Quality Assurance Project Plans (QAPPs): Overview and Tips for Development

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QAPPs: Why Do Them?

• Because they are required
  – EPA Order CIO 2105.0 (formerly 5360.1 A2) sets forth requirement for all organizations conducting environmental data operations on their behalf

  – State agencies (including TCEQ and TSSWCB) follow suit

• So that projects can be planned and implemented effectively
QAPP Requirements

- *EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5)* describes what should go in QAPPs

- QAPPs are required for environmental data operations
  - Work performed to obtain, use, or report information pertaining to environmental processes and conditions (*EPA QA/R-5*)
QAPP Requirements

• Graded Approach – Level of detail commensurate with nature of the work and intended use of data
QAPP Classifications

• “Monitoring”

• Modeling

• Secondary Data

• Geospatial Data
QAPP Classifications

- “Monitoring” QAPPs typically also include geospatial data, data acquisition, and data analysis
- Modeling QAPPs always involve data acquisition and geospatial data
- Secondary data QAPPs can involve acquisition of monitoring data, geospatial data, and other data
- Geospatial data QAPPs can involve primary or secondary data
Tools for QAPP Development

- EPA Q/A R-5 governing requirement (http://www.epa.gov/quality/qs-docs/r5-final.pdf)

- Other EPA guidance documents (http://www.epa.gov/QUALITY/qa_docs.html)

- For projects which only involve secondary data, 2-page guidance document (http://www.epa.gov/quality/qs-docs/found-data-qapp-reqts.pdf)

- Shells

- Other QAPPs
QAPP Content

- Section A – Project Management
- Section B – Data Generation and Acquisition
- Section C – Assessment and Oversight
- Section D – Data Validation and Usability
Section A

- A1, A2, A3 – Title Page, Signature Pages, TOC, Distribution List
- A4 – Project/Task Organization
- A5 – Problem Definition/Background
- A6 – Project/Task Organization
- A7 – Quality Objectives and Criteria
- A8 – Special Training/Certification
- A9 – Documents and Records
Section A – Tips

• Rely heavily on shell documents or existing QAPPs, but tailor to your needs

• When defining project, focus on whole project, not just monitoring needs
The purpose of this project is to complete a WPP for the _____ Watershed. This QAPP covers activities related to (1) gathering data and creating an inventory, (2) identification of data gaps, and (3) the collection of monitoring data. After data gaps are identified, the QAPP will be amended to include additional monitoring activities. A separate modeling QAPP is being developed for this project to describe modeling activities and methods to calculate load reductions.
Section B

- B1 – Sampling Process Design
- B2 – Sampling Methods
- B3 – Sample Handling/Custody
- B4 – Analytical Methods
- B5 – Quality Control
- B6 – Instrument/Equipment Testing, Inspection, and Maintenance
- B7 – Instrument/Equipment Calibration and Frequency
- B8 – Inspection/Acceptance of Supplies and Consumables
- B9 – Non-direct Measurements
- B10 – Data Management
Section B – Integrating Study Design

• The more site-specific the project, the more detail needed

• Justify sampling regime

• Incorporate flexibility, but justify it and define boundaries

• If conditions are being targeted, the parameters for these conditions need to be defined
  – Amount and intensity of rainfall, antecedent dry/wet days, what part of hydrograph will be targeted, etc.
Flexibility – Illicit Discharge Example

- “Full inspection of stormwater conveyance system coupled with monitoring of illicit discharges found”
  - Inspection program thoroughly described
  - Definition of illicit discharge very clear
    - Water observed when no antecedent rainfall for 7 days
Section B9 – Non-Direct Measurements (Secondary Data)

• All data being acquired or compiled for project activities need to be described

• Don’t forget the graded approach!

• If a function of a project is to identify and compile data that are not yet known, this may be built into the QAPP
  – If analysis performed with data, QAPP should be amended before analysis
Geospatial data available from various local, regional, state, and federal organizations may be used for cartographic purposes. Maps developed for reports will be for illustrative purposes. Geospatial data utilized in maps of the study area may include land use, precipitation, soil type, ecoregion, TCEQ monitoring location, TCEQ permitted outfall, gage location, . . ., aerial photography, and park information. The above data come from USGS, TNRIS, TCEQ, and US Census Bureau. Geospatial data from these sources are accepted for use in project maps based on the reputability of these data sources and the fact that there are no known comparable sources for these data. Geospatial data will be cited in reports.
Sections C and D

• C1 – Assessments and Response Actions
• C2 – Reports to Management

• D1 – Data Review, Verification, Verification, and Validation
• D2 – Verification and Validation Methods
• D3 – Reconciliation with User Requirements
Sections C and D

• Section C – Don’t forget to include reports

• Section D – Don’t forget D3 (Reconciliation with User Requirements)
  – How will data be used and shared?
  – How will data be analyzed?
  – How will limitations be reported?
Questions?