# Phase 6 Climate Change Model Development

Gary Shenk and the CBPO modeling team 10/8/19

Presentation to MWG

This information is being provided to meet the need for timely best science. The information is provided on the condition that neither the U.S. Geological Survey nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the information.

Preliminary Information-Subject to Revision. Not for Citation or Distribution

#### CBP Climate Work Plan

Plan Model Review Decide

2018 > 2019 > 2020 > 2021

STAC Workshop

Climate
Resiliency WG
to investigate
BMP response

Jurisdictions provide narrative in WIP3s on climate strategies

Modeling WG develop climate scenarios

Water Quality
GIT, Modeling
WG, Climate
Resiliency WQ
direct Modeling
team to develop
climate change
assessment for
TMDL

Technical Review of Models

Climate change considerations will be implemented into the 2022-2023 milestones.

#### CBP 2019 MWG Climate Work Plan

February	April	July	October	November
Climate Topics	Climate Topics	July 16-17 Technical Decisions on Climate Topics Draft documentation emailed 6/28	October 8-9 Technical Decisions on Climate Topics Draft documentation emailed 9/24	Delivery of model results based on October decisions

# Approval Process

- Topics split into July and October quarterly meetings
- November delivery for final model results
- October topics
  - Documentation for July topics sent out to MWG, CRWG, and interested parties
     Sept 24<sup>th</sup>
  - Next two days more in-depth presentation of October topics
  - Ask for approval from MWG today
- This presentation Overview of all and brief description of October topics

Climate Change Processes and Dependencies Model Observed Data Set Climate Extrapolation Precipitation scenarios Endpoint

Climate

Watershed

Estuary

Management

Complete

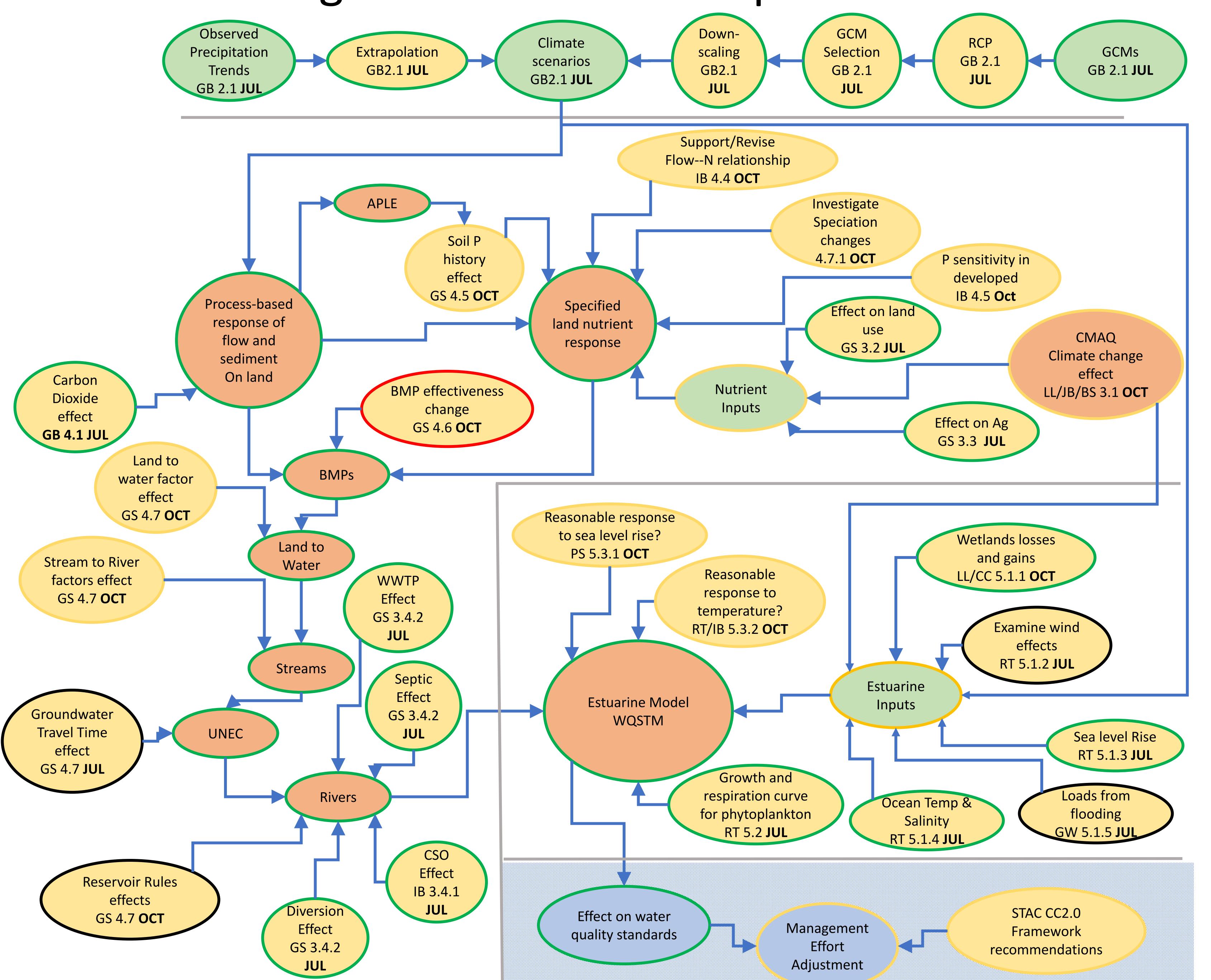
Project/Decision

In Process

Not included But important

Not included minor

Initials indicate the responsible person Numbers indicate the section of the documentation



Climate Change Processes and Dependencies

Model
Data Set
Endpoint
Project/Decision

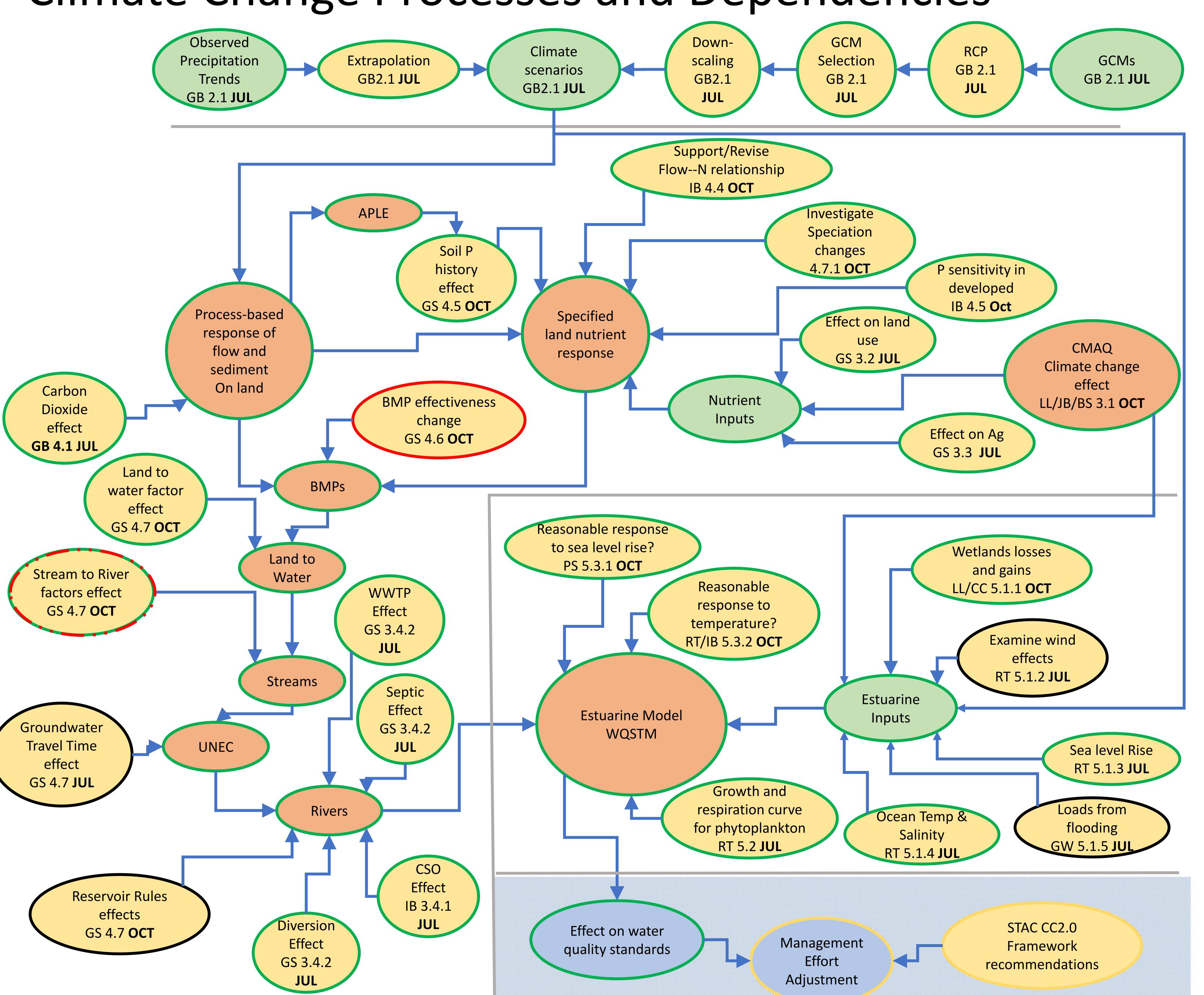
Complete

In Process

Not included But important

Not included minor

Initials indicate the responsible person
Numbers indicate the section of the documentation



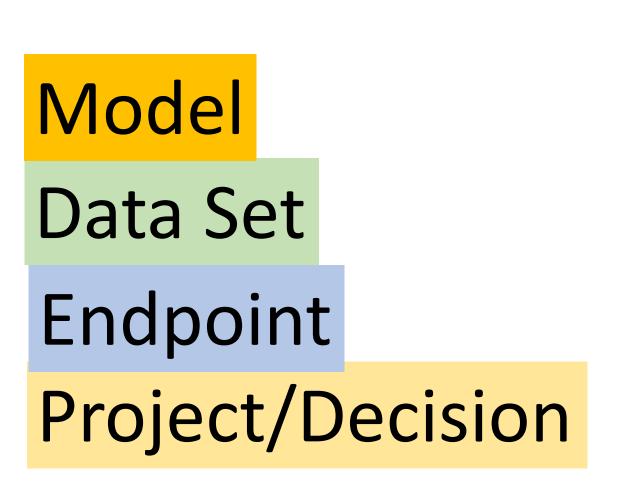
Climate

Watershed

Estuary

Management

#### Climate Change Processes and Dependencies



Complete

In Process

Not included But important

Not included minor

Initials indicate the responsible person
Numbers
indicate the section of the documentation

Flow--N relationship IB 4.4 **OCT** Investigate Speciation changes Soil P 4.7.1 **OCT** history effect developed GS 4.5 **OCT** IB 4.5 **Oct** CMAQ Climate change effect BMP effectiveness LL/JB/BS 3.1 OCT change GS 4.6 **OCT** Land to water factor effect GS 4.7 **OCT** Reasonable response to sea level rise? Wetlands losses PS 5.3.1 **OCT** and gains Stream to River Reasonable LL/CC 5.1.1 **OCT** factors effect response to GS 4.7 **OCT** temperature? RT/IB 5.3.2 **OCT** Growth and Loads from respiration curve for phytoplankton

Support/Revise

### This presentation

Soil Phistory
effect
GS 4.5 OCT

Land to water factor effect GS 4.7 OCT

Stream to River factors effect GS 4.7 **OCT** 

BMP effectiveness change GS 4.6 OCT

Loads from flooding GW 5.1.5 OCT

Margie Mulholland 12:30

#### Isabella Bertani

10:30 Today

Investigate
Speciation
changes
4.7.1 OCT

11:00 Today

Support/Revise
Flow--N relationship
IB 4.4 OCT

11:30 Today

P sensitivity in developed

IB 4.5 Oct

## Gopal Bhatt and Jesse Bash noon

CMAQ
Climate change
effect
LL/JB/BS 3.1 OCT

Richard 11:00 tomorrow

Reasonable response to temperature?
RT/IB 5.3.2 OCT

Carl Cerco 10:05 tomorrow

Wetlands losses and gains LL/CC 5.1.1 OCT

Lewis Linker 10:30 tomorrow

Reasonable response to sea level rise?
PS 5.3.1 OCT

#### CBP 2019 MWG Climate Work Plan

