

Improving Vegetation Establishment and Erosion Control with Compost-Based Specifications



Compost and hydroseeding application. Photo Courtesy of Caltrans.

FRESNO
September 28, 2006

MANCHESTER MALL
2015 E SHIELDS AVE, SUITE 145
YOSEMITE ROOM
FRESNO , CA

- New Caltrans Compost and Mulch Specifications
- Reducing Runoff
- Improving Vegetation Establishment
- Ensuring Compost Quality
- Successful Roadside Applications

For further information, go to: www.ciwmb.ca.gov/Organics/

WORKSHOP SUMMARY

The California Integrated Waste Management Board, in partnership with the Caltrans Headquarters Landscape Architecture Program, has developed new special provisions that focus on using compost to improve roadside vegetation and reduce erosion.

A series of five workshops has been scheduled across the state to introduce these new specifications to district designers, including landscape architects, biologists, and stormwater coordinators.



Compost incorporation, Placer County, Route 267.
Photo courtesy of Caltrans

These workshops will provide designers with the opportunity to comment, suggest revisions, and ask compost/water quality-related questions of a diverse team of experts. The workshop team will be staffed by University professionals, researchers, soil scientists, and California compost industry professionals as well as landscape architects with extensive compost experience from other state transportation departments.

These workshops will provide practical tools and information on using compost to reduce erosion and improve the establishment of roadside vegetation.

BENEFITS OF COMPOST AND MULCH

Compost and mulch benefits the environment in the following ways:

- Decreases runoff and erosion.
- Improves roadside revegetation establishment.
- Reduces irrigation requirements.
- Supplies significant quantities of organic matter.
- Improves drainage of clay-based soils and water-holding capacity of sand-based soils.
- Improves and stabilizes soil pH.
- Improves cation exchange capacity (CEC) of soils, improving their ability to hold nutrients for plant use.
- Supplies macro- and micronutrients.
- Supplies beneficial microorganisms.
- Suppresses certain soil-borne diseases.
- Binds and degrades specific pollutants.
- Reduces the need for fertilizers and pesticides.
- Encourages slow release of nitrogen.
- Improves drought tolerance.
- Improves plant health and vigor.

WORKSHOP AGENDA

8:45–9:15 a.m.

Welcome and Introductions

9:15–9:45 a.m.

Mulches, Soil Amendments, and Organic Fertilizers

Dr. David Crohn will discuss the characteristics and uses of mulches, soil amendments, and organic fertilizers.

9:45–10:30 a.m.

TXDOT Experiences Using Compost on Roadside Applications

Dr. Larry Beran will focus on the success of the Texas Department of Transportation (TXDOT) in using compost on roadside applications.

10:30–10:45 a.m.

Break

10:45–11:30 a.m.

Improving Stormwater Quality through Compost-Based Best Management Practices (BMP)

Dr. Britt Faucette will discuss the benefits of compost for roadside applications including reduced runoff, improved infiltration, improved erosion control, and filtration.

11:30 a.m.–12:00 noon

New Caltrans Tools to Implement Compost-Based BMPs

Mr. Ron Alexander will discuss the U.S. Composting Council's Seal of Testing Assurance Program, the national compost quality and labeling program. The new special provisions specify that only compost supplied by producers participating in the Seal of Testing Assurance Program can be used.

12:00 noon–12:45 p.m.

Lunch

12:45–1:15 p.m.

New Caltrans Compost Specifications

Mr. Greg Balzer will present new special provisions that focus on using compost to reduce erosion and improve the establishment of roadside vegetation. His presentation will include how compost quality and safety can be ensured and the benefits of bulk versus hydroseed applications.

1:15–1:45 p.m.

Caltrans Project Presentations

Mr. Steve Nawrath will discuss innovative Caltrans projects, pros and cons of different types of applications, and lessons learned.

1:45–3:00 p.m.

Panel Discussion

An expert panel will be available to discuss using compost and mulch on roadside applications. The panel will be comprised of experts representing Caltrans, the Texas Department of Transportation, the compost industry, erosion control specialists, and academia.

3:00–3:15 p.m.

Closing Remarks



Filter sock, photo courtesy of Dr. Britt Faucette, Filtrex

SPEAKER/PANELIST BIOS

Ron Alexander, United States Composting Council

Mr. Alexander is a horticulturist with more than 22 years of experience working with compost and other organic recycled products. He is the author of the American Association of State Highway and Transportation Officials Compost Erosion Control Specifications, Landscape Architecture Specifications for Compost Utilization, and Compost Use on State Highway Applications. He is currently co-managing the U.S. Composting Council's Seal of Testing Assurance Program, the national compost quality and labeling program. Mr. Alexander is also the President of R. Alexander Associates, Inc., a consulting company specializing in product and market development for organic recycled products.

Greg Balzer, Caltrans

Mr. Balzer is a Senior Landscape Architect with the California Department of Transportation (Caltrans) Office of Roadside Management, responsible for coordinating the development and updating of roadside policy, procedures, and standards. He has coordinated the implementation of a number of new erosion control specifications that will help reduce runoff and sedimentation and improve soil and plant health.

Matthew Cotton, United States Composting Council

Matthew Cotton has more than 18 years of experience in the composting industry. His company has provided technical composting-related consulting services to public and private clients in California for more than ten years. Mr. Cotton currently serves as the president of the Board of Directors of the U.S. Composting Council. The USCC is a national organization dedicated to the development, expansion, and

promotion of the composting industry based upon science, principles of sustainability, and economic viability.

Dr. David Crohn, UC Riverside Extension

Dr. Crohn earned his Ph.D. in 1992 from Cornell University where he concentrated on soil and water engineering, water resource systems engineering, and biogeochemistry. Since then he has been working as a professor and Cooperative Extension specialist at the University of California, Riverside, where his research has emphasized beneficial uses for organic residues as composts, fertilizers, and mulches.

Dr. Britt Faucette, Filtrex International

Dr. Faucette is a Research Ecologist and the National Director of Research and Environmental Assistance for Filtrex International. His Ph.D. is from the University of Georgia where he researched compost systems and industry standard BMPs used in erosion control and stormwater management applications. He also worked as a state compost/pollution prevention specialist in the Department of Biological and Agricultural Engineering. Dr. Faucette has a master's degree in agricultural ecology/sustainable systems. He serves on the ASTM Technical Committee to evaluate new erosion and sediment control technology, and he has published more than 50 articles relating to erosion and stormwater control and compost systems.

Hilary Gans, BFI

Hilary Gans has worked in the recycling and organics industry for the past 20 years. He has been involved in every aspect of the yard and food waste recycling programs in his work for the Newby Island Recyclery, operated by San Jose-based BFI. This facility is located in Milpitas

and processes approximately 1,000 tons per day of organic materials from Bay Area cities. Additionally, Mr. Gans has worked to expand urban and agricultural markets for compost.

Brent Hallock, Chair, Earth and Soil Sciences Department, California Polytechnic State University, San Luis Obispo (Cal Poly)

Dr. Hallock teaches an undergraduate course in soil erosion and water conservation, an upper-division course in rangeland resources, and a graduate course in environmental assessment for erosion control. He earned Cal Poly's highest award of Distinguished Teacher in 2000. Dr. Hallock has taught more than 35 seminars and short courses in site analysis, erosion control, and selection of management measures and practices. He has obtained research grants from Caltrans, regional water quality control boards, the U.S. Environmental Protection Agency, and environmental firms on the use of vegetation in erosion control and water quality. The grants totaled more than \$3 million in the past eight years. Dr. Hallock arrived at Cal Poly in 1979 and is a Certified Professional Soil Scientist (CPSS) and Certified Professional in Erosion and Sediment Control (CPESC).

Steve Nawrath, Caltrans

Mr. Nawrath is a California Licensed Landscape Architect and a Certified Professional in Erosion and Sediment Control (CPESC) currently working in the District 3, North Region Office of Landscape Architecture in Sacramento. He holds a B.S. in ornamental horticulture from Cal Poly, San Luis Obispo and a master's degree in landscape architecture from Cal Poly, Pomona. Currently, Mr. Nawrath is focused on the planning and design of "Environmental Improvement Projects" in the Tahoe Basin that aim to reduce and treat stormwater runoff from State highway facilities.

A major component of this effort is the use of compost for effective soil restoration and long-term revegetation of disturbed sites. Compost is being used extensively to repair denuded roadside areas such as in cut and embankment slopes, in bio-treatment swales/basins, and in enhancing degraded stream environment zones that serve as natural filters for waters entering the lake.

Dan Noble, Association of Compost Producers

Mr. Noble is President/CEO of Noble Resources Group and is a nationally recognized recycling resource market development consultant based in Southern California. He is also Executive Director of the Association of Compost Producers (ACP) (www.healthysoil.org) and has more than 30 years of environmental education, market research, publishing, and strategic consulting experience in both the public and private sector. Mr. Noble has B.A. degrees in biology and chemistry from the University of California, San Diego, and M.S. degrees in molecular biology and environmental education from the University of Oregon.

Dr. Larry Beran, Industry-Led Strategies (ILS)

Dr. Beran is currently acting as executive director for Industry-Led Strategies (ILS). He received a B.S. in civil engineering from the University of Nebraska, Lincoln, and a Ph.D. in applied economics from Clemson University. In partnership with the Texas Commission on Environmental Quality and the Texas State Soil and Water Conservation Board, an incentive program was implemented to encourage use of manure-derived compost by the Texas Department of Transportation (TX DOT) in new construction and maintenance projects. The incentive would accelerate the work underway to develop specifications for the use of compost in highway contracting. Today, TX DOT is the largest user of manure-derived compost in the U.S.

A joint project of the California Integrated Waste Management Board, Caltrans, University of California, Association of Compost Producers, and United States Composting Council



Publication # 442-06-014

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