7 Plan Schedule and Costs

Reversing three centuries of degradation will be neither quick nor cheap. The rehabilitation of Paxton Creek will take decades and cost millions of dollars.

Schedule

The RCP will be implemented in three phases. Phase I will cover the first ten years, Phase II the next ten years, and Phase III 20 years and beyond. (Table 7.0) During the first three years of Phase I, PCWEA will establish the RCP framework and partner with a major organization for program set up and administration of initial projects. This RCP start-up phase will establish a project finance system and a rotational volunteers program. PCWEA will also build a stronger support base, increasing the PCWEA Board of Directors, expanding membership, arranging coordinators for priority rehabilitation programs and projects (training PCWEA members on watershed initiatives, monitoring, special studies, making additional subwatershed assessments). During this implementation period projects will be initiated at the rate to two per year. In the latter part of Phase I the educational program will grow beyond startup and demonstration functions, basically institutionalizing the integration of nonformal and formal education experiences which likely will extend into Phase II.

During Phase II, watershed projects of all types will be conducted at a rate of 2-3 per year. In this phase, PCWEA will also encourage and assist municipalities in forming an inter-municipal stormwater utility or authority for more efficient, cost-effective runoff management. Support for initiatives on ordinances, education, and monitoring will continue.

Phase III activities call for community watershed projects to continue with increased emphasis on urban best management practices such as impervious cover retrofits, in-fill development, channel rehabilitation, and day lighting of buried streams. Trail and minipark projects may take on increased priority as anticipated support by stakeholders grows.

Creek Loot (Encrusted Coins) in Bag

Besides the designated projects, certain types of projects will be conducted on a regular basis during all the Phases:

- ☑Conservation landscaping and rain barrel workshops/implementation for residences and businesses every other year;
- ☑Retrofit of malfunctioning and underperforming detention ponds on alternate years;
- ☑Buffer plantings on creek reaches every year, until no longer needed (not expected);
- ☑Education activities each year, related to projects and as general outreach;
- ☑Subwatershed assessments, 1 each year for 9 years of Phase I;
- ☑Monitoring every year;
- ☑Research on local soil infiltration, floodplain augmentation, and certain BMPs for 3 years of Phase I, and afterwards.

"The price of a promising watershed? Million of dollars for hundreds of projects!"

Plan Schedule and Costs

Educational program initiatives will accelerate in the later half of Phase I. Emphasis on certain activities do not occur until Phases II and III because of the anticipated time requirements associated with the demands of the PCWEA programs setup and the subwatershed characterizations. In all these phases, monitoring activities will be at the center of watershed management and project tracking. (Table 7.0)

Poor data exist on the origins and amounts of stormwater and pollution (creek flows, pollutant loads). Without this information watershed planning is hindered (needed to estimate the maximum effects for efforts undertaken). This information will affect individual projects, rather than alter the overall RCP implementation schedule.

Costs

Plan costs are figured by applying unit cost estimates to organization activities, project components, and RCP tasks such as subwatershed assessments with monitoring. (Table 7.1) Although in-kind resources and volunteer labor may reduce these costs, the overall level is likely to increase 5-7 fold upon evaluation of the whole watershed. Initial details are in the Appendix.

Costly Oil Spill Cleanup

The RCP calls for over 14 dozen projects that are subject to project scoping and budgeting. Only 25 are addressed, a number sufficient for the 10-year period of Phase I. Costs for long term or large-scale initiatives, such as the railroad yard conversion, lower floodplain open space reservation, and potential lower creek rerouting are not computed. These are too nebulous, problematic, or far off to be useful guides.

Table 7.0 Plan Schedule

Phase 1	Phase 11	Phase III
RCP Administration & Program Set Up, PCWEA Capacity Building & Training, Subwatershed Assessments, 2 Projects/Year, Research & Education Emphasis, Monitoring	2-3 Projects/Year, Stormwater Management Utility & Education Emphasis, Monitoring	2-3 Projects/Year– IC Retrofits, Infill & Creek Rehab Miniparks & Trails Emphasis, Monitoring

Plan Schedule and Costs

Table 7.1 Plan Costs Summary

Tasks, Practices, and Tools	Reserve Cost* ($)	Phase I ($)
Organization Operations		
Start up Facilitation, Office, Stakeholders Involvement, Volunteer Coordination & Training, Special Studies (Flows, Sediment), Research & Monitoring, Education (Formal-Nonformal Programs, Stewardship & Mentoring)	860,000	510,000
Remaining 9 Subwatershed Evaluations	145,000	145,000
BMP Projects		
Stormwater and Open Space/Habitat Management (Reforestation, Creek Rehabilitation, IC Retrofit, Bioretention)	6,312,500	2,328,700
Pollution Source Controls (Practices and Behaviors Education, Landscaping and Stormwater Infiltration, Cleanups, Filters)	225,000	85,000
Recreation and Transport (Miniparks, Trails, Special Facilities)	4,834,800	240,000
Economic Development (BMPs Advisement, Green Infrastructure)+	60,000	30,000
Totals	12,438,000	3,339,000

*Cost estimates based upon data from reports (Skelly and Loy, 2003; Center for Watershed Protection, 2003 and 2004), and field assessment of 2 (of 11) subwatersheds; + Costs mainly accounted in trails, buffers, and miniparks estimates; IC impervious cover; BMPs, best management practices; *Reserve costs are for all phases.

Only cursory attention has been given to flood control and redevelopment projects. Other organizations have made estimates and are likely to lead flood control efforts ($280,000 by the City of Harrisburg for modifications and dredging in Wildwood Lake; $16 million by Skelly and Loy for the revitalization of Paxton Creek subwatershed). PCWEA will play a supportive role with volunteer labor, education, and related efforts, such as advocacy of best management practices with stormwater on-site infiltration.

These initial planning level costs ($655,000 for operations, and $2.7 million for watershed projects) in Phase I are sufficient for general plan guidance. These are ballpark estimates rather than near and long term cost estimates made with a discounting procedure, because of the high uncertainties associated with the benefit and cost components.

The monetary costs for doing the initial Paxton Creek North subwatersheds work are approximately $118,000 (2/11th of operations), and $483,000 for the initial RCP projects. Site specific estimates are necessary for individual projects and funding proposals.

Costs vary greatly among the subwatersheds and parts of subwatersheds because of the types and amounts of improvement projects. An example: in suburban yards where nearly all labor can be provided by residents and friends, disconnected roof downspouts with rain barrels, conservation landscaping, rain gardens, and soak-aways can be accomplished with as little as $50. Monetary costs are much greater ($200-400 per *linear foot*) in highly urbanized areas where creek branches are channelized, enclosed in pipes, and covered with dirt and impervious material. These are design, construction and installation estimates. Maintenance costs are not figured.