Regional Construction Education Program: Phase 1

Final Project Report

February 1998

prepared by
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prepared for
Bay Area Stormwater Management Agencies Association
Regional Construction Education Program:
Phase 1

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I. Introduction

The construction activities associated with new development and redevelopment can significantly alter existing drainage patterns and contribute pollutants to Bay Area waterways through stormwater runoff and nonstormwater discharges. Pollutants from construction areas include: sediments from soil erosion; construction materials and waste (e.g., paint, solvents, concrete, drywall); fertilizers and pesticides used in landscaping; spilled oil, fuel, and other fluids from construction vehicles and heavy equipment; and contaminated soil and water. These pollutants are often picked up in stormwater runoff, or are inappropriately discharged to storm drains. Polluted stormwater runoff and such discharges from construction activities combine with many sources of polluted runoff across the landscape, creating a major source of water pollution in the Bay Area and across the nation.

Various practices can be used to prevent and control pollution from stormwater and nonstormwater discharges; however, effective practices need to be more widely applied to further prevent and control this pollution.

In November 1997, the Bay Area Stormwater Management Agencies Association (BASMAA) initiated Phase 1 of the Regional Construction Education Program. The purpose of Phase 1 was to lay the foundation and garner support for a Bay Area-wide training program in pollution prevention practices for the construction industry. The intent in developing an education and training program is to provide the information and assistance to key audiences that will help the construction industry better prevent and control stormwater and nonstormwater discharges that cause pollution. BASMAA recognizes that other training programs are being conducted in this region. It is the intent in developing a program to work with existing programs and coordinate efforts wherever practical.

This report presents a three-phase Proposal for Implementation and Funding, including:

- Ongoing pollution prevention education, training & recognition for developers, contractors, and municipal/agency staff
- Outreach to public entities and the private sector on developer and contractor training requirements
- Development of training kits for local agencies, developers and contractors; assistance with local and private training.

This report also includes:

- details on project activities conducted in accordance with the scope of this Phase 1 project;
- findings; and
- useful resources for future implementation.
II. Project Scope

In accordance with the *Scope of Services* (see Appendix A), Phase 1 of the Regional Construction Education Program included the following scope and tasks:

- Research the approach and scope of other training/certification programs.
- Develop a region-wide mailing list/database of contracting firms and trade associations.
- Integrate the development of pollution prevention training/certification with the existing erosion and sediment control training and potential future certification.
- Draft a plan for a Bay Area-wide program.
- Form and convene an advisory group of construction industry representatives to comment on the plan and advise on both the optimal form of a regional training program and the feasibility of a recognition program.
- Develop regional, interagency cooperation and support for a Bay Area-wide training program.
- Prepare a final report summarizing research and comments and proposing a program and budget for funding and implementation.

Heather Nelson, Consultant, conducted Phase 1, carrying out the scope and tasks summarized above.
III. Proposal for Implementation and Funding

A. Overview

The following is a proposal for implementation and funding of a Bay Area-wide stormwater pollution prevention education program for the construction industry. It includes a Proposed Implementation Plan and Project Proposals for each of three proposed phases. It has been developed in response to input and feedback received in Phase 1 (summarized in Section IV-E.) and is designed to augment ongoing erosion and sediment control education and training conducted by the San Francisco Estuary Project in cooperation with the Regional Water Quality Control Board (Region 2).

It is recommended that the proposal be implemented over the next two years, at a total cost of $130,000. This includes staff time, publications, and materials which could be funded from a combination of BASMAA baseline funding, additional contributions from BASMAA member programs, and potential outside grant sources (e.g., State-administered Clean Water Act, Section 319 funding for nonpoint source pollution).

The three phases, and their summarized budgets (for complete budgets, see Appendix B), are:

*Phase 2:* Ongoing pollution prevention education, training & recognition for developers, contractors, and municipal/agency staff

- Budget (estimate): $20,000 staff support
- $20,000 publications/services/supplies
- $40,000 TOTAL

*Phase 3:* Outreach to public entities and private sector on developer and contractor training requirements

- Budget (estimate): $10,000 staff support
- $25,000 publications/services/supplies
- $35,000 TOTAL

*Phase 4:* Development of training kits for local agencies, developers and contractors; assistance with local and private training

- Budget (estimate): $7,000 staff support
- $48,000 publications/services/supplies
- $55,000 TOTAL

Details on the budget for staff time, services, and supplies, including notes on funding strategies and cost-savings options, are included in Appendix B.
B. Proposed Implementation Plan

PURPOSE

The purpose of this proposed program is to further protect water quality in the San Francisco Bay Area by helping the construction community better prevent pollution. To do this, it is necessary to educate and train the construction community on the most effective pollution prevention practices for stormwater and nonstormwater discharges and how to implement them.

OVERVIEW

Pollution prevention education and training for the construction community has been conducted in the Bay Area to some extent. It is proposed that this education and training:
- be expanded to more comprehensively cover the range of pollution prevention practices for stormwater and nonstormwater discharges that are required and necessary in construction projects; and
- be encouraged for a wider audience of developers, contractors, local and regional agency staff, and other associated individuals Bay Area wide.

To do this, it is proposed that the Bay Area Stormwater Management Agencies Association (BASMAA) work closely with the San Francisco Estuary Project, and others as appropriate, to
- hold comprehensive pollution prevention education and training workshops for a wide audience of developers, contractors, and agency staff in each of the nine Bay Area counties;
- develop a Certificate of Recognition for education and training to document training received;
- conduct outreach for public and private entities overseeing and hiring developers and contractors to ensure that these entities understand the need for training credentials and request documentation of training from the construction professionals they oversee and hire;
- develop educational tools for the construction community and local programs to use in ongoing training beyond county workshops, particularly for smaller subcontractors and individual crafts people who may be difficult to reach effectively in larger workshops.

It is proposed that this be done in three phases over the next two years.


Phase 2 (1998/99)

Ongoing pollution prevention education, training & recognition for developers, contractors, and municipal/agency staff

The San Francisco Estuary Project is continuing to plan and conduct education and training workshops on erosion and sediment control. This is likely to include:

- general oversight of the workshops
- arranging and hosting workshops
- handling workshop revenues and expenditures
- conducting program evaluation and necessary follow up

It is proposed that BASMAA partner with SFEP to do the following:

1. Conduct two workshops in each of the nine Bay-Area counties, covering pollution prevention comprehensively, and formatted as previous workshops with a classroom session and site visit. Each workshop will have the same comprehensive core program. The first
will be tailored (in classroom and on site) to that portion of the construction community audience involved in excavation, grading, and sediment and erosion control activities. The second will be tailored to members of the construction community involved in all other activities (concrete work, painting, remodeling, landscaping, and other activities; see Appendix C for Construction Activities and Associated Pollution Prevention Practices).

The audience for both will be developers, contractors, trade associations and organizations, agency staff responsible for oversight, and interested vendors/suppliers; however, different groups of contractors and vendors/suppliers will be invited, depending on which tailored program is being held, or all participants can be invited and given the choice of which workshop to attend. These audiences will be identified through the database and through ongoing communication with local programs and the construction community.

2. Revise and reprint workshop materials, including the Field Manual, Guidebook, and workshop program announcement, to expand the information on pollution prevention activities other than erosion and sediment control. Sources for such information include BASMAA's Blueprint for a Clean Bay and the State BMP handbook. It is recommended that a minimum of 3,000 copies be printed. Materials should include a list of resources, including agency assistance, vendors, and suppliers.

3. Work with local programs to ensure that a wide audience of local and regional agency staff, who are responsible for oversight, support and participate in the workshops. To do this, it is necessary to:
   - determine appropriate contacts for distribution of program announcements and encourage attendance of local inspectors and appropriate staff at workshop
   - obtain mailing lists for locally-used developers and contractors (e.g., bid lists)
   - submit articles and announcements to appropriate local newsletters
   - facilitate and encourage development of more consistent expectations and standards between local programs and inspectors
   - obtain continuing feedback on program development

4. Work with the construction community to ensure that a broad range of developers, different contractors, trade associations and organizations, and vendors/suppliers support and participate in the workshops. To do this, it is necessary to:
   - determine appropriate contacts for distribution of program announcements and encourage attendance of appropriate developers and contractors
   - recruit program sponsors (for place, food, transportation, program materials, other)
   - obtain mailing lists for developers and contractors
   - submit articles and announcements to appropriate local newsletters
   - obtain continuing feedback on program development

5. Expand and convene the advisory group convened in Phase 1 of BASMAA's project, to:
   - represent multiple types of developers and contractors, as well as agency staff, trade organizations and associations, and vendors/suppliers, and
   - guide development of tailored, comprehensive pollution prevention workshops

6. Expand and use the database of construction industry businesses, associations, organizations, suppliers/vendors, and appropriate related agency staff created in Phase 1. The database can be used to sort these audiences for selective mailings. To the greatest extent possible, key contacts should be identified for each company or listing. For developers, the project managers and site superintendents should be identified and contacted.
In addition, it is proposed that BASMAA specifically do the following:

1. **Develop and present a program segment on pollution prevention practices** beyond erosion and sediment control for the workshops. This includes practices for many construction activities, such as: spill and leak prevention and clean up; handling, storage and disposal of solid and liquid materials; maintenance of portable toilets; disposal of cleared vegetation; demolition waste management; roadwork and pavement construction management; dewatering; and contaminated water and soil management. In order to develop a flexible segment which could be offered in a short (20 minute) to long (90 minute) classroom format and elements which could be offered on site, it is recommended that BASMAA:
   - identify qualified speakers who can knowledgeably and effectively speak on this topic or specific segments of this topic in the classroom and/or on site (e.g., a concrete supplier who uses effective pollution prevention practices).
   - locate existing slides and shoot and develop new slides showing effective and ineffective practices
   - produce new photo displays (enlarged and mounted photographs) or other visual aides
   - produce oral presentation
   - revise, reproduce and duplicate a pollution prevention video previously produced by the Palo Alto Storm Drain Program and the Regional Water Quality Control Plant (*Preventing Pollution During Construction: Guidelines for contractors and maintenance crews*), which could serve as a stand-alone piece and a companion piece to SFEP’s *Hold on to your Dirt* video on erosion and sediment control.
   - revise and duplicate *Best Management Practices for the Construction Industry* "trifolds" done previously by BASMAA member programs in follow up to Blueprint for a Clean Bay. These include pieces on home remodeling; landscaping, gardening and pool maintenance; general construction and site supervision; fresh concrete and mortar application; heavy equipment operation; roadwork and paving; and painting and application of solvents and adhesives.

2. **Research and arrange for new vendors and field demonstrations** for the round of workshops in each county which will be tailored to that portion of the construction community audience involved primarily in activities other than excavation and grading.

3. **Create a new pamphlet on roles of staff overseeing construction activities**, including inspectors, enforcement officers, plan reviewers, engineers, planners, and/or other agency staff. It is recommended that this pamphlet be developed with input and guidance from such personnel with oversight responsibilities, and that it be created in house.

4. **Help develop more consistent expectations on water quality standards and outcomes** by working with SFEP and the Regional Board to facilitate communication between agencies (the Board, Fish and Game, Army Corps of Engineers, possibly others).

5. **Strengthen training expectations/requirements** in the NPDES General Permit for Construction and NPDES municipal permits by working with Regional Board on revisions to these permits.

6. **Issue "Certificate of Recognition"** for education and training to program participants. It is recommended that BASMAA:
   - develop a self-quiz for workshop participants to take at the end of the program. After quizzes are completed, workshop organizers can review and discuss answers.
   - develop a "Certificate of Recognition" for stormwater education and training and wallet-size laminated cards documenting education and training. Program participants should turn in their quiz to receive a certificate at the end of the program. Cards would then be
issued by mail. The certificate could be posted for display, while the card could be
carried to show documentation of training when it is requested by staff responsible for
oversight (e.g., on a site or with submission of the SWPPP) or by public or private
entities interested in hiring the participant. It is recommended that these items show a
date of issue but that they do not necessarily expire in one or two years.

- create and maintain a database of recognized individuals, for inside tracking and for
later distribution to personnel responsible for oversight and to entities interested in
hiring trained individuals.

7. **Report to BASMAA on Phase 2**, summarizing Phase 2 activities and making
recommendations for ongoing workshops and implementation of Phases 3 and 4.

These Phase 2 activities supported by BASMAA are predominantly for development of
educational tools in the first year. To sustain the program in future years, it is recommended that:

- SFEP provide ongoing oversight and support of program, with in-kind staff support from
the Regional Board and the BASMAA member programs, and funds from grants,
Administrative Civil Liabilities (ACL) monies, and/or other sources.
- BASMAA and/or member programs consider providing additional funds in future years to
support reprinting and revising publications.
- In future workshops, qualified individuals from BASMAA member programs (or others)
be invited to deliver the pollution prevention segment of the program (beyond erosion and
sediment control).

**Phase 3 (1999/2000):**

**Outreach to Public Entities and Private Sector on Developer and Contractor Training Requirements**

Following Phase 2 workshops and issuance of Certificates of Recognition for education and
training, it will be necessary to keep building an incentive for more individuals to seek training.
This can be done by ensuring that public and private entities understand the need for training and
seek documentation of training when overseeing construction activity and hiring developers and
contractors.

To provide outreach to public entities first, it is proposed that BASMAA do the following:

1. **Identify public entities responsible for overseeing and hiring contractors** and add to program
database. Public entities include state and county governments, municipalities, utility
districts, school districts, and others. It is recommended that specific contacts be identified.

2. **Develop flyer on training (and display)** to outline training requirements (under NPDES
permits) and convey the benefits of and need for hiring trained individuals. It is
recommended that the flyer be professionally produced and that it be intended for both public
and private recipients.

3. **Develop simple database/list guidance** to help public entities use a database/list of trained
individuals.

4. **Distribute database/list of trained individuals, guidance, and flyer** to public entities & assist
local entities in using.
5. **Assist local entities in revising policies to support consistent oversight and hiring of trained developers/contractors.** Such policies could include: making a request for training documents with all bids submitted; making that request when development proposals and SWPPPs are submitted; adding further pollution prevention questions consistently to inspection forms.

6. **Work with local inspectors and reviewers to ensure consistency.** This includes ensuring that:
   - they are consistently looking for documentation of training from permittees
   - there is consistency in acknowledging various types of training
   - documentation of training does not impact the assessment of other pollution prevention measures positively or negatively.

To conduct outreach to private sector, it is proposed that BASMAA do the following:

1. **Identify resources for those in the private sector who are hiring contractors** and add to program database. It is recommended that specific contacts be identified for groups such as: chambers of commerce, private referral services, better business bureau, contractors state licensing board, and others.

2. **Distribute database/list of trained individuals and flyer** to resources serving the private sector and assist in using.

3. **Work with municipal offices and retail establishments to set up flyer displays** at key points of contact. Such points are any points at which private entities have contact with a construction-related activity, including municipal offices issuing permits and construction supply establishments.

4. **Assist municipalities** if they wish to distribute information to residents (e.g., via tax bill mailings).

5. **Contribute informational articles** to appropriate newsletters.

Finally, it is proposed that the following be done:

1. **Report to BASMAA on Phase 3**, summarizing Phase 3 activities and making recommendations for ongoing activities and implementation of Phase 4.

To sustain the program in future years, it is recommended that:

- SFEP and staff of BASMAA member programs work together to continue distribution of updated database/list, dissemination of flyers, and ongoing assistance provided in support of hiring trained contractors.
- BASMAA and/or member programs consider providing additional funds in future years to support reprinting and revising publications.


*Develop training kits and provide to local agencies, developers and contractors; assist with local and private training*

In Phase 2, this education program will have had the opportunity to educate and train large developers and contractors, as well as some smaller contractors, agency staff, and vendor/suppliers. In Phase 3, the program will have had the opportunity to build a greater
incentive to participate in training by ensuring that oversight staff and those hiring developers and contractors are working more and more with trained construction professionals. It is expected that there will still be a large need to reach more of the smaller contractors, subcontractors, and front-line employees. To do this, more training is needed locally and from developers and contractors to their subcontractors and employees.

To develop this follow up training, it is proposed that BASMAA do the following:

1. **Assess language and literacy needs** for intended audience of specialized contractor and subcontractor employees. The level of literacy among workers, and their reliance on languages other than English, must be assessed in order to prepare materials which they can effectively understand and use.

2. **Create durable field reference cards** for specialized (sub)contractors. These cards should be brief, durable references communicating the basic "do's" and "don'ts" of construction practices for preventing pollution. It is recommended that they be professionally produced. Depending on assessed needs, they may need to be provided in multiple languages and maximize use of illustrations for less-literate segments of this group. They can be distributed at ongoing county workshops, and be provided directly to municipal programs, developers, and contractors who will have ongoing contact with specialized (sub)contractors.

It is also proposed that BASMAA and SFEP jointly do the following:

1. **Create a training video** by videotaping workshop and editing for training. Multiple workshops will need to be set up for videotaping to obtain the best possible material. Taped speakers and field demonstrations would ideally be combined with existing professionally-produced videos (*Hold On to Your Dirt* and the revised *Pollution Prevention During Construction*).

2. **Create a training kit guide** to enable users to conduct training without staff assistance. This should also include procedures for administering self-quiz and submitting quizzes to SFEP, BASMAA, or other authority for issuance of Certificate and card.

3. **Assemble and distribute kits** to all municipal programs who can identify a contact person who will be the resource for training. Other programs should receive repeated invitations to designate a contact person and receive the kit. Kits should also be distributed to private groups by request, provided a contact person can be identified.

4. **Assist local agencies, developers, and contractors with use of training kit**. Although the kit will be designed for unassisted use, some assistance will be needed. If local or private groups request assistance to arrange and host their own training sessions, it is recommended that SFEP and BASMAA assist to the maximum extent possible.

Finally, it is proposed that the following be done:


These Phase 4 activities supported by BASMAA are predominantly for development of follow-up educational tools. To sustain the program in future years, it is recommended that:
- SFEP provide ongoing oversight and support of program, with in-kind staff support from the Regional Board and the BASMAA member programs, and funds from grants, Administrative Civil Liabilities (ACL) monies, and/or other sources.
- BASMAA and/or member programs consider providing additional funds in future years to support reprinting and revising publications.
C. Project Proposals

Each of the following Project Proposals for Phases 2, 3, and 4 includes:

- Title
- Purpose
- Background
- Scope
- Products
- Schedule
- Budget
- Implementer
- Proposer
- Date

Details on the budget for staff time, services, and supplies, including notes on funding and cost-saving strategies, are included in Appendix B.
Phase 2

BASMAA

Proposed Project

Title: Bay Area-Wide Construction Education Program - Phase 2
Ongoing pollution prevention education, training & recognition for developers, contractors, and municipal/agency staff

Purpose: To expand and augment continuing Bay Area-wide erosion and sediment control education & training workshops, in close partnership with the San Francisco Estuary Project staff, in order to:
• incorporate further aspects of pollution prevention during construction,
• broaden the intended audience to include more contractors, developers, trade associations and organizations, and vendors/suppliers,
• strengthen training of local inspectors and agency staff through these workshops,
• increase consistency among regional agency expectations and among municipal programs, reviewers, and inspectors, and
• provide recognition and documentation of education and training by awarding certificates of recognition for education and training.

In addition, implementation of this project will lay the groundwork for:
• targeted outreach to public entities and the private sector on training requirements;
• development of training kits for use by local agencies and private groups

Background: The San Francisco Estuary Project is planning and conducting ongoing Erosion and Sediment Control workshops throughout the Region 2 Bay Area in cooperation with the Regional Water Quality Control Board (RWQCB - Region 2) and in support of the NPDES General Permit. Additional support is needed for staff and publications that will help this program address pollution prevention more comprehensively, reach a larger audience, train the local regulatory community, and provide both recognition for and documentation of training.

Scope (including tasks):
• Work with SFEP to revise "erosion and sediment control" materials as "pollution prevention during construction" materials.
• Create a workshop presentation on aspects of pollution prevention beyond erosion control, including revised video, slides, displays, and oral presentation
• Revise Best Management Practices for the Construction Industry tri-folds
• Work with SFEP to tailor one round of workshops to audiences involved in excavation, grading and sediment and erosion control, and a second round of workshops to audiences involved in all other activities.
• Work with area water program/municipal personnel to: create a new pamphlet (done in-house) on role of inspectors, enforcement officers, plan reviewers, agencies; reach audience with announcements; develop more consistent expectations.
• Assist SFEP in working with construction industry members and groups to most effectively reach audience with workshop announcements and obtain sponsorships.
• Work with SFEP and the Regional Board to facilitate communication between agencies (the Board, Fish and Game, Army Corps of Engineers, possibly others) to develop consistent expectations on water quality standards and outcomes.
• Work with Regional Board to strengthen stated training expectations/requirements in NPDES General Permit for Construction and NPDES municipal permits.
• Work with SFEP to expand database of developers, contractors, local agency staff, vendors, suppliers, associations, others.
• Attend and deliver presentations at workshops.
• Develop and provide "Certificate of Recognition" for education and training to program participants.
• Prepare final report on Phase 2.

Products:
• Revised and reprinted Field Guide and Guidebook
• A new presentation on pollution prevention, including supporting materials
• A new brief on roles of local staff
• A certificate of recognition documenting and recognizing training, a mechanism for awarding certificates, and a database of recognized individuals
• Final report

Schedule: Spring/Summer or Summer/Fall 1998. (Approx. 25 weeks, if full-time effort)

Budget (estimate):
$ 20,000 staff support
$ 7,500 revision of publications
$ 1,500 material to create presentation
$ 11,000 revision of video

$ 40,000 TOTAL

Implementer: Friends of the San Francisco Estuary (contracting to consultant(s))

Proposer: Heather L. Nelson

Date: February 9, 1998
Phase 3

BASMAA

Proposed Project

Title: Bay Area-Wide Construction Education Program - Phase 3
      Outreach to Public Entities and Private Sector on Developer and Contractor Training Requirements

Purpose: To provide a greater incentive for developers and contractors to obtain and update their training credentials (e.g., by attending SFEP/BASMAA regional workshops), and thereby increase their training in and knowledge of pollution prevention. This incentive can be provided by encouraging individuals in the public and private sector who oversee and hire developers and contractors to check training credentials when overseeing and hiring construction professionals. To do this it is necessary to conduct outreach for these sectors on:

- the training requirements of developers, contractors and municipal personnel, and
- the need for and benefits of checking training credentials when overseeing and hiring construction professionals.

Background: Phase 1 determined that providing recognition, and marketing that recognition, to encourage the construction community to seek training and learn more about pollution prevention is not a strong enough single incentive to increase participation, and requires a high level of funding for staff time, publications, marketing and advertising. The NPDES General Permit for Construction does require permittees to address training in their Stormwater Pollution Prevention Plans (SWPPP), and Permit language and guidance is being strengthened to more specifically require documentation of training. The need to meet this requirement can provide a strong incentive for participating in training. Training workshops are already being conducted and are providing documentation of training to participants (following Phase 2 of this project). In order to make this incentive work (i.e., encourage more developers and contractors to seek training), those who oversee and hire these individuals need to understand training requirements and consistently check training credentials of developers and contractors.

Scope (including tasks):

Outreach to public entities:
- Identify public entities responsible for overseeing and hiring contractors and add to program database.
- Develop flyer (and display) to outline training requirements and convey the benefits of and need for hiring trained individuals.
- Develop simple guidance on use of database/list of trained individuals.
- Distribute database/list of trained individuals, with guidance and flyer, to public entities; assist local entities in using.
- Assist local entities in revising policies to support hiring of trained developers/contractors (e.g., in bid process, request training documents).
- Work with local inspectors and reviewers to ensure consistency in interpretation and acknowledgment of training documentation.
Outreach to Private Sector
• Identify resources serving those in the private sector who hire contractors; add to program database (e.g., chambers of commerce, private referral services, better business bureau, contractors state licensing board, others).
• Distribute database/list of trained individuals and flyer to private sector resources and assist in using.
• Work with municipal offices and retail establishments to set up flyer displays at key points of contact (e.g., offices issuing permits, construction supplier establishments).
• Assist municipalities if they wish to distribute information to residents (e.g., via tax bill mailings).
• Contribute informational articles to appropriate newsletters.
• Report to BASMAA on Phase 3.

Products:
• Expanded and revised program database
• Flyer on training requirements and benefits of and need for hiring trained professionals; display for flyer
• List of trained individuals and guidance on use
• Newsletter articles
• Final report

Schedule: Spring/Summer 1999. (Approx. 12 weeks, if full-time effort)

Budget (estimate): $10,000 staff support
                    $25,000 publication
                    $35,000 TOTAL

Implementer: Friends of the San Francisco Estuary (contracting to consultant(s))

Proposer: Heather L. Nelson  Date: February 9, 1998
Phase 4

BASMAA

Proposed Project

Title: Bay Area-Wide Construction Education Program - Phase 4
Development of training kits for local agencies, developers and contractors; assistance with local and private training

Purpose: To further reach and train specialized contractors and subcontractors by providing local agencies, developers and contractors with:
- training tools and materials; and
- assistance in using tools and conducting local and private training.

Background: Phase 1 clearly identified the need to train large developers and general contractors, but also to train smaller specialized contractors and subcontractors. Since the construction industry includes tens and possibly hundreds of thousands of developers and contractors in the Bay Area alone, it is difficult to effectively reach these smaller (sub)contractors. Developers and general contractors have also identified the need to have material that they can pass on to their subcontractors and on-site employees, and have stated their interest in conducting in-house training. Local agencies/programs can also make use of training tools and tailor them to address key issues and audiences over time.

Scope (including tasks):

- Assess language and literacy needs for intended audience of specialized contractor and subcontractor employees.
- Create durable field reference cards for specialized (sub)contractors (series of cards, multilingual if necessary, professionally produced and printed).
- Work with SFEP to videotape workshop and edit for training video.
- Work with SFEP to create training kit guide (in house).
- Work with SFEP to assemble kits and distribute to municipal programs; distribute to private groups by request.
- Work with SFEP to assist local agencies, developers, and contractors with use of training kit, and with in-house training whenever feasible.
- Report to BASMAA on Phase 4.

Products:

- Durable field reference cards
- Training kit and guidance
- Final report

Schedule: Summer/Fall 1999. (Approx. 8 weeks, if full-time effort)

Budget (estimate): $ 7,000 staff support
$ 48,000 publications.

$ 55,000 TOTAL
Implementer: Friends of the San Francisco Estuary (contracting to consultant(s))

Proposer: Heather L. Nelson

Date: February 9, 1998
IV. Project activities, findings, and useful resources

The following sections detail activities conducted to carry out each task in the Phase 1 Scope of Services. Findings are also detailed, where appropriate, and useful resources and contacts are identified.

A. Local and out-of-state training/certification programs

In November 1997, the scope and approach of other training and certification programs were reviewed, including:

- training and certification programs from other states
- training by industry groups
- Bay Area training

Recommendations and contacts are listed for each category.

Programs from Other States

A summary of certification and training programs was written in July, 1997, by Diana Sokolove, San Francisco Estuary Project (see Appendix D). The states of Maryland, Delaware, Virginia, and Washington all contained established programs with the following in common:

- program administered by state agency
- submission of an erosion and sediment control plan required for each site
- plan approval contingent upon certification that a trained, certified staff person be on site
- approved control plan required to receive a building permit.

In scope, these programs cover erosion and sediment control with apparent breadth and depth, however, elements of pollution prevention beyond erosion and sediment control are not covered broadly. The course length varies from a half day to four days. Courses utilize field sessions and exams, in some cases. In approach, all programs are conducted in support of mandatory certification requirements.

In addition to review of other state programs, in July 1997, the International Erosion Control Association (IECA) training was reviewed for general sediment and erosion control.

In summary, the approach of these programs did not directly translate to California, where support for a certification program is assessed to be unlikely in the near future. In scope, they are limited to erosion and sediment control, and in depth, considered too long and detailed for a voluntary training session. The IECA training was assessed as too general, in comparison with a local program, which could be tailored to the Bay Area and encourage closer ties with the local construction community. The San Francisco Estuary Project has, however, already integrated and adapted some successful elements of these programs, including field sessions. If a more formal, regulatory program is pursued in the future by local or state agencies, these state programs would serve as useful models.

Training by industry groups

Several industry groups were contacted to inquire about existing training programs and potential future partnerships. The following groups may have programs to work with in the future:
• **Golden State Training Trust:** The Trust is affiliated most closely with the Associated Builders and Contractors, and is also supported in part by the Associated General Contractors. Existing training provides practical information for front-line craftspeople, particularly in the industrial and commercial construction sectors, and for union or non-union contractors. (The latter do not receive training through union apprenticeships.) Most of the training is OSHA based (occupational safety and health), relating to hazardous materials communication and hazardous waste operations. Pollution prevention training for stormwater and nonstormwater discharges could possibly be offered in conjunction with some regular training at the Trust. Audience would be primarily independent, small contractors and builders.

**Recommendation:** keep in contact for future opportunities.

**Contact:** Frank Henry, Director of Training, 510.829.9230 x104 or 510.368.4833.

• **National Center for Construction Education and Research (NCCER):** The Center conducts craft training for 21 different crafts. All training sessions/materials are craft-oriented. They do not conduct special issue-oriented training, although they could include issue-oriented materials in appropriate training curricula.

**Recommendation:** keep training material on file.

**Contact:** Customer Service, 352.334.0911.

In summary, although these programs do not necessarily provide the most appropriate vehicles for an educational program in pollution prevention at this time, they should be kept in mind for the future.

**Bay Area stormwater training**

• **Association of Bay Area Governments (ABAG):** ABAG conducts pollution prevention-related training through their training center. A current training course is focused on industrial facility managers, compliance personnel, and other interested individuals. Erosion control training has been conducted in the past.

**Recommendation:** Invite contact to join future advisory group in program development.

Review ABAG programs to avoid duplication and assess opportunities for future training partnerships.

**Contact:** Jennifer Krebs, ABAG, 510.464.7977.

• **San Francisco Estuary Project - Erosion and sediment control training:** SFEP is conducting ongoing erosion and sediment control workshops in the San Francisco Bay Area (Region 2), in close cooperation with the Regional Water Quality Control Board. Training has focused primarily on erosion and sediment control, however, educational publications contain further information on pollution prevention beyond erosion and sediment control. Workshop format consists of video, slide and oral presentations in the morning, and an afternoon field session. Audience has been predominantly from the residential development sector, with some involvement of municipal and other agency personnel. Some feedback received includes:

- Field sessions and "how-to" instruction on implementation of measures has been well-received.
- Background on environmental protection and agency roles and regulations should be kept brief.

**Recommendation:** work with SFEP to revise and expand workshop and materials to cover additional elements of pollution prevention for a wider audience of developers, contractors, and municipal staff. This allows for improvement of an existing effort, thereby avoiding creation of entirely new workshops for pollution prevention. It also provides opportunities to pool resources and leverage program support.

**Contact:** Marcie Adams, 510.286.0924, or Marcia Brockbank, 510.286.0780.
BASMAA: Surface cleaners outreach and recognition: The BASMAA Mobile Cleaners pilot program has conducted educational workshops and provided recognition to area surface cleaners. The program is now working to provide training kits to local clean water programs in order to educate new and previously recognized cleaners and provide/reissue recognition certificates. Some lessons learned from the pilot program include:

- Significant outreach—first for public entities hiring cleaners, and then for private entities—is critical in order to level the playing field for cleaners who are spending more money on pollution prevention and losing bids as a result. Ongoing marketing of recognized cleaners is also needed. Outreach and marketing is needed to provide an incentive rather than a disincentive for the audience to seek recognition and implement pollution prevention measures; at this time, implementation often costs the cleaners more in equipment, materials, and time. Such an outreach and marketing effort requires both significant time and expense.

- An additional method for encouraging hiring of recognized cleaners would be to include recognition in the bid specifications; that is, when the notice goes out to invite contractors to bid on a job, the specification should say that recognition should be held. That way, such recognition will receive points in the bidding process so that the low bid doesn’t undercut a cleaner who is recognized.

- Over time, as more cleaners are recognized and found to be implementing measures, the standards for awarding recognition should be raised to encourage continuing improvement in practices.

- Need to make it convenient and inexpensive for cleaners to learn about and institute practices.

- Need to provide a list of vendors, retailers, and helpful agencies where cleaners can get the supplies and the help they need. Vendor demonstrations also helpful.

- Need to train inspection/enforcement staff.

- Need to add pollution prevention questions to inspection forms.

- Can reach private customers by going through groups that represent/reach them (e.g., Chambers of Commerce, Better Business Bureau, retail establishments, public offices)

- Need to step up enforcement of violations.

Recommendation:

- Do not rely on recognition and associated outreach and marketing to provide enough incentive for this large audience of contractors and developers to come to training workshops and implement pollution prevention measures; it is very costly and intensive to conduct in a manner that will be sufficient to make this the lone incentive for such a large audience.

- Consider including appropriate specifications in the bidding process, such as specifications for documented training; consider adding further pollution prevention questions to inspection forms.

- Highlight the most convenient and inexpensive, yet still effective methods for preventing pollution.

- Train municipal staff.

- Provide lists of resources (vendors, suppliers, agencies).

- Encourage enforcement of required pollution prevention practices.

Contact: Geoff Brosseau, BASMAA, 510.286.0615.

In summary, the SFEP workshops are the most appropriate existing educational vehicle upon which a comprehensive pollution prevention education program for the construction community can be built. Partnering with SFEP provides many opportunities to most readily implement effective programs. Other elements of a program can adapt and draw upon the successes of the BASMAA Surface Cleaners Program.
B. Region-wide mailing list and database

Throughout this project, various contacts were made to identify the various segments of the construction community audience and the most effective methods and tools for reaching them. To some extent, available listings have been incorporated into a database. In the future, access can be provided to additional mailing lists which can be used but cannot be incorporated into this project's database. Beyond the use of mailing lists to distribute program announcements, several newsletters also welcome information pieces and program announcements. Programs can also be more widely and thoroughly advertised by attending meetings of trade organizations and local agencies.

Database

A database for the construction community was created in Macintosh-compatible FileMaker Pro software to include:

- developers,
- contractors (general and specialized),
- trade association contacts,
- appropriate municipal contacts and agency staff, and
- other key contacts

in the nine counties of the Bay Area. (The nine counties include: San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, and Marin.)

Each record consists of:
- company/organization name
- street address
- city, state and zip code
- 1 - 3 classifications for use in sorting list

and, where available:
- contact name and title
- phone and fax numbers
- email address
- standard industrial classification (SIC) code

For an example of a database listing, see Appendix E.

FileMaker Pro allows database records to be sorted and formatted in various label and list formats, and allows for exporting of records (for use in other software formats).

Copies of database files have been supplied on diskette to Geoff Brosseau, BASMAA, and Diana Sokolove, SFEP.

Data Sources

Existing data sources include:
- A mailing list of key contacts compiled from contacts made from November 1997 through January 1998 (see Appendix F).
- Construction business listings downloaded from Powerfinder (CD-ROM by PhoneDisc®, 1998 edition)
Additional data sources which should be incorporated in the future include:

- Additional listings downloaded from Powerfinder
- Local/Municipal contacts obtained from ABAG
- Local/Municipal contacts identified by communicating with county and municipal clean water programs (BASMAA member programs and others)
- Contractors on developers' and public entities' bid lists (must request their bid lists)
- Additional contacts made as project continues
- Updated business listings (from 1999 edition of Powerfinder or other sources)

Other mailing lists

Some additional mailing lists are available for use, but records cannot be readily imported into database and cross-checked easily to delete duplicate recipients.

These include:

- **Associated General Contractors.** Mailing list for 1,200 members in Northern California (estimated 800 in Bay Area) is not available; however, AGC will include provided material in their weekly mailings at no cost.
  
  **Recommendation:** Provide announcements for a weekly mailing.
  
  **Contact:** Skip Jones, AGC, 510.827.2422.

- **Home Builders Association.** In 1997, HBA provided SFEP with its mailing list; they can do so again at no cost.
  
  **Recommendation:** Distribute announcements to HBA mailing list.
  
  **Contact:** Mark Lazzarini, HBA, 408.977.1490.

- **Associated Builders and Contractors, Inc.** Membership list may be available.
  
  **Recommendation:** Inquire about using or sending to mailing list.
  
  **Contact:** John Robinson, ABC, 510.829.9230 or 510.507.5559 (cell).

- **American Subcontractors Association.** Membership list may be available.
  
  **Recommendation:** Inquire about using or sending to mailing list.
  
  **Contact:** Jordi Grant, ASA, 888.310.2722.

- **Contractors State Licensing Board (CSLB).** For $.04/label, the CSLB will issue labels in hard copy or on diskette requested by license category, geographic area, or other sort. It is recommended to choose the "active, in good standing" category. They cannot estimate how large your request will be based on the parameters you indicate. They also do not remove duplicate listings for overlapping categories (e.g. general v. paving).
  
  **Recommendation:** Consider requesting if other lists do not provide adequate inclusion of area contractors. Format may be compatible for incorporation into database.
  
  **Contact:** Lynette Blumhardt, CSLB, 916.255.3915.

- **Contractors Organization for Professional Standards (COPS).** The organization does not address environmental aspects of work, however, audience is predominantly residential remodeling contractors.
  
  **Recommendation:** When trying to reach this audience, contact C.O.P.S. to inquire about use of their mailing list.
  
  **Contact:** Laurie or other, 800.240.4774 or 415.424.9200.
Other vehicles for distribution of announcements and information

- **Associated General Contractors**: AGC has statewide full-color magazine. Districts have newsletters (East Bay, North Bay, Delta Sierra - contains portion of Solano county).
  *Recommendation*: Consider running an advertisement in statewide magazine. Submit article and announcement in district newsletters.
  *Contact*: Skip Jones, AGC, 510.827.2422.

- **Associated Builders and Contractors, Inc.**: ABC has monthly newsletter.
  *Recommendation*: Submit announcement and informative article for newsletter. Inquire about presenting at monthly ABC dinner meeting.
  *Contact*: John Robinson, ABC, 510.829.9230 or 510.507.5559 (cell).

- **Home Builders Association**: Newsletter may be available.
  *Recommendation*: Research the various HBA publications for appropriate piece to which announcements and articles can be submitted.
  *Contact*: Mark Lazzarini, HBA, 408.977.1490.

- **American Subcontractors Association**: ASA has newsletter for the Bay Area, with 200 - 300 recipients.
  *Recommendation*: Contact ASA to see if announcement/article could be submitted.
  *Contact*: Jordi Grant, ASA, 888.310.2722.

- **Concrete Masonry Association of California and Nevada (CMACN)**: Woodward-Clyde Consultants distributes mailing to their membership; material could possibly be mailed out with a regular distribution.
  *Recommendation*: For programs focusing on concrete/masonry work, contact CMACN to inquire about submitting material for mailing.
  *Contact*: 916.722-1700, CMACN.

- **California Alliance for Jobs**: The Alliance represents heavy construction, such as infrastructure & highway projects. Members include about 1750 highway construction companies. The organization promotes job generation, helping members to connect with big jobs. They advocate for public investment in infrastructure. They can help get the word out through their newsletters and their "action alerts".
  *Recommendation*: Submit announcement and article to newsletter and/or "alert" to target heavy construction sector.
  *Contact*: Tom Goff, Alliance, 510.452.1661.

- **Contractors State Licensing Board (CSLB)**: Items or announcements for their newsletter are welcome. Statewide circulation is approximately 278,000 contractors.
  *Recommendation*: Submit announcement and article in newsletter.
  *Contact*: Lynette Blumhardt, CSLB, 916.255.3915.

- **The Trades Guild**: The Guild provides contractor referrals for homeowners. They serve five Bay Area counties: Marin, Contra Costa, Alameda, San Francisco, and San Mateo. They can help distribute to their audience of 180 - 190 members in two ways: 1) provide the postage paid mailing to them; they attach labels and distribute; or 2) provide a flyer for them to insert with their quarterly newsletter. Cost: $80 (for either).
  *Recommendation*: Provide flyer for them to insert in quarterly newsletter (deadline at least 3 weeks prior to publication.
  *Contact*: Jeani Miner, 510.547.3337.
• **CA Contractor Referral Service & Contractor License Verification Bureau.** They have a web site at: www.cacontractorreferral.com. They verify licenses for building owners who are hiring contractors. A meeting notice and basic information would be welcome at their site. 
  *Recommendation:* Submit notice for posting on web site. 
  *Contact:* Ken Turner, 510.943.7883.

• **San Francisco Estuary Project.** SFEP distributes bimonthly *Estuary* news, an independent news source on Bay-Delta water issues, estuarine restoration efforts and implementation of the S.F. Estuary Project's CCMP. Each issue contains a calendar of workshops, seminars, meetings and hands-on programs. 
  *Recommendation:* Submit announcement to newsletter. 
  *Contact:* Cariad Hayes, 510.547.6287 (fax); or editorial office, 510.286.4392 (tel).
C. Integration of comprehensive pollution prevention training and certification with existing erosion and sediment control training

During Phase 1, numerous discussions have been held with staff of the San Francisco Estuary Project and the Regional Water Quality Control Board to determine how further pollution prevention training can best be integrated with ongoing erosion and sediment control training. The contents of an educational program, approach of a recognition program, and necessary funding and staff support have all been discussed and are reflected in the program proposal (see Section III).
D. Development of a draft plan, convening of advisory group, and development of interagency cooperation and support

In outlining a plan, the key tasks during Phase I included:

- Development of a draft plan for a Bay Area-wide program;
- Formation and meeting of advisory group of construction industry representatives to comment on the plan and advise on both the optimal form of a regional training program and the feasibility of a recognition program; and
- Development of regional, interagency cooperation and support for a Bay Area-wide training program.

*Activities*

After meeting with BASMAA-affiliated staff, conducting background research on programs and audiences, and contacting some members of the construction community, a draft discussion piece was prepared in November 1997 to lay out recommendations and options for a pollution prevention outreach and recognition program for the construction community (see Appendix G). With questions to stimulate feedback included in the text, the discussion piece was distributed to key agency personnel, BASMAA New Development Committee members, and contacts including trade associations, developers, contractors, and consultants. All recipients were invited to a meeting on December 11 to discuss ideas. Ongoing phone contacts were made to solicit interest and feedback from the construction community.

On December 11, eight individuals attended, including a trade association representative and representatives from SFEP, RWQCB, BASMAA, and the Friends of the San Francisco Estuary. The group discussed options and recommendations, reached general consensus on desired approaches to and elements of a program, and identified specific items needing to be addressed in development of a program proposal.

On December 17, a meeting was held with a trade association representative (Skip Jones, Associated General Contractors) who could not attend on the 11th. Valuable input was received and an invitation extended to attend an AGC Bay Area districts meeting on January 14.

On December 17, a *Draft Plan* was distributed to roughly 25 individuals who had indicated an interest in providing further comments (see Appendix H). All were invited to join an advisory group meeting on January 28, 1998. Throughout the remainder of December and January, new phone contacts were made to solicit interest and feedback from the construction community. Names and numbers of contacts had been suggested from earlier contacts. Roughly 25 additional individuals provided some feedback on plan ideas conveyed over the phone and indicated interest in providing further comments. All were sent the *Draft Plan* and invited to join an advisory group meeting on January 28.

Of 50 invitations extended, the following replies were received:

15 yes
  11 agency/BASMAA
  2 trade associations
  2 developers
8 no, but please keep informed
1 no, do not keep informed
26 no response
In addition, one or more messages were left for approximately 11 developers, contractors, consultants, and trade associations who had been suggested as contacts. No response was received.

On January 14, an overview of the Draft Plan was presented to representatives at the AGC Bay Area districts meeting. A good discussion was held, feedback was received, and the Draft Plan was distributed. Participants were invited to join the advisory group on January 28, and share materials with others.

On January 28, 13 individuals attended the advisory group meeting, including one developer and representatives from SFEP, RWQCB, BASMAA, local government, and the Friends of the San Francisco Estuary. A summary of feedback was presented and elements of a proposed program discussed. Minutes and meeting material were distributed to 27 individuals, including meeting participants and others who could not attend and wanted to be kept informed. The meeting discussion and additional comments received were used to create the final program proposal.

Advisory group

The advisory group that met on January 28, together with interested individuals who could not attend but have provided comments on the plan, includes representation from:

- residential developers,
- contractors,
- consultants,
- trade associations,
- BASMAA and member programs,
- the City of Palo Alto,
- the San Francisco Estuary Project,
- the Regional Water Quality Control Board, and
- not-for-profit groups.

As a program is developed and implemented, these individuals should be contacted again for further input. The future advisory group should also be expanded to include additional representation from:

- commercial and industrial developers
- contractors (general and specialized)
- suppliers/vendors
- municipal departments, programs, agencies
- agencies such as Fish and Wildlife, Army Corps of Engineers

See Appendix I for Advisory Group meeting attendees, other interested individuals, and additional representation recommended.

Cooperation and support

Regional support and cooperation between agencies and between the construction community and agencies has been very high in Phase 1. Support and cooperation in the development and implementation of a program will remain high if:

- communication through an advisory group and possibly other mechanisms is continued;
- the advisory group is expanded to include additional representatives; and
- efforts are faithfully made to address concerns.
E. Summary of comments

Methods

Feedback was solicited from developers, contractors, trade associations, consultants, and agency staff (municipal and regional). Initial contacts were suggested by BASMAA-affiliated individuals (New Development Committee members and others), San Francisco Estuary Project staff, and Regional Board staff. Trade associations and industry-related organizations in the Bay Area were researched to identify contacts. Further contacts were suggested by initial contacts.

Feedback was received in phone calls and meetings. Initial contact was made by phone, briefly identifying BASMAA, explaining the Phase 1 project and its purpose, and discussing ideas about the program scope, audience, ideal format of an educational program, and use of recognition as an incentive to participate in a program. Unless contact declined, the discussion piece (of 11/25/97) or Draft Plan (of 12/17/97) was sent to them, further feedback was welcomed, and an invitation was extended to attend a scheduled meeting (discussion on 12/11/97 or advisory group meeting on 1/28/97) or set up a one-on-one meeting.

As a result, feedback was received
• during initial phone discussions
• via comments transmitted in writing or conveyed in follow-up phone calls in response to discussion piece (of 11/25) and Draft Plan (of 12/17)
• through one-on-one meetings
• through an invited presentation and discussion at a regularly-scheduled trade association meeting
• through discussion meeting of 12/11/97 and advisory group meeting of 1/28/98 held specifically to solicit feedback and reach consensus on characteristics of and plans for an education program.

Summary of Comments

The following points summarize feedback received. The Proposal for Implementation and Funding (Section III) is a direct response to these key points. Further detailed and specific suggestions regarding educational program format, materials, intended audience, and methods for reaching the audience are not included here; however, they are incorporated into the Proposal.

Expectations, regulations and enforcement must be more clear and consistent.

• Overlap and conflict now exists between sister agencies and among different level agencies on stormwater requirements.
• Municipal/agency staff need to be trained along with construction audience, both to increase their knowledge of pollution prevention measures and to increase consistency of expectations among inspectors, reviewers (in site inspection, enforcement and review).
• A clear, brief summary of regulatory responsibilities must be provided (in a publication like the Guidebook, and in the programs).
• Communication between sister agencies (RWQCB, Fish and Game, Army Corps) and between agencies at different levels (RWQCB, municipalities) needs to be facilitated in order to reach agreement on and define expected outcomes and standards for water quality, and streamline requirements wherever possible.
• Expectations must be realistic; pollution can be prevented to some degree, but there will still be impacts.
• A common checklist among inspectors would help make evaluation more consistent.
Voluntary training is preferred by the construction community, yet strong incentives are needed to get individuals to participate in training, learn about pollution prevention and implement effective pollution prevention practices.

- Specific education and training programs should be voluntary and focused on the "how to"
- The incentives to increase participation in a voluntary program are
  - offering a practical, useful program, which makes expectations more clear and provides instruction on how to cost-effectively choose and implement the right pollution prevention measures for a variety of different sites and site conditions.
  - providing valuable documentation of training
- Documentation will be valuable if
  - inspectors and reviewers are consistently looking for it (e.g. to meet training requirements of NPDES permit).
  - public and private entities (including developers) who are hiring developers and contractors are consistently looking for it when awarding contracts.
- Having or not having documentation of training should not impact the assessment of compliance with other requirements.
- Outreach needs to be provided to
  - agencies, to ensure that there is consistency in requesting documentation and recognizing various types of training.
  - public and large private entities, and then smaller entities; this can be done efficiently and cost-effectively at major points of contact for those hiring, such as municipal offices where permits are obtained.
- Lists of those trained should be made available (as are lists of violations/violators)
- No state requirement for specific certification and training now exists; however, the NPDES permit does require that the SWPPP address training. Training expectations can be strengthened in the permit and the Guidebook.
- A regulatory approach requiring a specified certification would require new state legislation or new local ordinances.
- Use of some type of recognition is beneficial if
  - it helps bring the construction community into compliance; for instance, if regulatory agencies acknowledge recognition as one measure of compliance.
  - it helps them obtain business, as customers look for that recognition in choosing a contractor.
- Recognition is not necessary: construction community will participate if they know a program will provide clearer expectations.
- Recognition alone is not enough, and it is very costly and intensive to do the outreach necessary to foster a consumer demand for recognition that will motivate developers and contractors enough to actively seek it.
- Significant media relations and ad campaigns could be used to raise awareness about the need to hire trained contractors, however, at this time, the message can be delivered more precisely to a smaller audience (via key points of contact) at a much lower cost (in publications and advertising). If there is a need to do more widespread outreach in the future, it would be useful for the ongoing BASMAA public outreach efforts to consider integrating this message in future campaigns.
- Marketing of trained individuals could also be provided, however, the expense of publishing marketing tools (e.g., decals, flyers) and providing public recognition (e.g. via advertisements) is high. If training were purely voluntary, it would be necessary to try to create a market for trained professionals over untrained professionals; however, since some type of training is required by NPDES permittees, oversight on this requirement can be strengthened to provide a strong incentive to attend training programs, instead of relying on market advantage as a lone incentive.
(See Appendix J for Advantages and Disadvantages of Voluntary Incentives and Mandatory Requirements for Education and Training.)

Stormwater pollution prevention education and training should be comprehensive, to include erosion and sediment control as well as other pollution prevention measures required and expected on projects.

- A comprehensive program should be used region wide, but different programs should have different emphases (e.g. on grading/excavation/erosion and sediment control, washout of concrete and other materials, remodeling, saw cutting, dewatering, other)
- Some issues need more attention than they are getting now, because developers and contractors are not seeing practices used or used correctly. Most frequently problematic issue, based on comments, is washout of concrete, mortar, plaster, stucco materials.
- Consider tying pollution prevention elements in with Safety and Risk Management so that safety officers could help carry this out. Contact safety officers and consider contact with American Society of Safety Engineers.

Education and training should be provided for developers and general contractors first, then for specialized contractors and subcontractors.

- Developers, contractors and municipal/agency staff all need training.
- Construction audience is very large. The most logistically and economically feasible and effective way to reach them is to educate and train the developers and general contractors and provide them with material/information they can pass on to or use with the subcontractors and front-line employees.
- Developers need to be educated and trained because they are ultimately liable for the construction projects and responsible for compliance with their NPDES permits.
- Project/site superintendents and project managers are key individuals to reach. They also need to pass this information on to their contractors to help contractors properly implement measures and avoid violations.
- General contractors need to be educated and trained, because they are doing the site work or contracting to subcontractors. The developer expects them to appropriately carry out stormwater pollution prevention measures outlined in the SWPPP. They also need to pass this information on to their subcontractors.
- Wherever possible, training should be conducted on specific activities and practices for the appropriate contractors (knowing that contractors specialize in a different mix of construction services).
- Subcontractors need to be educated and trained, because they are doing the site work. They, ultimately, are the front line—those on site every day implementing or not implementing appropriate measures.
- Industry associations (e.g., Home Builders Association, Association of General Contractors) can help identify and reach developers and contractors.
- Audience can be divided into two groups:
  - excavation, grading and erosion and sediment control specialists
  - others (for concrete, paving, plastering, masonry, painting, etc.)

Education and training format and materials need to be practical and useful.

- Program should be kept simple.
- Main emphasis needs to be on most realistic, cost-effective pollution prevention measures and how to implement them. Some now feel that unrealistic measures are required; some measures are just not practical to install and not economically justifiable. For example:
- disposal of all the erosion control straw is difficult because they are prohibited from dumping it on most sites and dump fees are high;
- paint material washout is not considered practical. Painters are not likely to go two blocks away to a washout site, nor are they likely to go inside to dump down the drain (for delivery to sanitary sewer), because the cleaning service has often been through the property already and will not be back again (there's no time in the project schedule). They don't see washing out some paint and solvents at the outside spigot onto the grass or soil on a site-by-site basis as a problem, as long as it isn't going to the gutter or storm drain.
- in scheduling and phasing, it is important to recognize that developers are businesses that need to operate year round to be profitable. Projects are in all phases in every month; work must be done in the rainy season.

- Specific examples from and demonstrations in the field on real sites are needed.
- Materials need to be field-durable and easy to read so they are useful daily references on site.
- Brief discussion of regulations and responsibilities is needed from a regulatory expert who can describe NPDES and other permits and regulations from various agencies; regulations and responsibilities should be clearly and succinctly addressed in publication also.
- Need to acknowledge that there are other sources of stormwater pollution and that other efforts are focusing on those sources. Some in the construction industry feel singled out and that they are carrying the burden.
APPENDIX A

Scope of Services

Title: Regional Construction Education Program - Phase 1

Purpose: To lay the groundwork and develop regional, interagency cooperation and support for a Bay Area-wide training program in pollution prevention practices for the construction industry, using BMPs in Blueprint for a Clean Bay and other contractor education pieces.

Scope (including tasks):
(Modeled on the BASMAA/BAPPP Mobile Cleaners Outreach - Phase 1 project)
• Research the approach and scope of training/certification programs in other regions (e.g., Maryland’s Green Card program) with an emphasis on pollution prevention.
• Develop a region-wide mailing list/database of contracting firms and trade associations.
• Work with Regional Board and Friends of the San Francisco Estuary staff to integrate the development of the pollution prevention element with the erosion/sediment control element of the training/certification program.
• Draft a plan for a Bay Area-wide program.
• Form and convene an advisory group of construction company owners, supervisors, and workers, as well as trade association representatives to comment on the plan and advise BASMAA and the Regional Board on 1) the optimal form of a regional training program and 2) the feasibility of a recognition program based on the surface cleaners program model.
• Prepare a final report summarizing research and comments from the advisory group and others, and proposing a program and budget for subsequent funding and implementation.

Products:
• Mailing list/database
• Report
# APPENDIX B

Budget for staff time, services, and supplies

<table>
<thead>
<tr>
<th>PHASE 2: Ongoing pollution prevention education, training &amp; recognition for developers, contractors, and municipal/agency staff</th>
<th>Year 1</th>
</tr>
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<tbody>
<tr>
<td><strong>Staff</strong></td>
<td><strong>Supplies and Services</strong></td>
</tr>
<tr>
<td>Hrs</td>
<td>Item</td>
</tr>
</tbody>
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| Work with SFEP to revise "erosion and sediment control materials" as "stormwater pollution prevention" materials:  
  Guidebook  
  Field Manual | 120 | contribution to SFEP for graphic design & printing (print 3000+) | 7,500 |
| Create a workshop presentation (approx. 30 minutes) on aspects of pollution prevention beyond erosion control  
  revise and duplicate pollution prevention video  
  locate existing and shoot new slides for pollution prevention  
  develop slides for pollution prevention  
  produce new photo displays for pollution prevention (up to 18)  
  produce oral presentation  
  revise and duplicate *Best Management Practices for the Construction Industry* tri-folds | 200 | produce and duplicate video  
  film & devel.  
  enlargements, materials | 11,000  
  300  
  600 |
| Work with SFEP to tailor a portion of the workshops to audience involved in excavation, grading and sediment and erosion control, and tailor the remaining workshops to audiences involved in all other activities (goal: one workshop for each audience in each county)  
  Research and arrange for new vendors and field demonstrations relating to "other activities" to be incorporated into tailored workshop | 60 |  |
| Work with area stormwater program/municipal personnel to:  
  create a new pamphlet (done in-house) on role of inspectors, enforcement officers, plan reviewers, agencies  
  determine appropriate contacts for distribution of program announcements and encourage attendance of local inspectors and appropriate staff at workshop  
  obtain mailing lists for locally-used developers and contractors  
  submit articles and announcements to appropriate local newsletters  
  facilitate and encourage development of more consistent expectations and standards between local programs and inspectors  
  obtain continuing feedback on program development | 160 |  |

**BASMAA**  
Regional Construction Education Program  
Phase 1, Final Report  
February 9, 1998
<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assist SFEP in working with construction industry groups to:</td>
<td>100</td>
</tr>
<tr>
<td>determine appropriate contacts for distribution of program announcements and encourage attendance of appropriate developers and contractors</td>
<td></td>
</tr>
<tr>
<td>recruit program sponsors (for place, food, transportation, program materials, other)</td>
<td></td>
</tr>
<tr>
<td>obtain mailing lists for developers and contractors</td>
<td></td>
</tr>
<tr>
<td>submit articles and announcements to appropriate local newsletters</td>
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</tr>
<tr>
<td>obtain continuing feedback on program development</td>
<td></td>
</tr>
<tr>
<td>Work with SFEP and the Regional Board to facilitate communication between agencies (the Board, Fish and Game, Army Corps of Engineers, possibly others) to develop consistent expectations on water quality standards and outcomes</td>
<td>40</td>
</tr>
<tr>
<td>Work with Regional Board to strengthen stated training expectations/requirements in NPDES General Permit for Construction and NPDES municipal permits</td>
<td>20</td>
</tr>
<tr>
<td>Work with SFEP to expand database of developers, contractors, local agency staff, vendors, suppliers, associations, others</td>
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</tr>
<tr>
<td>Attend and present segment at workshops</td>
<td>100</td>
</tr>
<tr>
<td>Provide &quot;Certificate of Recognition&quot; for education and training to program participants</td>
<td>80</td>
</tr>
<tr>
<td>develop and print self-quiz (in house)</td>
<td></td>
</tr>
<tr>
<td>create and distribute &quot;Certificate of Recognition&quot; &amp; cards</td>
<td></td>
</tr>
<tr>
<td>create and maintain database of recognized individuals</td>
<td></td>
</tr>
<tr>
<td>Report to BASMMAA on Phase 2</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>900</strong></td>
</tr>
<tr>
<td><strong>Total Cost ($)</strong></td>
<td><strong>$40,000</strong></td>
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</tbody>
</table>

Funding strategies and cost-saving options:

- Funding invested in staff time for this project and funding contributed to reprinting publications is critical in leveraging SFEP investment in ongoing training. BASMMAA investment in staff time to work with area stormwater programs and municipal personnel is particularly critical since BASMMAA is positioned to work closely and effectively with such programs and personnel.
- Baseline funding is recommended for the total Phase 2 budget. At a minimum, baseline funding should support staff time ($20,000), publication reprints ($7,500), and materials ($1,500). If baseline funding must be at a lower level, funds to support revision of the pollution prevention video ($11,000) should be solicited from the member programs. If these funds or other funds are not available, revision of the video would need to be postponed.
- Roughly $1,500 of the $20,000 for staff support should be provided to the San Francisco Estuary Project/Friends of the Estuary to support existing staff already working on publication revisions and reprinting. The remainder should support staff dedicated to carrying out the rest of the tasks outlined in the scope.
<table>
<thead>
<tr>
<th>PHASE 3: Outreach to Public Entities and Private Sector on Developer and Contractor Training Requirements</th>
<th>Year 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Staff</td>
<td>Supplies and Services</td>
</tr>
<tr>
<td></td>
<td>Hrs</td>
<td>Item</td>
</tr>
<tr>
<td>Outreach to public entities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify public entities responsible for overseeing and hiring contractors and add to program database</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Develop flyer (and display) to outline training requirements, and convey the benefits of and need for hiring trained individuals</td>
<td>40</td>
<td>flyer prod'n &amp; printing (100,000)</td>
</tr>
<tr>
<td>Develop simple guidance on use of database/listing of trained individuals.</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Distribute database/listing of trained individuals and flyer to public entities &amp; assist local entities in using</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Assist local entities in revising policies to support consistent oversight and hiring of trained developers/contractors (e.g., in bid process, request training documents; in plan review, check for training)</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Work with local inspectors and reviewers to ensure that: they are consistently looking for documentation of training from permittees; there is consistency in acknowledging various types of training documentation of training does not impact assessment of other pollution prevention measures positively or negatively</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Outreach to Private Sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify private sector resources for those hiring contractors and add to program database (e.g., chambers of commerce, private referral services, better business bureau, contractors state licensing board, others)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Distribute database/listing of trained individuals and flyer to private sector resources and assist in using</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Work with municipal offices and retail establishments to set up flyer displays at key points of contact (offices issuing permits, contractor supplier establishments)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Assist municipalities if they wish to distribute information to residents (e.g., via tax bill mailings)</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Contribute informational articles to appropriate newsletters</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Report to BASMAA on Phase 3</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>450</td>
<td>25,000</td>
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<tr>
<td>cost for staff @ $20/hr and 10% overhead ($)</td>
<td></td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Total Cost ($)</strong></td>
<td>35,000</td>
<td></td>
</tr>
</tbody>
</table>

Funding strategies and cost-saving options:

- Baseline funding is recommended for the total Phase 3 budget. At a minimum, baseline funding should support staff time ($10,000). If baseline funding must be at a lower level, funds to support publication of the flyer ($25,000) should be solicited from the member programs.
• If funds for publication are not available, in-house publication could be considered; however, wide distribution and display of a publication that is not of professionally-produced quality is not recommended.
### PHASE 4:
Develop training kits and provide to local agencies, developers and contractors; assist with local and private training

<table>
<thead>
<tr>
<th></th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Staff</td>
</tr>
<tr>
<td></td>
<td>Hrs</td>
</tr>
<tr>
<td>Assess language and literacy needs for intended audience of specialized contractor and subcontractor workers.</td>
<td>35</td>
</tr>
<tr>
<td>Create durable field reference cards for specialized (sub)contractors (series of cards, multilingual, professionally produced and printed)</td>
<td>120</td>
</tr>
<tr>
<td>Work with SFEP to videotape workshop and edit for training video</td>
<td>40</td>
</tr>
<tr>
<td>Work with SFEP to create training kit guide (in house)</td>
<td>20</td>
</tr>
<tr>
<td>Work with SFEP to assemble kits and distribute to municipal programs; distribute to private groups by request</td>
<td>40</td>
</tr>
<tr>
<td>Work with SFEP to assist local agencies, developers, and contractors with use of training kit, and in-house workshops when feasible</td>
<td>40</td>
</tr>
<tr>
<td>Report to BASMAA on Phase 4</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>315</td>
</tr>
<tr>
<td><em>cost for staff @ $20/hr and 10% overhead ($)</em>*</td>
<td>7,000</td>
</tr>
</tbody>
</table>

**Total Cost ($) 55,000**

Funding strategies and cost-saving options:

- Baseline funding is recommended for the total Phase 4 budget. At a minimum, baseline funding should support staff time ($7,000) and contribution toward production and duplication of training video ($3,000). If baseline funding must be at a lower level, funds to support publication of the reference cards ($45,000) should be solicited from the member programs.
- If funds for publication of cards are not available, outside sources of funding should be actively pursued. It is not recommended that these cards be published in-house because they need to be made very durable and will likely need translation in multiple languages and careful development of graphics, depending on assessed language needs and literacy levels.
<table>
<thead>
<tr>
<th>Construction Activities</th>
<th>Erosion Prevention and Sediment Control</th>
<th>General Site Maintenance</th>
<th>Demolition Waste Mgmt</th>
<th>Roadwork &amp; Pavement Constr. Mgmt</th>
<th>Contaminated Water and Soil Mgmt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>prevent erosion</td>
<td>control sediment</td>
<td>prevent &amp; collect spill from vehicles and equipment</td>
<td>prevent &amp; maintain dumpsters</td>
<td>properly remove paints, solvents, adhesives, cleaning solutions</td>
</tr>
<tr>
<td>building (general)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>excavation</td>
<td>X</td>
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<td>X</td>
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<td>demolition</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>remodeling</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>construction clean up</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

* Construction materials include those that are wet or dry, hazardous or nonhazardous.
** Portable toilets may be associated with any construction activity, depending on site size and project duration.

---

1 Categories adapted from yellow page listings in telephone directory.
2 Categories used in Blueprint for a Clean Bay (BASMAA, 1995).
# A P P E N D I X D

Summary of Certification Training Programs
excerpted from July 1997 Memorandum from Diana Sokolove, SFEP

<table>
<thead>
<tr>
<th>State</th>
<th>Name of Program</th>
<th>Program Direction</th>
<th>Course Instructors</th>
<th>Course Information</th>
<th>Regulatory Requirements</th>
<th>Partners</th>
<th>Contact Person</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD</td>
<td>Responsible Personnel* Training and Certification Program</td>
<td>MD Department of the Environment (MDE)</td>
<td>MDE staff or other approved entity</td>
<td>1/2 day 300 slides</td>
<td>No approval of Erosion &amp; Sediment Control Plan or building permit without designated Certified Personnel on-site for any project over 5000 square feet</td>
<td>soil conservation districts</td>
<td>Rick Trickett (410) 631-3510</td>
<td>specialize according to audience MDE operates 65 acre &quot;outdoor classroom&quot; called Fairland Park Stormwater Management Demonstration Area</td>
</tr>
<tr>
<td>DE</td>
<td>Contractor Certification Program</td>
<td>DE Department of Natural Resources (DNR) oversees program &amp; designates authority to local govt. or conservation dist.</td>
<td>DNR staff, field professionals, consultants, engineers, and academics</td>
<td>32 hours held one day a week for four weeks $125.00</td>
<td>No approval of building permit without designated Certified Personnel on-site for any project</td>
<td>local community college, HBA, conservation districts</td>
<td>Mr. Piorko (302) 739-4411</td>
<td>specialize according to types of development, location, and audience be customer friendly</td>
</tr>
<tr>
<td>VA</td>
<td>Erosion and Sediment Control Certification Program</td>
<td>Department of Conservation and Recreation (DCR) oversees program &amp; designates authority to local govt. or conservation dist.</td>
<td>DCR, locality, or local soil &amp; water districts</td>
<td>Program Administrator 2 days Plan Reviewer 4 days Inspector 3 days $20 per class $20 per exam</td>
<td>All local programs must employ a certified Program Administrator, Plan Reviewer, and Inspector No approval of plan or building permit without plan reviewed by certified Plan Reviewer All inspections done by certified inspector</td>
<td>soil and water districts, local community college</td>
<td>John Barzowski (804) 371-4532</td>
<td>program began as voluntary open book exam program geared toward local government employees who manage erosion &amp; sediment control program locally can exempt from class (not exam) if experience requirements are met</td>
</tr>
<tr>
<td>WA</td>
<td>Department of Transportation (DOT) FOR DOT PROJECTS ONLY</td>
<td>2 days including 1/2 day in the field $100.00</td>
<td>If project requires an NPDES permit then certified person must be on site</td>
<td></td>
<td></td>
<td>local general contractors</td>
<td>David Jenkins (360) 705-7479</td>
<td>specialize according to audience - maybe offer a basic class and an extra half day devoted to specialties be customer friendly and use many visuals course previously offered through IECA but it was too general course previously offered through University of Washington but it was too theoretical</td>
</tr>
<tr>
<td>contact name</td>
<td>Mark Lazzarini</td>
<td></td>
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<tr>
<td>contact title</td>
<td>Executive Director</td>
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<tr>
<td>phone</td>
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<tr>
<td>fax</td>
<td>408.977.1493</td>
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</tr>
</tbody>
</table>
APPENDIX F

List of Key Contacts

Primary Contacts
(have expressed interest to staying involved and informed)

Trade Associations

Skip Jones
Regional Manager (Bay Area)
Associated General Contractors of California
1390 Willow Pass Road, Suite 1030
Concord, CA 94520
ph 510.827.2422
fx 510.827.4042
e

Mark Lazzarini
Executive Director
Home Builders Association
675 North First Street, #620
San Jose, CA 95112
ph 408.977.1490 or 491.9911
fx 408.977.1493
e

Agency, Local Government, and related

Marcie Adams
San Francisco Estuary Project
2101 Webster Street, Suite 500
Oakland, CA 94612
ph 510.286.0924
fx 510.286.0928
e

Phil Bobel
Regional Water Quality Control Plant
City of Palo Alto
2501 Embarcadero Way
Palo Alto, CA 94303
ph 650.329.2285 or 2598
fx 650.494.3531
e phil_bobel@city.palo-alto.ca.us

Marcia Brockbank
San Francisco Estuary Project
2101 Webster Street, Suite 500
Oakland, CA 94612
ph 510.286.0780
fx 510.286.0928
e
Janet Cox
1741 Cowper Street
Palo Alto, CA 94301
ph 650.321.3070
fx 650.321.2046
e roosters@batnet.com

Hossain Kazemi
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612
ph 510.286.1043
fx 510.286.1380
pgr 510.729.3349
e

Jennifer Krebs
Senior Environmental Planner
ABAG Green Business Program
PO Box 2050
Oakland, CA 94604-2050
510.464.7977
510.464.7980
JenniferK@abag.ca.gov

George Leyva
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612
ph 510.286.3976
fx 510.286.1380
e

Trish Mulvey
Friends of the Estuary
527 Rhodes Drive
Palo Alto, CA 94303
ph 650.326.0252
fx 650.326.8919
e Mulvey@ix.netcom.com

Tom Mumley
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612
ph 510.286.0962
fx 510.286.1380
e

Diana Sokolove
San Francisco Estuary Project
2101 Webster Street, Suite 500
Oakland, CA 94612
ph 510.286.0734
fx 510.286.0928
e
BASMAA affiliated

Geoff Brosseau
BASMAA
2101 Webster Street, Suite 500
Oakland, CA 94612
ph 650.322.3070
fx 650.322.5147
e gabrosseau@aol.com

Tom Dalziel
Planning Specialist
Contra Costa Clean Water Program
255 Glacier Drive
Martinez, CA 94553-4897
ph 510.313.2392
fx 510.313.2333
e Tdalziel@pw.co.contra-cost.ca.us

Jim Fain
Marin County Public Works
P.O. Box 4186
San Rafael, CA 94913
ph 415.499.6583
fx 415.499.3799
e

David Gilpin
Pacific Coast Seed Inc.
6144-A Industrial Way
Livermore, CA 94550
ph 510.373.4417 (x13)
fx 510.373.6855

c

Peter Mangarella
Woodward-Clyde Consulting
500 12th Street, Ste 100
Oakland, CA 94607
ph 510.874.3022 or 893.3600
fx 510.874.3268
e PAMANGA0@WCC.COM

Heather Nelson
BASMAA
2101 Webster Street, Suite 500
Oakland, CA 94612
ph 510.286.6798
fx 510.286.0928
e HNelson999@aol.com

Joe Teresi
Public Works, Engineering, 6th Floor
City of Palo Alto
PO Box 10250
Palo Alto, CA 94303
ph 650.329.2129
fx 650.329.2299
Developers - Residential

Tim Cronin
President of Construction
New Cities Development Group
9781 Bluelarkspur Lane
Monterey, CA 93940
ph  408.655.3600/5000
fx  408.655.2530
e

Paul Medeiros, Project Engineer
Kaufman & Broad South Bay, Inc
2201 Walnut Avenue, Ste 150
Fremont, CA 94538
ph  510.505.7574 or 792.2900
pgr 510.719.6245
fx  510.792.8349
e

Nathan Meeks
Ponderosa Homes
6671 Owens Drive
Pleasanton, CA 94588
ph  510.460.8953
fx  510.734.9141
e  nmeeks@ponderosahomes.com

Ravi Nandwana
Ryland Homes
3130 Crow Canyon Place, Ste 410
San Ramon, CA 94583
ph  510.866.9222
fx  510.866.9233
e

Dominic Pieri, Project Manager
Warmington Homes
3160 Crow Canyon Place, #200
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BASMAA
Regional Construction Education Program
Phase I, Final Report

February 9, 1998
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Phase 1, Final Report
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Phase 1, Final Report  
February 9, 1998
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Trade Associations

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APPENDIX G

BASMAA Regional Construction Education Program
Phase I: Program Development

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DRAFT
for discussion purposes only

Stormwater Pollution Prevention
Outreach & Recognition Program
for the Construction Community

BACKGROUND: the problem of stormwater pollution

Land development and construction activities can significantly alter natural drainage patterns and pollute stormwater runoff. Pollutants from construction areas include sediments from soil erosion, construction materials and waste (e.g., paint, solvents, concrete drywall), landscaping runoff containing fertilizers and pesticides; and spilled oil, fuel, and other fluids from construction vehicles and heavy equipment. Such stormwater pollution from construction and many other daily activities across the landscape is a major source of water pollution in California.

PURPOSE: pollution prevention education and recognition for the construction community

The Bay Area Stormwater Management Agencies Association (BASMAA) is designing a pollution prevention education and recognition program specifically for the construction community that will: 1) help developers and contractors learn how to prevent pollution and thereby remain competitive and profitable, comply with regulations, and protect the environment; and 2) recognize these members of the construction community for their efforts, giving them greater visibility and marketability, and encouraging their preventative actions.

- Does the construction community feel education is needed?
- Does the community itself want and/or are they receptive to education and recognition?

SCOPE OF POLLUTION PREVENTION: comprehensive or narrowed down

Comprehensive stormwater pollution prevention consists of erosion and sediment control, general site maintenance (including spill and leak prevention and clean up, as well as material handling, storage and disposal), demolition waste management, roadwork and pavement construction management, and contaminated water and soil management. Ongoing outreach is being conducted by the San Francisco Estuary Project (SFEP) and the Regional Water Quality Control Board (RWQCB) for this community specifically on the erosion and sediment control aspects.

BASMAA would like to further educate the construction community on these additional aspects of stormwater pollution prevention and establish a recognition program tied to the educational program. BASMAA would also like to build on and tie in with the current erosion and sediment control outreach and utilize existing materials and networks wherever feasible.

Recommendation:
- Revise and expand the SFEP/RWQCB erosion and sediment control education program to make it a comprehensive stormwater pollution prevention education program.
Material & format: revise the guidebook, field manual, video, and workshop program content; create key stand-alone handy reference sheets/cards for use on site that are easy to distribute by mail for specific segments of audience that may be hard to reach (e.g., small painting and landscaping contractors) [see Education section also], and/or add on several special sessions over time to the standard general workshops, going into detail for a different audience segment each time.

Audience: broaden to include all types of appropriate contractors conducting construction activities that can be addressed with stormwater pollution prevention practices [see Audience section and Construction Activities-BMPs matrix also]

Create a recognition program to recognize comprehensive stormwater pollution prevention. [see Recognition section also]

Other options:

Create a pollution prevention education program to deal specifically with those aspects of pollution prevention beyond erosion and sediment control, while still revising erosion and sediment control outreach materials to include more pollution prevention activities.

Material: create new on-site reference briefs specific to the various construction activities.

Audience: target those segments of the audience concerned primarily with activities beyond those most involved with erosion and sediment control (e.g., painting and landscaping rather than excavating, clearing and grading).

Create a recognition program separate from erosion and sediment control activities.

Does the construction community perceive erosion and sediment control and these other aspects of pollution prevention to be related parts of the comprehensive issue of stormwater, or does the community perceive them to be separate issues?

Should these aspects of pollution prevention outreach, therefore, be integrated with erosion and sediment control outreach or kept distinct?

Which approach would be more well received and more effective?

Accordingly, should the recognition program be comprehensive or not?

APPROACH: voluntary or regulatory

Regulatory certification programs have been instituted in other states, however, at this time in California, there is no regulatory authority at the state level requiring certification. BASMMAA would like to provide education and recognition on a voluntary basis, using various incentives to maximize participation. Generally, a voluntary approach is advised to foster a more proactive construction community and present less threat. Standardized, optional recognition reinforces and rewards pollution prevention, provides an incentive to participate in the program by making the participant more visible and marketable, and further adds an opportunity to educate the public and private sector about stormwater pollution prevention as they work with, provide supplies and services to, and choose between recognized and nonrecognized contractors [see Recognition section also].

Recommendation

Create a voluntary education and recognition program based on current models (including erosion and sediment control outreach and the BASMMAA Mobile Cleaners Outreach & Recognition Program) [see Education & Recognition sections also].

Other options
• Establish policies to create the authority for a program to certify construction workers, setting up administration and oversight of such a program at the state/regional level in conjunction with current nonpoint source pollution regulation and implementation at the local level. (Based on other state programs, approval of stormwater plans and issuance of building permits could be subject to proof that at least one certified person be on the project site to oversee construction, inspection and reporting.) These policies could be pursued while developing a program or after a voluntary program has been established and running, when businesses will have had ample opportunity to obtain recognition and policy makers at the local and regional level will have had an opportunity to see a voluntary program in operation.

• In instances where the region/state is seeking indemnification from parties cited for violation of enforceable nonpoint source pollution regulations (e.g., under NPDES program), have such parties sponsor and participate in the education and recognition program.

Are members of the community responsive to voluntarily learning more and receiving recognition?

If they are effectively targeted as an audience and given the right incentives, will they participate? Are they likely to use the practices they learn about?

For those with a history of storm water violations, should participation in a program be heavily suggested or even required?

Would this community learn more and be more likely to improve their practices under a mandatory certification program? (Why/Why not?)

TARGET AUDIENCE: broad versus narrow

There is a broad construction-related audience to educate, with some segments perhaps more crucial than others and some more easily reached than others. The broadest audience includes all segments of the construction community: developers who have plans for a parcel of land, general contractors who work on site and subcontract; large and small subcontractors; inspectors, planners, and engineers who guide and oversee construction plans and activities; suppliers; customers; and others. These segments and their roles include, but are not limited to:

• **Developers** are responsible for new development and redevelopment. They work with their contractors in overseeing and carrying out construction plans. They need direct education and training on how to use pollution prevention practices, and should further be assisted in passing this information on to their contractors.

• **General contractors and specialized contractors/subcontractors** conduct all the different activities in construction. They need direct education and training on how to use pollution prevention practices. The activities that are most likely to create stormwater pollutants and are therefore most important to address in pollution prevention include [see Construction Activities-BMPs matrix also]:
  - building
  - excavating, clearing and grading
  - paving
  - working with concrete, plaster, drywall
  - masonry
  - plumbing
  - roofing
  - painting (including power washing & refinishing)
  - landscaping
  - remodeling
  - demolition
  - construction clean up
• Municipal staff and officials work closely with the construction community. They need to understand these practices, but specifically need to understand how to encourage them, plan for them, and enforce them. Key individuals include:
   inspectors
   planners
   engineers
   commissions

• Vendors, suppliers, retailers supply the construction community with materials and often with guidance on the use of these materials. They need to understand what materials and tools the construction community needs to practice pollution prevention.

• Customers/clients choose and hire the developers and contractors. They need to learn about pollution prevention and understand the benefits of hiring recognized professionals. Ultimately they can drive the market demand for environmentally-responsible construction professionals.

The target audience may also be narrowed down by factors including:
   work site size (e.g., under & over 5 acres)
   new development v. redevelopment, renovation/remodeling
   construction sector (residential, commercial, industrial, utility, transportation, reconstr.)
   geographic area

Recommendation:
This program should target as many segments of the audience as it can effectively reach. The most successful approach is likely to be one that starts with the core audience segment and expands over time to related and supporting segments.

• For broad coverage, the primary target initially should be the developers and contractors [see Construction Activities-BMP matrix], with education and training focused on the specific practices they can use, without a lot of potentially distracting policy and planning.

• Over time, specialized and tailored material and/or sessions focused on specific activities and contractor types (e.g., for landscaping, painting, or paving) would be effective in providing deeper coverage for various important audience segments.

• Such a program could also be open to the municipal audience and to vendors to provide them with an opportunity to interact with the construction audience and learn what the construction community is learning. These invitees could be provided with supplemental information (e.g., brochures) pertaining to their role and responsibility in the construction process. Over time, specialized workshops could also be organized for these audiences.

• While recognition is kicking off, an outreach program specifically targeted to the customers/clients would be crucial in creating a consumer audience that is aware of recognition and starting to look for it. This customer clientele could be educated at several points of contact with the construction process, including contact with permitting authorities, licensing boards, referral services, chambers of commerce, better business bureaus, yellow pages, contractor and retail construction business establishments, and private and public advertisements.

Other options
• An initial program could focus only on large developers and contractors, with special attention given to helping them disseminate information to their employees, contractors, and subcontractors. That could be balanced concurrently or later supplemented by special programs/sessions for different key segments.

• The initial program could be targeted to all developers and contractors, with follow up programs for the key segments (in a second phase)?.

• Over time, it would also be highly effective to cross-link this program with other educational programs in nonpoint source pollution management, such as public outreach; education and training for land-use decision makers on land use planning, site design, and best management practices; education for public and private planners, engineers and inspectors on site planning & engineering, review and inspection; and other potential programs for key audiences.
Assuming that it is not possible to work with every audience at the beginning, which segments should be first?

Among contractor types, which are most important to reach? What groups are missing? [see Construction Activities-BMPs matrix]

How do these overlap with the erosion and sediment control audiences reached so far?

Based on that, can stormwater pollution prevention outreach be presented to a broad developer/contractor audience (from developer and general contractor to small, three-person painting business), or is it too broad?

Do different aspects of pollution prevention (i.e. erosion and sediment control versus other aspects) need to be targeted separately to different audiences? Or are both approaches necessary (i.e. comprehensive education to whole community and follow up outreach specific to different audience segments)?

**GEOGRAPHIC SCOPE:** Audience located in Bay Area basin and counties

The scope for this program is Bay-Area wide. This can be defined as the 7-basin area in California Region 2, or further as the 9-county area containing those basins. It can also be defined as the 6-county area working together under the auspices of BASMAA. (San Francisco, Napa and Sonoma counties do not have stormwater programs officially represented in BASMAA). The audience targeted can be the construction community located within this area or the statewide community doing business in this area.

The scope should be oriented to
- address the crucial and immediate need to increase awareness and foster the most basic understanding and practice of pollution prevention;
- fairly support the recognition component, which should designed and marketed to provide a competitive advantage within the given area; and
- provide an audience size that is feasible to reach with materials and programs (A very rough estimate of the number of relevant contractors in Alameda County alone, based only on telephone directory yellow page listings is 1,500. Those listed may overlap with listings in other counties.)

**Recommendation:**
- Program materials could be sent out to each county, and any workshops planned could be conducted by county for all nine counties over the course of several months (with the Bay as the environmental reference point, although some portions of those counties extend beyond SF Bay regional basin).
- The target audience could be primarily the construction community located within the area, however, those outside the area but doing business here could also request information and/or attend programs. At least initially, such a program cannot feasibly have an all-inclusive reach, but the program should not be exclusive.

**Other options:**
- The program could be piloted in one county, targeting all segments of the audience, from contractors and developers to municipalities and consumers. After modifications are made to the pilot program, it could expand to cover additional counties over time.

What geographic scope is most feasible, taking into account the potential size of the audience and the ability to identify and contact them?
PARTNERSHIPS: key groups for reaching the audience

To effectively reach out to the construction community, the most important alliances are with the organizations and people who work with, represent, serve, and hire the developers and contractors. Such partners are essential in helping to build rapport with the construction community, garner program guidance and advice, share communication networks in the community, increase access to the audience, and conduct the program. Potential partners and their roles include, but are not limited to:

Developers and Contractors can provide direct guidance on programs that will be effective for their community and access to their contacts.
- specific suggestions?
- owners? supervisors? workers?
- residential/commercial/industrial?

Trade Organizations can help guide and endorse the program, help reach the audience through mailing lists, newsletters, meetings, and help sponsor special events/workshops.
- Associated Builders and Contractors, Inc. (ABC), Golden Gate Chapter
- Associated General Contractors (AGC) -- of California
- Home Builders Association (HBA)
- American Subcontractors Association (2 chapters covering area)
- others?

Other Industry Organizations can be similarly helpful.
- Contractors State Licensing Board (CSLB)
- National Center for Construction Education and Research (NCCER)
- The Trades Guild (education of members)
- Contractor's Organization for Professional Standards (COPS)
- others?

Vendors & Suppliers are tuned in to construction community needs and disseminate information on products and their use. They can help reach the audience through mailing lists and posted announcements, and could help sponsor and provide displays at workshops.
- suggested vendors/suppliers?

Consumer and business-oriented groups can help drive the recognition program by increasing awareness about recognized construction professionals and making databases of recognized professionals available to and accessible for the public.
- CA Contractor Referral Service & Contractor License Verification Bureau
- The Trades Guild (education of consumers)
- Better Business Bureau
- Chambers of Commerce
- home buyer association?
- banks?
- others?

Local and Regional Governments, Agencies, and affiliated groups can help shape the program, reach the developers and contractors at points of contact (such as permit acquisition, plan approval, inspection), and reach the municipal staff and officials involved with construction.
- BASMAA and member organizations (7 stormwater programs in 6 counties)
Napa County
Sonoma County
City & County of San Francisco
Regional Water Quality Control Board (RWQCB)
Association of Bay Area Governments (ABAG)
San Francisco Estuary Project/Friends of the Estuary
Resource Conservation Districts
municipalities
EPA?
others?

*Educational Institutions & Educators* can provide other venues, formats, and resources for education.

- International Erosion Control Association (IECA)
- community colleges
- UC-Davis
- UC-Berkeley

**Recommendation:**
- Reach out to all potential partners during program development.
- Include interested parties in informal advisory group.
- Work closely with groups interested in providing access to their audiences, getting involved in conducting the programs, and sponsoring the program.

**Other options:**
suggestions?

- Who are the most crucial partners?
- Can you suggest developers, contractors, and/or vendors who would be interested and willing to give feedback at this stage?
- What partners need to be added (and what is their role)?

**EDUCATION: many tools and methods**

Educational materials and delivery mechanisms should:
- build upon and be incorporated into existing efforts (e.g. the Erosion and Sediment Control Field Guide and workshops), wherever logical and feasible;
- fill gaps in knowledge and audiences reached in the construction community;
- be transferable and sustainable (e.g. develop education program for audience, but also training/tools for trainers who can conduct ongoing education).
- be simple, accessible, and achievable; and
- communicate clear expectations and outline of responsibilities.

Multiple types of materials and delivery mechanisms can be used, spread out over time, and evolve over time.

Materials may include:
- fact sheets, pamphlets, guidebooks, announcements, videos
- posters, decals, advertisements
- training kits
- other
Delivery mechanisms may include:
- direct mail
- workshops (independent, sponsored, invited and/or hosted)
- field sessions/demonstrations
- course for credit at community college
- distribution at point of licensing (CSLB? local governments?)
- distribution at point of permitting (NPDES and local permits)
- distribution of consumer information in city tax bills
- displays at municipal offices
- displays at construction businesses
- displays/promotions at vendors and retailers
- announcements in trade publications and newspapers
- public announcements and advertisements
- other

**Recommendation:**
- The developers and contractors could be sent a general fact sheet and receive invitations to a session especially for them. They could attend a program and obtain recognition or request materials by mail and seek recognition at a later date. Such a session should be offered at several points convenient to them. First, it could be held under the auspices of the organizers (e.g. BASMAA, Regional Board, others), with sponsorship by associations and those in the development and construction community). Second, it could be integrated into existing training sessions, such as ABCs programs. Third, it could be sponsored by these trade organizations independently, under their name. A combination of multimedia tools (slides, video, displays) could be used at a session, with on-site demonstrations on-site.
- The municipal audience should also receive notice of the program, and be invited to sit in to learn what the construction community is learning. A special brief/letter could elaborate on their role and explain that although this program is not training directly for their work, it would provide an opportunity to learn more and meet the people from the front lines.
- Similarly, suppliers should be invited and receive a special brief/letter about their role. They should be invited to display their materials and support demonstrations.
- Customers/clients need an entirely different set of materials. They need to learn about the recognition program through every point of contact and through public announcements. They also need incentives for using recognized construction professionals, such as coupons and discounts.
- Many of the key educational materials for a workshop format could be created by revising and expanding the erosion and sediment control materials. They include the Erosion and Sediment Control Field Manual, the guidebook (Information on Erosion and Sediment Control for Construction Projects), the video, and the slide program. Other "simple message" briefs could be custom made for each aspect of pollution prevention or each type of contractor, and for each separately-targeted audience segment (e.g., suppliers, municipal personnel).
- Further materials and training could be provided to "train the trainers", enabling company personnel to train their own employees and contractors.

Other options:
- many; further suggestions?

What are the most effective educational materials and delivery mechanisms (for the audience segments that you view as most important) for helping this audience understand and use pollution prevention practices?

What is the most efficient approach?
INCENTIVES: motivation for participation

Incentives for participation in educational programs are what will get the audience involved. They include, but are not limited to:
- recognition (see below)
- increased marketability (based on recognition) and resulting increased profitability
- increased knowledge of issues and practices (and perhaps more efficient practices)
- clarified expectations of environmental responsibilities
- indemnification
- reduction of liability and anxiety

Most likely, the greatest incentive for learning about and practicing pollution prevention is to make the construction community's job more efficient and profitable. To increase their profits, they need to know they will learn ways to save money (e.g. by making their construction activities more efficient, less wasteful, and less subject to fines) and increase their marketability through acquisition of recognition status that consumers will come to prefer and demand. Other incentives further motivate the community to participate, such as clearer expectations of pollution prevention responsibilities, increased knowledge of stormwater pollution issues and practice, and possibly indemnification and reduction of liability.

Recommendation:
All incentives should be incorporated for maximum participation. Key in this is orientation of the program to efficiency of operations, avoidance of violations, and increase visibility and marketability.

Other options:
suggestions?

What incentives are most effective in motivating this community to learn about pollution prevention in their work and use pollution prevention practices?

What other incentives could be used?

RECOGNITION: standardized and comprehensive

Recognition is intended to be a major component of this program. Two models from which this program can draw are the BASMAA mobile cleaners recognition ("Doing the Job Right") and the City of Palo Alto's vehicle service facility recognition ("Clean Bay Business").

Recognition can provide acknowledgment and praise, foster environmental responsibility and pride, and increase marketability and visibility. All of these can act as incentives and rewards for learning about and using pollution prevention measures.

Recognition is voluntary and not the same as certification, which is more formal and legally based, but it could operate similarly.

This recognition could be comprehensive (for all pollution prevention activities, including erosion and sediment control), be issued separately from any erosion and sediment control recognition, or be issued by subcategory of construction activity type or type of construction professional.

Recognition can be earned in several ways (e.g., self-quiz v. formal test), issued to different parties (e.g., individual v. companies, or the developers and contractors v. those working with,
overseeing, and servicing the developers and contractors), and issued by different entities (e.g., agencies, in conjunction with associations and companies).

Recommendation:

- Issue recognition comprehensively, to avoid confusion and duplication within very similar areas of stormwater pollution prevention. The benefits are praise for participation, inclusion in a listing of recognized construction professionals, and free marketing tools, such as decals, posters, advertisements and announcements which all tout the recognition. The recognition piece should be a nicely designed and presented certificate suitable for display.
- To earn recognition, participants should take a brief, open-book test, review and discuss questions and answers before recognition is awarded, and sign a statement of commitment. Such a test could encourage participants to become familiar with educational material and also stimulate discussion.
- Issue recognition to both companies and individuals. The test could be the same, however the statements could differ, stipulating that companies make a commitment to educate and train their employees and contractors. Recognition awards could clearly state the type of recognition so consumers are not led to believe recognized companies necessarily have recognized employees.
- Issue recognition from an agency or combination of agencies (such as the Regional Board & BASMAA), and perhaps jointly with sponsors or designated company trainers.
- Update recognition annually. Initially, recognition could be issued for two years; beyond that, recognition could be updated on a yearly basis or whatever is deemed appropriate. For individuals, renewal could be dependent on attending another workshop, providing examples of practices uses, and/or taking another quiz, or exempting from the workshop if quiz is taken and passed via mail. For companies, renewal could be dependent on proof of training within their company and/or of their contractors.
- Market the recognition to make it a strong incentive for continuing education and use of practices. Recognized individuals and companies could be given materials to display and share with customers, such as recognition certificates, cards, posters, decals, brochures, and other items. Consumers also need to be educated to choose recognized individuals through a combination of outreach and marketing tools such as public announcements, ads, contests, and coupons.
- Create a database of recognized contractors & construction-affiliated professionals for tracking purposes internally and for reference by consumers. Make the database available and accessible to the public, through agencies and consumer-related groups.

Other options:

- Issue recognition in one or multiple areas (such as: erosion and sediment control, general site maintenance, demolition waste management, etc.)
- As the program matures and the level of education in the construction community rises, the requirements for recognition could change (e.g. from being based on attending a program and taking a test to demonstrating practices and committing no stormwater violations).
- Convert voluntary recognition into mandated certification if regulatory authority is established.

What type of recognition is important to this community?

What should construction professionals need to do to receive recognition?

What should the benefits of such recognition be?

Should recognition for a company be different than recognition for an individual?

Should this recognition cover stormwater pollution prevention comprehensively or should it consist of several areas of recognition?
ADVISORY COMMITTEE: need for guidance and feedback

Representatives of the intended audience and of potential partners should be assembled to provide input, feedback and guidance on all aspects of the program, from program development to reevaluation as the program matures.

Recommendation:
Invite those who have maintained interest in the program and provided feedback to come together to review a draft plan. This group can then finalize plan and guide program implementation.

To start, the erosion and sediment control outreach group can be expanded. This group could specifically include:

Local Governments & affiliated groups
BASMAA
City of Palo Alto
San Francisco Estuary Project
Friends of the Estuary
Regional Water Quality Control Board
Geoff Brosseau
Heather Nelson
Phil Bobel
Janet Cox (consultant)
Marcie Adams*
Marcia Brockbank*
Trish Mulvey
Hossain Kazemi*

Developers
--(residential?)
--(commercial?)
--(industrial?)

Contractors
--(general?)
--(excavation/earthwork?)
--(painting?)
--(landscaping?)
--(paving?)
--(masonry/drywall/plaster/roofing?)
--(demolition?)

Trade Associations
Associated General Contractors
Associated Building Contractors
Home Builders Association
Skip Jones
Frank Henry (John Robinson?)
Mark Lazarini*

Other groups
The Trades Guild
Jeani Miner

(*also from the erosion and sediment control group)

What representatives should be assembled? Suggestions?

11
## CONSTRUCTION ACTIVITIES AND ASSOCIATED BEST MANAGEMENT PRACTICES TO PREVENT STORMWATER POLLUTION

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* Construction materials include those that are wet or dry, hazardous or nonhazardous.
** Portable toilets may be associated with any construction activity, depending on site size and project duration.

---

1 Categories adapted from yellow page listings in telephone directory.
2 Categories used in Blueprint for a Clean Bay (BASMAA, 1995).
APPENDIX H

BASMAA Regional Construction Education Program
Phase I: Program Development

DRAFT PLAN
for the
Bay Area Stormwater Pollution Prevention
Outreach & Recognition Program for the Construction Community

INTRODUCTION

The need for pollution prevention

Land development and construction activities can significantly alter natural drainage patterns and pollute stormwater runoff. Pollutants from construction areas include sediments from soil erosion, construction materials and waste (e.g., paint, solvents, concrete, drywall), landscaping runoff containing fertilizers and pesticides; and spilled oil, fuel, and other fluids from construction vehicles and heavy equipment. Such stormwater pollution -- from construction and many other daily activities across the landscape -- is a major source of water pollution in California.

A plan for reaching out to the construction community and recognizing pollution prevention efforts

The following pages lay out a Draft Plan for a pollution prevention education and recognition program. The Bay Area Stormwater Management Agencies Association (BASMAA) is custom building this program for the construction community. BASMAA is a consortium of local San Francisco Bay Area municipal stormwater programs. Its New Development Committee is now supporting development of a proposal for a custom-built program. The objectives of the program are:

1) to teach developers and contractors effective practices to prevent pollution. Pollution prevention will help the construction community comply with regulations, remain competitive and profitable, and protect the environment.
2) to recognize members of the construction community for their pollution prevention efforts. Recognition will provide construction businesses with greater visibility and marketability and reinforce pollution prevention practices.

The program is being designed in cooperation and partnership with the Regional Water Quality Control Board (RWQCB), San Francisco Estuary Project (SFEP) and the construction community. Cooperation and partnership will ensure coordination with existing programs and delivery of the information that this community needs most.

The scope for this program is Bay-Area wide. This includes the nine counties which contain the seven subbasins of the San Francisco Bay Basin (California Region 2). Members of the construction community based in the Bay Area will be invited; however, the program will not exclude any member based outside the area if they are doing business here and choose to attend.

Do members of the construction community need more stormwater pollution prevention education?

1
Do they want education and recognition? Are they receptive to these?

PLAN OVERVIEW

1. Develop a two-tiered educational program to:
   - focus both broadly on comprehensive stormwater pollution prevention and specifically on pollution prevention for priority construction activities; and
   - reach large developers and building contractors, smaller general contractors and subcontractors, and municipal/agency staff responsible for oversight.

2. Recognize members of the construction community for their voluntary efforts.

3. Develop an advertising and marketing campaign to educate public and private consumers about the importance of hiring recognized developers and contractors.

PROGRAM CHARACTERISTICS

The two-tiered program

The comprehensive program

Content. The program shall address the broad range of stormwater pollution prevention practices. This range includes erosion and sediment control as well as general site maintenance and other elements as outlined in Blueprint for a Clean Bay. Education shall focus on specific practices participants can use, rather than on policy and larger planning issues.

Participants. Developers, general contractors, and subcontractors shall be invited to the program, along with municipal and agency staff responsible for oversight. The project managers and construction superintendents shall be the key personnel invited from these businesses. Vendors and suppliers shall also be invited to participate with displays.

A database of developers, contractors and municipal/agency staff shall be developed from directory listings and used to create a mailing list for program announcements. BASMAA will also work with trade groups and local governments to distribute announcements to their mailing lists and submit announcements and/or articles for publication in their newsletters. A packet of announcements will be sent to developers and general contracts to pass on to their subcontractors. In planning programs, coordinator(s) shall attend any appropriate association, union, and municipal/county meetings to build support, gather further input on specifics of program content and logistics, and increase awareness of upcoming programs. Ongoing distribution of materials and advertisement of workshops could also be made at these meetings and at other venues, such as trade shows.

Design. The program shall be designed as a Stormwater Pollution Prevention program, which is adapted from the RWQCB/SFEP Erosion and Sediment Control (ESC) program for the construction community. BASMAA will work with the RWQCB/SFEP to expand and revise their materials and jointly implement the program.

---

1 Comprehensive stormwater pollution prevention consists of the following: erosion and sediment control; spill and leak prevention and clean up; handling, storage and disposal of solid and liquid materials; maintenance of portable toilets; disposal of cleared vegetation; demolition waste management; roadwork and pavement construction management; and contaminated water and soil management.
* The workshop discussion (including slide show and video) and site visit shall be expanded and revised. The workshop shall be highly interactive, soliciting input from participants about the ease of implementing practices and their own experiences in the field. Sponsors, hosts, and partners\(^2\) shall be sought to help support and advertise the program. The format could also be integrated into existing training efforts of other organizations (e.g. The Golden State Training Trust) and offered to their audiences, with guidance from BASMAA and the RWQCB. Over time, the program could possibly be offered as a course for credit through community colleges.

* The *Erosion and Sediment Control Field Manual*, and the *Guidebook* shall be revised as necessary. The first details the pollution prevention practices, while the second provides guidance for writing a Stormwater Pollution Prevention Plan (SWPPP). Additionally, new materials shall be developed, including:
  - a pamphlet/brochure on the role of municipal and agency personnel providing oversight. This should cover important points which are not addressed during the general program. It should stress how inspectors and staff throughout the Bay Area can develop more uniform expectations and guidelines on pollution prevention measures.
  - Simple, brief and durable reference cards/briefs on specific construction activities shall also be provided for developers and contractors to distribute to their subcontractors, along with guidance for such distribution. Material could be distributed during existing weekly meetings (e.g. safety meetings) and as needed on site. These materials need to be offered in both English and Spanish (and other languages as well, if later deemed necessary).

**Duration.** The program shall include a morning workshop from roughly 9 a.m. to 11:30, with refreshments, and a site visit with a box lunch provided.

**Frequency.** The program shall be held every two years, or on an annual basis if deemed necessary. (More than one program in each county may be required to accommodate participants.)

**Location.** The program shall be held in each of the nine Bay Area counties.

**The program for priority construction activities**\(^3\)

**Content.** The program shall address priority construction activities over time. For instance, in Year One of the program, the focus topic could be concrete handling and washout.

**Participants.** Specialty contractors\(^4\) and related suppliers shall receive a more personalized letter of invitation along with their program announcement. The database used for the comprehensive program will enable specific classifications of contractors to be pulled out separately for this effort. Organizers will work with trade groups or unions representing specific specialty contractors to better reach those contractors.

**Design.** The new program shall be a special session and materials focused on a priority construction activity.

- A special session will be held in conjunction with the comprehensive program. Brief, independent sessions could be sponsored and held elsewhere by request. If more than one comprehensive program is offered in each county to accommodate a large number of interested participants, each workshop could have a different special session. This would enable subcontractors to choose the most relevant workshop.

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\(^2\) See Appendix A, "Contacts, Advisors and Partners for Construction Community Outreach and Recognition"

\(^3\) See Appendix B, "Construction Activities and Associated Best Management Practices"

\(^4\) See Appendix C, "Contractor Classifications"
- Materials specific to the topic shall be developed and distributed; for example, activity-specific reference cards that are both durable and easy to read in the field could outline and illustrate the "how-to's" of a pollution prevention measure. These materials need to be offered in English and Spanish.

**Duration.** The session shall run one hour or less, from 11:30 a.m. to 12:30 p.m., with site visit immediately following.

**Frequency.** A different session shall be offered with each comprehensive program (held every two years, or on an annual basis if deemed necessary).

**Location.** Sessions shall be held in each of the nine Bay Area counties, in conjunction with the comprehensive program.

**Local and in-house education and recognition.** See "Recognition" section.

What segments of the construction community are most crucial in implementing pollution prevention practices? Will this two-tiered approach successfully reach them?

Is it a feasible to invite all developers and contractors to just 9 programs (one in each county)? Will it be necessary to offer more workshops?

Will subcontractors/specialty contractors be interested? If they are specialists in the area being focused on in the special session, will they want to sit through the comprehensive portion, which will be the majority of the workshop?

What are the most useful types of educational materials?

Would you use in-house training when it becomes available?

Are you interested in being a sponsor, host, or partner in these programs?

**Recognition**

The recognition program shall be a voluntary, incentive-based program, drawing from the successful elements of other area programs.5

**Obtaining recognition.**

**Individuals.** A Certificate of Recognition for a clean construction professional shall be issued to participants after taking a brief, open book quiz at the end of the comprehensive educational program. Participants and workshop leaders will review and discuss answers. At the end of the quiz review, participants will sign a nonbinding Statement of Intent to use and support pollution prevention practices in their construction activities. Upon signing, Certificates will be issued and recipient's name, business, and contractor classification will be recorded.

**Businesses.** Businesses and municipalities/ agencies will be recorded with individuals names in order to acknowledge and advertise those companies with recognized employees.

---

5 These include the *Mobile Cleaners* outreach program (BASMAA), the *Clean Bay Business* waste minimization program (Palo Alto Regional Water Quality Control Plant), and the *Green Business Program* (Association of Bay Area Governments).
Local & in-house education and recognition. After one year of the program, an education and recognition kit will be provided to all area clean water programs and to any municipality upon request. They will be able to offer the program at any time. Participants will submit their quiz and statement to be issued a certificate by the authorized agency. Businesses may also request the kit to teach their employees, provided they demonstrate the ability to properly administer the program.

Issuing recognition. Recognition shall be issued jointly by BASMAA and the RWQCB. Joint issuance will show support from the Bay Area clean water programs (as represented by BASMAA) and support from the regional regulatory agency (RWQCB). Initial recognition will be valid for two years.

Incentives. Incentives of the education program alone include:
- increased knowledge of issues and practices (and perhaps more efficient practices)
- clarified expectations of environmental responsibilities

Additional incentives provided by recognition include:
- advertising and marketing of the recognition program and of recognized individuals and businesses (as outlined in "Consumer Outreach"); and
- direct financial incentives, if they can be successfully put in place (for example, permit fee discounts at the local or regional level).

Renewal. After two years, recognized individuals and business may renew their Certificate of Recognition by attending another program and taking another quiz. As the construction community becomes more educated over time, quiz standards could be raised or other performance standards adopted.

Internal Tracking. A database of recognized individuals and businesses shall be developed. The database will provide a list of recognized professionals for internal tracking and can be used by agencies and consumer-related groups in making referrals.

Potential Certification in future. Regulatory certification programs have been instituted in other states; however, in California, there is no existing regulatory authority at the state level requiring certification.

If the State or Regional Water Quality Control Board chooses to pursue a required certification program, the voluntary recognition program should convey this and help prepare individuals for certification and compliance.6

- Will a recognition program increase participation in educational programs?
- Will such recognition reinforce the use of pollution prevention measures?
- Is a voluntary recognition program enough? Would required certification be a more effective method for educating the construction community and effectively improving their practices?
- What incentives does the construction community need that are not now available?

---

6 See Appendix D, “Certification Issue”
Consumer outreach

An outreach program shall be developed for the consumers seeking construction services. Consumers include any individual, business, or public entity (e.g. a municipality) hiring a developer or contractor.

Objective. The goal of the outreach program is to foster a consumer demand and preference for recognized developers and contractors. This can be done by increasing awareness of the recognition program and conveying the benefits of hiring recognized professionals.

Outreach & Marketing tools. Consumers shall be reached with simple material at various points of contact.

Individuals. Property and home owners shall be reached through as many points of contact as possible. These include: recognized construction businesses and professionals, advertisements, municipal offices, referral services, and retail suppliers.

- Recognized construction businesses and professionals shall be given a nicely-presented Certificate of Recognition for display, "blue cards" (or some type of card) to carry with them, decals for their offices and vehicles, and simple flyers to display and give to their customers.
- Ads shall be placed in area yellow pages and newspapers. In addition, public service announcements shall be developed.
- Municipalities shall distribute simple flyers with property tax bills, include them in municipal newsletters, and make them readily available at municipal offices where property owners obtain permits, pay tax bills, and review land records.
- Referral services shall be sent a packet of information including the database of recognized professionals and flyers. The program shall work closely with these services to see if recognition status can be worked into their referral program. Referral services include private services as well as chambers of commerce, the Contractors State License Board, the Better Business Bureau, and possibly others.
- Retail suppliers shall be given posters to display and flyers to distribute throughout their stores.

Businesses. Businesses can be reached through recognized construction businesses and professionals, advertisements, municipal offices, and referral services also.

Public Entities. All municipalities and agencies shall be sent simple notice flyers about the need to hire recognized contractors and developers. Offices or other public entities specifically overseeing construction activity shall receive background information on the recognition program. With this, they will be able to encourage property owners, developers and contractors to hire recognized professionals, and encourage the construction community to seek recognition.

Will such a program effectively reach consumers? Will it influence their hiring decisions?

With this outreach effort to boost visibility of the recognition program, will developers, contractors, and/or subcontractors feel that recognition is worth seeking?

PROGRAM FUNDING

Additional funding and staff will be needed for this program effort.
• Existing SFEP staff support for erosion and sediment control programs is decreasing; therefore, more support will be needed to help BASMAA and the RWQCB continue expanded programs (expanded to more comprehensive stormwater management) and publish revised materials.
• Add-on sessions for priority construction activities will presumably require a greater staff effort and additional funds for program materials.
• Staff and funds for materials will be needed for recognition element of program, both initially and for long-term oversight and renewal.
• Significant funds will be needed to market the recognition program, in staff, materials, and advertising.

Potential sources of support (staff and funds):
• fees for workshops and materials
• funds and staff from sponsors in the construction community
• BASMAA baseline funding
• the BASMAA member clean water programs’ staff and funds
• RWQCB staff and base funds, and funds from fines imposed for stormwater violations.

What sources of funding and staff support would you recommend?

OTHER CONSIDERATIONS

Linkage to pre- and post-construction phases. This program should seek cross-links with existing programs and any new programs that address stormwater in the pre- and post-construction phases. Such programs include: public outreach; education and training for land-use decision makers on planning, site design, and best management practices; education for public and private planners, engineers and inspectors on site planning, engineering, review, and inspection; and other potential programs for key audiences.

Infill sites. Infill sites become more and more crucial as the amount of highly developable and available land decreases. This could be a special focus for one or more workshops. The audience for this program should not be unique, since development companies and contractors (especially larger ones) are pretty well diversified and doing work in both new and already-developed areas.

Interpretation of stormwater pollution prevention measures. There are many different stormwater requirements and individuals interpreting them. Requirements and interpretations need to be made more uniform throughout the area whenever possible. Workshops will help deliver a uniform message if both the construction community and staff providing oversight attend. Model regulations/ordinances could help make requirements more uniform.
# Appendix A

## Contacts and Potential Advisors & Partners for  
Construction Community Outreach and Recognition

Developers (heads of construction and land  
planning, project managers, super-  
intendents, others)

- **Residential**
  - Shapell Industries
  - Pinn Bros.
  - Ryland Homes
  - New Cities Development Group
  - Shea Homes
  - Seeño
  - Warmington Homes

- **Commercial**
- **Industrial**
  - Orchard Properties

Developers (continued)

- Chris Truebridge
- Sam Worden
- Ray Bodey
- Ravi Nandwana
- Tim Cronin
  (John Cooper?)
  (J. Torres-Muga?)
  (Dominic Pieri?)
  (others?)
  (??)

- Dan Sarhad
  (others)

Contractors

- (general?)
- (excavation/earthwork?)
- (painting?)
- (landscaping?)
- (paving/concrete?)
- (masonry/drywall/plaster/roofing?)
- (demolition?)

Engineering Companies

- Bellecci and Associates, Inc.

Trade Associations

- American Subcontractors Association
- Associated General Contractors
- Associated Building Contractors
- Golden State Training Trust
- Home Builders Association
- State Engineers Association

Other Industry Organizations

- Contractors State Licensing Board (CSLB)
- National Center for Construction Education and Research
- Contractors Organization for Professional Standards (COPS)

(keep in contact)
(keep in contact)
(keep in contact)

(continued on next page)

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**BASMAA**
**Regional Construction Education Program**
**Phase 1, Final Report**

February 9, 1998
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<th>Consumer and business-oriented groups</th>
<th>Vendors and Suppliers</th>
<th>Private groups</th>
<th>Consulting firms</th>
<th>Local and Regional Governments &amp; Agencies</th>
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<td>others?</td>
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<td>Wendy Gleason</td>
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| Bonnie Headlee                      | (concrete?)          |                             |                | Trish Mulvey                             |
| (keep in contact)                   |                      |                             |                |                                        |

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<td>(other?)</td>
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| Alameda Countywide C.W.Prog.     | Geoff Brosseau      |                             |                |                                        |
| RWQCB                            |                     |                             |                |                                        |
| Marin County                      | Tom Dalziel          |                             |                |                                        |
| Pacific Coast Seed Inc.          | Rod Andrade          |                             |                |                                        |
| San Francisco Estuary Project    | Mike Campbell        |                             |                |                                        |
| Regional Water Quality Control Board |                    |                             |                |                                        |
| City of Palo Alto                | Joe Teresi           |                             |                |                                        |
| Other Municipal Staff             | Dan Cloak            |                             |                |                                        |
|                                  | Wendy Gleason        |                             |                |                                        |
|                                  | Gary Shawley         |                             |                |                                        |
|                                  | Bruce Wolfe          |                             |                |                                        |
|                                  | Jim Fein             |                             |                |                                        |
|                                  | David Gilpin         |                             |                |                                        |
|                                  | Marcie Adams         |                             |                |                                        |
|                                  | Marcia Brockbank     |                             |                |                                        |
|                                  | Hossain Kazemi       |                             |                |                                        |
|                                  | George Leyva         |                             |                |                                        |
|                                  | Phil Bobel           |                             |                |                                        |
|                                  | Janet Cox            |                             |                |                                        |

??
# Appendix B

## Construction Activities$^1$ and Associated Best Management Practices$^2$

To Prevent Stormwater Pollution

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<th>Construction Activities</th>
<th>Erosion Prevention and Sediment Control</th>
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* Construction materials include those that are wet or dry, hazardous or nonhazardous.
** Portable toilets may be associated with any construction activity, depending on site size and project duration.

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$^1$ Categories adapted from yellow page listings in telephone directory.

$^2$ Categories used in *Blueprint for a Clean Bay* (BASMAA, 1995).
APPENDIX C

Contractor classifications
adapted from Standard Industrial Classifications

Building Construction—General Contractors and Operative Builders

General Building Contractors—Residential Buildings
  Single-Family Houses
  other
Operative Builders
General Building Contractors—Nonresidential Buildings
  Industrial Buildings and Warehouses
  other

Heavy Construction Other than Building Construction—Contractors

Highway and Street Construction, Except Elevated Highways
Heavy Construction, Except Highway and Street Construction
  Bridge, Tunnel, and Elevated Highway Construction
  Water, Sewer, Pipeline, and Communications and Power Line Construction
  Other

Construction—Special Trade Contractors
Plumbing
Painting
Masonry, Stonework, Tile Setting, and Plastering
  Masonry, Stone Setting, and Other Stone Work
  Plastering & Drywall
Roofing, Siding, and Sheet Metal Work
Concrete Work
Water Well Drilling
Miscellaneous Special Trade Contractors
  Excavation Work
  Wrecking and Demolition Work
  Other

Landscaping???
APPENDIX D

Certification Issue

If a certification program is pursued by regulatory agencies at the local, regional, or state level in the future, the following are possible approaches:

- Certification could be required through the stormwater general permit. Stormwater pollution prevention plans (SWPPPs) could require preparation by a certified person and/or require that a certified person review the SWPPP and oversee implementation of the SWPPP on site (such as the project superintendent). Individuals could be issued "Blue Cards" to show their certification.

- Municipal staff are the most appropriate individuals to administer the program, while the state provides oversight. It is therefore important that personnel in the stormwater programs be educated. Municipalities could face noncompliance violations if they fail to administer and enforce the certification program.
**APPENDIX I**

Advisory Group

1/28/98 Advisory group meeting attendees, other interested individuals, and additional representation recommended

*Developers* (heads of construction and land planning, project managers, superintendents, others)

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<td>Shapell Industries</td>
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<td>Dominic Pieri</td>
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<td>Ravi Nandwana</td>
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<td>Tim Cronin</td>
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<td>Mike Spencer</td>
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<td>Paul Medeiros</td>
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*Contractors*

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| erosion and sediment control         |                             |
|                                      | Bob Crowell                 |

| excavation/earthwork?                |                             |
|                                      |                             |

| painting?                            |                             |
|                                      |                             |

| paving/concrete?                     |                             |
|                                      |                             |

| masonry/drywall/plaster/roofing?     |                             |
|                                      |                             |
demolition?

Engineering Consultants
Bellecci and Associates, Inc. Lawrence Gossett

Environmental Consultants

Trade Associations
Associated General Contractors Skip Jones
Home Builders Association Mark Lazzarini

Other Industry Organizations

Consumer and business-oriented groups

Vendors and Suppliers
concrete?
erosion controls?
others?

Private groups
Friends of the Estuary Trish Mulvey

Local and Regional Governments & Agencies
BASMAA Geoff Brosseau
Heather Nelson
BASMAA New Development Committee
Contra Costa Clean Water Prog. Tom Dalziel
Palo Alto, Public Works Joe Teresi
Marin County Jim Fain
Pacific Coast Seed Inc. David Gilpin
Woodward Clyde Consulting Peter Mangarella

San Francisco Estuary Project Marcie Adams
Marcia Brockbank
Diana Sokolove

Regional Water Quality Control Board Hossain Kazemi
George Leyva
Tom Mumley

City of Palo Alto Phil Bobel
Janet Cox
APPENDIX J

Advantages and Disadvantages of Voluntary Incentives and Mandatory Requirements for Education and Training

General: mechanisms to encourage and require education and training

+ Great to get more of construction community educated to do the right thing
- Training must be available and effective if actions are to improve

Voluntary education

incentive: learn how to comply with regulations
+ no pressure
- only gets proactive members of construction community involved

Certificate of recognition (alone)

incentive: nice to display
+ it is positive gesture
- doesn't mean much if no one understands ("token effort")

Certificate of recognition with adequate outreach and marketing on recognition

incentive: recognition would help win jobs, customers
+ very positive
+ provides an economic incentive
- dependent on building the market demand for visible recognition
- to build the market, a massive outreach effort is needed to reach public and private entities hiring contractors and a massive marketing effort is needed to help those recognized gain visibility; both require much in funding to support publications, advertising and direct contact.

Training requirement under NPDES General Permit for Construction and Municipal Permit (alone)

incentive: comply with NPDES permit
+ very loose requirement, much room for interpretation
- very small incentive, unless it is being asked for as an element of compliance
- doesn't provide incentive for those who do not need permit

Training requirement under NPDES General Permit for Construction & Municipal Permit AND Certificate of recognition, as documentation of education and training

incentive: to comply with NPDES permit
+ if documentation of training is sought as an element of compliance, Certificate provides that documentation, as does any other evidence of appropriate training
+ if interpretation is loose, those needing to comply have many alternatives
+ if training is being looked for more and more, a training program provides an effectively way to help regulated community stay in compliance
- a document of training does not mean actions have necessarily changed
- a permittee may or may not ever get asked to show documentation
- doesn't provide incentive for those who do not need permit
Certification program (mandatory)

incentive: need to have certification to approve SWPPPs, get building permits, and essentially do business
+ ensures that key individuals will get certified
- requires legislative mandate
- requires major staff commitment and funding to implement and enforce state wide
- requires municipalities to administer and oversee
- presents more regulation to construction community

Local ordinances for certification/training

incentive: need to comply to do projects in given local area
+ ensures that projects in a local area will be done only where certified individuals are involved
- when all local areas have different requirements, very tough for those trying to do business in multiple towns
- increases local regulations and need for oversight
- need to have funds and staff to conduct certification in the absence of an existing program