

## Stormwater Management: Source Control

### Best Practices White Paper Summary

The effective use of temporary erosion and sediment control (TESC) BMPs depends on their selection, operation and maintenance, and site conditions. Among the construction TESC BMPs discussed in the literature, anionic polyacrylamide (PAM) showed the best results for controlling erosion and sediments at their source.

Applying PAM to low-slope soils that are high in clay content or impregnating PAM into other BMPs (such as check-dams) appeared to be the most effective. However the use of PAM may be limited in Washington due to concerns about the effect it has on pH, and further evaluation appears warranted. Other construction TESC BMPs that ranked well for source control include ground cover blankets or filter socks with compost or wood mulch filling. Sediment ponds generally showed poor performance.

Many studies in the literature reported high percentage reduction of turbidity by TESC BMPs, however the results were usually in comparison to bare soil or in a controlled “bench-top” setting. In practice, the use of filtration or chemical treatment BMPs are typically required to reduce turbidity in construction site runoff down to within 5 NTUs of the receiving water.

Presently, the AKART approach is used, which presumes compliance with water quality standards when a construction permittee plans, samples, monitors, reports results, and uses TESC BMPs properly following permit conditions.

- Not addressed in the literature available, but based on anecdotal experience, the inspection of BMPs for erosion and sedimentation control is most effective when done on a consistent schedule that includes special inspections after significant flow events. The Stormwater Management Manual for Western Washington requires designating a Certified Erosion and Sediment Control Lead who is responsible for ensuring compliance with all applicable sediment control and water quality requirements.
- Not addressed in the literature available, but based on anecdotal experience, inspection of private stormwater facilities can improve compliance with O&M since sometimes a visit by an inspector will result in immediate corrective action to an O&M problem.
- Annual visits are recommended at a minimum in general but the frequency should include considerations of the type of facility and the local watershed conditions that may affect the facility.
- Not well-addressed in the literature available, but based on anecdotal experience and additional literature, several methods work well. The selection of the specific method depends on the nature of the illicit discharge. A recent survey of illicit discharge detection and elimination (IDDE) methods used by Washington state NPDES permittees reported the top three methods as: 1. having an IDDE hotline; 2. inspection of manholes and catch basins; and 3. inspection of outfalls. A forthcoming IDDE Field Screening and Source Tracing Guidance Manual (an activity of the Source Identification Information Repository (SIDIR) subgroup) is currently in preparation that will provide helpful IDDE method selection guidance.
- Not addressed in the literature available, but based on anecdotal experience and additional literature, wet weather screening can be an effective tool for detecting illicit connections as part of a comprehensive IDDE program. The literature recommends developing a regional chemical indicators database against which local wet weather sample results can be compared to identify the source area, activity, or organism from which an illicit discharge originates.

- Not addressed in the literature available, but based on anecdotal experience and additional literature, the decision of which parameters to measure during dry weather to detect illicit connections should be based on characteristics of the discharge and some foreknowledge of potential sources. A desktop assessment of storm drainage infrastructure and current and historic activities in the drainage area can provide this foreknowledge. Top parameters to inspect include the presence of discolored or odorous discharge as well as algal growth and deposition patterns at an outfall. Several western Washington jurisdictions have already developed their own IDDE dry weather screening manuals.
- Not addressed in the literature available, but based on anecdotal experience, the impact of in-person visits at businesses is usually short-lived. It's important to prioritize businesses for in-person visits/inspections where the staff changes frequently, such as restaurants, big box stores, and some automotive businesses, such as detailers and carwashes. A wide range of source control BMPs exist across many businesses and industries, thus inspections should be performed by knowledgeable staff that can identify noncompliance and specify corrective actions for the types of BMPs expected to be encountered. Refer to the Public Education and Outreach key findings and white paper for more information on this topic.
- Not addressed in the literature available, but based on anecdotal experience, the optimum frequency of inspections at businesses depends on the activities occurring at the business, the local relevant codes and regulations, and the nature of the business-government relationships in that area. The wide range of available structural source control BMPs requires setting an inspection frequency that depends on the BMP type. For non-structural source control BMPs, regular contact is key in order to establish and build relationships between local jurisdiction staff and businesses.

*Summary prepared by AWC staff, June 2013*