Modeling Workgroup Conference Call
December 10, 2015
1:00 PM – 3:30 PM
Event webpage: http://www.chesapeakebay.net/calendar/event/23327

DRAFT AGENDA

Announcements and Amendments to the Agenda – Lee Currey, MDE and Dave Montali, WVDEP

- There is an upcoming STAC workshop that will review Conowingo infill, to be held January 12-13, 2016.
- As a reminder, the next quarterly meeting will be held January 20-21, 2016.

Progress in the development of the Phase 6 Watershed Model – Gopal Bhatt, PSU Gary Shenk, USGS, Olivia Devereux, Devereux Consulting
Attachment A.1, *Attachment A.2*, *Attachment A.3*

- Olivia fully explained the adjustments and approaches that were taken to develop global targets and ratios of recipient land uses that were used in applying those values to different targets.
- A question was asked about the reasoning behind scaling the sensitivities to the magnitude of the target load. Gary explained that the development of the sensitivities involved determining the slope of a multi-variate regression based upon several predictors in order to arrive at an average load for a given land use.
- A matrix of the way in which loads were mapped out was distributed to the Modeling Workgroup earlier in 2015. The only changes since that time involved some of the tree canopy land uses, and Kyle will send those out again to the Modeling WG for review.
- Gopal reviewed the current standing of model calibration based on the observed dataset as well as WRTDS loads. Furthermore, key changes in the Phase 6 model input data were also reviewed.
- There may be a tighter distribution of the log scale load comparison with WRTDS in Phase 6 because of the increase in data points per land segment. The modeling team will change the representation of sediment export targets to produce a better comparison that is more alike when studying comparisons in these distributions.
- The overall land to water delivery variances increase based upon specific parameters. In the case of phosphorus, it is both the presence of well-drained soils and proximity to the coastal plain that drive higher delivery variances. Loads are averaged over the period where continuous loads exist.
- There are some points where Phase 6 is under predicting phosphorus loads. To move points closer to the 1:1 line between WRTDS and simulated loads, it was asked if there were there any modifications to SPARROW that could be undertaken to account for under-simulations instead of relying upon regional factors.
    - This analysis could be done, but it is difficult to look at the sensitivities of different parameters for SPARROW. To continuously ask for further SPARROW runs may be impose significant time constraints on further refining and reviewing Phase 6.
- There is a consistent underrepresentation of nitrogen and phosphorus loads compared to WRTDS at RIM stations, although nitrogen is more closely aligned with WRTDS loads than phosphorus.
- At this point, Phase 6 is not a great model for loading the estuarine model and more refinements are needed. Over the past months the modeling team has been applying ratios to deliver more accurate loads for WQSTM refinement.
- Gary also reviewed several options for helping to produce more accurate loads in the watershed model, and this decision should be made for each beta version of the model in Phase 6.

- The goal is to be within +/- 5-10% of WRTDS values, which is the typical standard of uncertainty for nitrogen in large rivers in WRTDS in order to simulate loads within uncertainty targets.
- ACTION: Re-examine the original uncertainty of WRTDS, and reconnect with Jeff Chanat who can help to provide that data.
- What the modeling team is sending to Carl will still preserve a model that is completely explainable. The first order of business is to examine the comparison between the WSM and WRTDS seasonally. If they match up seasonally, then Gary will apply an adjustment factor to Phase 6 loads solely for loading into the WQSTM. Phase 6 loads without an adjustment factor will be submitted for review.

Progress in the development of the Water Quality and Sediment Transport Model (WQSTM) – Carl Cerco, U.S. CoE ERDC
Attachment B

- Carl presented an outline of where we expect to be in January 2016 with regards to the WQSTM. A fully operational WQSTM is expected by the end of January 2016, and aspects of the fully operational model was further defined within the presentation.
- A question was asked regarding the relationship of phosphate and its linkage with particulate inorganic phosphorus in the sediment. Carl agreed that this was an issue to dive into further, and it was agreed that particulate inorganic phosphorus and the WQSTM and Conowingo model would be discussed further with the larger Modeling Workgroup at the next meeting.
- The first cut for wetlands work has helped to decide the choice to permit the net settling of nitrogen into wetlands. Care has been taken to map wetlands with NWI data without overlapping across watersheds.
- ACTION: Follow up with internal call about what further data needs for wetlands and other parameters prior to the next Modeling WG meeting.

Meeting Attendance

MEMBERS			
Currey	Lee	lcurrey@mde.state.md.us	MDE/Modeling WG Co-Chair
Montali	Dave	david.a.montali@wv.gov	WV DEP/Modeling WG Co-Chair
Linker	Lewis	linker.lewis@epa.gov	EPA/CBPO/Modeling WG Coord
Hinson	Kyle	khinson@chesapeakebay.net	CRC/CBPO/Modeling WG Staffer
Brown	William	willbrown@state.pa.us	PA DEP
Keeling	William	william.keeling@deq.virginia.gov	VADEQ
Mandel	Ross	rmandel@potomac-commission.org	ICPRB
Shenk	Gary	gshenk@chesapeakebay.net	EPA/CBPO
Tesler	Ted	thtesler@pa.gov	PA DEP
PARTICIPANTS			
Amin	Vimal	vamin@mde.state.md.us	MDE
Bhatt	Gopal	gbhatt@chesapeakebay.net	Penn State/CBPO
Cerco	Carl	Carl.F.Cerco@erdc.usace.army.mil	USACE

Dalmasy	Dinorah	dinorah.dalmasy@maryland.gov	MDE
Devereux	Olivia	olivia@devereuxconsulting.com	DEC, Inc.
Emmart	Paul	paul.emmart@maryland.gov	MDE
Fitzpatrick	Jim	jim.fitzpatrick@hdrinc.com	HDR
Goulet	Norm	ngoulet@novaregion.org	Northern VA Regional Commission
Ibrahim	Mukhtar	mibrahim@mwcog.org	MWCOG
Johnson	Zoe	zoe.johnson@noaa.gov	NOAA/CBPO
Kremer	Janet	kremer.janet@epa.gov	EPA
Mirsajadi	Hassan	hassan.mirsajadi@state.de.us	DE DNREC
Sanford	Larry	lsanford@umces.edu	UMCES
Schreiner	Steve	SSchreiner@versar.com	Versar, Inc.
Sullivan	Tom	tsullivan@gomezandsullivan.com	Gomez and Sullivan
Tian	Richard	rtian@chesapeakebay.net	UMCES/CBPO
Tribo	Jenny	jtribo@hrpdcva.gov	HRPDC
Wang	Ping	pwang@chesapeakebay.net	VIMS/CBPO