

Watershed Model Work Plan and Modeling Workgroup Summary

Gary Shenk

WQGIT

2/10/2014

Draft Modeling Schedule for MPA

Dec 20, 2016 - All models are final. The partnership decision-making process begins to discuss how these new models will be used in the WIP3 process

September 2016 – Final comments on the draft Phase 6 model

Dec 20, 2015 - Phase 6 draft model is complete. Evaluation followed by fine tuning during this year

Oct 20, 2015 – All inputs are final and delivered to the WSM by the scenario builder team for the final calibration run

March 20, 2015 – All major partnership decisions are made on changes to scenario builder processing and data. Scenario builder final modifications begin.

Oct 20, 2014 – Rough Draft of major changes to nutrient processing in Scenario Builder will need to be complete. (Examples: land use types and manure application rules)

March 20, 2014 – Ideas must be on the table

Draft Modeling Schedule for MPA

Continued
discussion of
priorities

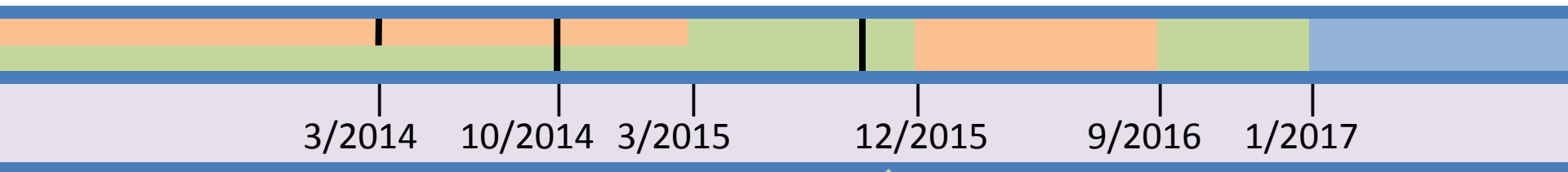
Partnership engages in
Mid-Point Assessment

Partnership
rough draft of
major revisions

Partnership
Finalizes
requirements

Partnership review

Ideas "on
the table"



Scenario Builder Major
Revision Planning

Draft Model
Calibration

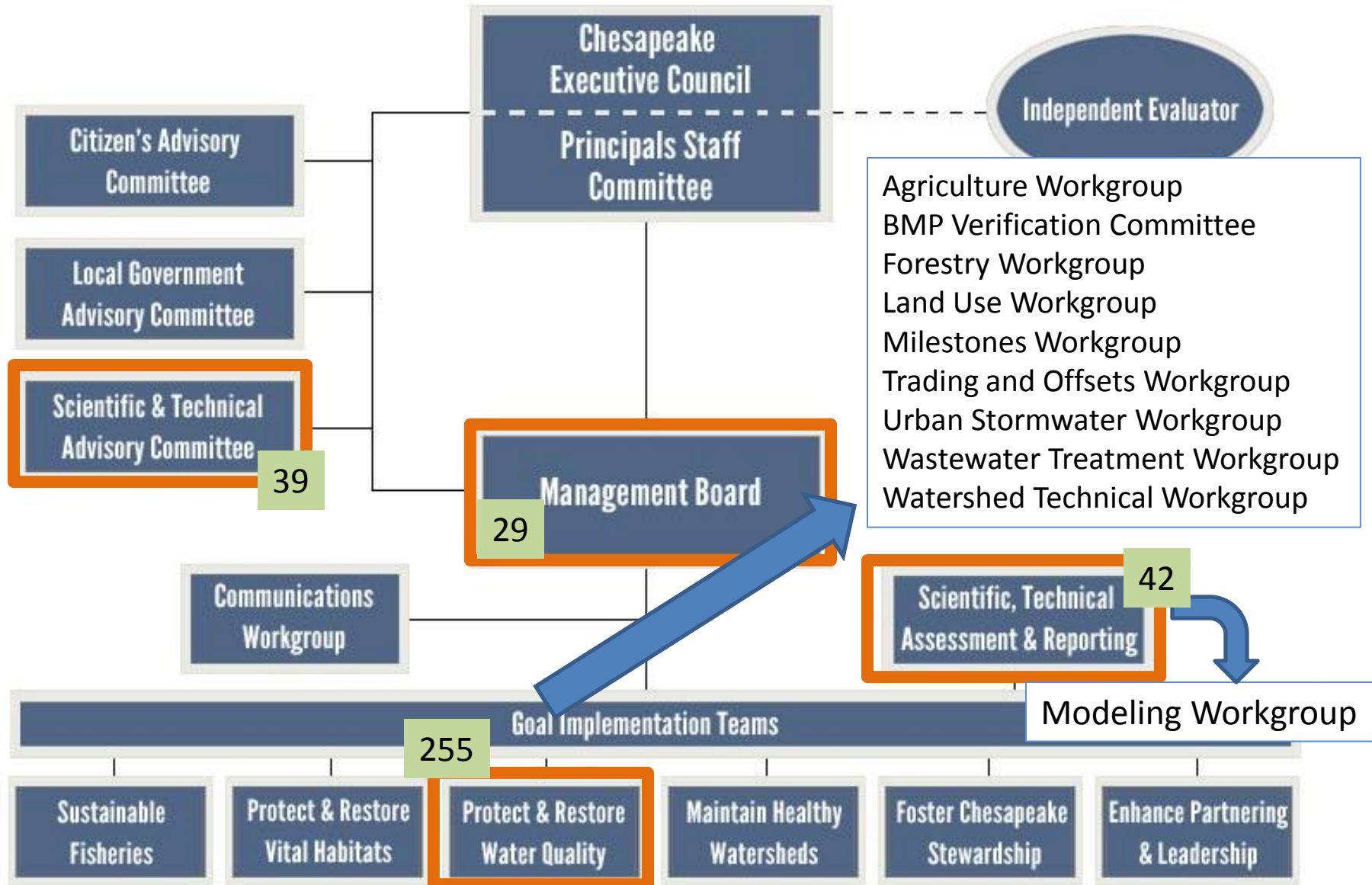
Final Model Preparation

Model Capacity Building

Scenario Builder
Reprogramming

Model related Membership as of 7/2013 – 365 individuals

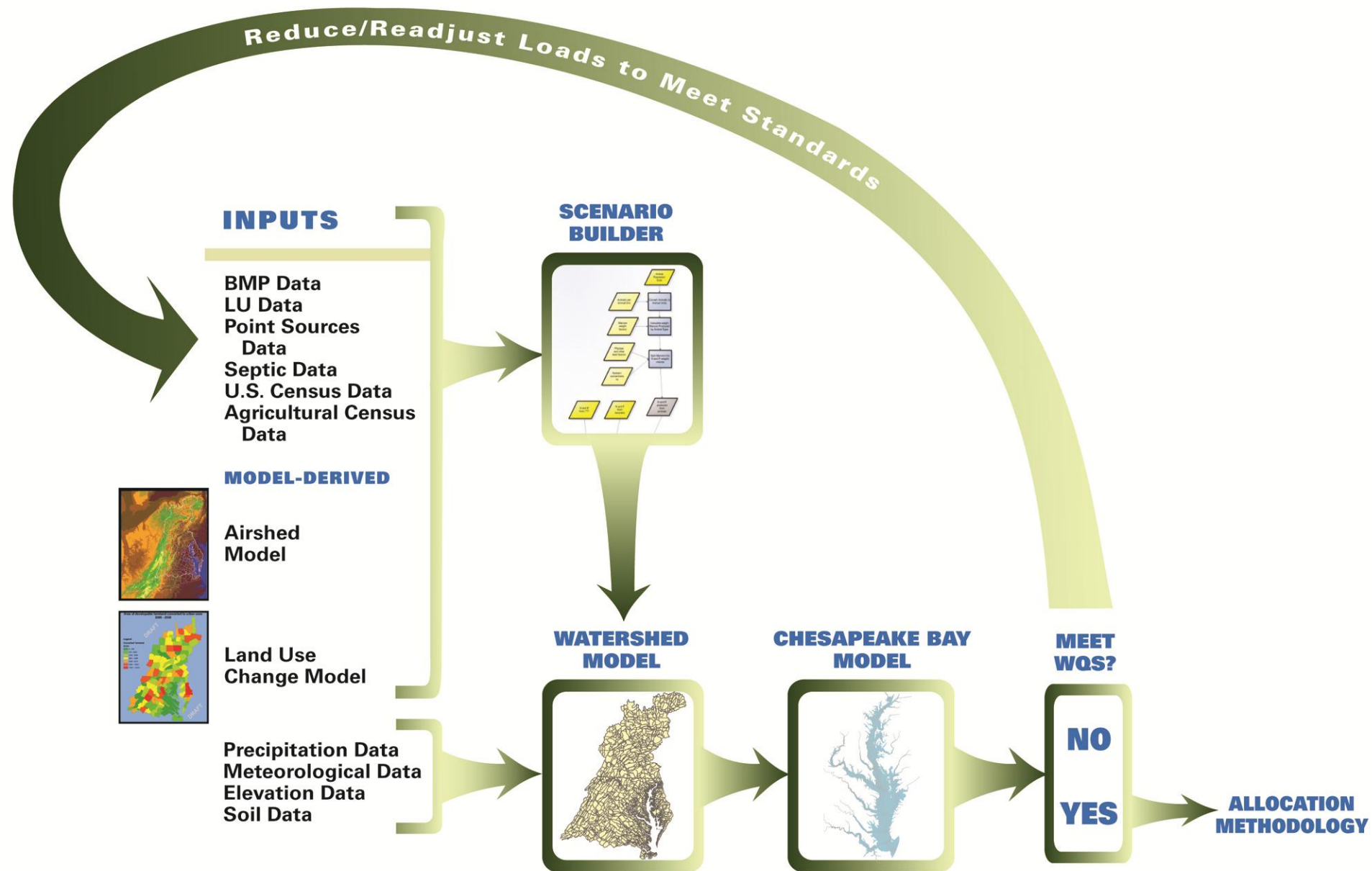
Chesapeake Bay Program Partnership



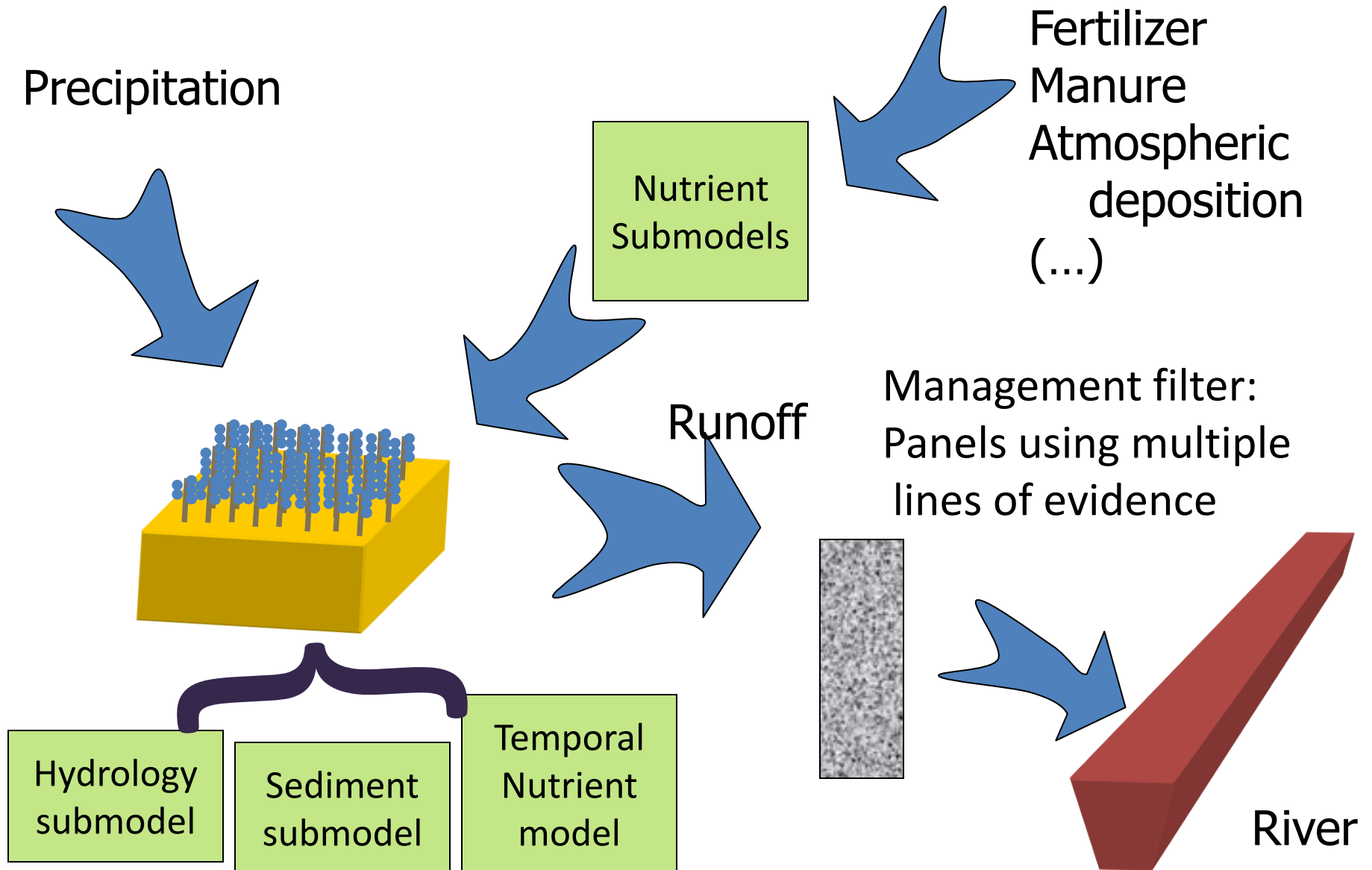
Expert Panels

- Stormwater performance standards
- Stormwater retrofits
- Nutrient management
- Conservation Tillage
- Cover Crops
- Poultry Litter
- Stream Restoration
- On-Site Wastewater Treatment systems
- Urban Fertilizer Management
- Riparian Buffers
- Urban Tree planting
- Erosion and sediment control
- Illicit discharge
- Septic
- manure treatment technology
- impervious disconnect
- animal waste storage systems
- liquid manure injection/incorporation
- forest management
- urban filter strips and upgraded stream buffers
- urban shoreline erosion control
- floating wetlands
- street sweeping
- algal turf scrubbers
- cropland irrigation management
- MS4 minimum management measures

Chesapeake Bay Partnership Models



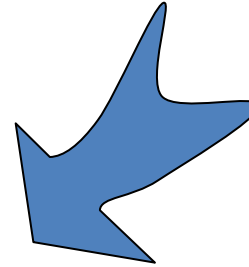
Phase 6



Phase 6 – Multiple Tracks

Precipitation

Nutrient
Submodels



Fertilizer
Manure
Atmospheric
deposition

Scenario Builder Issues

Ag Workgroup

Urban Workgroup

Forestry Workgroup

Poultry Litter Subcommittee

Ag Modeling Subcommittee (BBBM)

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Iter:
multiple
ce

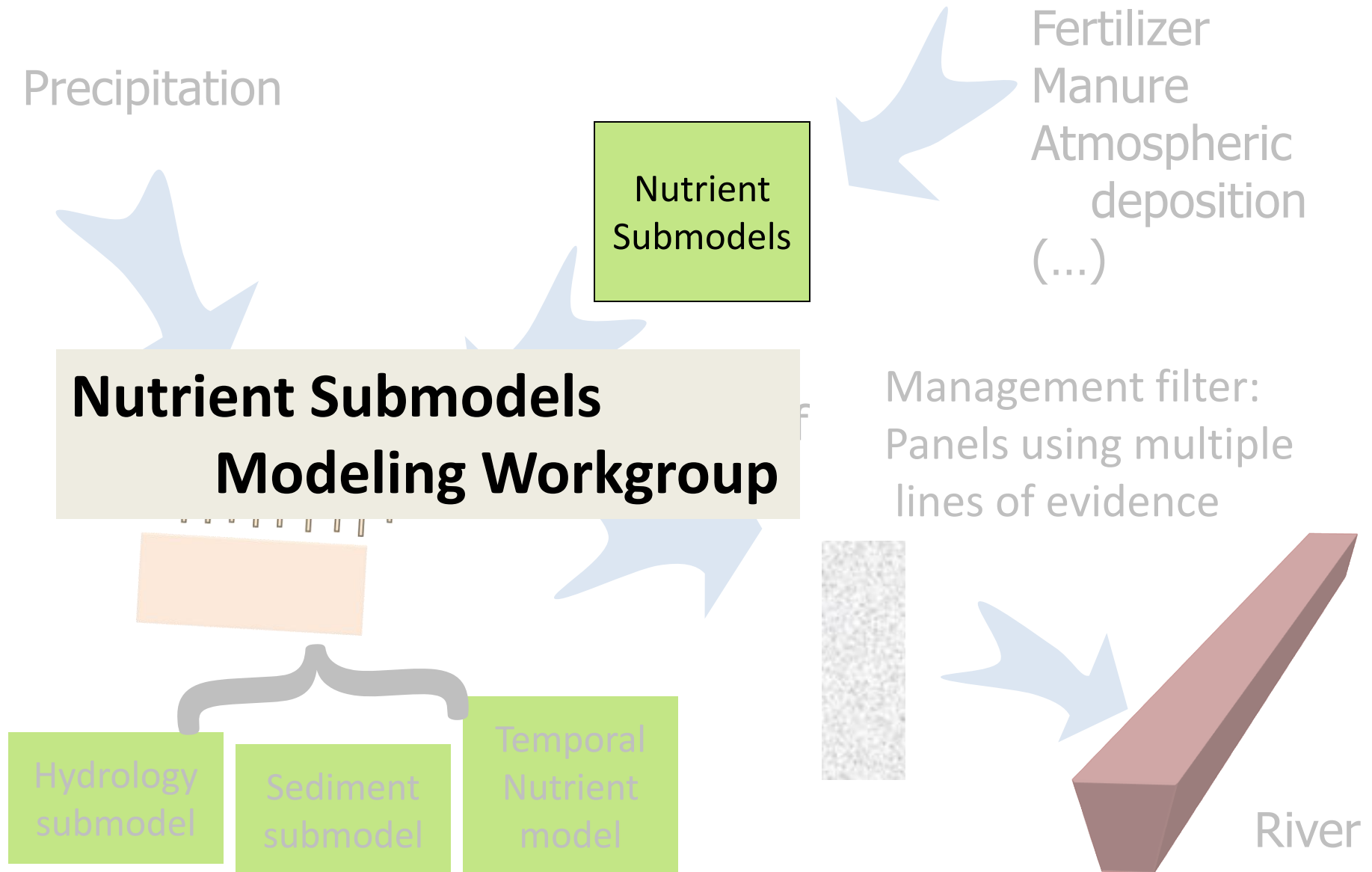
submodel

submodel

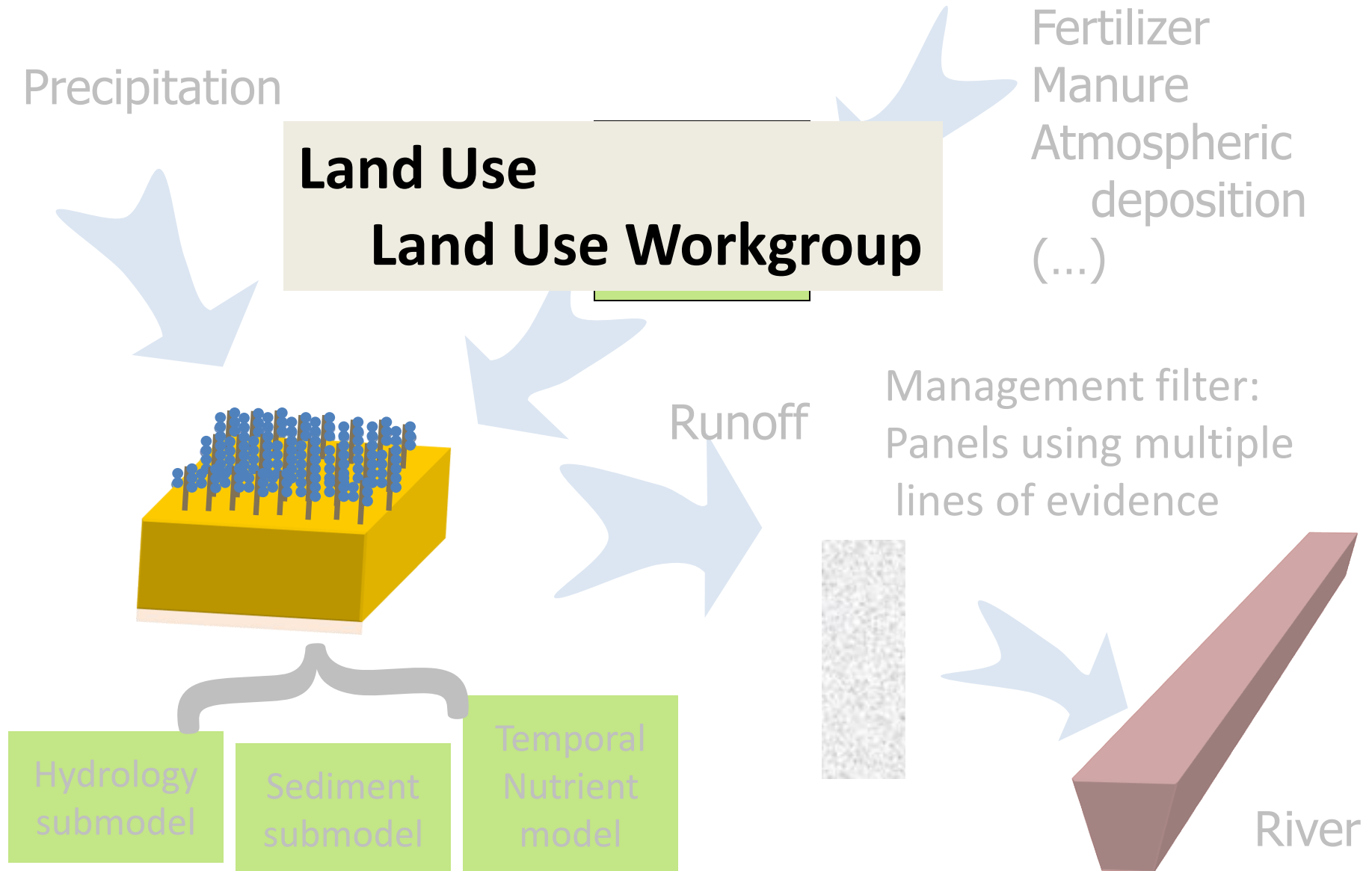
model

River

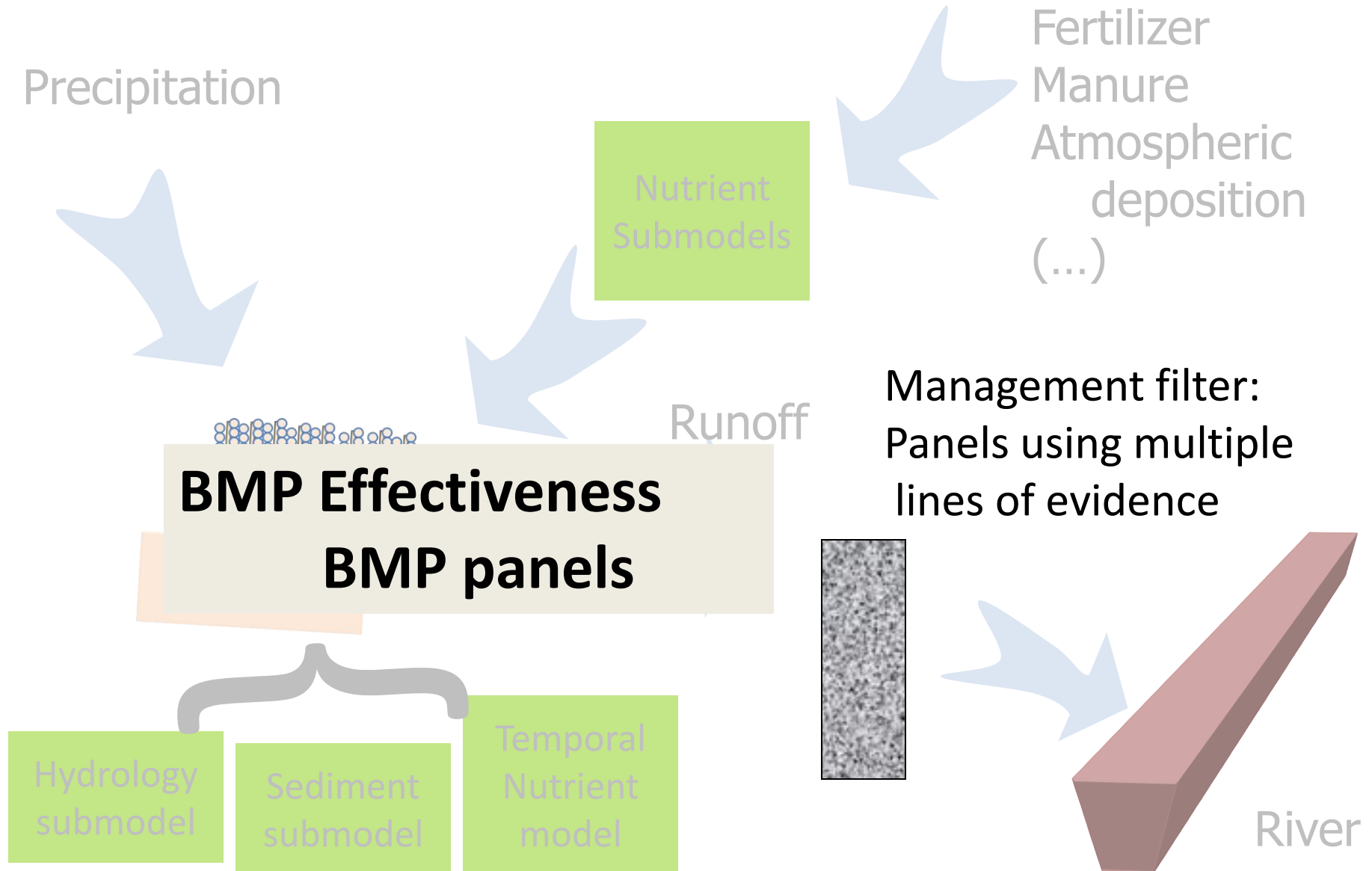
Phase 6 – Multiple Tracks



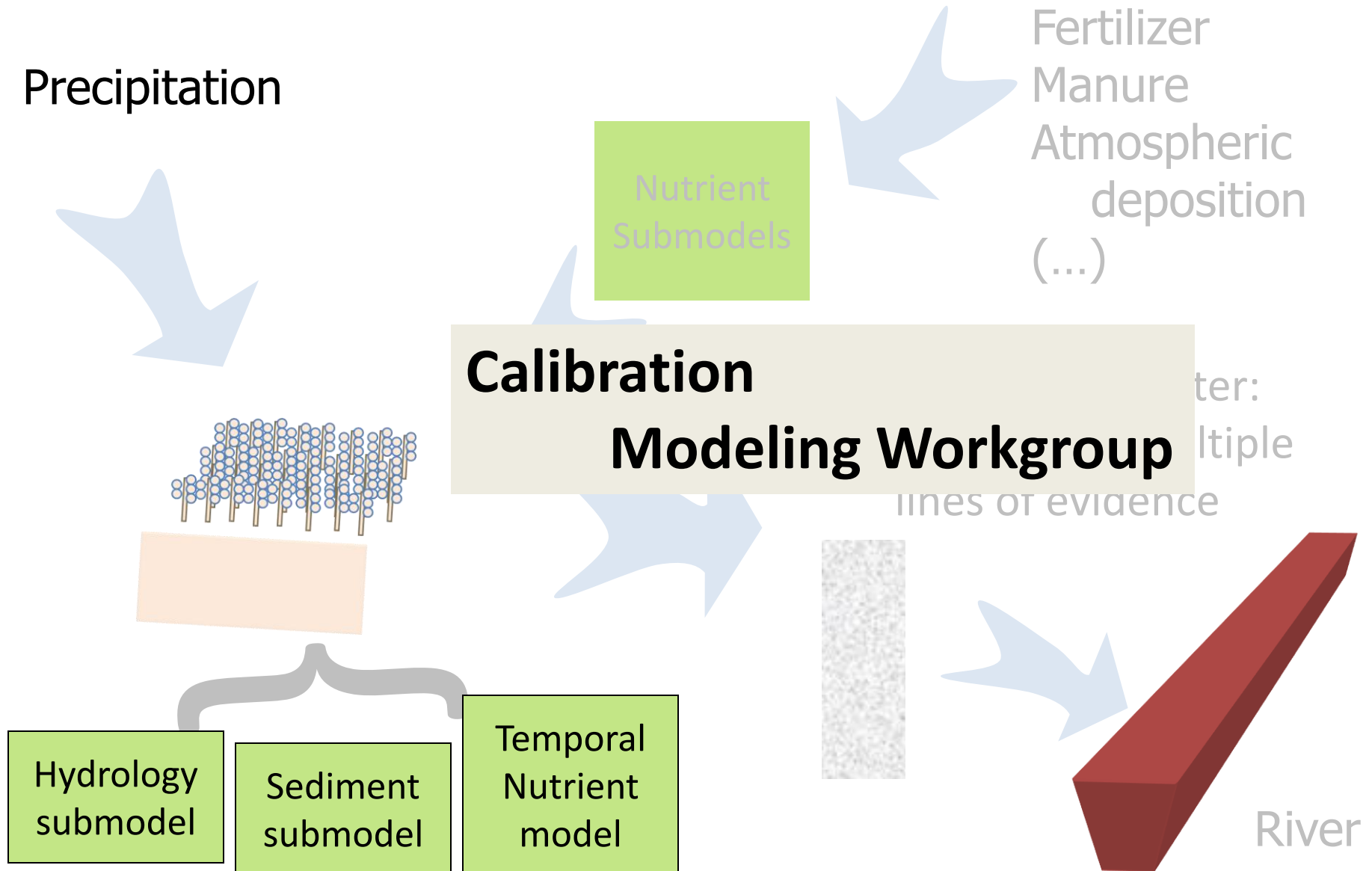
Phase 6 – Multiple Tracks



Phase 6 – Multiple Tracks



Phase 6 – Multiple Tracks



Phase 6 – Multiple Tracks

Precipitation

Fertilizer
Manure
Atmospheric

STAC

Peculiarities of Perviousness

Phosphorus Panel

Management Effects on Water Quality Trends

Multiple Models

Healthy Watersheds

Climate Change

Hydrology
submodel

Sediment
submodel

Temporal
Nutrient
model

River

January Modeling Workgroup

- Conowingo (Hirsch, Zhang, Cerco, Yactayo, Bhatt)
 - Increase in scour and decrease in deposition at moderately high flows
 - Modeled response of large storms indicate that the increased nutrient load is the primary threat to WQS
 - Dredging is one mitigation method

January Modeling Workgroup

- Shallow Water Modeling and Monitoring (Cerco, Trice)
 - Estuarine model is being extended to 2012
 - Boundary conditions for the shallow water models.
 - Much more extensive shallow water data sets during this period
- Forest Response to Deposition (Eshleman)
 - Forest nitrate loads have decreased significantly due to changes in atmospheric desposition

January Modeling Workgroup

- Center for Nutrient Solutions (Shortle)
 - 3 year effort with integrated approach to nutrients
 - Physical and social science
 - Four watersheds intensively studied
- APLE Phosphorus Model (Mulkey)
 - Proposed phosphorus submodel as component of phase 6
 - Integrates recent research
 - Sensitive to soil test P and physical setting
- SPARROW Sensitivities (Yactayo)
 - Comparison of p5.3.2 and SPARROW sensitivities to inputs

January Modeling Workgroup

- James River Chlorophyll (Butt and Parker)
 - Description of the estuarine and watershed models being developed for the James River assessment
- Climate Change in Delaware (de Mooy)
 - Discussion of likely climate change impacts in DE
- Spatial Distribution of CC impacts (Pruzinsky)
- Modeling Lab Action Team (Bennett)