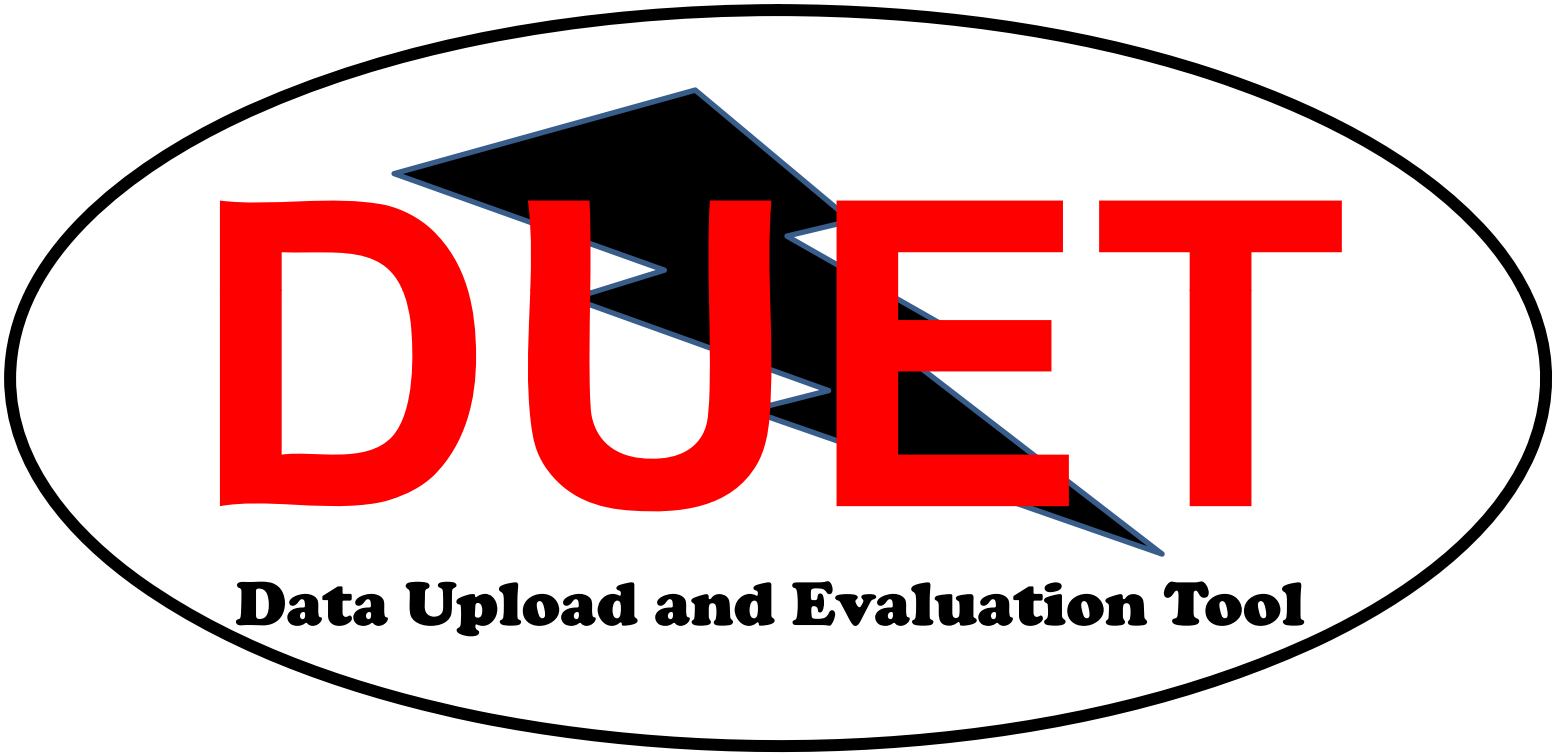


AMQAW – 21 March, 2012

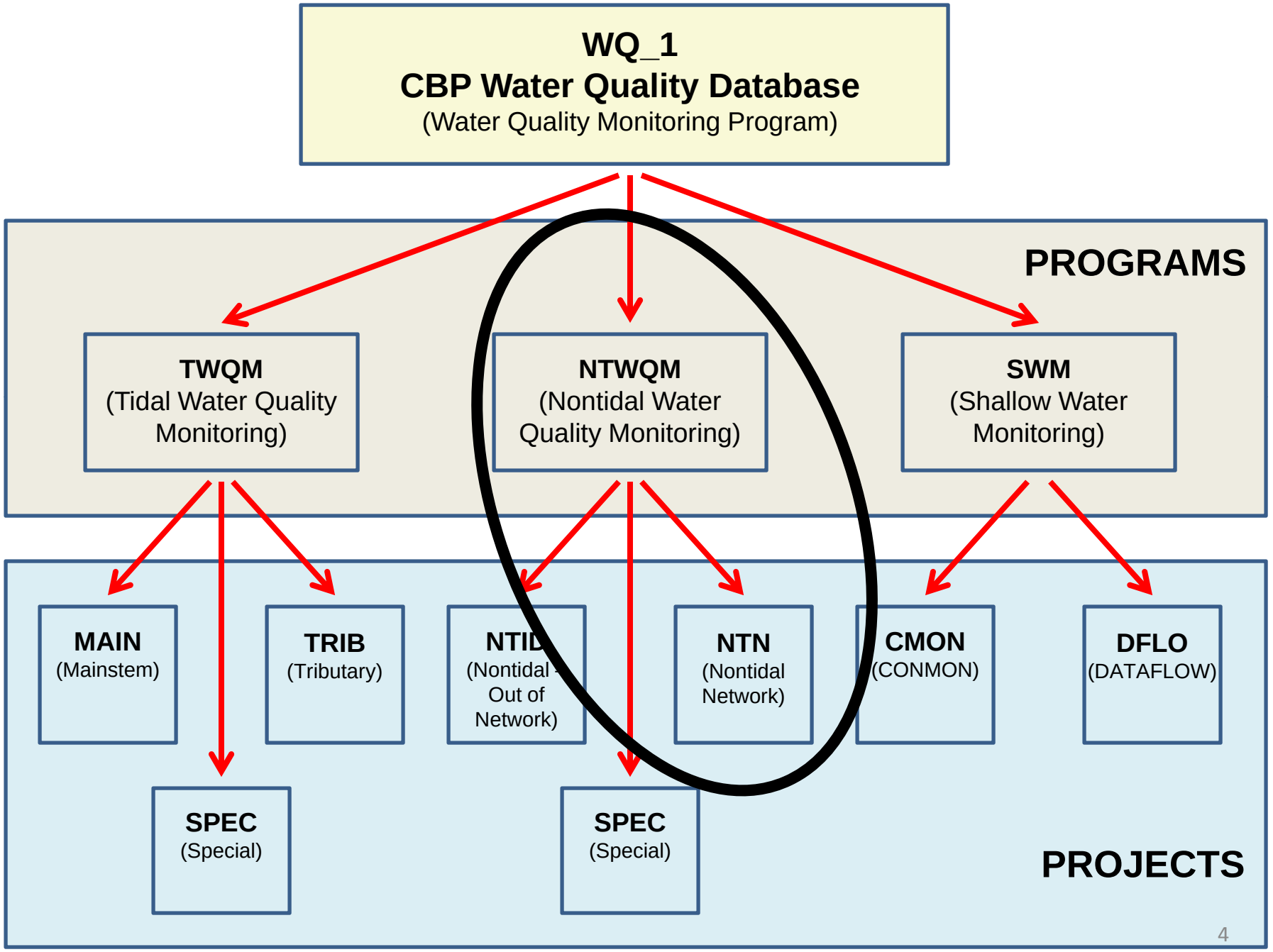
Mike Mallonee, Mary Ellen Ley

Scope of Project

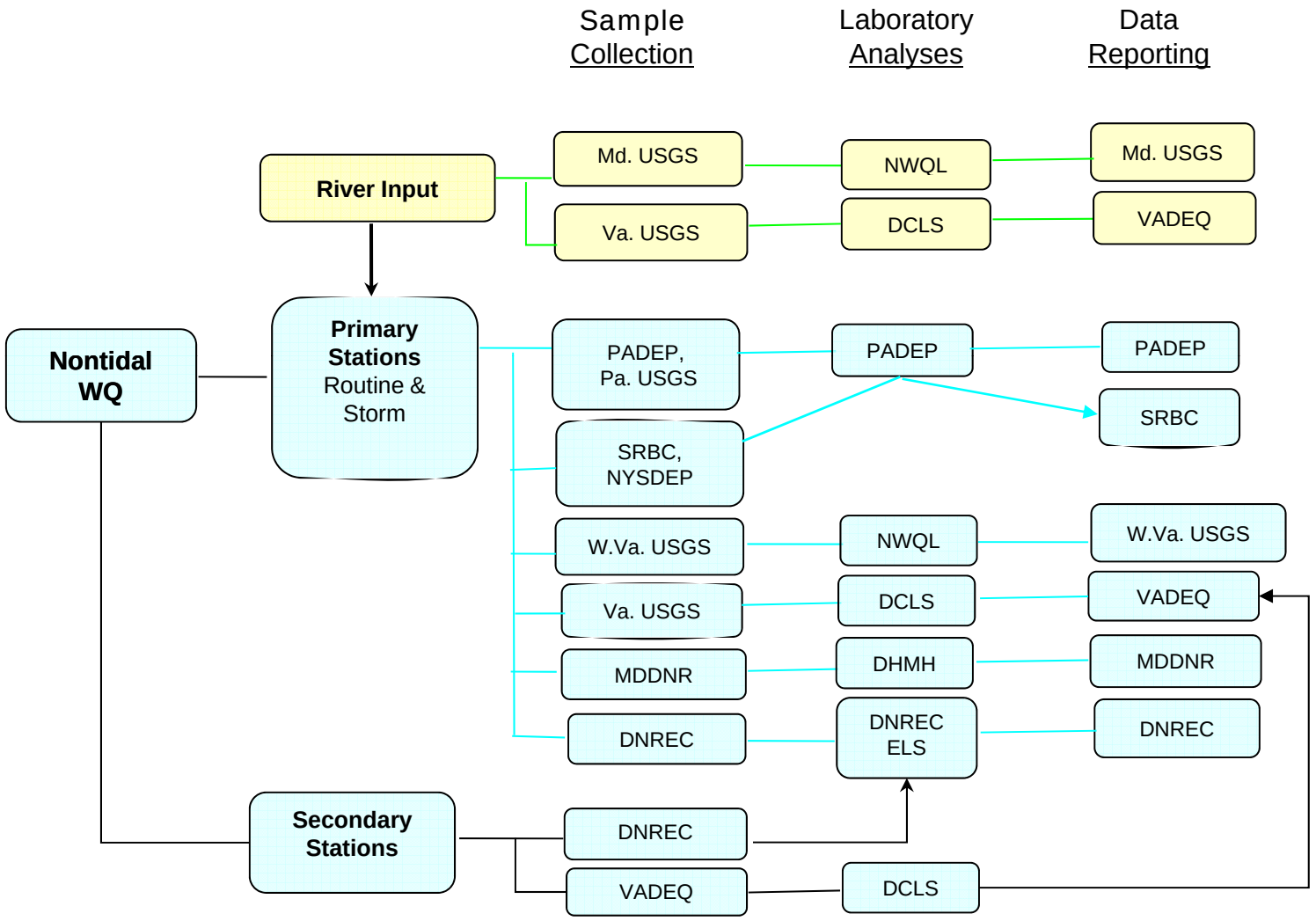
- DUQAT (Data Upload and Quality Assurance Tool) is currently used to upload tidal and nontidal data submittals for Maryland and Virginia to the CBP Water Quality Database.
    - DUQAT performs 168 checks on the submittal; most are FATAL error checks for database integrity (entity and referential) issues.
    - There are some NONFATAL error QAQC checks but need more QAQC checks.
- Project will develop DUET (Data Upload and Evaluation Tool)
    - Revise DUQAT to enable the submission, review, transformation, and archival of WQ data and the metadata for the Nontidal Water Quality Monitoring (NTWQM) Program and the Tidal Water Quality Monitoring (TWQM) Program.
    - DUET will upload NTWQ data and metadata from the 6 Agencies (Data Providers) collected by 15 Sources (Data Collectors).

Scope of Project (2)

- Submitted WQ data will be reviewed by DUET, and generate reports with metadata on the following:
  - **Timeliness** of the Source Submissions and the Agency Uploads.
  - **Completeness** of the submitted data, in relation to the data expected.
  - **Quality** of the submitted data, with regard to clerical errors, extreme values, logic checks (dissolved < whole), and data accuracy (bias and precision).
- QC'd data and metadata will be archived in CIMS by water year.
  - Goal is to process the data with DUET for 2012 water year.
  - Beta-test DUET in August 2012 using the 2011 water year nontidal data.
  - Actual upload/import by 31 March 2013.


WQ_1
CBP Water Quality Database
(Water Quality Monitoring Program)
PROGRAMS
TWQM
(Tidal Water Quality Monitoring)
NTWQM
(Nontidal Water Quality Monitoring)
SWM
(Shallow Water Monitoring)
MAIN
(Mainstem)
TRIB
(Tributary)
NTID
(Nontidal
Out of
Network)
NTN
(Nontidal
Network)
CMON
(CONMON)
DFLO
(DATAFLOW)
SPEC
(Special)
SPEC
(Special)
PROJECTS

Chesapeake Bay Nontidal Monitoring Program Participants



Workplan

- **Phase I:** Define scope, current DUQAT processes, and Timeliness knowledge requirements for DUET.
- **Phase II:** DUET Completeness of Source (Data Collector) data submittal.
- **Phase IIIa:** DUET Logic checks for Outliers
    - Inconsistent relationships – dissolved vs whole water parameters.
    - Define preferred equation scripts to run for calculated parameters.
    - Identify illogical relation conditions by Source (Data Collector).
    - Assess for data entry error and correct if case.
- **Phase IIIb:** DUET QAQC Data Review
    - Field quality control data (Replicates and blanks).
    - Lab quality control data. (??)
    - Coordinated Split Sample Program (CSSP), Blind Audits, and Ref. Samples.
    - Assess accuracy of WQ data (bias and precision).
    - Remark WQ data as appropriate

Workplan (2)

- **Phase IIIc:** DUET logic checks with Precision Information
  - Review non-data entry errors (fatal and nonfatal).
  - Determine affect on data quality.
  - Remark WQ data accordingly.
- **Phase IIId:** DUET calculated WQ Parameters
  - Provide hierarchal relations for WQ calculations for each parameter.
  - Calculate WQ relations for each Data Source by Station by parameter.
  - Remark calculated WQ parameters accordingly.
- **Phase IV:** DUET Import/archival of WQ Data in WQ_1 and Metadata in Metadata database

DUQAT QA/QC Checks

QAQC	Record(s) are not associated with WQ_EVENT records.	FATAL
QAQC	Record(s) contain an CRUISE that is not in the dataset or the database	FATAL
QAQC	Record(s) contain duplicate key fields.	FATAL
QAQC	Record(s) contain key fields already in the water quality database.	FATAL
QAQC	Record(s) contain negative or null depths.	FATAL
QAQC	Record(s) contain null sample date times.	FATAL
QAQC	Record(s) contain undefined lab codes.	FATAL
QAQC	Record(s) contain undefined or null agency codes.	FATAL
QAQC	Record(s) contain undefined or null layer codes.	FATAL
QAQC	Record(s) contain undefined or null method codes.	FATAL
QAQC	Record(s) contain undefined or null parameter codes.	FATAL
QAQC	Record(s) contain undefined or null program codes.	FATAL
QAQC	Record(s) contain undefined or null project codes.	FATAL
QAQC	Record(s) contain undefined or null sample replicate type codes.	FATAL
QAQC	Record(s) contain undefined or null source codes.	FATAL
QAQC	Record(s) contain undefined or null station codes.	FATAL
QAQC	Record(s) contain undefined or null unit codes.	FATAL
QAQC	Record(s) contain undefined problem codes.	FATAL
QAQC	Record(s) contain undefined qualifier codes.	FATAL

Project Schedule

Due Date	Task	Staff
2/29/2012	Develop phased sequential workplan and tasks, list by phase	G4
3/16/2012	Get familiar with DUQAT; hold requirements gathering session(s)	All
3/01/2012 3/13/2012 3/20/2012 4/10/2012 4/20/2012 4/25/2012 4/30/2012	Finalize knowledge requirements by phase: Phase I – Timeliness Phase II – Completeness Phase IIIa – Outlier and inconsistent relationships checks Phase IIIb – QAQC field and lab checks Phase IIIc – Precision logic checks Phase IIId – Database calculated parameters Phase IV – Import/archive data submittal in WQ_1	G4
tbd	Finalize technology requirements	Vistronix
4/10/2012	Update NTN grant guidance based on new tool requirements	G4, Brian
3/30/2012	Implement Phase I of DUET (includes sample data submittal testing)	Vistronix
5/18/2012	Implement Phase II of DUET (includes sample data submittal testing)	Vistronix
6/22/2012	Implement Phase III(a-d) of DUET (includes sample data submittal testing)	Vistronix

Project Schedule (2)

Due Date	Task	Staff
6/29/2012	Implement Phase IV of DUET and complete testing	Vistronix
7/31/2012	Complete DUET Programming for NTN	G4
8/31/2012	Complete beta-testing of DUET using NTN data	Vistronix
10/31/2012	Complete DUET programming for TWQM/NTWQM	G4
10/31/2012	Update TWQM grant guidance based on new tool requirements	G4, Brian
12/15/2012	Complete beta-testing of DUET using tidal data	Vistronix
12/31/2012	Complete final DUET, deliver with documentation, user guide, procedures, etc.	Vistronix
1/31/2013	Complete training and outreach with data providers	G4