

Appendix I: Criteria for Prioritizing Restoration Management, Retrofit, and Rehabilitation Actions

Various factors guide the implementation of ecological restoration and management projects. Pollution prevention, funding availability, habitat improvement and community access are just some of the factors considered when prioritizing a list of potential projects. In addition, there are numerous unpredictable factors that fall beyond the scope of planning. Below, find a framework for the development of restoration projects to address the most pressing ecological, social and cost issues. This framework was developed using both scientific and community input. It can be used by practitioners and planners to assess the worth of individual projects as well as prioritizing among projects.

Ecological Benefits

Water Quality and Quantity

Environmental studies of the river indicate that most damaging impacts of are high fecal coliform levels and flashy flows, high velocity and volume after storms and low base flow during dry weather. Projects that promote stormwater infiltration or retention and uptake of contaminants should be considered high priorities as they aim to improve water quality and increase infiltration

Habitat Value

Invasive plant species dominate much of the river corridor and exclude native plants that provide habitat for wildlife, stream bank stabilization, and other services. Preliminary studies and anecdotal evidence indicates that the populations of birds in the river is surprisingly diverse, but abundances for some may be very low. The fish community contains almost all of the species that were present in the river 70 years ago, but the benthic macroinvertebrate community is considered 'moderately impaired' by state standards. Projects that control invasive species and improve habitat for native fauna should be considered high priorities for restoration.

Community Benefits

Development of restoration projects should incorporate the values and needs of the local community. Restoration projects can improve the quality of life in a neighborhood by providing aesthetic and recreational amenities; similarly, community residents can improve the restoration work by providing valuable input on the project. Increasing the amount of vegetation and open space in urban areas enhances public health by decreasing summer temperatures and improving air quality. Restoration projects can provide a vehicle for developing community leadership, involvement and environmental education. Finally, public support and social benefits serve as important prioritization factors because projects that attempt to go forward without community input and support are likely to face serious challenges.

Funding

Funding availability is often the deciding factor of a project's implementation. Given the limited funds available for restoration projects, ranking criteria should emphasize cost-effectiveness, the potential for a project to provide significant benefits at minimal cost.

Feasibility

There are many potential challenges and conflicts to ecological restoration. Sites should be selected and plans developed that are appropriate for the specific type of restoration, to minimize potential impacts, and be based on state of the knowledge restoration techniques.

Management

Sustainability of a restoration and the responsibility for management of the site are critical issues for the long-term fate of a restoration. Projects should be designed to be self-sustaining and require minimal management resources. Commitments and resources for maintenance should be integral to the restoration plan.

The following worksheet provides a numerical value for individual projects according to criteria based on these principles. It can be used to rank projects as high, medium, or low priorities.

STORMWATER			
Estimated volume of stormwater detained/infiltrated as result of proposed project	1,000-5,000 ft ³	5,001-10,000ft ³	>10,000ft ³
Reduction of target pollutant(s)	0-30%	31-60%	>60%
Project suitability, based on location (CSO drainage area, other drainage area, direct runoff, stormwater drainage), suitable soils, proximity to river, etc.	Low	Medium	High
HABITAT			
Amount of invasive vegetation removed from project site	0-40%	41-75%	>75%
Wildlife habitat benefits of proposed project	Low	Medium	High
COMMUNITY			
Community support for proposed project measured by: Number of groups involved, publicly voiced support, survey results, local government involvement, public outreach	Low (less than 5 groups supporting, little community outreach attempted)	Medium (at least 5 groups supporting, pos. feedback at public meetings)	High (some local government contacted, pos. feedback at well attended public meetings, at least 10 groups supporting)
Community involvement in project planning, implementation and maintenance	Low	Medium	High

Potential for environmental education based on access, inclusion of signage, educational materials produced as part of project	Low	Medium	High
Public health benefits based on increased green/open space (relative to current acreage of open space in neighborhood), recreation areas, removal of environmental contaminants	Low	Medium	High
FEASIBILITY AND LOGISTICS			
Project site ownership	Low (private owner not a willing partner)	Medium (private owner willing to partner)	High (publicly owned land)
Physical advantage of site based on lack of physical impediments, existing infrastructure, site contamination, limited infiltration capacity	Low	Medium	High
Sustainability of project, based on existence of maintenance plan, amount of maintenance required, designated organization to carry out maintenance and funds in place to finance maintenance activity	Low (no maintenance plan/high level of maintenance required)	Medium (maintenance plan only/medium level of maintenance required)	High (plan, \$ and stewards in place for maintenance of project/low level of maintenance required)
Technical probability of success, based on logistics, capacity of organization undertaking project, technical oversight, peer review of project plans, etc.	Low	Medium	High
MAINTENANCE			
Organization willing and capable of undertaking long term maintenance. <i>List organization(s):</i>	Low (no plan or designated organization)	Medium (either plan or organization designated)	High (designated organization and plan)
Funding available for maintenance <i>Amt/year: No. of years:</i>	Low (no identified funding sources)	Medium (partially funded)	High (fully funded)
COST			
Funding availability <i>Funding cost:</i>	Low (no identified funding sources)	Medium (partially funded)	High (fully funded)
Cost-benefit analysis results	Low (benefits and costs equal)	Medium (benefits slightly outweigh costs)	High (benefits far outweigh costs)

Planning/project development status	Proposal	Concept plans	Construction plans
OTHER CONSIDERATIONS			
Project incorporation in larger watershed plan	Low	Medium	High
Project replicability, based on usability as a model, commitment for completion by same organization or training provided for those taking on projects in future.	Low	Medium	High
Partnerships developed for implementation	Low	Medium	High
Visibility/model value, based on high profile of project	Low	Medium	High