

SECTION 3: DATA COLLECTION

3.1 INTRODUCTION

EPA gathered and evaluated technical and economic data from various sources in support of this final action. EPA used existing data sources to profile the industry with respect to general industry description, industry trends, environmental impacts, and erosion and sediment control best management practices (BMPs) and costs. This section details the data sources used in the development of the final action.

3.2 LITERATURE SEARCH

A literature search was performed to obtain information on various BMPs that pertain to the construction and land development industry. Journal articles and professional conference proceedings were used to summarize the most recent BMP effectiveness data, design and installation criteria, applicability, advantages, limitations, and cost.

3.3 COMPILATION OF STATE CONTROL STRATEGIES, CRITERIA, AND STANDARDS

A compilation of existing State programs for the control of construction site storm water was prepared. The data were collected by reviewing State construction general permits, web sites, summary references, and State regulations and erosion and sediment control design and guidance manuals. A summary of criteria and standards for construction site erosion and sediment control that are implemented by States as of September 2003 are presented in Table 3-1. More information on this analysis can be found in Section 7.2 and State-level data sheets are contained in Appendix D.

Table 3-1. State Requirements for Construction Site Erosion and Sediment Control

Element	Number of States with Equivalent Requirement
Initiate soil stabilization with 14 days after construction activity has ceased	27
Install sediment basins that provide storage for the 2-year, 24-hour storm or 3,600 cubic feet per acre for drainage areas with 10 or more disturbed acres at one time	30
Install smaller sediment basins and/or sediment traps for drainage areas serving less than 10 acres	22
Remove sediment from sediment traps or sedimentation ponds when the design capacity has been reduced by 50 percent	25
Conduct inspections at least every 7 calendar days or at least every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater	41

3.4 OTHER DATA SOURCES

3.4.1 PHASE II STORM WATER RULE ECONOMIC ANALYSIS

The *Economic Analysis of the Final Phase II Storm Water Rule* (USEPA, 1999) estimated Phase II Storm Water Rule compliance costs for two major categories of pollutant controls for construction sites: erosion and sediment control BMPs and post-construction storm water management controls. Total costs for implementing the Phase II Rule encompass expenditures for installation of erosion and sediment control technologies, labor requirements for submitting a Notice of Intent (NOI) to be covered by a general permit, a Notification to Municipalities, a Storm Water Pollution Prevention Plan (SWPPP), and maintenance costs. Costs were derived on a per-site basis and then aggregated to the State and national level based on the number of the building permits issued. As described in the Economic Analysis Report for the Phase II Rule, census data were used to project the annual number of construction permits by Standard Industrial Classification (SIC) Code and construction permit data from 14 municipalities were used to categorize construction activities by site size.

EPA used several data sources collected for the Phase II economic analysis in this rulemaking, including construction permit data collected in 14 municipalities and estimates of BMP installations on small construction sites.

3.4.2 USDA NATIONAL RESOURCES INVENTORY

The National Resources Inventory (NRI) (USDA, 2000) is a statistically based survey that has been designed and implemented using scientific principles to assess conditions and trends of soil, water, and related resources on non-Federal lands in the United States. The NRI is conducted every 5 years by the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS), in cooperation with the Iowa State University Statistical Laboratory. The inventory provides scientifically valid, timely, and relevant information that is used to formulate effective agricultural and environmental policies and legislation, implement resource conservation programs, and enhance the public's understanding of natural resources and environmental conditions.

The NRI is a compilation of natural resource information on non-Federal land in the United States—nearly 75 percent of the country's land base. The inventory captures data on land cover and use, soil erosion, prime farmland, wetlands, habitat diversity, selected conservation practices, and related resource attributes at more than 800,000 scientifically selected sample sites. The NRI can be accessed at <http://www.nrcs.usda.gov/technical/NRI/>.

EPA used the NRI data in support of several analyses. First, NRI data was used to determine the amount of annual construction acreage in each state, which served as a basis for calculating state-level compliance costs of the options considered. NRI data was also used to estimate the amount of construction activity occurring in each of the watersheds in the U.S. based on the Hydrologic Unit Code (HUC) cataloging system. HUC-level data was used to estimate the number of construction sites and the associated loads occurring in each HUC and to link these loads to stream reaches for modeling of water quality improvements and benefits estimates using EPA's National Water Pollution Control Assessment Model (NWPCAM).

3.4.3 CENSUS OF CONSTRUCTION

The census of construction was used as a data source in a number of analyses including determining the amount of construction activity by sector (single-family residential, multi-family residential, commercial and industrial) and in EPA's analysis of financial impacts of the options considered. Additional information on these analyses can be found in the document "Economic Analysis for Final Action for Effluent Guidelines and Standards for the Construction and Development Category," EPA-821-B-04-002.

3.4.4 SOILS DATABASES, REVISED UNIVERSAL SOIL LOSS EQUATION AND SEDCAD

EPA utilized data from the USDA State Soil Geographic STATSGO database (USDA, 1995) to determine county-level soil textural information in support of the loadings estimates and BMP removals estimates. EPA utilized the Revised Universal Soil Loss Equation (RUSLE) in combination with the soils data to determine soil erosion rates from model construction sites in different areas of the county. In order to evaluate BMP removal efficiencies and to calculate

national loadings reductions of the options considered, EPA used the SEDCAD (Warner, 1998) model to evaluate removals under various control strategies.

3.5 REFERENCES

USEPA. 1999. *Economic Analysis of the Final Phase II Storm Water Rule*. U.S. Environmental Protection Agency, Office of Wastewater Management. Washington D.C.

USDA. 1995. State Soil Geographic (STATSGO) Database, Miscellaneous Publication 1492, Revised 1994.

USDA. 2000. *1997 National Resources Inventory*. U.S. Department of Agriculture, National Resources Conservation Service, Washington, DC.

Warner, R.C. and P.J. Schwab. 1998. SEDCAD 4 for Windows 95 & NT-Design Manual and User's Guide. Civil Software Design, Ames, IA.