

COMMUNICATION AND COOPERATION

THE FORGOTTEN CONSTRUCTION SITE BMPS

by

Jerald S. Fifield, PhD, CPESC

HydroDynamics Incorporated

PO Box 1327

Parker, CO 80134

303-841-0377

hdi@ecentral.com

INTRODUCTION

What are the most important Best Management Practices (BMPs) needed on a construction site to ensure minimal discharge of sediment during runoff events? Is it strategically placing barriers to block the path of runoff? Or should sediment containment systems (SCS) be placed to intercept runoff? How about implementing erosion control practices?

Actually, it is none of the above. It is communication and cooperation!

Communication and cooperation are such simple and inexpensive BMPs. However, with whom should they be implemented? Should it be with the contractor who is simply following a set of plans? Maybe better communication and cooperation with the designer is needed? But aren't designers simply following rules and regulations set forth by a regulatory agency? If those rules and regulations are flawed, shouldn't this problem be communicated to the regulators? Finally, don't forget about the inspector who is supposed to be well informed about sediment and erosion control plans and be knowledgeable about BMPs. What happens when inspectors don't know everything about the plans and have a limited knowledge about sediment and erosion control?

The above discussion suggests a hierarchy of communication and cooperation to ensure effective sediment and erosion control on a construction site is not a "one-way street." Figure 1 illustrates the interdependency of individuals and/or agencies if the goals set forth in the Clear



Water Act (CWA) and EPA requirements are to be met. Notice there is no one group of individuals or agencies that must be accountable for effective sediment and erosion control. Instead, everybody must be responsible and be able to communicate and cooperation with each other. Essentially, interaction between all of those working on a construction project must occur.

REGULATORY AGENCIES

What is the role of regulatory agencies? Few would argue that they must enforce the environmental laws of the United States. However, enforcement must be done in a manner that is realistic, achievable, and consistent. This can only be accomplished by regulatory agencies continually communicating and cooperating with all impacted parties. At the same time, it is equally important that designers and inspectors provide feedback to regulatory agencies so that their policies remain effective and realistic.

Political Backing: Regulatory agencies must have the political resolve to enforce the law of the land. This is the role of the EPA, which has the backing of the United States government. Unfortunately, local regulatory agencies do not have the luxury of such support. Instead, they must obtain local political support--a task that is not always easy to achieve. Thus, effective communication (sometimes known as marketing) is needed to ensure political support if reduction in sediment found in runoff waters from construction sites is to become a reality.

Requirements: Once political backing is ensured, regulatory agencies must clearly communicate to designers, contractors, and inspectors about their requirements. Clearly defined requirements for drawings, identifying acceptable BMPs and recognizing their limitations, discussing timing issues for installing BMPs, and allowing for innovation must be the norm. Submittals using "cook book" methods should be avoided since they stifle use of innovative techniques and can cause sediment and erosion control to be a sham.

Review Process: Regulatory agencies must clearly communicate submittal requirements and cooperate with the applicant on how and when plans will be reviewed and processed. Review processes that exceed 30 days should not be tolerated. Also, if a regulatory agency requires professionals to develop sediment and erosion control plans, similarly qualified people must review and approve the submittals. Any other action communicates the impression that qualified people are not necessary to oversee NPDES permit requirements.

Identify Penalties: In an idealize world, everybody will try to protect the environment. Reality dictates that the possibility of penalties is required if compliance is to be achieved. Doing nothing communicates the impression that regulatory agencies are not serious about protecting the environment. Lack of action is construed as doing "business as usual" and does little to protect the environment while construction activities occur. Small "hand slapping" fines will be ignored! Work stoppage catches everybody's attention. However, regulatory personnel must work and cooperate with contractors to allow for completion of maintenance requirements in a timely and practical manner.

DESIGNERS

Often, regulatory requirements mandate that designers of sediment and erosion control be professional engineers. This requirement puts those having minimal sediment and erosion

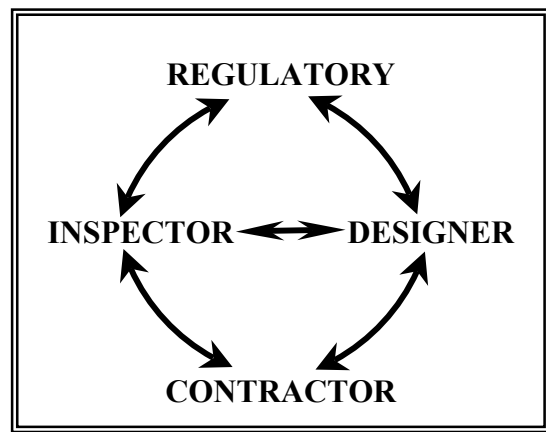


Figure 1. Circle of Communication and Cooperation

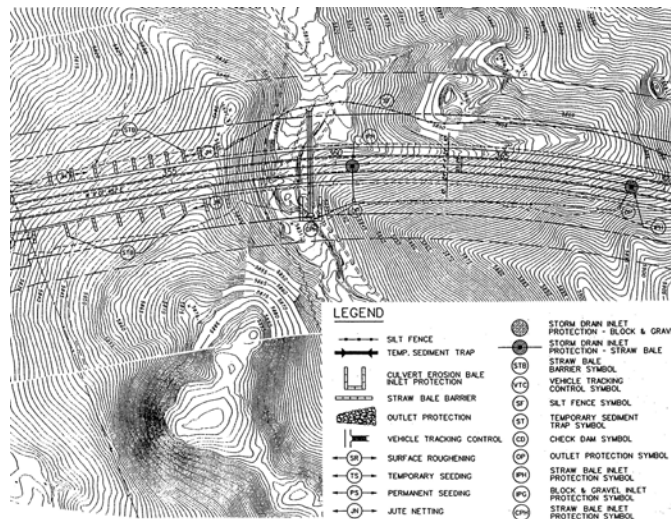
control skills in a compromising position since professional ethics may prevent engineers from attesting that they have designed a plan. Fortunately, regulatory agencies (e.g., the EPA), states, counties, and cities are overcoming this problem by recognizing that a Certified Professional in Erosion and Sediment Control (CPESC) has the expertise and skills to ensure development of effective plans (see www.cpesc.org for more information).

Designers have the difficult task of interpreting regulatory requirements, satisfying demands of the client, and developing plans that contractors can implement in a cost-effective manner. Effective sediment and erosion control on construction sites requires designers to be properly trained and have extensive experience. This means that designers have to be cognizant of hydrology, engineering, drainage issues, sediment and erosion control BMPs, agronomy, geology, soil science, politics, and (perhaps most important) possess common sense.

Identify the Needs: Designers must understand what is required to reduce sediment from runoff waters and how to minimize erosion while construction activities occur. They need to assess how construction might impact critical areas such as wetlands, streams, and ponds. Also, designers need to maintain communication with regulatory agencies and cooperate with contractors to ensure their needs and requirements are being met.

Understand What is Needed: Designers must complete site visits before, during, and after construction activities occur. Pre-construction site visits help identify critical habitats, observe existing vegetation, develop a "feel" for the site, and identify potential problems. By completing site inspections during construction activities, designers can learn about problems that contractors and inspectors experience daily. Also, designers need to complete post construction site visits to assess whether erosion control measures are minimizing downstream discharges of sediment. In summary, designers must inspect all aspects of their work if they are to become competent in sediment and erosion control.

Develop Plans for Contractors: Plans are a "first appraisal" of what needs to be completed on a construction site. As such, they must change if effective protection of the environment is to occur. Thus, sediment and erosion control plans must be developed for the contractor! This requires designers to communicate what is required for pre-, during, and post construction activities. Plans must have numerous notes on each page, adequate contour lines, identification of BMPs, and clear instructions as to when something is to be completed. Designers must avoid "cook book" solutions that result in exactly the same template for every submittal!



Finally, designers should never assume contractors know everything about controlling sediment and erosion while construction activities occur. *They don't!*

Get Involved: Designers have to be involved with all aspects of sediment and erosion control. Communication with the client, contractor, inspectors, regulatory agencies, and (if needed) the general public is a must. As a minimum, biweekly meetings with all parties must take place. During these meetings, frank discussion about the sediment and erosion control plan has to occur. Are some of the BMPs not practical? Should there be modifications to the plan? Why is

non-compliance occurring? What can be done to improve the current situation? Only by asking these, and similar questions, will designers learn what is happening on construction sites.

CONTRACTORS

Contractors will make or break a sediment and erosion control plan developed by designers. If the plan is confusing, then only minimal measures will be installed. However, when plans clearly communicate what is needed, what is to be installed, and when installation is to occur, effective sediment and erosion control on a construction site will become a reality.



Take the plan seriously: Protecting the environment is a responsibility everybody must share. Since construction activities can potentially disturb and expose vast amounts of land, every effort must be taken to minimize sediment leaving a site. Thus, contractors have to take sediment and erosion control plans seriously. The CWA mandates severe fines and EPA is serious when they identify the contractor as being responsible for implementing the plan.

Install, Inspect, and Maintain: Contractors can reduce sediment and erosion control costs by initially always installing BMPs correctly. Once installed, BMPs must be continually inspected and maintained. In addition, non-compliance issues are to be reported to the regulatory agency through an inspector report. Don't forget, those reports have to be available for review up to three years after completion of the project!

Educate: Contractors must communicate to designers and cooperate with inspectors when plans illustrating specific BMPs will not function as designed. This means contractors may have an obligation to (diplomatically) educate designers and inspectors when changes or modifications are recommended. Likewise, contractors must be ready to learn about new methods from the designers and inspectors.

INSPECTORS

Pity the poor inspector! In what other profession does one have to be a politician while communicating and cooperating with contractors, designers, and regulatory agencies? And, at the same time, inspectors are to be knowledgeable about all aspects of sediment and erosion control? Not an easy task for any one person.



Understand the Plan: If inspectors do not understand construction plans, then more than likely they will not know how to read sediment and erosion control plans. Plans are more than just symbols on a piece of paper! They are a blue print for contractors to follow. Thus, inspectors have to know the implementation schedules, where and when BMPs are to be installed, what BMPs are to be maintained or eliminated, and fully understand the limitations of BMPs.

Become Certified: An inspector has to maintain communication with regulatory agencies, designers, and contractors. As such, certification is needed to demonstrate competency with issues related to sediment and erosion control. Certification also requires an individual to keep current on the many BMPs that can be used on construction sites. Thus, continued education is a must!

Know the Limitations: An inspector may or may not be qualified to be a designer. However, inspectors must know their limitations when modification and updates of a sediment and erosion control plan is required. Thus, inspectors must maintain communications with designers when major modifications are required. Keep in mind that if an inspector completes major modifications to a plan and designer approval is not obtained, the municipality may be liable for damage caused by the changes.

Communicate your Concerns: The contractor needs to be informed by the inspector of non-compliance and violation issues. However, sufficient time must exist to allow for repairs, installation of new BMPs, removal of structures, and so forth. When it appears a plan is not "workable" or has obvious problems, then the inspector must relay these observations to the designer, contractor, and regulatory agency. Likewise, when regulations prevent or hamper the implementation of effective sediment and erosion control techniques, inspectors must inform regulatory agencies of these problems.

Insist on Regularly Scheduled Meeting: Inspectors must meet at least weekly with the contractor to avoid problems that might lead to noncompliance issues. During these weekly meetings, the contractor can provide updates about construction activities and how they impact what is needed for effective sediment and erosion control. Inspectors must cooperate with contractors and inform them about problems found that need to be addressed in an expedient manner. Monthly meetings with designers and regulatory personnel should also occur so they can assess whether their involvement has been an asset or detriment in protecting the environment.

SUMMARY

Effective sediment and erosion control on construction sites requires continual communication and cooperation between all parties associated with the project. Whenever these simple and cost effective BMPs are continually implemented, problems associated with sediment and erosion control will be minimal. However, ignoring the use of this simple BMP will lead to excessive costs.