E. Lessons Learned
LESSONS LEARNED

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

SECTION 319 NPS PROJECT 11-03/319

OVERVIEW

The original project scope was formulated to allow the implementation of up to twenty-five (25) individual Best Management Practice (BMP) controls within the Long Pond Watershed. The primary control mechanism was envisioned to be rain gardens; however it was also envisioned that a combination of individual BMP measure could also be combined at several locations to further enhance treatment efficiency. The completed project resulted in the installation of twenty-nine (29) BMP’s at nineteen (19) separate locations.

PROJECT ELEMENTS

Engineering and Project Management. The significant amount of separate BMP control locations proved to be somewhat detrimental to the project timeline and budget especially from a permitting perspective. It was believed at the time of grant application that the Town’s Conservation Commission agent would function as the Project Manager for the Town. The agent had wetland delineation and permitting skills and believed that the generally recognized beneficial aspects of the proposed pollution prevention measures (the BMP’s) would be easily and quickly approved by the local Commission and as a result only a nominal amount of time and cost was set aside for support services for permitting the project. The Commission Agent planned to conduct the delineation and permitting efforts with engineered plans. Although this proved true for the local Commission, MADEP-NERO Wetlands issued a Superseding Order requiring complete demonstration that the BMP’s complied with newly created state BMP design guidance and that individual Stormwater Reports be generated for each location. The design guidance required more elaborate site investigations for each BMP to document conditions and required more detailed hydraulic and hydrologic calculations and modeling to demonstrate what was somewhat prima-fascia, namely that the BMP’s were beneficial to the removal of pollutants. This somewhat excessive analysis effort resulted in close to a year delay for the project, requiring a project extension, and a significant cost increase for out-side consulting engineering services. Although the Superseding Order may have been justified under a stringent view of the regulations, it resulted in over $20K of additional engineering effort and a year delay and only proved that the design base and beneficial aspects originally deduced were accurate. There should be more flexibility in the interpretation of the wetland regulations to allow to the economical implementation of non-point pollution abatement measures, otherwise too much cost is dedicated to superfluous engineering making BMP implementation less economical for communities to implement.

The timeline was further complicated by town employee turnovers including the replacement of the Conservation Commission agent on two separate occasions. These newer agents generally did not have the wetland delineation or engineering capabilities of the original agent, requiring an increased demand for the use of outside consulting services. The project management issues were also further complicated by a turn over at the Town Engineer position and the transfer of the project management from Engineering to another Community Development employee who had management responsibilities for both Planning and Conservation related projects. This also increased the demand for the engineering consultant to supply management and continuity for the project increasing outside consultant costs.
Student Educational Program (Watershed Academy). This cost aspect progressed fairly well with many town engineering staff, engineering consultants and High School teachers providing time to educate students regarding the environmental aspects of the project. Power Point presentations and handout materials were created to help establish and continue the Watershed Academy program run through the high schools environmental science department. Academy activities involved both classroom and field training to educate the students. Environmental monitoring training was also exercised during the field program. A significant amount of in-kind time was utilized to establish the program. The materials were utilized for approximately four semesters at the school: however a set-back was recently encountered due to teacher turn-over and the school inability to maintain a consistent environmental science course with sufficient flexibility to continue the Academy training format. The original grant outline had also anticipated utilizing students for planting of the BMP’s. Due to the permitting delays previously outlined, the original Academy students who received training had moved through the system and were not available to see first hand the results of their past field efforts.

The Town Tree Department which has been processing bark mulch and wood chips and stockpiling the product for the project had inadvertently introduced poison ivy vines into the material. This was recognized based upon rashes contracted by workers who had been working with the mulch. Due to potential liability issues with students working in and with the mulch, the field planting efforts were abandoned and an educational sign component was added to the project. The signs would be mounted at each site and clearly identify the BMP’s around Long Pond. Pamphlet holders mounted on the sign posts would hold the informational brochures describing Non-Point Pollution, BMP uses, rain gardens and bio-retention areas. An overall project map with aerial photo would be mounted at the main parking area of the pond allowing visitors to view the BMP locations within the watershed. This educational component was viewed as an exceptional long-term educational tool not only for students but also for the general public as well.

Construction. The Town was able to secure a local contractor for the construction and this proved to be very beneficial to expedite work and to keep costs in control. The contractor did an exceptional job to establish environmental controls, sequence work around some extreme weather conditions and implement work utilizing an array of minority and women sub-contractors. There was one complication which occurred at the site of two BMP’s on a private property lot. The property in question was foreclosed upon and taken by the lending institution. Although the previous owner signed a license agreement, trying to get confirmation from the new owner that work could continue proved difficult to obtain and as a result the two BMP’s were dropped from the project. Given flexibility of the selected local contractor, the Town was able to secure two alternate BMP sites outside wetland resource areas and abutting drainage catch basin. The new sites would treat the urban runoff in the BMP’s prior to it entering the catch basins. These addition BMP’s helped to maximize the project outcome by being able to treat more stormwater.

SUMMARY

In general, the Lessons Learned, were that invariably, personnel and site availability may change with time and the longer the project timeline extends the higher frequency of such complications occurring will exist. To maximize the use of available funds, acceleration and expediting of project tasks is imperative. Although permitting aspects can never be fully foreseen, working with state Wetland Division regulators in the initial stages of the project may help to avoid delays.
F. Attachments
Maps
Locus Map
BMP Locations with Tributary Treatment Areas
Approximate location of BMP

BMP Tributary Treatment Area

BMP 14-09B