etc. Personnel should not have to resort to peripheral, unauthorized means of enforcing the ESC program. The program's own enforcement mechanisms must be strong enough to provide effective incentives for compliance. The sure knowledge that violations will result in

imposition of substantial penalties provides such incentive, but the prospect that a violator will be assessed a significant penalty is slight at present.

One potential problem is that the present limitation of remedies to criminal actions may deter conviction of violators. While retention of the criminal action for willful or other serious violations of ESCL is desirable, a civil action may be more appropriate for the majority of violations.

A second problem at present is the tendency of at least some courts to impose only small penalties on violators. To provide the proper deterrent to program violation, penalties should be substantial enough to make compliance worthwhile, suggesting that ESCL should establish a minimum level for such penalties. A penalty equal to twice the amount necessary to correct violations of ESCL should be considered.

In order to gain the cooperation of the courts, the attorneys involved in ESC litigation and the courts themselves should be educated in the importance of potential damages to property and the environment. Means should be available for attorneys to discuss cases with the ESC technical personnel prior to the court date.

A third problem is the perception that the ESCL's penalty provision focuses on the landowner and not on the party directly responsible for installation and maintenance of control measures, the contractor. A provision allowing imposition of penalties on contractors for failure to comply with program requirements therefore has potential to increase effectiveness.

Establishment of mandatory permitting and a mandatory requirement for performance sureties as a condition of ESC project approval would increase assurance that planned erosion and sediment control measures were implemented where the responsible party fails to do so (due to financial constraints or other reasons). The interviews conducted as part of the DCHR and Water Center studies indicate that the current discretionary authority to impose sureties is frequently not utilized in local program administration, thereby decreasing the certainty that control measures will be implemented.

6.9 STORMWATER MANAGEMENT

There is strong support for regulatory stormwater management programs addressing flood prevention and NPS pollution control and administered according to a format similar to the ESCL. There is also strong support for having a single state agency responsible for administering any new flood control and stormwater quality control programs as well as the ESCL, since those problems are so interreiated. Most study respondents preferred that the DCHR/DSWC be the responsible agency. An administrative structure and regulatory format for a stormwater management program are suggested in the next section.

As with the ESC program, any new stormwater regulatory program will need to be adequately staffed if it is to be effective. Standards for design and construction of stormwater quality and flood control devices also need to be developed and promulgated.

VII. RECOMMENDATIONS

Having considered the results of the various studies upon which this report is based, the Division of Soil and Water Conservation of the Virginia Department of Conservation and Historic Resources recommends the following modifications of the Erosion and Sediment Control Law and actions to improve ESC Program implementation.

7.1 STAFFING

The DCHR recommends that DSWC staffing be increased by 20 FTEs, composed of engineer and clerical positions, to provide additional oversight, training and assistance to local governments and state agencies in the ESC Program. Three of those FTEs will provide staff for the recently acquired Flood Hazard Reduction Program, which was transferred without staff or financial resources. Several engineers and the clerical positions would be located in the Richmond office to provide coordination of local program reviews, training, state project oversight and technical assistance. The balance of these positions would be located in regional offices around the state in order to provide better assistance to local programs. These 20 FTEs are less than the additional 50-plus positions recommended by the study consultants. The DCHR believes that even without major changes in the law and regulations, these additional staff members could bring about significant improvements in program implementation.

7.2 LEGISLATION

7.2.1 Program Administration

1. Certain Code Commission-type changes in the ESCL would remove some confusion. Certain agency names have changed, referenced authorities have been supplemented, some terminology needs to be made consistent and references to "standards and criteria" should be changed to "regulations" to conform with terminology of the Administrative Processes Act, which did not exist when the ESCL was drafted. However, provisions should be kept that provide for the creation of "guidelines" as well as regulations.

2. Adding and modifying some definitions (e.g., applicant, responsible person, plan approval authority, guidelines, regulations and subdivision) would clarify the meanings of certain terms and perhaps eliminate some perceived loopholes in the law.

3. The Board should be authorized by statute to delegate specific day-to-day administration or other authority for the ESCL to the Director of the DCHR, with the Board retaining ultimate authority and responsibility for the program. For example, such delegation is authorized under the State Water Control Law.

4. The size and composition of advisory boards should be modified or eliminated all together [21-89.4(a) and 21-89.5(a)]. Their function was to assist with program establishment, which has been done. An alternative is to require calling together a technical review committee only when considering changes to program "standards."

5. Remove the fee limit (Sec. 21-89.5). This program is treated differently than other land-development regulatory programs, such as subdivision ordinances and the building code, which allow "reasonable" permit fees to cover administrative and enforcement costs.

6. Add the authority for local governments to identify "critical erosion areas" (as defined in the law or regulations) that may be unrelated to current development and to require the owners of such properties to stabilize such areas (Sec. 21-89.6).

7. Authorize the Board to review each local program periodically for compliance and adequate implementation (Sec. 21-89.4).

7.2.2. Exemptions

1. Delete the exemption for Federal lands (Sec. 21-89.3), and provide that land disturbing projects on federally owned land have plans approved and inspection and enforcement provided by the Board.

2. Delete the grandfather clause (Sec. 21-89.15), thereby eliminating a perceived loophole. The intent of a grandfather clause is generally to prevent an economic hardship due to rule changes during the execution of a project or commitment. It is difficult to conceive that such situations remain after 14 years of program implementation.

3. Reassess the exemptions for railroads and for telephone and electric utility lines. One of the main justifications for these exemptions has been the costly delays resulting from the plan approval/permitting option. The DCHR/DSWC recommends, as a reasonable compromise, allowing the railroads and public utilities to submit ESC specifications to the Board annually and, upon approval, manage their own ESC program internally (as they claim to do now) with the addition of periodic Board oversight to ensure compliance. This should address the current public perception that the utilities and railroads are receiving special treatment.

4. Continue the exemption for tilling, planting and harvesting of agricultural, horticultural and forest crops pending the results of the upcoming NPS assessment required by the 1987 amendments to the Clean Water Act.

5. Related to the above exemption, add a clarification [to be placed as Sec. 21-89.3(a)(va)], which would state that clearing land for the purpose of tilling, planting or harvesting agricultural, horticultural or forest products is exempt provided that a conservation plan has been approved for the site by the local SWCD, and the plan is implemented during the land clearing process.

6. Change the exemption in 21-89.6(e) so that referenced "engineering operations" [Sec. 21-2(c)] must result in an agricultural use and that ponds and floodwater retarding structures that are large enough to require dam safety permits under DCHR regulations shall not be exempt from this law.

   Note: These engineering operations, such as strip cropping, diversions and terracing, have traditionally been exempt as supportive of tilling, planting and harvesting and as being soil conservation measures themselves.

7. If ESC regulations are considered for silvicultural activities, the laws and regulations of the Virginia Department of Forestry appear to be a more appropriate vehicle than the ESCL. As a minimum, BMPs should be required at logging sites in areas identified as wetlands, especially if non-tidal wetland protection laws are eventually enacted.

8. Add to the exemption for single-family houses not in subdivisions [Sec. 21-89.3(a)(vii)] a condition that the house must be set back at least 100 feet from any downhill (downstream) property line or water course. This requirement should not be unreasonable since this exemption applies to houses built on lots exceeding five acres or larger tracts of land.

9. Support additional language in the Virginia Oil and Gas Act (Sec. 41.1-286 et seq., Code of Virginia) to include gas well feeder pipelines in the list of land disturbing activities requiring ESC approval under that Act.

10. Change the exemption for tidal shoreline erosion control projects [Sec. 21-89.3(a)(x)] to delete the exemption of such projects that are merely approved by the Soil and Water Conservation Districts in which the projects are located and to include the exemption of such projects under permits from local wetlands boards or the U.S. Army Corps of Engineers as well as those approved by the VMRC. By making this change, all shoreline erosion control projects should be scrutinized under one regulatory program or another.

7.2.3 Technical Issues

1. Clarify Sec. 21-89.6(d)(1) regarding changing previously approved control plans to provide for changes required by the local program administrator if the plan as implemented fails to satisfy performance standards (General Criteria).

2. Give program "standards" (regulations) the force of law [Sec. 21-89.4(b)].

3. Codify and clarify the variance procedure of the General Criteria which provides needed flexibility but implies the application of less stringent standards.

7.2.4 Inspection

Consolidate Sections 21-89.8(b) and (c) to consistently require periodic inspections and also to consistently allow imposition of monitoring and reporting requirements.

7.2.5 Enforcement

1. A subsection should be added to Sec. 21.89.11 (penalties) authorizing that civil penalties may be sought by the enforcement agent of any unit of government that implements an ESC program. Maximum penalties should be specified, and each day of an uncorrected violation should constitute a separate violation. Some provision should be made for the disposition of monies collected through civil penalties.

2. A schedule of administrative fines should be authorized so that a violator may pay a specified fine in lieu of going to court, and a provision should be made for the disposition of monies collected through such fines.

3. Add to Sec. 21-89 11(a) that each day of an uncorrected misdemeanor violation shall constitute a separate violation.

4. The responsibility for compliance should be clearly assigned to the landowner and any other "responsible persons" who have contractual responsibility for a project and/or land disturbing activities, including developers, contractors and subcontractors [Sec. 21-89.6(a) and (b)].

5. Concerning the use of performance sureties, clarify conditions under which a surety will be returned (based on the achievement of adequate stabilization, not the completion of the land disturbing project), and the application to which a surety may be applied, (including repair of off-site damages). Add a provision that the agency may bill the permittee for the difference if cost exceeds the amount of surety (Sec. 21-89.7).

6. Make the stop-work order project-oriented rather than land disturbance-oriented. This would address such ESC problems as inadequate installation or maintenance of controls during periods when grading is not being done. Under the current language, the stop-work order is useless at such times because there is no land disturbance activity to stop.

7. Reflect appropriate roles of municipally employed attorneys as well as Commonwealth Attorneys [Sec. 21-89.11(c)].

7.2.6 Training and Certification

Specify Board responsibility to provide training (Sec. 21-89.4) and require certification of ESC inspectors in a manner similar to that implemented for certifying building inspectors (ref. Code of Virginia Section 36-105 and Building Code Section 102.8).

7.2.7 Stormwater Management

1. Clarify the statutory authority for addressing stormwater management under ESC law [(e: "nonagricultural runoff" in Sec. 21-89.4(a)] for prevention of stream channel erosion.

2. Even though the investigation of stormwater management issues was a subsidiary element of this study, the consultants have recommended that additional legislation and regulation be enacted for stormwater management to prevent increased localized flooding and nonpoint source pollution. The DCHR/DSWC agrees with the need for such additional regulatory authority. Should the General Assembly decide to proceed with the development of stormwater management legislation, the DCHR/DSWC recommends that the following approach be considered:

   a. Policy: The primary goal of state or local stormwater management programs should be to maintain after development, to the greatest extent possible, the pre-development runoff characteristics to arrest the deterioration of existing waterways by reducing stream channel erosion, NPS pollution and local flooding.

   b. Alternative Administrative Structures: The DCHR/DSWC has identified four potential structures that could be adopted to administer a comprehensive stormwater management program. The first is a program of state agency administration and enforcement of state law and regulations. The program would require significant addition of manpower and logistical coordination with local development review programs. A second alternative involves allowing localities the option of adopting a local program at least as stringent as state-promulgated regulations and guidelines. Areas not covered by local programs would be subject to state regulations and enforcement. A third alternative, similar to the ESCL, would require locally adopted programs following state regulations and guidelines. And finally, somewhat of a pure "local option" program is an alternative. With this plan, local ordinances and regulations are at least as stringent as those in a state-promulgated model. However, to insure a minimum level of effort, areas not covered by local stormwater management ordinances would still be subject to the stormwater management regulations under the ESCL. The pure "local option" alternative also appears to maintain regulatory sensitivity to local need for such control.

   c. Recommended Administrative Structure: Administrative authority for such a program should be assigned to the Soil and Water Conservation Board. The Board should be authorized to promulgate minimum regulations and guidelines for local-option stormwater management programs. The Board would have responsibilities similar to those under the current ESCL and those recommended in this report. Enforcement options should include those in the current ESCL and those recommended in this report. Localities that opt not to adopt a program would still apply some minimum stormwater management regulations through the ESC program.

d. Regulations: Each of the various stormwater-related problems identified in this report, including NPS pollution, stream channel erosion and localized flooding require the application of different design criteria to achieve effective control. Such criteria may vary further depending upon unique characteristics of the physiographic province within which a development is located. Therefore, stormwater management regulations should reflect the various needs of Virginia's counties and municipalities. The regulations should require evaluation of the array of possible types of problems and require designs satisfying all criteria identified as applicable to a particular site. Planning and design methods that address each of the criteria are currently available, so there is no reason that multi-criteria policies and regulations should not be adopted. Adoption of multi-criteria policies may slightly increase the complexity of the design process but should greatly reduce stormwater-related problems associated with development.

Specifically, NPS pollution can be reduced by BMPs that infiltrate or detain the first one-half to one inch of rainfall or some "frequent" storm event with a short statistical return period (e.g. the "six-month" storm). Stream channel erosion may need to be more effectively controlled by modifying the current ESC regulations or incorporating the use of simplified bed material load estimation models. Groundwater recharge and stormwater volume control can be accomplished principally by infiltration methods. And control of localized flooding can be accomplished best by peak discharge control of both the two-year and 10-year statistical storms to the pre-development levels. Certain localities or sensitive watersheds in the state may need to have an additional layer of peak discharge control applied for the 100-year statistical storm.It will be important for stormwater management regulations to be carefully integrated with the ESCL, the SWCL, the FDRA and current or future tidal and freshwater wetland regulations. Also, it will be important to maintain enough flexibility to allow for locally developed stormwater management programs that are either more stringent than the state program or different based upon engineering studies of the local problems and specifically recommended solutions.

e. Interjurisdictional Oversight: The Board should maintain the authority to resolve disputes concerning interjurisdictional stormwater impacts, including disputes between localities or between state or federal agencies and localities.

f. Funding: The "stormwater utility" approach discussed in Section 5.4.1.1. of this report should be authorized for use by Virginia localities; this approach generates a dependable source of revenue for administration of stormwater management programs, including planning, implementation, enforcement and long-term management of the control structures.

7.3 TECHNICAL STANDARDS

Revise the Virginia Erosion and Sediment Control Handbook to do the following:

1. Incorporate recommendations of the Handbook review committee that met during the winter of 1985-86.

2. Particular attention and additional study should be addressed to technical standards for sediment trapping measures incorporating recent research and development concerning trapping efficiency.

3. Clearly separate regulations from guidelines so that the guidelines are not subject to regulatory procedures of the Virginia Administrative Processes Act.

4. Expand Chapter 7 ("Administrative Guidelines") to provide increased and improved guidance to those administering programs. More guidance on enforcement options and procedures would be particularly helpful.

APPENDIX A

This section includes responses to the report recommendations concerning reassessment of the special interest exemptions in the ESCL. Reponses were submitted by the following organizations concerning the referenced exemptions:

Agriculture

1. Virginia Board of Agriculture and Consumer Services
2. Virginia Farm Bureau Federation

Silviculture

1. Virginia Board of Forestry
2. Virginia Forestry Association
3. Virginia Farm Bureau Federation

Telephone Utility Lines

1. Virginia Telephone Association (re: telephone utility lines)
2. C&P Telephone Company (re: telephone utility lines)
3. Contel Telephone Operations

Electric Utility Lines

1. Virginia Power Company
2. Appalachian Power Company
3. Delmarva Power
4. Potomac Edison Power Company
5. Old Dominion Electric Cooperative

Railroads

1. Norfolk Southern Corporation
2. CSX Corporation
3. RF&P Railroad

Agriculture

SEP

JASON CARBAUGH
COMMISSIONER

RAYMOND D. VAUGHAN
DEPUTY COMMISSIONER

COMMONWEALTH of VIRGINIA

DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
P. O. Box 1163, Richmond, Virginia 23209

September 8, 1987

	CONF		
	ATTEND		RETURN
	HOLD		FILE
1	DIR		FSS
2	DEP DIR		HL
	ADM DIR		
3	EX AST		P&R
	FIS DIR		SWC
	IA		HP
	PER DIR		VOF
	ADM AST		SEC
	DP DIR		AG

TO: The Honorable Richard M. Bagley
The Honorable John W. Daniel, II
Mr. R. E. Wilkinson, Chairman, Virginia Soil and Water Conservation Board
Mr. B. C. Leynes, Jr., Director, Department of Conservation and Historic Resources

Gentlemen:

Attached is a copy of a resolution adopted by the State Board of Agriculture and Consumer Services at its meeting on August 5, 1987, which I was requested to send to you.

Sincerely,

Raymond D. Vaughan
Secretary
State Board of Agriculture
and Consumer Services

Attachment

RESOLUTION BY THE

VIRGINIA BOARD OF AGRICULTURE AND CONSUMER SERVICES

ON THE

VIRGINIA EROSION AND SEDIMENT CONTROL LAW

WHEREAS, Virginia farmers have been exempted from the requirements of the Virginia Erosion and Sediment Control Law for land-disturbing activities associated with tilling, planting, or harvesting of agricultural, horticultural, or forest crops since the legislation was passed in 1973; and

WHEREAS, Virginia farmers continue to expand and improve Best Management Practices in agricultural and forestry tillage, planting and harvesting management; and

WHEREAS, the 1985 USDA Food Security Act prevents the tillage and planting of fragile and highly erodible land for production and requires all farms participating in federal agricultural programs to develop a soil conservation plan by 1990 and implement the plan by 1995; and

WHEREAS, the Chesapeake Bay Program and other state soil erosion programs have increased research, education and incentives to promote improved soil erosion practices; and

WHEREAS, environmental groups, farm and forestry groups, federal and state policymakers, and state and local administrators are working together to create interdisciplinary coordination of soil erosion programs throughout the Commonwealth; now, therefore be it

RESOLVED by the State Board of Agriculture and Consumer Services that Virginia farmers should continue to be exempt from the requirements in the Virginia Erosion and Sediment Control Law for land-disturbing activities associated with tilling, planting, or harvesting of agricultural, horticultural, or forest crops; and, be it

FURTHER RESOLVED, That this resolution be sent to the Secretary of Economic Development, Secretary of Natural Resources, Chairman of the Virginia Soil and Water Conservation Board, and the Director of the Department of Conservation and Historic Resources.

AUG 1 0 1987

Virginia Farm Bureau Federation

200 WEST GRACE STREET P. O. BOX 27552 RICHMOND, VIRGINIA 23261 804-788 1234

August 6, 1987

Mr. Roland B. Geddes
Director
Virginia Division of Soil & Water Conservation
203 North Governor Street
Suite 206
Richmond, VA 23219

Dear Roland:

Our staff has reviewed the consultants report, "An Evaluation Of The Virginia Erosion and Sedimentation Control Program". In Section IX-3 of that report the recommendation is made that the exemption for agriculture be "reassessed". This exemption is set forth in Sec. 21-89.3, paragraph (a) of the "Erosion and Sediment Control Law", Title 21, Chapter 1, Article 6.1 of the Code of Virginia. I wanted to make a brief comment on behalf of the 38,000 producer members of the Virginia Farm Bureau Federation. The Virginia Farm Bureau requests that agriculture continue to be exempt from the provisions of the Erosion and Sedimentation Control Law.

This request is based on simple concepts. Agricultural producers in Virginia have a track record of continually improving the quality of their stewardship of the land on a voluntary basis. No single group has a greater vested interest in maintaining the land and waters of the Commonwealth in an unadulterated form than farmers. The viability of their future economic activity is tied to the results of present and future actions.

The farmer and landowner interest in the voluntary BMP installations under the 1987 Chesapeake Bay Nonpoint Source Pollution Control Program Area are a clear indication of commitment to improving environmental quality. As you know the 2.5 million dollars requested under this program was more than double the original appropriation. Division of Soil and Water Conservation publications indicate that 1987 sign up for cost sharing on BMP installations involved the largest number of farmers ever. Recent changes in federal farm programs can be expected to further promote participation in these cost share programs.

The 1985 Food Security Act represents the most comprehensive conservation compliance legislation ever enacted. For the first time federal farm program participation is directly linked to the effectiveness of a farmers conservation practices. Implementation of the Sodbuster-Swampbuster provisions of this bill represents both a tremendous challenge and opportunity for farmers. These programs are administered by the USDA's Soil Conservation Service (SCS). SCS has a technically trained staff with significant expertise in conservation techniques appropriate to production agriculture. SCS staff personnel are appropriate to administer the conservation programs which are now in place and when fully implemented will result in significant protection of fragile farm lands and the waters into which they drain. Including agriculture in the Erosion and Sediment law would be inappropriate due to the fact that a comprehensive regulatory mechanism is already in existence to accomplish identical goals.

The Virginia Farm Bureau and all members of Virginia Agriculture remain committed to maintaining and improving the environment in which we live and farm. The wide scale adoption of voluntary BMPs and compliance with the 1985 Farm Bill are the appropriate areas for producer participation.

Thank you for your consideration in this matter. I trust that these arguments will reinforce the importance of leaving the agricultural exemption to the Erosion and Sediment Law in place.

Sincerely,

Robert B. Delano
President

RBD/dce

Silviculture

JUL 2 4 1987

COMMONWEALTH of VIRGINIA

BOARD OF FORESTRY

Alderman & McCormick Roads
Box 3758, Charlottesville, Virginia 22903
(804) 977-6555

July 20, 1987

Mr. Roland B. Geddes
Director
Division of Soil and Water Conservation
Suite 206
203 Governor Street
Richmond, Virginia 23219-2094

Dear Roland:

Attached is a recently adopted Board of Forestry resolution requesting that silvicultural practices remain exempt from the Soil Erosion and Sedimentation Act.

The Board appreciates the necessity for good land management practices to protect our streams and rivers. We believe the forestry community is improving both its educational programs and on-the-ground accomplishments for protective measures in day-to-day operations. We all recognize that improvement must continue, but since 1979 concerted efforts have shown positive results. Rather than burden landowners and operators with additional regulations and permits, we are respectfully requesting to keep silviculture on a voluntary basis.

Please rest assured this Board will remain committed to positive efforts that will assist in your agency goals for improved water quality.

Sincerely,

T. Nelson Flippo
Chairman

Enclosure

COMMONWEALTH of VIRGINIA

BOARD OF FORESTRY

Alderman & McCormick Roads
Box 3758, Charlottesville, Virginia 22903
(804) 977-6555

WHEREAS, the sixteen million acres of forestland in Virginia is recognized as a major contributor to the valuable, high quality water resource of this Commonwealth, and,

WHEREAS, it is recognized that forest management activities, including harvesting, site preparation and reforestation are necessary to support the forest industry so that it will continue to prosper and contribute to the economic well-being of Virginia, and,

WHEREAS, it has been well established that forest management activities can be accomplished without adverse impact upon the quality or quantity of Virginia's fresh water, and,

WHEREAS, through the cooperative efforts of the forestry community the voluntary accomplishments of forestry BMP has been successful in accomplishing a reduction of soil erosion and stream sedimentation and that these voluntary accomplishments have steadily increased each year, and,

WHEREAS, the Board of Forestry is committed to actively support this effort and advises the State Foerster to maintain an active technical assistance program to insure an increase of on-the-ground forestry BMP accomplishments through educational programs, services to landowners and industry, technical advice to private and industrial foresters and internal training,

NOW THEREFORE BE IT RESOLVED, that the Board of Forestry does respectfully request the Director of the Division of Soil and Water Conservation to allow the continued exemption of silvicultural activities from the Virginia Soil Erosion and Sedimentation Control Act,

BE IT FURTHER RESOLVED, that the Board of Forestry and the Department of Forestry will actively seek cooperative projects with the Division of Soil and Water Conservation to increase successful forestry BMP practices throughout the Commonwealth.

Approved by the Board of Forestry this _____ day of _____, 1987.

_____
T. Nelson Flippo, Chairman

JUL 1 6 1987

Virginia Forestry Association

1205 EAST MAIN STREET • RICHMOND, VIRGINIA 23219-3627
Publishers of Virginia Forests magazine TELEPHONE 804-644-8462

CHARLES F FINLEY, JR. CAE
Executive Director

July 15, 1987

Mr. Roland B. Geddes, Director
Division of Soil and Water Conservation
203 Governor Street
Suite 206
Richmond, VA 23219

Dear Mr. Geddes:

At your kind invitation, we would like to submit this position letter along with some background information relating to the Erosion and Sediment Law and the current exemption for harvesting forest crops [21-89.3(a)v and 21-89.6(e)]. Because of the unique nature of forestry operations and other considerations, the Virginia Forestry Association requests that this exemption continue in effect.

The Virginia Forestry Association (VFA) has over 2100 members consisting of conservation-minded citizens, clubs, foresters, Tree Farmers, forest products industries and other businesses. Our purpose is to encourage the wise use of Virginia's forests for present and future generations.

Virginia's forests cover 64 percent of the state and help sustain the quality of our air and water as well as a large portion of our economy. The total of nearly 1,000 manufacturers that use Virginia's forests for raw materials rank "first in employment, first in salaries and wages, third in value added through manufacturing, when compared to other manufacturing industries, and fifth in capital expenditures". (Source: Virginia's Forests: Its Common Wealth, Virginia Division of Forestry, 1985). These are significant contributions to the state's well being, and they are accomplished with minimal impact of the soil erosion and stream sedimentation problems of our Commonwealth. VFA recognizes, however, that despite the efforts of the forestry community in general, and the Department of Forestry in particular, there is still room for improvement. We are confident that this improvement can continue most efficiently through a continuing and expanded voluntary action program.

Before describing some of the voluntary effort that has already taken place in the forestry community, we would first like to point out that even on "erodible land," the forest builds the soil. In comparison to other agricultural uses on erodible land, the soil on forestland is lost at an average rate of 0.8 tons per acre per year (Table 1) which is well below the average rate at which soil is added to the land through natural forces--four tons per acre per year (ranges from three to five tons per acre per year). The net effect, as you know, is that soil is being added in our forestland.

Table 1. Erosion Rates by Use on Erodible Lane

Use	Range Tons/Ac./Yr.	Average Tons/Ac./Yr.
Cropland	5 - 25	8.0
Pastureland	3 - 15	6.0
Grazed Forestland	3 - 12	5.0
Forestland	0.5 - 2.5	0.8

Source: Conservation Needs Inventory, U.S.D.A., 1977.

We would also like to point out that only 1.2 percent of Virginia's land base is totally harvested annually (approximately 185,000 acres). Even if as much as ten percent of this land area is disturbed for logging roads or skid trails, then only 0.12 percent of the Virginia's land base has a potential for contributing to the erosion and sedimentation problem because of the harvesting of forest crops. Also, this relatively small area (18,500 acres) is dispersed over the entire state (15.4 million acres). In addition, most road and skid trail disturbance is temporary, as natural vegetation reclaims most of these areas within two years (unless the road is maintained for permanent access).

I should also point out that site preparation activities prior to reforestation on these harvested sites may add slightly to the potential for sedimentation, but the major forms of site preparation (e.g., chopping and/or prescribed burning) create minimal soil disturbance. The practices that do disturb the soil (e.g., shearing and piling), once again, have a temporary effect except in a few extreme cases. Also, shearing and piling is minimally used and is most often applied to flat sites which are not susceptible to erosion.

We would like to describe some activities that the forestry community has implemented to improve erosion and sedimentation control:

1. Educating the entire forest community about forestry Best Management Practices (BMPs) has been a major goal of the Department of Forestry and the Virginia Cooperative Extension Service. In 1976, 20 dinner meetings were held across the state, and almost 800 foresters, loggers and others participated. In 1981 and 1982, 20 logger training meetings were held involving 538 participants. In 1982, the Virginia Game Commission was involved in three meetings involving 80 agency (wildlife and forestry) personnel. In 1986 and 1987, 10 training sessions were held involving 331 members of the forestry community. Also, for the past several years 24 large BMP "signborads" were displayed at various sawmills, pulpwood yards and concentration yards around the state.

2. The Virginia Forestry Association has sponsored an annual "Logger Merit Award" to recognize outstanding loggers for exemplary adherence to Best Management Practices and other criteria.

3. The Virginia Cooperative Extension Service periodically offers short-courses on proper forest road construction.

4. The Department of Forestry is supporting best management practices statewide with a full-time forest hydrologist. Among other tasks, the hydrologist has provided valuable research data on Best Management Practices (BMPs) in the state.

5. The Department of Forestry has summarized the annual BMP activity of forest industry (Appendix I).

6. With the financial support of forest industry, the Virginia Cooperative Extension Service and the VFA jointly sponsor eight forestry and wildlife bus tours each year that often feature the proper use of BMPs on private forest land.

7. Various forest products companies conduct periodic inspections of company-owned and privately-owned forestland to see if BMPs are properly implemented on lands in their care.

8. BMP cost-assistance is available to landowners through Virginia's Reforestation of Timberlands Act, the federal Forestry Incentives Program, Agricultural Conservation Program and Conservation Reserve Program and the more recent Chesapeake Bay Program.

Even though this is an impressive list of activity and even though forestry operations have a relatively small negative impact on erosion and sedimentation, the forestry community recognizes that there are occasional problems. We will continue to address them.

We would like to search continuously for more cost effective ways to improve BMP compliance on all forest land. Such activities may require increased Department of Forestry (DOF) personnel in the field of forest hydrology, continued BMP research, and full funding of county positions in the DOF. Also, continued and expanded cost-assistance and tax incentives to private landowners would make voluntary compliance financially feasible on more small woodlots.

Thank you for the opportunity to express the views of the Virginia Forestry Association on this important matter. We hope that we have adequately described the importance of forestry in Virginia, the relatively small effect of forestry operations on erosion and sedimentation and the broad range of voluntary action that has taken place in the forestry community. We believe that continuation of the exemptions for forestry activities are justified. I trust that the forestry exemption will continue in effect so that forestry can continue to be a major part of the state's economy.

Sincerely,

Wallace F. Custard
President

WFC:bf

AUG 18 1987

Virginia Farm Bureau Federation

200 WEST GRACE STREET P. O. BOX 27552 RICHMOND, VIRGINIA 23261 804-788-1234

August 14, 1987

Mr. Roland B. Geddes
Division of Soil & Water Conservation
203 Governor Street
Suite 206
Richmond, VA 23219

Dear Mr. Geddes:

The Virginia Farm Bureau Federation is actively involved in forestry issues as they pertain to large timber owners as well as the farm wood lot. Forestry is tremendously important to the economic and environmental well being of all Virginians. Farm Bureau members are direct owners of timber land and many live on or near their forest lands. Because of this close relationship to the land responsible stewardship is a primary goal of Virginia Farm Bureau families. I think our efforts in the area of encouraging use of forest land which is consistent with its long term maintenance are well known to you and other members of the agriculture community.

I am concerned that there is some discussion of eliminating the forestry exclusion to the Erosion and Sediment Law. On the average Forest lands even on erodible land tend to build soil rather than loose soil. Forests in fact have a highly stabilizing effect on steep land which would be subject to severe erosion otherwise. Less than two percent of Virginia's total land base is harvested for timber annually. So even in the absence of any use of BMP's the effect of these logging operations would be minimal. In fact, the use of BMP's in logging operations is growing voluntarily due to an increased educational effort from a broad range of industry groups. We encourage Farm Bureau members to be very selective in choosing loggers and harvesting techniques. Our members are extremely eager to utilize harvesting methods which minimize impact on their land. We work closely with the Department of Forestry promoting utilization of the cost sharing and technical resources available through state and federal agencies.

There is much work left to do but the private sector working with government is well on the road to making forestry activities mindful of water quality and other environmental concerns. It makes no sense to alter the working of a partnership that has been successful over the years. The dollars necessary to implement new regulatory efforts in this area would be more effectively applied to expanding Department of Forestry operations, expanded cost assistance, and tax incentives.

Continuation of the exclusion for Forestry to the Erosion and Sedimentation Law will allow private forest land owners to continue to work with government agencies who have the expertise and dedication to continue to voluntarily lessen the environmental impacts of forestry.

Sincerely,

Robert B. Delano
President

RBD/dce

Telephone Utility Lines

Virginia Telephone Association

August 17, 1987

Mr. Roland B. Geddes
Division Director
Department of Conservation & Historic Resources
Division of Soil & Water Conservation
Commonwealth of Virginia
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Geddes:

This letter is in response to your letter dated August 6, 1987, subject: Virginia Erosion and Sediment Control Law (Sec. 21-89.1 et seq., Code of Virginia).

Telephone utilities throughout the state are very concerned about erosion and sediment control, which is evident in construction project practices. Buried construction of telephone cables in most areas is done with a vibratory plow for about 98% of the projects, which disturbs the soil only a minimal amount.

Construction on State and Federal property has its restrictions regarding construction, protection, and restoral of property. Construction on private property has its restrictions and obligations due to the nature of easements obtained from the property owners. Therefore, the telephone utilities are already "covered" through other methodologies.

A point to make note of is that there may be companies in the private sector that are not under restrictions already in place for electric and telephone utilities.

The job is being done already by telephone utilities; therefore, duplication will only require added cost for agencies to "police" projects already restricted by practices and policy thereby adding expense to utility companies and ultimately to each customer and tax payer.

700 BUILDING, SUITE 1420 • 700 EAST MAIN STREET • RICHMOND, VIRGINIA 23219-2662 • (804) 643-0688
"representing the telecommunications industry"

In summary, the inclusion of telephone utilities under this Section of the Virginia Code will not serve a useful purpose, and the exemption for telephone utilities should be continued.

Representatives of the Virginia Telephone Association (VTA) would be pleased to discuss any concerns in person. If you have any questions, don't hesitate to call.

Sincerely,

Ralph L. Frye
Executive Director

RLF/kf

AUG 2 4 1987

C&P Telephone
A Bell Atlantic Company

J. H. Hyman
District Staff Manager - Operations Support
Network Services - Virginia

10 North Nansemond Street
P. O. Box 27241
Richmond, Virginia 23261
Telephone (804) 772-5401

August 20, 1987

Mr. C. Scott Crafton
Water Control Engineer
Commonwealth of Virginia
Department of Conservation and Historic Resources
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Crafton:

With reference to the recent study of the effectiveness of local implementation of the Virginia Erosion and Sediment Control Law, C&P Telephone supports the present exemption for telephone utility lines.

This position is based on the following facts:

Telephone Company right-of-way clearing activities generally involve narrow strips of land and cause minimal disturbance to land surfaces.

In those instances where we construct our facilities within public right-of-ways, our activities are generally governed by State or Local permit stipulations with regard to soil disturbance, backfill, depth, surface restoration and disposing of soil.

Where telephone facilities are constructed on private property, we are under obligation to the property owners, as a condition of right-of-way, to backfill, tamp, and otherwise promptly restore any surface disturbance to his satisfaction, and in accord with his stipulations.

In summary, Telephone Company disturbance of soil surfaces are minimal and offer very limited opportunity for erosion and water pollution.

Thank you for the opportunity to express our thoughts on this matter.

Sincerely,

J. H. Hyman

Copy to: Mr. Ralph Frye, Virginia Telephone Association
Mr. Jack Stadler
Mr. Harrison Bush
Mr. F. L. Benson, Jr.

SEP 1 1987

Continental Telephone Company
of Virginia
P.O. Box 980
Mechanicsville, VA 23111
804 779 4016

CONTEL Telephone Operations

August 25, 1987

Mr. C. Scott Crafton
Water Control Engineer
Department of Conservation
Commonwealth of Virginia
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Crafton:

The Virginia Telephone Association has provided Continental Telephone Company of Virginia with a copy of your letter of August 6, 1987, regarding soil erosion. I would like to respond to your letter.

Continental Telephone of Virginia is vitally interested in protection of the environment and certainly the erosion of soil which would affect the waterways. It is because of our concern for this, as well as the customers we serve, that we take every precaution to assure a minimal of land disturbance in our construction practices.

It is our policy to reconstruct as nearly as possible any damage done to land. When plowing a cable, we only make a three inch wide cut. Following the placement of cable, we reseed to insure restoration. If we cut a driveway, we restore it to its original condition eliminating puddling or holes which would cause customer irritation or unsightly conditions.

Clearing of rights-of-way is very limited in the telephone industry since most areas of development for housing have already been cleared and access to the premise is planned and installed in accordance to the developer's needs.

My point is that the construction practices of the telephone industry are such that soil disturbance is minimal and, when it does occur, we readily reseed, repave or do whatever is necessary to accommodate a good environmental condition.

We at Continental Telephone of Virginia would hope that the exemption for our industry would be recognized as essential in our construction needs, allowing us to continue to meet our demands for continued growth and development without undue hardship and the burden of further regulations.

Sincerely,

William D. Watson

William D. Watson
Director - Public Affairs

WDW:jbw

Electric Utility Lines

American Electric Power System
APPALACHIAN POWER CO.
Post Office Box 2021, Roanoke, Virginia 24022
Telephone: area code (703) 985-2300

August 27, 1987

Mr. C. Scott Crafton
Water Control Engineer
Commonwealth of Virginia
Department of Conservation and Historic Resources
Division of Soil and Water Conservation
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Crafton:

Appalachian Power Company has reviewed your letter to R. D. Carson of August 6, 1987, concerning the 'utility exemption' contained in the Virginia Erosion and Sediment Control Law. The company appreciates the opportunity to respond on this issue and urges the Division of Soil and Water Conservation to give careful consideration to the following comments in support of the exemption continuance.

Section 21.89.3, Code of Virginia, establishes the definition of "land-disturbing activity" which exempts "...(iia) construction, installation, or maintenance of electric and telephone utility lines..." This exemption was included in the original Erosion and Sediment Control Law due to circumstances and reasons which remain valid at this time. A discussion of the supporting evidence is discussed below.

Utility line construction is quite different from other types of construction or site development. Utility line construction involves two main components involving land disturbances: 1) location and installation of tower or pole structures to support the conductor, and 2) clearing the right-of-way and installation of the line conductor. To address the potential effects of either component on erosion, a detailed review of each activity is needed.

The sequential activities involved for the installation of a tower or pole structure may require construction of an access road involving limited clearing to the structure site. The site is cleared in the immediate area of where the structure is to be erected insofar as trees and brush are cut flush with the ground and removed. A minimal excavation is made at the structure locations to facilitate installation of foundations or poles and the structure is erected. After the structure is erected and conductor installed, crane pads, conductor tensioning areas, and structure locations are seeded, fertilized, and mulched to establish vegetative cover. Also, access roads are graded, bermed, and side slopes seeded. In most cases the area disturbed at the structure location is considerably less than the 10,000 square feet minimum area requiring an erosion and sediment control plan. Since the amount of exposure is small, the effects of erosion would be minimal.

Clearing the right-of-way for line construction involves a somewhat different type of land-disturbing activity. Normally, right-of-ways must be clear of trees and brush to allow an unobstructed span for the conductor. Even though trees and brush are removed, it is important to note that stumps, root mat, underlying grass, vegetation, and topsoil are left intact.

Another area of land-disturbing activity closely related to utility line construction involves substation construction at terminal points along transmission lines. Construction of substations is the one activity, which is an integral part of utility line construction, which presents a risk of potential erosion. During the building of substantial access roads and grading for the substation site, the topsoil and vegetation are removed. Because substation construction is similar to conventional projects in terms of erosion potential, Appalachian Power Company currently prepares an 'erosion and sediment control plan' for each project with disturbed areas exceeding 10,000 square feet.

In reviewing the applicability of the Erosion and Sediment Control Law, it is noteworthy that in areas associated with utility line construction (i.e., substations) where erosion potential is evident, E&S Plans are prepared and the law, as it now stands, is effective. For those activities associated with utility line construction where erosion potential is de minimis such as tower sites or right-of-way clearing, the exemption applies as it was originally intended. It is clearly evident that in areas of utility construction where erosion potential exists, the law applies and is effective since erosion protection is required. Where the utility exemption does apply, the construction activity does not cause erosion. This point is reinforced by the lack of complaints related to erosion from line construction projects.

Aside from the supporting evidence discussed above, there are several additional reasons for maintaining the utility line exemption as it now stands in the E&S law. Utility line construction usually involves projects which extend many miles and cross more than one jurisdictional boundary. Under the current law, localities are given responsibility for implementing programs which quite often vary in both substance and interpretation. To subject an intrastate, or in some instances interstate, transmission line to the subjective interpretations of local jurisdictions for de minimis, erosion potential would be unnecessary and without just cause. Any standards and interpretations which affect multiple jurisdictions should be administered by the state agency. Appalachian Power Company feels that Virginia's General Assembly took the appropriate action in granting the utility line exemption and the justification for that action remains valid at the present time.

A quick review of the law should not prompt the state to take

hasty action without thorough study of the facts. A simple reading of the statute without a detailed knowledge of utility construction methods could lead to a false assumption that the 'utility line exemption' is too broad and allows uncontrolled erosion; however, to the contrary, the existing law and its application are most effective in controlling erosion from general utility construction projects. Past experience should attest to the current law's effectiveness. Appalachian Power Company urges the Division to allow utility line exemption to remain as it is in the current law.

As stated earlier, Appalachian Power Company appreciates this opportunity to respond on this issue. Utility line construction can be described, at best, as a heavily regulated and administratively burdensome task requiring substantial capital outlays. Any further unnecessary regulation and its intended cost should be avoided.

Sincerely,

Robert J. Robinson

Robert J. Robinson
Environmental Affairs Director

RJR:d

cc: Mr. R. D. Carson, Jr.

E. L. CRUMP JR
Virginia Legislative Affairs Representative

SEP 8 1987

Post Office Box 26666
Richmond, Virginia 23261
804-771-3240

VIRGINIA POWER

September 1, 1987

Mr. C. Scott Crafton
Water Control Engineer
Department of Conservation and Historic Resources
Commonwealth of Virginia
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Crafton:

We appreciate you and Jim Cox meeting with us to discuss possible modifications to the Virginia Erosion and Sediment Control Law. Your explanation that this law and its exemptions were periodically reviewed in order to determine if revisions should be made from time to time certainly seems to be a correct procedure. You stated that the consultants report indicated that certain exemptions such as agriculture, silviculture, utilities, railroads, mining, oil and gas should be reassessed.

As we explained, Virginia Power participated in the formation of the current law at which time it justified an exemption for utilities and the General Assembly at that time felt that the utility exemption was appropriate in light of current practices being followed to control erosion and sedimentation on initial right of way clearing for transmission and distribution line construction. All these activities are covered by specifications which will minimize any erosion and sediment pollution.

It is also important to note that the erosion and Sediment Control Law does not exempt all utility activity. In fact we meet all the local and state requirements when we build sub stations, power stations, office buildings or conduct any other major land disturbance activity.

We think the initial burden imposed on issuing permits for 30,000 installations a year, setting some 20,000 poles a year, or repairing some 10,000 failures would be an unreasonable obligation both to the utilities and the local governing body. We also feel right of way clearing is similar to logging in that woody growth is removed but roots, stumps and smaller vegetation is allowed to remain. We suggest that there is little, if any, soil disturbance

as a result of right of way clearing.

These are the main reasons that Virginia Power suggest that the exemption for utilities be continued as stated in the current law. We have enclosed for your information certain specifications which Virginia Power requires of its contractors and employees to control any possible sediment pollution which could result from our activities. Typically, these specifications are part of a construction contract with compliance monitored by Virginia Power on site Construction Coordinators.

Please feel free to incorporate our comments into your report to the General Assembly. As the review process begins Virginia Power would appreciate the opportunity to provide more information on our construction activities and efforts in the area of erosion and sediment control.

Yours very truly,

Bill Crump

E. L. Crump, Jr.
Virginia Legislative Affairs Representative

Attachment

Delmarva Power

August 31, 1987

Northern Division General Office
I-95 & Route 273 • P O Box 9239
Newark, DE 19714
(302) 429-3011

Mr. C. Scott Crafton
Depart. of Conservation and
Historic Resources
Div. of Soil and Water Conservation
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Re: Sedimentation and Erosion Control Law

Dear Mr. Crafton:

In reference to your letter of August 6, 1987 regarding the Virginia Erosion and Sedimentation Control Law, Delmarva Power would like to offer the following comments in support of the present exemption for utility lines.

- Utility transmission line construction is already heavily regulated by the Corps of Engineers, Public Service Commission, and the State of Virginia. Possible sediment and erosion control concerns would be covered by the broad regulatory requirements presently administered by these agencies. Any additional requirements would further slow down the permit process and result in unnecessary delays and costs.

- Transmission line construction may extend across several local jurisdictions. Requiring erosion control permits from multiple regulatory agencies would be redundant, and costly.

- Most of the construction and installation of electric utility lines involve flush cutting where the vegetation is cut but soil and root structure are maintained. Areas where the soil is disturbed is generally limited to the foundation area of the tower or pole, thereby minimizing the potential impact to the surrounding environment.

- Maintenance of electric rights-of-way has moved from cutting to selective application of E.P.A. approved herbicides. The goal being the elimination of the tall growing trees and the establishment of a low growing shrub-herb-grass community. This type of vegetative cover has been shown to be the most effective in reducing soil runoff and stream siltation, and has also demonstrated to be the preferred community for wildlife food and cover.

While no sedimentation and erosion control permits for utility lines are required under existing law, Delmarva Power appreciates the need to control the clearing and grubbing of land. However, we do not believe it is necessary to obtain permits where general guidelines can be followed to achieve the same effect.

Delmarva Power

Thank you for the opportunity to respond to this issue. If you would like further input regarding our position, please do not hesitate to call me (302-454-4910).

Sincerely yours,

Lynn Srivastava

Lynn F. Srivastava, P.E.
Environmental Affairs

cdc

cc: R.F. Molzahn
J.E. Mason
G.C. Hunt
W.G. Wheatley
C.F. Dalphon
R. Johnstone

SEP 11 1987

LUCINDA S. GRUNBERG
Director, Public Affairs

The Potomac Edison Company
Part of the Allegheny Power System

Downsville Pike, Hagerstown, MD 21740
(301) 790-3400

September 8, 1987

Mr. C. Scott Crafton
Water Control Engineer
Commonwealth of Virginia
Department of Conservation and
Historic Resources
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Crafton:

We appreciate very much the opportunity to comment on proposed changes to the Virginia Erosion and Sediment Control Law which would require utilities, which are now exempt, to obtain erosion control permits. Potomac Edison supports the State's earlier decision to exempt utilities, and opposes changing the law because it will increase the cost of electricity for our customers without commensurate public benefits.

You stated that if the State intends to prevent water pollution, similar activities should receive similar treatment. May we point out that line construction activities are considerably different from major development activities where large contiguous areas are disturbed. Clearing for lines does not include major grubbing, and soil disturbance is confined usually to structure location and access road locations.

Although no erosion control permits are currently required in Virginia, Potomac Edison has routinely prepared and followed soil erosion and sediment control plans for transmission line projects. It is reasonable that we continue this practice to avoid accelerated erosion caused by our construction activities.

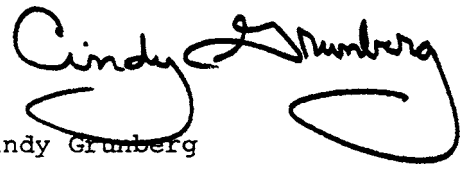
The construction of transmission lines is already regulated by each individual county involved under Virginia Code 15.1-466.1 Article 4. Lines above 150,000 volts are further regulated by the Virginia State Corporation Commission (SCC). Included in the requirements for a Certificate of Public Convenience and Necessity from the SCC is the following:

> "As a condition to approval the Commission shall determine that the line is needed and that the corridor or route the line is to follow will reasonably minimize adverse impact on the scenic assets and environment of the area concerned."

In developing our erosion control plans, we have worked successfully with the SCS-USDA District Conservationists who are usually in the same office with the County Soil Conservation Administrators/Managers and with the County Conservation Districts. These agencies have the technical background to understand the reasonable measures which apply to line construction work. If permits are to be required from agencies other than at the SCS or county district level, the process will become burdensome because of the possible lack of technical expertise and because many permits may be required when lines are routed through multiple county, city and town jurisdictions. Requiring erosion control permits from each jurisdiction will delay service to customers and increase costs.

Potomac Edison recognizes the need to control activities which may cause sediment pollution, and we believe utilities can continue to be exempted from erosion control permitting requirements without compromising protection of the environment. We respectfully urge the State not to change the law in this matter.

Very truly yours,



Cindy Grunberg

LSG/ak/N5-C/S/CRAFTON

SEP 2 1 1987

INNSBROOK CORPORATE CENTER • 4222 COX ROAD—SUITE 102 • GLEN ALLEN, VIRGINIA 23060
TELEPHONE (804) 747-0592

September 18, 1987

Mr. C. Scott Crafton
Water Control Engineer
Department of Conservation
and Historic Resources
Division of Soil and Water Conservation
203 Governor Street
Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Crafton:

I am writing in response to your letter to Mr. Gus Kappatos extending Old Dominion the opportunity to address the exemption of utilities from the Virginia Erosion and Sediment Control Law (Sec.21-89.1et. seq., Code of Virginia). I appreciate your willingness to include Old Dominion Electric Cooperative's position in your report to the 1988 Session of the General Assembly.

Old Dominion is a Generation and Transmission Rural Electric Cooperative comprised of twelve Member distribution cooperatives located in Virginia, Maryland, Delaware, and West Virginia. Old Dominion meets the power needs of its Member Systems through its ownership of 11.6% of the North Anna nuclear power station, power purchases from Virginia Power, Delmarva Power and Light and Potomac Edison, and direct sales to certain Members by the Southeastern Power Administration.

As we discussed during our telephone conversation, Old Dominion is contractually bound under the terms of its mortgage agreement with the Rural Electrification Administration (REA). In protection of its loan commitment, the REA mandates, among other things, methods of design, construction and maintenance of generating stations and power lines and compliance with the environmental requirements included in 7 CFR 1794. Old Dominion's obligations regarding preservation of the environment is delineated in 7 CFR 1794, Environmental Policies and Procedures. The purpose of this section is to set forth REA's policies and procedures for implementing the following statutes, regulations and orders:

- The National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321 et seq.),
- the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500-1508),
- Executive Order 11988, "Floodplain Management",
- Executive Order 11990, "Protection of Wetlands",
- Executive Order 11514, "Protection and Enhancement of Environmental Quality",
- Executive Order 11593, "Protection and Enhancement of the Cultural Environment",
- the Farmland Protection Policy Act (Pub. L. 97-98),
- the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470, et. seq.),
- the Advisory Council on Historic Preservation regulations on Protection of Historic and Cultural Properties (36 CFR Part 800),
- the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), and
- the Farmland Protection Policy Act (Pub. L. 97-98).

REA's procedures applicable to 7 CFR 1794 include:

- Application of NEPA early in the process
- Consideration of Alternatives
- Public involvement
- Interagency involvement between Federal, State and local agencies.

These procedures insure that any construction activity undertaken by Old Dominion and/or its Member Systems shall take account of potential environmental impacts during both the planning and construction phase. The public involvement and interagency contact aspects of the procedure insures that environmental constraints which may only be identified at the local level are adequately addressed.

For your information, I've enclosed a copy of Part 1794, Environmental Policies and Procedures. You'll note that varying degrees of Federal actions require varying degrees of mitigative measures. Even those activities identified as having minimal environmental impact ("Proposals with no BER"), however, require a project description including, where applicable, a plan for erosion and sedimentation control.

Rural Electric Cooperatives, through the REA procedures and guidelines meet and exceed the requirements stipulated in the Virginia Erosion and Sedimentation Control Law. As such, exclusion of Rural Electric Cooperatives is appropriate.

Should you have any questions, or wish to discuss any aspect further, please contact me.

Sincerely,

Edward D. Tatum, Jr.
Planning Engineer

bcc: Earnest M. Jordan, Jr.
K. N. Kappatos
Kenneth Alexander
Tom Dick

Railroads

NORFOLK SOUTHERN

Norfolk Southern Corporation
Law Department
One Commercial Place
Norfolk, Virginia 23510-2191
804 629-2755

John S. Shannon
Executive Vice President — Law

Donald M. Tolmie
Vice President and General Counsel

James C. Bishop, Jr.
Senior General Solicitor

William C. Wooldridge
General Solicitor

William P. Stallsmith, Jr.
Senior General Attorney

Joseph C. Dimino
A. Gayle Jordan
J. Gary Lane
General Attorneys

William A. Noell, Jr.
Mark D. Perreault
Assistant General Solicitors

August 27, 1987

Mr. C. Scott Crafton
Water Control Engineer
Commonwealth of Virginia
Department of Conservation and
Historic Resources
Division of Soil and Water Conservation
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Crafton:

Please refer to your letter of August 5, 1987 to Bruce Wingo concerning the recent study done by outside consultants for the Division of Soil and Waste Conservation on the effectiveness of local implementation of the Virginia Erosion and Sediment Control Law (Section 21-89.1, et seq., Code of Virginia). Mr. Wingo has forwarded your letter onto me for response.

In connection with the study, the consultants have questioned why the State law exempts railroad construction activities since such activities could possibly result in sediment pollution and have recommended reassessment of the exemption. You have asked for the position of the Norfolk Southern railroads on this issue.

First, I want to thank you for giving Norfolk Southern Corporation the opportunity on behalf of its subsidiary railroads to address this issue and for your assurance that our views will be included in the final version of the report that is to be submitted by the Department of Natural Resources to the General Assembly. Hopefully, after you have had an opportunity to review my letter and the attached material, the views expressed herein will be shared by the Department.

The General Assembly, when it enacted the State's Erosion and Sediment Control law, included the exemption for

railroad construction activities for sound legal and practical reasons. The State law was in part an outgrowth of Section 404 of the Clean Water Act, 33 U.S.C. § 1344, which provision is entitled "Permits for dredged or fill material" and is administered by the Corps of Engineers. Congress, when it enacted Section 404 in 1971, recognized that it would be impracticable and imprudent to impose dredge or fill permit requirements on a number of specified activities, including activities relating to the maintenance, as well as emergency reconstruction of recently damaged parts, of currently serviceable transportation structures. To avoid burdening interstate commerce and the inevitable conflict with safety laws and regulations caused by time delays in securing permits, Congress expressly included an exemption covering certain transportation-related construction activities specified in § 404(f)(1)(B). See 33 U.S.C. § 1344(f)(1)(B), copy attached. Under that provision, the following activities were not deemed to be prohibited discharges of dredged or fill material:

> (B) for the purpose of maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, and bridge abutments or approaches, and transportation structures;

The statutory exemption for transportation structures was codified by the Corps at 33 U.S.C. § 523.4(a)(2), which reads as follows:

> (2) Maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures. Maintenance does not include any modification that changes the character, scope, or size of the original fill design. Emergency reconstruction must occur within a reasonable period of time after damage occurs in order to qualify for this exemption.

A copy of the foregoing regulation is also attached for your convenience.

By virtue of the statutory exemption, Congress negatively preempted State authority over the specified exempted activities. This preemption extends to State laws and regulations over land disturbing activities that might result i soil erosion and subsequent sediment disposition in waters.

When the General Assembly was considering passage of the State Erosion and Sediment Control Law in 1973, it was done with the knowledge of Congress' express exemption of certain transportation-related activities under the Clean Water Act. Thus, the General Assembly likewise included a similar exemption for the railroad industry encompassing the exemption granted by Congress.

Aside from the preemption afforded as discussed above, there are very strong practical reasons why the exemption should be continued, reasons which both Congress and the General Assembly were well aware of. Unlike fixed facilities located within a single jurisdiction, railroads traverse hundreds of cities and counties. Norfolk Southern's railroad subsidiaries alone have 2,400 miles of track in Virginia, crossing approximately 100 different jurisdictions. "Land disturbing activities" are an everyday occurrence on the railroad. It would be impossible to operate the railroad if every time maintenance work on track or other transportation structures needed to be done the work had first to be approved by each locality. It would be an impossible situation even if the work had to be approved by the State Commission alone. Railroads cannot afford any time delays in keeping its structures and other facilities in compliance with the Federal Railroad Administration's safety standards applicable to track and other structures. Public safety would be at risk.

Furthermore, there is no necessity for State regulation in this area. As was pointed out in your letter, no specific complaints have been brought because of railroad construction activities. The absence of complaints evidences the railroads employ good engineering practices to avoid soil erosion and provide for sediment control. For instance, it is in the railroads' best interest to prevent erosion in order to maintain the roadbed and keep it from deteriorating. Numerous controls are used, including placement of riprap to control erosion. In short, it is the railroads' policy not to pollute the environment, even in the absence of regulation.

The only extent to which a state can regulate railroad activities in this area is limited to the construction of brand new transportation facilities and structures. Once such new construction activities are completed, state and local authority over erosion and sediment control would then cease. Since the railroad plant, for all practical purposes, is already in place, the General Assembly saw fit to grant a full exemption to the railroads, covering routine maintenance and emergency

reconstruction, as well as new construction of transportation structures and facilities.

The railroads believe the full railroad exemption should remain in place. Construction of new yards and new lines of road is a rare occurrence, and such projects, when they do occur, are always implemented to avoid erosion or water pollution problems. Contractors employed for any grading or drainage work are required by agreement to comply strictly with all applicable federal and state laws, and they are closely supervised by experienced railroad personnel.

Norfolk Southern does not believe any change in the State law is warranted due to the strong legal and practical reasons discussed above. No complaints have been lodged against the railroads in connection with any of their construction activities since enactment of the State law in 1973. Thus there is no justification for eliminating or modifying the existing exemption.

Sincerely,

A. Gayle Jordan

A. Gayle Jordan

cc: Mr. Bruce Wingo

SEP 8 1987

CSX Corp

One James Center
Richmond, Virginia 23219
(804) 782-1472

CHARLES J. DAVIS, III
Regional Vice President

September 3, 1987

Mr. C. Scott Crafton
Water Control Engineer
Commonwealth of Virginia
Division of Soil and Water Conservation
203 Governor Street, Suite 206
Richmond, Virginia 23219-2094

Dear Mr. Crafton:

Thank you very much for contacting me on August 5th seeking our views on the proposed elimination of the railroad's exemption from state soil erosion requirements. For the reasons discussed below, we would like to retain the railroad exemption for emergency repairs but would not object to elimination of the railroad exemption for new construction.

Although loss of the railroad exemption for new construction projects would require additional information and plan modifications, our Engineering Department advises us that adequate planning in conjunction with good engineering and construction practices can usually overcome any attendant delays and minimize any additional construction costs. Furthermore, our engineering personnel are accustomed to dealing with such soil erosion requirements and have for a number of years been working with various state and federal agencies which administer such requirements.

On the other hand, it is very important that we retain the railroad exemption with respect to emergency repairs for problems such as flood damage and washouts. Under such emergency circumstances, it is vital for both the railroad and our shippers that service be restored as expeditiously as possible. In such situations, the plan review and permit requirements would impose an intolerable burden.

Since we do not object to elimination of the railroad exemption for new construction, I would suggest that the Virginia Erosion and Sediment control Law be amended by striking the word "construction" at the beginning of Section 21-89.3 (a) (vi). Since we need to retain the "repair or re-building" exemption for the reasons discussed above, however, I am hopeful that the remainder of that subsection will be left unchanged.

Thank you again for giving CSX an opportunity to apprise you of its views and please let me know if you have any questions with respect to our position on this matter.

Sincerely,

CJD/clj

R&P

SEP 4 1987
P. O. Box 11281
Richmond, Virginia 23230

September 1, 1987

Mr. C. Scott Crafton
Water Control Engineer
Department of Conservation
& Historic Resources
203 Governor Street, Suite 206
Richmond, Virginia 23219

Dear Mr. Crafton:

Thank you for allowing the RF&P's comments on the proposed changes to the Virginia Erosion and Sediment Control Law (Va. Code Section 21-89.1, et. seq.). It is my understanding that outside consultants have questioned the exemption of the railroads from the Code requirements.

The exemption is a sound one and should remain intact. As you are probably aware, the Clean Water Act, 33 USC Section 1344, exempts transportation structures from dredge and fill permit requirements and the Virginia General Assembly no doubt was aware of and followed this exemption with the passage of the Erosion and Sediment Control Law. The imposition of such requirements place a burden on interstate commerce and impose unnecessary safety hazards for the railroad industry. Each work day, railroads maintain the track and track structures, sometimes disturbing the land. It would be an undue burden if a permit was required from each locality prior to maintaining our right-of-way. Delays of this sort would endanger the safety of the public.

The RF&P contracts for most of our significant tract structure repair. In that case, the outside contractor is required to comply with the applicable state laws and regulations.

Although we are currently exempt from the statute, we have experienced engineers and track forces who are careful not to disturb the land. This is necessary to protect our roadbed and facilities, as well as surrounding property.

It is the RF&P's belief that the exemption should remain in place. We have received no complaints of failure to adequately avoid erosion and we will continue to protect the environment in the future. We see no reason to alter the exemption.

If you have any questions, please feel free to call me.

Very truly yours,

Susan E. Hazelwood

Susan E. Hazelwood
Attorney
804/257-3386

SEH/lmp

cc: Mr. J. C. Hobbs
Mr. J. R. Smith, Jr.