



Next Steps for Transportation and Environmental Stewardship Through Context-Sensitive Planning, Design, Construction, and Maintenance

“Making It Happen” Workshop

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Environmental Stewardship Opportunities

PREFACE

Common Needs Among Planning, Design, Construction, and Maintenance and Operations Phases:

1. Develop partner agreement among DOT, environmental agencies, and construction industry to share responsibility for environmental stewardship.
2. Be careful about “purpose and need” terminology. Must reflect the objectives of a full range of stakeholders.
3. Front end everything you can and pass off to all phases.
4. Plan and provide for ongoing education, outreach, training, research, and strategic planning.
5. Use environmental management systems to incorporate environmental stewardship opportunities in all phases and to control environmental risks inherent in maintenance and operations.
6. Need more guidance on meeting environmental commitments within the design/build framework.
7. Implement a “buying green” procurement strategy.

Environmental Stewardship Opportunities

PREFACE

Common Needs Among Planning, Design, Construction, and Maintenance and Operations Phases:

8. Set waste reduction and recycling goals (e.g., AASHTO guidelines, aligned with scanning tour results, etc.). Be cautious about defining “quality;” understand trade-offs between environmental quality and economics.
9. Need funding flexibility.
10. Enlist the support and participation of environmental agencies and stakeholders in publicly and internally recognizing environmental excellence on the job.

Environmental Stewardship Opportunities For

PLANNING

1. Plan for environmental quality and stewardship, not just regulatory conformity and compliance (SIP/TIP).
2. Establish broad community context for transportation programs, plans, and projects (e.g., cultural, socioeconomic, ecological, watershed, etc.).
 - a. Identify and consider environmental issues important to advocacy and community organizations.
 - b. Plan for stewardship of historic transportation infrastructure.
 - c. Consider impacts of planning on minority and tribal communities.
 - d. Consider water resource (supply and waste) planning in “smart growth” transportation plans.
3. Establish stewardship “agreements in principle” among MPO, environmental steward agencies, and environmental regulators.
4. Identify, balance, integrate, and document regional transportation and environmental goals, plans, and purpose and need through joint inter-agency planning (e.g., EPA’s National Environmental Performance Partnership System - <http://www.epa.gov/ocirpage/extras/pps.html>).
5. Identify and promote multi-objective opportunities.
6. Exchange and “cross review” planning documents with environmental regulators and steward agencies.

Environmental Stewardship Opportunities For

PLANNING

7. Recognize that there are two parts to planning: systems planning and project development planning. Need to identify environmental factors early in systems planning; ultimately, there needs to be a blurring of distinction between systems planning and project planning.
8. Start mitigation in systems/project planning phases when environmental concerns are identified early.
9. Implement matched funding opportunities with other agencies for transportation and environmental stewardship initiatives. Co-invest with resource agencies and DOTs to develop natural resource planning tools.
10. Plan and measure agency-wide environmental performance (recycling, energy, emissions, etc.)
11. Educate community about planning process; conduct a strategic evaluation of potential needs and integration of partners.
12. Expand understanding of environmental consequences of transportation infrastructure and individual behavior by staff and public.
13. Publicly showcase environmentally beneficial planning results and enlist the support of agencies at all levels.

Environmental Stewardship Opportunities For

DESIGN

1. Design for total environmental quality and stewardship over the design life of the project, not just for the regulated parts. Design to make environmental stewardship easier and more cost-effective throughout the construction and maintenance phases.
2. Use context-sensitive design (CSD). Stewardship is the “environmental conscience” of CSD. Define community, transportation, and environmental context and performance measures before you design.
3. Go beyond “environmental mitigation” paradigm. Replace it with well-integrated environmentally sensitive design concepts and multi-objective design concepts, as agreed to by a full range of stakeholders.
4. Identify and promote dual-purpose projects that bridge the gap between planning and design.
5. Use innovation and prudent flexibility.
6. Find ways to enhance the quality of the “non-regulated” environment. Include small, beneficial details; they can make a big difference.
7. Consider suggestions by others with environmental stewardship responsibilities and concerns. Early involvement can result in either avoidance or the utilization of best practices.

Environmental Stewardship Opportunities For **DESIGN**

8. Review standard specifications for “greener” substitute materials (including recycling goals) and methods.
9. Use bioengineering techniques.
10. Enhance environmental value of excess right-of-way parcels.
11. Compile and share examples of design details and concepts that reflect high environmental stewardship ethic (the pre-workshop survey produced many examples, <http://www.itre.ncsu.edu/cte/survey>).
12. Publicly recognize environmental excellence in design.

Environmental Stewardship Opportunities For

CONSTRUCTION

1. Provide clear and consistent communication by senior DOT managers that construction staff are expected to be active, responsible stewards of the environment.
2. Involve construction staff in establishing the environmental and community context upon which their responsibilities rest, and expect them to follow through on planning and design commitments.
3. Develop partner agreement among DOT, environmental agencies, and construction industry to share responsibility for environmental stewardship.
4. Explain reasons for environmental commitments in plans and specifications.
5. Identify performance standards and provide more detailed environmental plan sheets in the specifications.
6. Use environmental monitors/inspectors (e.g., resident engineer) on all construction projects. "Monitors" doesn't mean "staff" necessarily. There is a need for self certification.
7. Provide and encourage the flexibility and empowerment necessary to act on simple, low-cost "moment of opportunity" items that add environmental value on site and off site.

Environmental Stewardship Opportunities For **CONSTRUCTION**

8. Produce simple field guides that clearly show how project teams can be responsible environmental stewards.
9. Incorporate “simple” measures that enhance environmental value. The pre-workshop survey results and FHWA’s “Keeping It Simple” give many examples.
10. Promote the use of environmentally friendly techniques and equipment.
11. Use information technology during the construction phase (and throughout the entire process) to keep in touch with environmental agencies.
12. Report unexpected environmental problems to DEP enforcement staff before the public does, and ask for help.
13. Designate agency-wide organizational oversight and reporting responsibility for environmental excellence.
14. Consider the role of a third party in conducting a post-construction environmental analysis to determine if the pre-construction goals were achieved. (This can be carried through the maintenance phase as well.)
15. Encourage planners, designers, and environmental stakeholders to visit construction sites.

Environmental Stewardship Opportunities For **CONSTRUCTION**

16. Conduct an environmental stewardship award program for construction staff.
17. Publicly recognize examples of environmental excellence in construction.

Environmental Stewardship Opportunities For

MAINTENANCE/OPERATIONS

1. Remind staff that maintenance work is the most visible evidence of agency commitment to environment. Provide sensitivity training for staff, illustrating the benefits and consequences of stewardship.
2. Plan and design for easier, more effective environmentally responsible maintenance and operations by leveraging partnerships (e.g., Adopt a Right of Way) and by engaging maintenance/operations staff in a dialogue about what is easier, appropriate, maintainable, and sustainable.
3. View maintenance from a system approach, and design asset management accordingly.
4. Use collaborative efforts and partnerships to develop and leverage the necessary funding and staffing for environmental maintenance.
5. To reduce DOT's long-term maintenance requirements, consider long-term maintenance and ownership of mitigation sites from the start and ensure that mitigation goals fit larger environmental goals of partners and agencies (see Design, #2, 3).
6. Promote partnerships with external environmental stakeholders on land management (e.g., develop inventory and accountability systems). Appeal to those entities to assume responsibility for long-term operability of land.

Environmental Stewardship Opportunities For **MAINTENANCE/OPERATIONS**

7. Ask staff to make a list of examples of good environmental stewardship.
8. Consult with other “land management” agencies or companies for stewardship ideas.
9. Assist environmental agencies as practicable; seize “moments of opportunity.”
10. Keep current on emerging “green” alternative materials, recycled materials, equipment, and methods.
11. Use compatible materials when repairing historic and highway infrastructure. Educate staff on type/cost/availability/aesthetic quality of materials.
12. Develop simple pocket guide for staff on importance of being active environmental stewards on the job.
13. Review procedures/maintenance management systems to find opportunities to enhance environment. Ensure compatibility of maintenance management system with agency-wide environmental management system.
14. Publicly and internally recognize examples of environmental excellence on the job.

Environmental Stewardship Opportunities

NEXT STEPS

1. Post workshop summary on the TRB A1F02 Committee web site (<http://itre.ncsu.edu/A1F02/default.htm>).
2. What organizational changes are needed? This and other questions from the survey not addressed at the workshop will be summarized and posted on the A1F02 Committee web site.
3. Develop list of research ideas.
4. Need to foster stronger relationship with Environmental Council of States (ECOS) - <http://www.sso.org/ecos/>.
5. Promote ideas within AASHTO's Center for Environmental Excellence, FHWA, etc.
6. Champion ideas "at home."
7. Reach out to other TRB committees.