

**Proposed Work Plan to
Develop and Implement an
Environmental Management System
for
Colorado DOT Division of
Transportation Development**



**Prepared with the Assistance of
AASHTO Center for Environmental Excellence**



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Introduction

The Environmental Programs Branch of the CDOT Division of Transportation Development (DTD) proposes to incorporate an Environmental Management System (EMS) based work plan (the Plan) for office operations within DTD. The Plan is based on the Plan-Do-Check-Act Deming Cycle and is designed to help DTD minimize the adverse impacts of our environmental footprint. The EMS Plan would in many ways continue and expand on practices already put into place at DTD (see Attachment A). The Plan requests 0.2 FTE for coordinator to oversee the Green Team, and 2-4 hours per month for each of 5 Team members during FY 06/07.

Plan Focus

The Plan would focus on our activities in such areas as: transportation, purchasing, energy and water conservation, and waste minimization. The components of the plan include an analysis of what DTD does (aspects), what the resulting environmental effects are (impacts), and what actions we do have the highest adverse environmental effects (Significant Impacts).

Plan Expectations

Overall goals for the Plan include:

- Minimizing the adverse environmental impacts from DTD office operations;
- Showing our internal environmental ethic through improving our environmental footprint within the DTD office operations;
- “Walking the talk” consistent with both the Environmental Stewardship Guide (ESG) and the Governor’s Greening of State Government Initiative (GGGI); and,
- Build a model for office EMS to be used /adopted by other offices at CDOT.

Environmental and business benefits expected from following the Plan include at a minimum:

- Improved employee satisfaction, productivity, health, and possible retention;
- Reduced operating costs associated with use of water, energy, waste disposal, file space requirements, document control and retention, postage use, paper and office supplies, driving and flying to meetings, among others;
- Improved compliance with applicable laws and regulations such as waste disposal;
- Support of the Governor’s Greening of State Government, Executive Order D005 05 (GGGI), and taking advantage of resources being provided through the Order;
- Support of the Environmental Stewardship Guide (ESG) and encouraging a culture of environmental stewardship and awareness as the norm;
- Promotion of a proactive rather than reactive approach to management of environmental influences within the office and, potentially, outside as well;
- Reduce indoor and outside air pollution;

- Improve water quality and reduce water quantity waste; and,
- Reduce traffic congestion.

Regulatory Guidance and Basis

The work plan follows the guidance of the following documents:

- CDOT Environmental Stewardship Guide
- Governor's Greening of State Government, Executive Order D005 05
- AASHTO Center for Environmental Excellence Implementation Guide in Using an EMS to meet Transportation Challenges and Opportunities
- FHWA Formal Policy on the Use of Recycled Materials, February 2002
- FHWA and EPA Green Highways Initiative (draft guidance)
- SAFETEA-LU emphasis on investing dollars that "protect and enhance our environment," funding emphasis on topics such as recycled materials, and funding for innovations, process efficiencies, pollution abatement, congestion mitigation and air quality improvement and environmental restoration
- International Organization for Standardization standard ISO 14001.

Development and Implementation Schedule and Actions

The Plan will be developed and implemented according to the following schedule and actions:

- By April 1, have management approval for the Plan. Management would distribute an Email to all DTD staff announcing the establishment of the Green Team, and invite staff to volunteer. The Email would announce incentives for volunteers, including Green Team involvement as IPGs for next year's performance evaluation criteria, invitation to the Governor's Greening Government workshop in May/June, training and tour opportunities, certificates, administrative leave, donuts, and other possibilities. Volunteers from each DTD branch and operations group would be recruited and encouraged, primarily due to interest and experience, secondarily by rewards and when necessary, by management selection.
- By May 1, have Green Team established and first meeting held. First meeting would involve introductions, establishment of team goals, an assessment of baseline conditions (what has already been done to minimize our environmental footprint), and starting to compile a list of DTD environmental aspects/impacts using Appendix A as a starting point. The meeting will result in a decision to prioritize and implement at least one item for action based on environmental impact, simplicity, limited resources, and cost savings (Biggest Bang for the Buck emphasis, or BBB). Staff will volunteer to research areas of their influence and experience which help to compile the aspects/impacts list. The next meeting will be scheduled. Green Team members will be invited and encouraged to attend Greening Government Workshop to be held in May.

- Between May 1, 2006, and January 1, 2007, Green Team would meet every 6 weeks to do the following things:
 1. Using brainstorming and research results, compile an aspects/impacts list of office operations, including a prioritization ranking of adverse environmental impacts called Significant Impacts. Areas of focus primarily would include worker transportation and commuting, purchasing of supplies and equipment, energy and water conservation, air pollution, and waste minimization. Brainstorming would include compiling the list of aspects (what we do), and research would be planned to assess the impacts (how it affects the environment);
 2. Discuss research results completed since last meeting and incorporate into aspects/impacts list and Significant Impacts ranking;
 3. Pick at least one item on the list of aspects to be done before the next meeting, decide how to track its success, and assign this to a Team member to complete;
 4. Discuss success of previous action items completed and their tracking results;
 5. Assign research topics to Team members to be done by next meeting.
- By October 1, Team would present a Progress Report to management.
- By January 1, 2007, the Team would present to management a progress report in the form of a DTD office operations Aspects/Impacts analysis based on the results of the Team's work so far. The Aspects/Impacts analysis would include an ranking of Significant Impacts. The Team will also present a Plan and budget request for FY 2007/08 to address the highest-priority Significant Impacts for which funding would be needed. The Plan would propose to continue the Plan-Do-Check-Act cycle and the Green Team's efforts.
- Between January 1 and June 31, 2007, Team will continue efforts towards researching and implementing proposed BBB action items, and measuring success of implemented items. Team will continue meeting every 6 weeks, researching and implementation of new items, tracking success of items completed, and an on-going evaluation of the program. Progress reports would be submitted on April 1 and July 1.
- Beginning July 1, 2007, team would begin to implement the Plan using the provided budget, to address the highest-priority Significant Impacts. Team would continue to Plan-Do-Check-Act impacts of DTD office operations. Staff would begin to communicate to others outside DTD on the success and results of the program. Staff would offer to help other CDOT offices to implement their own office EMSs when requested.

Attachment A provides additional detail on possible actions to be considered by the Team.

Resources Required

The Plan development will be overseen and coordinated by EPB staff, with the participation of 5 DTD volunteer personnel within major operational groups such as planning, administration, information technology, environmental programs, and research. This group of people will be called the "Green Team."

One Green Team Coordinator in DTD is needed on a one-day-a-week basis, requiring 20 percent FTE. It is proposed that Pat Martinek in EPB assume this role.

The Plan implementation will involve training and assistance by members of the Green Team to affected staff. Affected staff will include DTD office personnel, and staff in operations, janitorial, purchasing, property management, information technology, building operations, consultants and contractors, Regional and Headquarters CDOT staff and others when work intersects with DTD operations

The Green Team would consist of 5 DTD people plus the coordinator. The team would meet once every six weeks for two hours to go over objectives and actions, and help brainstorm, research, plan, and assist. Each Team member would also need to commit roughly 2-4 hours per month between meetings to do research, help implement action items, and help collect measurements.

All of DTD staff would ultimately be involved as measures are incorporated into daily operations. Resource commitment would include attendance at brown-bag presentations, staff meetings, training sessions, and peer group discussions; reading and following Emails; learning and performing new tasks; providing ideas, time, and feedback; and other related activities. These actions would require minimal additional time initially, and no extra time to continue established protocols.

Additional funding is not required during FY 06/07, except where small expenditures are needed and available from existing funding sources such as programs and operating funds, or cost savings. Funding would be requested for FY 07/08 based on the Significant Impacts analysis, to be presented in January 2007.

Plan Success Factors

Management participation and visible and sustained commitment to the EMS Plan are essential for success.

Management commitment will need to include: DTD management approval including formal encouragement and permission for staff involvement, eventual funding, and allowing measures to be adopted. Management would need to circulate initial Email creating the Green Team and requesting volunteers, giving time at staff meetings and

other training opportunities, give space and other office resources as needed, and giving staff time and recognition for their involvement.

The Team's success will be defined largely by the Team members. The Team will require sustained participation and dedication by a half dozen of enthusiastic, knowledgeable, and key people within DTD. These staff will need to find time within their current job duties to do the work needed to support the team's efforts. They need to be confirmed advocates to the Team's mission, provide ideas and experience beyond their current job duties, be willing to find the resources needed to advance the Team's plans, be sales people and trainers to other DTD staff, and be willing to stay the course.

Finally, the Plan's success will be defined by the efforts of the entire DTD staff. Success will require that every employee participate, effectively changing some of their daily behaviors at work. They will need to be convinced that these changes are a good idea or, at minimum, that their supervisors require them to participate. This cultural shift will be simple and satisfying for many of the office staff based on our mission as environmental and professional staff. For some, these changes may be more difficult to accept and do.

To ensure success of the Green Team, the following concepts will be employed:

- Visible and sustained management support including staff recognition and rewards.
- Green Team to consist of dedicated, enthusiastic, and knowledgeable staff willing to commit to a 15-month timeframe.
- A regular schedule to be followed for meeting every 6 weeks, research and follow-through between meetings, goals to be achieved prior to each meeting, clear end-of-year goals, and an eventual budget to be followed.
- Team will implement action items on a careful basis, making sure that the cultural change is not too steep for general staff to follow or Team to manage.
- Team will follow the Plan-Do-Check-Act cycle.
- Team will engage all office staff as much as possible, from initial research to putting into place action items. Staff feedback will be accepted whenever provided, and compiled formally on a quarterly basis. Much of Team's efforts will include training, assistance, promotion, success recognition, and other outreach to engage staff involvement.
- Progress reports will be compiled on a quarterly basis for management review and approval, and will include feedback from office staff.
- Team mission would be committed through the end of FY06/07, and would hope to continue an expanded program at that time.

Attachment A:
Ideas for Green Team Objectives, Quantitative measures and targets, associated milestones and activities

Attachment A is a collection of brainstorm ideas to help jumpstart the Green Team in deciding on ideas to focus on. Concepts, suggested goals, and possible avenues to take are presented.

Previous Actions already taken by DTD to reduce environmental footprint:

- Lunchroom recycling programs by Tom Mauser and EPB staff;
- Recycling of electronics and furniture at State Surplus;
- Headquarters-wide recycling of white and colored paper;
- Signs on light switches telling staff to turn light off when not in use;
- Commuter passes for staff to use for mass-transit subsidy;
- Flex time, place, and hours for staff where possible;
- Sign in EPB lunchroom to conserve water;
- Purchase of recycled content paper;
- Preferred purchasing of flat-screen computer screens with less toxicity than CRTs;
- Use of stairs by some staff;
- Winter conference recycling and compostables;
- Emergency Preparedness and Response Procedure and reminders;
- Telecommuting equipment purchased including jump drives when requested, laptops;
- Increased emphasis on environmental issues in funded research topics;
- Purchase of a Honda Insight hybrid car by EPB staff;
- Publication of the Environmental Stewardship Guide;
- Participation by Brad Beckham and Pat Martinek on Greening Government Coordinating Council;
- Involvement by Brad and George Gerstle on Transportation Environmental Resource Council;
- Emphasis on NEPA compliance on all projects with environmental consequences.

Initial Actions to consider with high BBB:

- Circulate a “blast” Email to all DTD staff asking for ideas and help;
- Initiate expanded recycling program to that beyond current programs;
- Post signs around office encouraging energy and water conservation, personal health suggestions, others;
- Invite ideas and help from other state agencies involved in and offering help on Greening the Government Initiative;
- Employ simple techniques on existing office areas and hardware that save paper, electricity, water, and prevent waste;
- Start with employee outreach on behaviors that affect environmental footprint. Brownbags on recycling, energy conservation, Green Seal products, sustainable farming, etc.

- Start with influence on consultants and contractors which affect office operations. For example, issue direction that environmental documents need to be submitted on double-sided, recycled paper, and drafts are preferred on CD or by accessing a website.

Commuting:

- Fewer personal car commuter days than work days (using a variety of carpooling, vanpooling, flex place/time/hours, mass transit use, laptop and Jumpdrive use with home computers, remote access to staff Email);
- Reduced meeting-related commuting using carpooling, mass transit, high-efficiency fleet vehicles, remote methods (teleconference, speaker phones)

Office Waste:

- 100 percent recycling of printer cartridges;
- Reduce paper purchasing by 10 percent;
- Recycle 25 percent office paper used
- Reduce total trash volume by 10 percent
- Reduce hard-copy materials submitted by consultants
- Recycle 90 percent of paper waste received from outside of office
- Establish document procedures that require double-sided printing where practicable.
- Require environmental and other externally-generated documents to be printed on recycled and double-sided paper.
- Establish formal recycling program for mixed waste
- Reduce conference waste through recycling and composting, on-line registration and materials availability, materials provided on CD and only upon request rather than paper copies for all registrants, food and beverage materials, recycling, etc.
- Provide Brown-Bag training to staff on both office and home recycling, minimizing paper use including computer training and file management, website resources.

Environmentally-Preferable Purchasing of Office Supplies:

- 100% purchases using recycled and/or post-consumer content paper
- Minimize packaging materials by purchasing in bulk including bulk CD's without jewel cases, pens, and others
- Preferred items with longer durability, recyclable packaging, biodegradable
- Cleaning supplies and office materials with low VOC emissions
- Efficient lighting features such as fluorescent light bulbs, motion-sensing light switches, heating system
- Purchasing refilled toner cartridges instead of virgin
- Encourage staff to order recycled, environmentally-friendly supplies by placing reminder labels on catalogs explaining to look for least-packaged, minimal materials/space/energy, Green Seal products, etc.

- Encourage staff not to purchase items that are not needed. For example, encourage use of electronic calendars rather than bound paper.

Employee Health, Safety, Well-Being, and Social Consciousness (may be a stretch for now)

- Signs in lunchrooms, Emails, stairways, and other places encouraging actions to improve health, such as reminders to take the stairs, take ergonomic breaks at the desk, take a walk during lunch, follow healthy diets and exercise, join the Walking-at-Lunch group, etc.
- Have more employee morale gatherings such as ice cream socials, potlucks, etc.
- Encourage safety in daily routines during driving, field work;
- Purchase Free Trade coffee and other products;
- Suggest to staff using the concepts of waste avoidance, reuse, and recycling in personal choices;
- Provide information to staff on their own choices as consumers on sustainable farming practices, energy and water conservation, fuel-efficiency, etc.