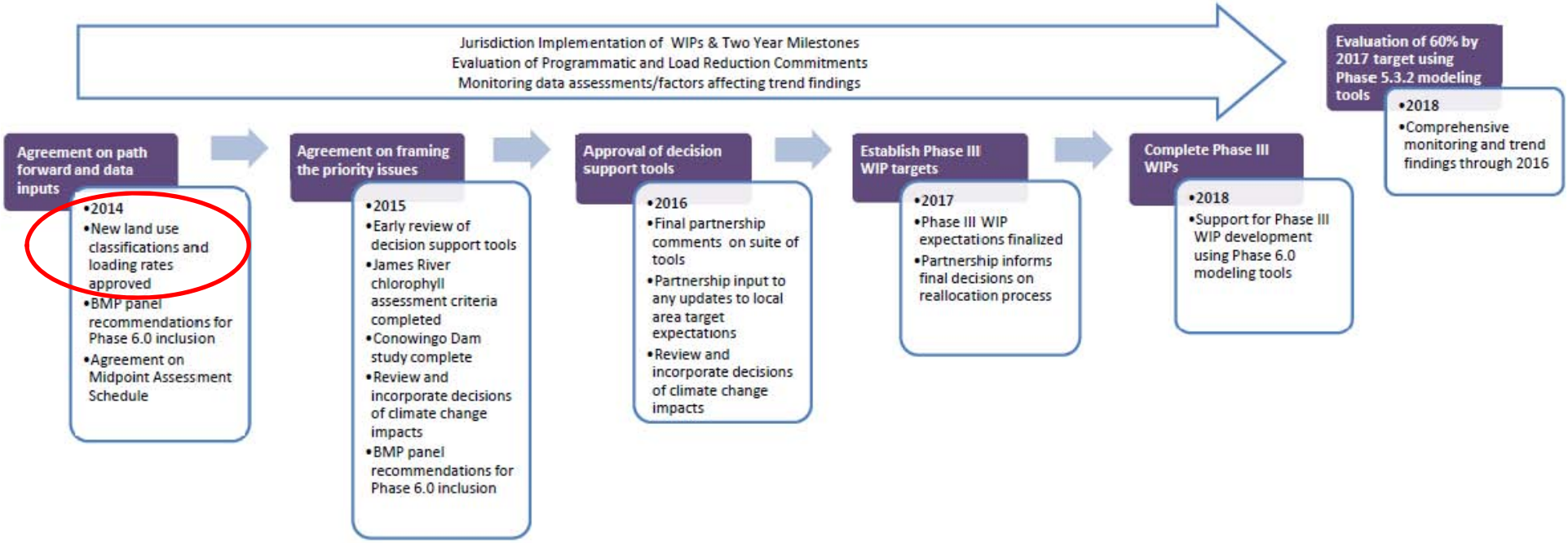
JOINT USWG/LUWG Work Session.

The Process for Deriving Urban Land Use Loading Rates for the Phase 6 Model.

Midpoint Assessment Timeline



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

REVIEW
The Models

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

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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)

CREATE
The Models

Proposed schedule for finalizing Phase 6 urban land uses

- **July 30-** LUWG/USWG members identify any outstanding issues with outstanding issues with proposed land uses
- **August 12 LUWG call** -- Address outstanding issues and vote on final land uses.
- **September**- make recommendations on urban land uses to the modeling workgroup
- **October**- Presentation of final land uses to WQGIT for approval.

Process to Get to this Point

- STAC research Workshop on April 22-23 on Peculiarities of Perviousness
- LUWG (2014) Land Use and Mapping Options
- Tetra Tech (2014) Urban Loading Literature Review
- Recommendations from 6 Expert Panels

Structure for Today's Work Session

- Process for Deriving Urban Land Use Loading Rates
- Six mini-sessions to arrive at consensus on the major recommendations
  - Brief summary of each issue (Steering Committee)
  - 15 minute discussion (Everyone)
  - Wrap-up next steps (Tribo)

How Urban Land Cover is Represented in the Current Version of CBWM

	Impervious Cover	**Pervious Cover**	**Construction**
Acres in Watershed [1]	1,269,030	3,398,732	84,500
Average TN Load [2]	15.5 lbs/ac/yr	12.4 lbs/ac/yr	26.4 lbs/ac/yr
Average TP Load [2]	1.93 lbs/ac/yr	0.55 lbs/ac/yr	8.8 lbs/ac/yr
Average TSS Load [2]	0.65 t/ac/yr	0.09 t/ac/yr	24.4 t/ac/yr
Key Inputs	Air Deposition Build-up/Washoff	Air Deposition Fertilizer [3]	Air Deposition No Fertilizer
Key Outputs	Flow volumes and N/P EMCs for surface runoff only	Flow volumes and N/P EMCs in runoff, interflow and groundwater	Flow volumes and sediment yield, attached nutrients

[1] Acres as reported in most recent CBWM version 5.3.2

[2] Average values, as reported in Tetra Tech 2014a and ESC EP, 2014 (construction sites), although actual values are regionally variable

3 Unit fertilizer input of 43 lbs TN /ac/yr and 1.3 lbs TP/ac/yr applies to all pervious acres

Range of Urban Land Cover/Uses Considered by LUWG (2014)

Land Cover	Potential Sub-Class
Impervious Surfaces	Residential/Non-Residential; Commercial, Industrial, Institutional, Roads, Connected/Disconnected
Pervious Surfaces	Residential/Non-Residential, Hi-fertilized turf, Lo-fertilized, Golf Course, Landscaping, Scrub-shrub, Connected/Disconnected
Urban Tree Canopy	Forest, Street Trees, Residential Trees, Mixed- Open
Construction	None
Extractive [1]	Surface mines, quarries, gravel pits, abandoned mines
Stream Corridor	Floodplain, riparian forest, wetland
Other Layers [2]	MS4-Regulated/Non-regulated, Combined Sewer Service Area, Federal Lands,

[1] not considered in this report, as it is not really an urban land use
[2] layers are defined as an acreage subset of an existing land use category, and are only used by managers to track implementation in these sectors (i.e., not used for simulation purposes

The 4 Criteria For Making a Change

- Does the source or cover type depart in a meaningful way from the average nutrient or sediment loading for generic impervious and/or pervious land?
- If so, are their existing or future mapping tools that can accurately measure the source or cover type at the scale of a county and the entire Bay watershed?
- If so, can the pollutant dynamics of the source or cover type be accurately simulated in the context of existing or future versions of the CBWM?
- If so, would the source or cover type respond in a unique manner to the application of a new or existing urban BMP type?

The Six Key Issues

1. Do different types of impervious cover have different pollutant loading rates ?

2. Should we recommend a lower target load for disconnected impervious cover ?

3. Should there be a new land use representing the urban stream corridor ?

4. What changes in nutrient inputs to urban land can be expected in the future -- atmospheric deposition, fertilization, discovered nutrient discharges, etc.) ?

5. Does it make sense to split pervious land based on fertilizer wash-off risk or fertilization status ?

6. How should we handle urban tree canopy and forest fragments on pervious land ?

Questions and Comments