Long-term Water Quality Solutions

TOC Meeting
1/25/2000

OVERVIEW
- Background
- Process leading to long-term solutions
- Preliminary baseline data report and peer review comments
- Next steps in process

Overview of Process Leading to Long-term Solutions

- Develop Baseline data set
- Develop Basis of Design data set
- Determine degree of treatment required
- Identify potential solutions
- Evaluate alternative solutions
- Develop Conceptual Designs

Baseline Data Set

- First step in developing Basis of Design flow and water quality data
- Baseline data will be adjusted to account for future activities
- Basis of Design data set will be used to evaluate alternative solutions
- Baseline data set should preserve hydrologic variability and basin-specific water quality conditions

Preliminary Baseline Data Report

- Comments received from
  - Parsons Brinckerhoff
  - Audubon Society
  - Pennine Path & Wildlife Conservation
  - Commissioner
  - NYS Parks
  - Robins DEP
- All comments to be addressed in final Report
- Key comments discussed today

Comments & Recommendations

Overview

- Careful collection of baseline data from Basis of Design data
- on intended use of data
Water Quality Report summary

- Phosphorus and dissolved oxygen were noted as particularly of concern at all sampling locations.
- Specific conductance was concern at northern inflow points.
- Total beryllium and diazinon were concern at a few inflows.

Comments & Recommendations: Water Quality

- Need to clarify that all parameters of concern will be considered in selection of new target stations.
- Need to describe errors in data and data sources.
- Information related to other phosphorus fractions, e.g., in-stream, and if data are available, use additional phosphorus data.
- Need to describe data error (e.g., measurement, random errors in flow data).

Phosphorus Report summary

*Note: References: WY 98-99 for EAA runoff, with BMPs and WY 90-99 were used.*
Water Quality

* Period of record (WY 90-99)

- Data of measurement sites are inappropriate.
- Period ends at the STA revised (WY 90-99) and the additional presentation of sustainability initiatives continues (WY 20-98).
- Presentations should be made to TOC, RTAC or subcommittees thereof, in addition to presentations already made to the STA Design review group to receive stakeholder input.

Flow

Report summary

* Period of Record (WY 90-99)

- Data with least mean ten year period was used to calculate weighted mean TP.

* Increased variability in flow

- Provides consistency across all basins and preserves hydrologic variability.
- Is consistent with watershed and water supply plans.

Comments & Recommendations

Flow

- Improved flow pattern restoration is also a long-term goal.
Several methods were considered
to predict TP concentrations,
many based on regression of flow and TP
concentrations. Many had poor regressions.
A regression of daily mean flow and
TP concentrations to estimated flows
based on 30-year hydrologic variability
preserved long-term TP concentration
profiles and mass balance.
This is similar to methods used in design of the STAs.

Detail design could use more refined
data if desired.

Flow-TP regressions may be useful if slope is
appropriately different from "G".
Variables considered included:
- Mean daily flow
- Mean daily TP
- Mean daily flow and TP
- Mean daily flow and TP
- Percent of "good" sampling
data (excluding "poor data"
- Use simple TP reduction constant for STAs.

I am currently looking at these recommendations
to develop daily flow and water quality data for each
basin.

Next steps:

- Plan next requirements for
- Real-time data collection
- Complete tasks:
  - complete fall 2001.