Attachment 6

Stormwater Flood Management Grant Proposal
Santa Barbara County Flood Control and Water Conservation District
Monitoring, Assessment, and Performance Measures

Attachment 6 consists of the following items:

- ✓ Monitoring, Assessment, and Performance Measures. The purpose of this attachment is to describe the monitoring, assessment, and performance measures that will be used to evaluate the proposed project. These measures will ensure that this proposal meets its intended goals, achieves measurable outcomes, and provides value to the Region and the State of California.

The purpose of this attachment is to provide a discussion of the monitoring system to be used to verify project performance with respect to the project benefits or objectives identified. This attachment will also discuss how monitoring data will be used to measure the performance in meeting the overall goals and objectives of the Santa Barbara County IRWM Plan. The project applicant has prepared a Project Performance Measures Table (Table 6-1) that includes the following:

- Project goals
- Desired outcomes
- Targets – measureable targets that are feasible to meet during the life of the project
- Performance indicators – measures to evaluate change that is a direct result of the project being built
- Measurement tools and methods – effectively track performance

The project performance measures will be used to develop the project monitoring plan. The project performance measures will continue to be refined as the project continues to be developed. Development of performance measures and monitoring plans for the *Lower Mission Creek Flood Control and Restoration Project* Reach 1A Phase 2 and Reach 1B is also presented in Attachment 3.

Table 6-1: Performance Measures Table
Lower Mission Creek Flood Control and Restoration Project Reach 1A, Phase 2 and Reach 1B

Project Objectives	Desired Outcomes	Targets	Performance Indicators	Measurement Tools and Methods
Improve flood flow conveyance capacity	Increase flood conveyance		Increased conveyance capacity that results in reduction of flood events in project area in future	Measurements of upstream and downstream flows
Improve public safety during storm events	Increase flood protection	Reduction in amount of parcels/acreage of flood damage in adjacent to and in the vicinity of Lower Mission Creek	Quantification of the damage of historic flood events reduced adjacent to Lower Mission Creek	Record of damage estimates for historic and future flood events
Protect, restore and expand habitat and ecosystems	Increase native and riparian vegetation Increase fish habitat and passage	Increase in natural habitat for vegetation and for fish (steelhead and tidewater goby)	Quantification of habitat increased as a result of the project Successful use of fish ledges by steelhead and tidewater goby	Visual and photogrammetric habitat monitoring of vegetation renewal Visual surveys of successful fish passage during annual surveys
Protect and improve surface water quality	Improve water quality for both human and animal benefit	Increase in water quality	Quantification of water quality and species viability	Monthly monitoring of water quality

The Lower Mission Creek Flood Control and Restoration Project Reach 1A, Phase 2 and Reach 1B has been meticulously designed to: 1) improve flood conveyance capacity to accommodate a 20-year flood (the current capacity is a 5-year flood); 2) improve the health and public safety of the residents and businesses in the project area; 3) restore natural habitat; and 4) improve water quality. Project goals each have performance measures that will be used to quantify and verify project performance. The performance measures used to quantify and verify project performance are described in the Project Goals and Performance Measures section below.

Project Goals and Performance Measures

Improve Flood Conveyance Capacity

The *Lower Mission Creek Flood Control and Restoration Project* Reach 1A Phase 2 and Reach 1B will increase the creek channel capacity to 3,400 cfs, which equates to an increase from a 5-year event to a 20-year event or a 125% increase in flood flow conveyance capacity.

Flow measurements will be taken on both reaches of the creek to verify project performance. The performance measure is consistent with the Santa Barbara County IRWM Plan objective of implementing flood control measures, which would be quantified from the documented flow monitoring.

Improve Public Safety During Storm Events

The project will result in improved public safety during storm events by directly removing 11 parcels adjacent to Lower Mission Creek from its floodplain, which has been verified by the HEC-RAS Modeling analysis (USACE Feasibility Study, 2000.

The performance measure is consistent with the Santa Barbara County IRWM Plan objective of implementing flood control measures, which would be quantified from the reduction in flood damages.

Protect, Restore and Expand Habitat and Ecosystems

The *Lower Mission Creek Flood Control and Restoration Project* Reach 1A Phase 2 and Reach 1B will provide 4,000 square feet of riparian and native habitat expansion zones adjacent to the creek. In addition, 10,000 square feet of aquatic habitat will be added for the endangered steelhead trout and the endangered tidewater goby.

The performance measures is consistent with the Santa Barbara County IRWM Plan objective of protect, restore, and enhance natural processes and habitats, which would be quantified from the amount of habitat increased around each project area and the successful passage of fish through the project area.

Protect and Improve Surface Water Quality

The *Lower Mission Creek Flood Control and Restoration Project* Reach 1A Phase 2 and Reach 1B provide benefits to water quality. In addition, the project will remove various types of bank stabilization and restore banks and adjacent creek areas will native vegetation.

Monthly monitoring of water quality will be conducted and compared with historic data. The following data will be collected and recorded:

- dissolved oxygen,
- pH,
- temperature,
- turbidity,
- conductivity,
- salinity,
- total dissolved solids, and
- indicator bacteria

This performance measure is consistent with the Santa Barbara County IRWM Plan objective of improve the quality of urban runoff and stormwater, which would be quantified with water quality results and species viability.

Storm water samples would likely not be analyzed for this project since the project area is less than one acre, thus not subject to the SWRCB Construction General Permit.