

FGM Workgroup-Project Recommendations

Problem Statement-FGM projects implemented in the NC Region of PA aren't as successful as they could or should be due to a variety of reasons. A few of the issues contributing to this are addressed below.

Issue	Task	Milestone	Who
<p>Problem-Many projects are not planned out to the rigor that is required to ensure a more successful project such as location selection, lack of detailed planning and restoration strategies, and other social issues.</p>	<ol style="list-style-type: none"> 1. Create a process using a group of people representative of all agencies and disciplines involved in the process of FGM planning, design, permitting, and construction. 	<p>May 15, 2006</p>	<p>Sec. Kathleen McGinty; Deputy Sec. for Water Mgmt, Cathy Myers; Deputy Sec. of Field Ops, Mike Sherman</p>
<p>Issue 1-Need for specific guidance for grant applicants in relation to an FGM project and what is expected or required for getting a project funded. This guidance should be clear and concise, consistent from region to region, and written so it is easily understood by all partners. This guidance needs to be distributed and education provided to watershed organizations, watershed specialists, consultants, and DEP staff, specifically the watershed managers and soils and waterways sections, so there is consistency across the state, and the expense can be identified up front, budgeted, and/or considered for in-kind matching opportunities.</p>	<ol style="list-style-type: none"> 2. Develop specific detailed guidance for FGM grant applicants that include specific direction for Work Items 1-8. 3. Disseminate and educate applicants, DEP staff, Watershed Specialists and consultants 	<p>Draft by September 1, 2006 Final by November 24, 2006</p>	<p>Bureau of Administration-Karen Bassett and Growing Greener Grants Center</p> <p>Watershed Management Staff Growing Greener Grant Center</p>

Work Items:

1. Definition of “success”

- Need to define what we mean by “objectives of a project”
 - This step will set out the mission of the project, and provide the standard for which the project performance will be evaluated. Objectives should be established in the very first planning stages. Examples could be “Stabilize the stream”, “Reduce bank erosion”, “Increase habitat for fish”, etc.
- Need to define what success parameters ranges are and what they mean.
 - Rosgen’s suggestion for monitoring the success of a project: use the reference reach(es) to characterize river pattern and profile dimensions and also the range of each parameter found. In future monitoring, remedial action is indicated if the monitoring parameters fall outside the measured range of the reference reach(es). The same approach could be used on habitat and riparian characteristics.
- Need to define performance expectations for a project-something that is quantifiable within a timeframe.
 - This relates to the success parameter ranges, and also the project objectives. The timeframe would be best defined in terms of bankfull events or extreme events. Also need to identify performance expectations with regard to extreme events, i.e. should the project be able to withstand a 100-year event? There is currently not an established methodology for evaluating the risk (return period “rating”) of a project.

2. Assessment

- Need to define “watershed wide problem identification”
 - Rivers are integrated systems, such that problems/significant changes upstream can effect a cascade of changes/reactions downstream. Many projects have been done that represent a “band-aid” approach, addressing only a local problem effect. To truly fix a river, the whole system should be examined. This step involves traveling along the water courses within the watershed and identifying areas that appear to be unstable.
- Need to define “initial assessment and inventory”
 - This represents a second step in the problem identification within a watershed; each problem area identified in the previous step would be characterized in detail by measuring the stream pattern and profile dimensions, the potential sediment production, and the potential for the problem to increase with future bankfull or greater events. These sites should be inventoried for prioritization analyses.
- Need to define “watershed wide forensic analysis”.
 - There is a need to understand what is the underlying cause of instability within a watershed system. The forensic analysis constitutes identifying the cause of the problems identified above. This is necessary in order to prevent the problems from reoccurring. An example is the formation of gravel bars-typically symptomatic of a hydraulic problem. Without a change in the river hydraulics, the gravel bar will reoccur with each significant runoff event. Identifying the cause of the watershed problems will enable a solution to be formulated and executed.
- Need to understand why a restoration or prioritization plan is necessary

- A prioritization scheme must be established, and an overall restoration plan formulated for the watershed, based on the above assessment steps. Consideration should be made of the upstream causes of problems and downstream effects of restoration efforts at a particular site in establishing the priorities of the problem sites.
- Special considerations-emergencies or protection of previous project investments
- DEP needs to concur with results of these assessments and restoration plans-watershed managers and soils and waterways staff need to do this early in the process such as before a grant is even submitted
 - Need to consider these in context of a watershed system approach

*** A tool already developed that could serve as a starting point for this is the Watershed Stewardship, A Planning and Resource Guide, Toolbox 3, 3950-MN-DEP3130 and Guidelines for Developing Cost Ranges of a Natural Stream Channel Design Project.

3. Permitting

- Need to explain what it is, the different types of permits available for these projects and which to use when.
- Need to identify why it is necessary/important;
- Describe realistic timeframes for getting permits,
- Identify the process used for reviewing each type of permit
- Need to identify who should hold the permit;
 - A consideration here is that given an extreme event such as Hurricane Ivan, can the permit holder respond in a timely manner to maintenance requirements prior to the onset of additional bankfull events? (i.e. how many permits/potential maintenance “centers” does the permit holder have?)
- Need to explain the responsibilities of all involved parties, particularly the issue of maintenance of the project.
 - Is the permit holder financially responsible to initiate maintenance?
 - Or who does the permit holder notify when maintenance is required?
 - What are the criteria for identifying maintenance needs?

*** A tool already developed that could serve as a starting point for this is the Watershed Stewardship, A Planning and Resource Guide, Toolbox 5, 3950-MN-DEP3130 and Guidelines for Natural Stream Channel Design for PA Waterways.

4. As-builts

- Need to explain what is meant by an as-built drawing, what is involved, the minimum requirements to satisfy a grant or permit, who does them and how and what level of detail is needed.
 - This requirement should be identified in the grant application guidelines, so that the applicant includes a plan for submission of as-builts in the grant application.
 - Is there a need to standardize the format?

5. Monitoring Requirements

- Define what type of things volunteers can do to satisfy the permit requirements.
- Explain how an evaluation of success for the project meeting objectives stated in the proposal is different for each objective and what can be done to evaluate them.
 - Set up monitoring plan to provide success “indicators”, which when certain limits are exceeded, may trigger the need for maintenance.
- Identify possible opportunities for match by having CD, watershed members, or a university complete the monitoring or provide equipment for volunteers.

6. Maintenance Plan

- Define what a maintenance plan is.
 - Plan should identify when professional intervention would be warranted, and who should be contacted.
- Identify possible opportunities for match by having CD, municipality, or university do it for them, provide equipment, training personnel for construction supervision,
- Maintenance design plan and oversight, if needed who should do it?-PACD-TAG as a possible resource

7. Sequencing

- Determine if three phases (Assessment, Design and Permitting, and Construction) are appropriate or if four phases is better to correspond with timeframes for funding and permitting cycles

*** A tool already developed which addresses 4 funding phases to a project is the [Guidelines for Developing Cost Ranges of a Natural Stream Channel Design Project](#)

8. Myth Killer

- There are many things that FGM was thought address or unrealistic expectations that are associated with using this approach to restoration. A fact sheet or myth-buster information sheet needs to be developed to highlight what these unrealistic expectations are, and to provide an explanation provided for what FGM can do.

Problem-	Task	Milestone	Who
<p>There are many technical areas that still need further research and information shared when using this approach to restoration which often is too expensive to develop for individual projects, however knowing little and using minimal information in its place is a huge contributor to the lack of success of projects that are implemented. DEP doesn't necessarily have the resources to do all of this work on their own.</p> <p>Issue 3-Need for DEP to look more holistically at how to improve FGM designs/projects and develop partnerships to address these issues, if they can't get it done themselves.</p>	<ol style="list-style-type: none"> 1. Determine specifically what is needed in each area listed below 2. Develop an RFP and provide a grant to address these items beginning with a literature search related to these items to determine the best of and differences between various states implementing FGM. 	<p>By 2007</p>	<p>Deputy Sec. for Water Mgmt, Cathy Myers</p>
<p>Work Items:</p> <ol style="list-style-type: none"> A. Measurement of success-need to look at criteria for ecological restoration and define degrees of attainment, learn from existing projects by evaluating same, and answer the question, "Do successful projects need maintenance?" B. Continue to ensure the use and population of the Reference Reach Database. <ul style="list-style-type: none"> o Include continued validation by monitoring reference reach sites over time rather than the snapshot approach being used today, o Need to evaluate/monitor a reference reach's linked sites (designed using the respective reference-reach data) to see if the designed parameters are adequate. C. Need to develop sediment rating curves for the region by sampling both bedload and suspended sediment. <ul style="list-style-type: none"> o Challenge with flashy streams: short time (on the order of hours) in order to get to the sampling site and obtain samples. <p>***Tools already developed to assist or improve this includes Dave Rosgen's PowerSed Model, which is a tool he developed to evaluate power required to move sediment which evaluates the sediment transport capacity of the stream.</p>			