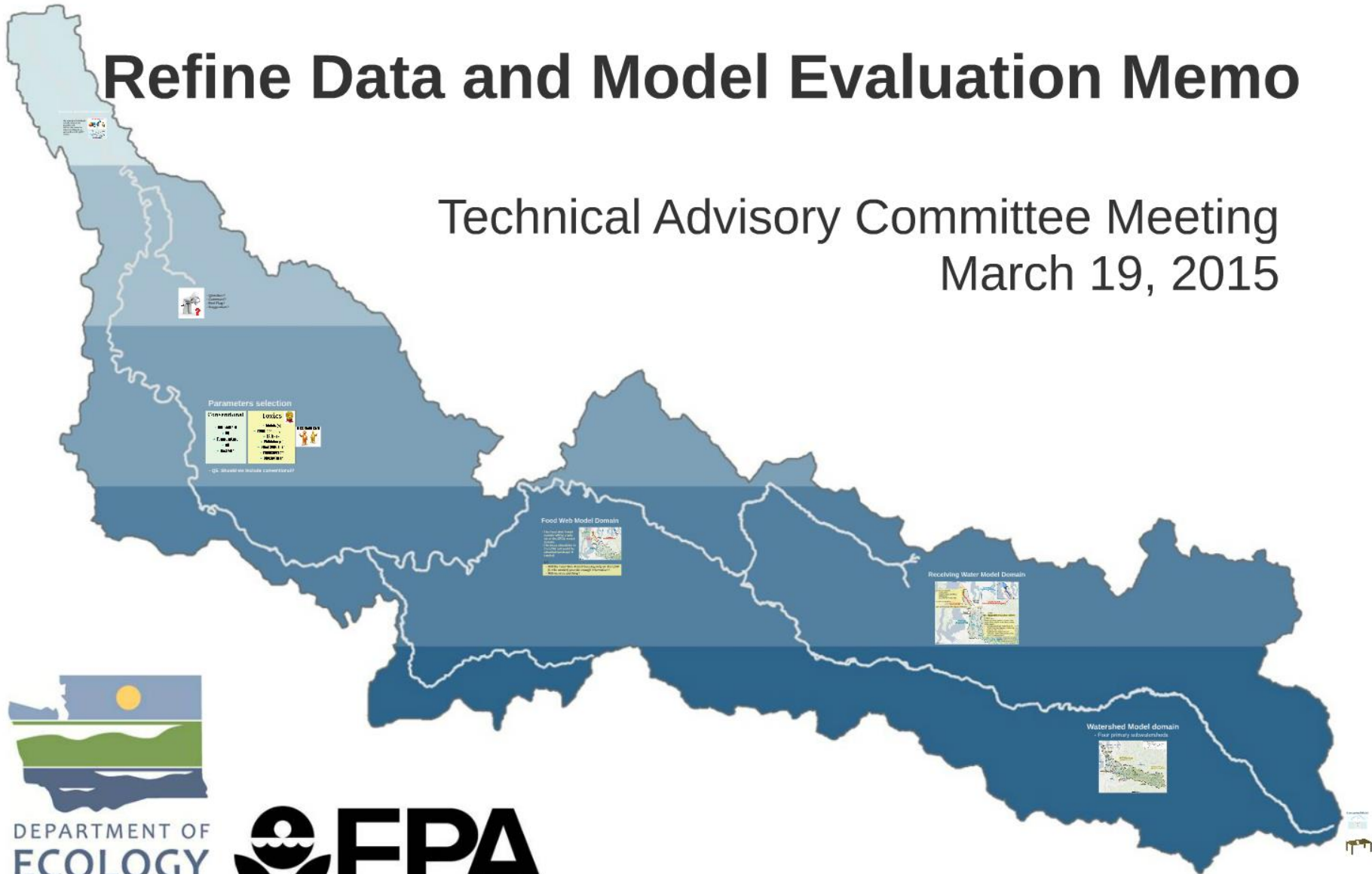


Refine Data and Model Evaluation Memo

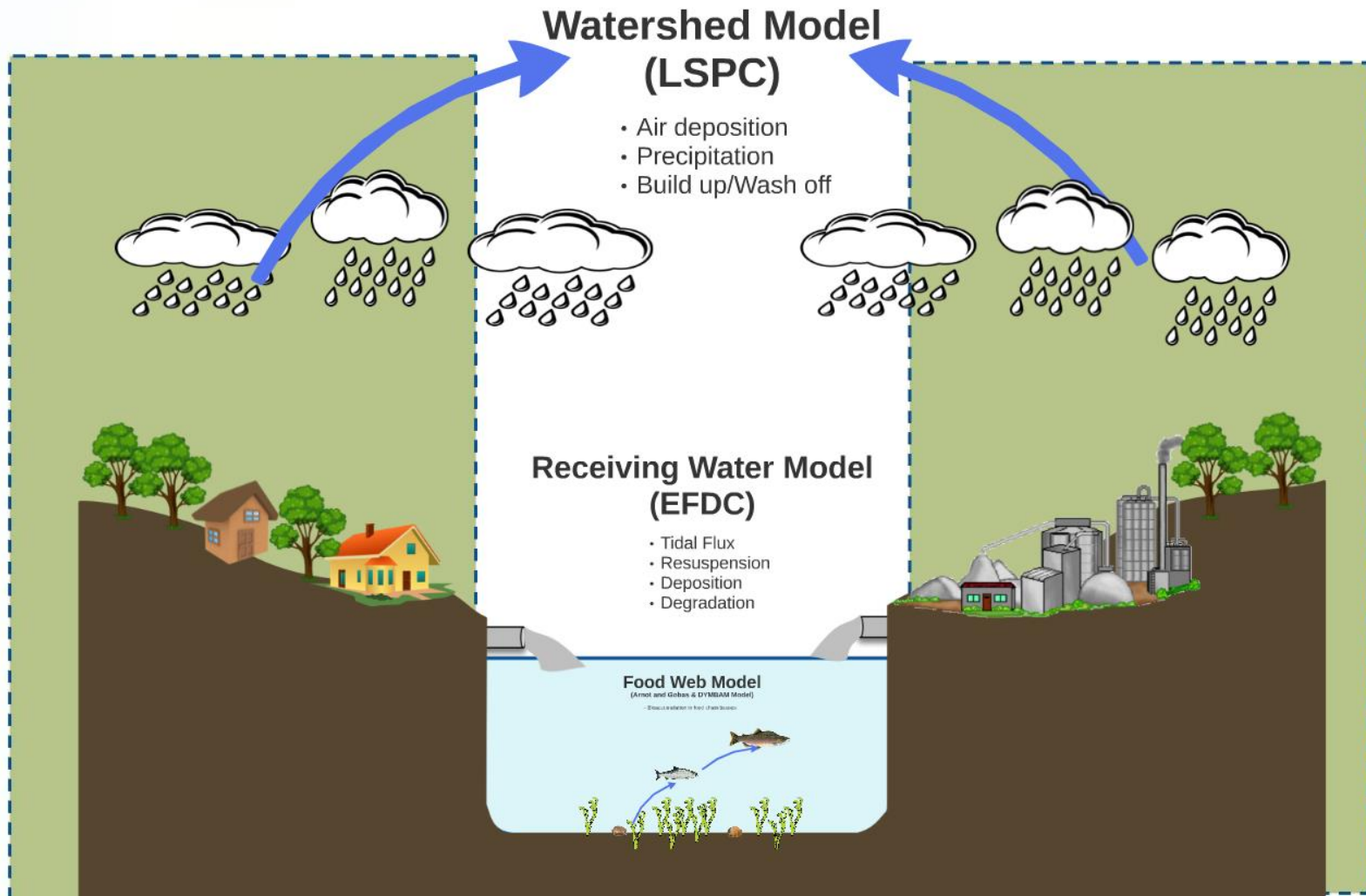
Technical Advisory Committee Meeting
March 19, 2015



DEPARTMENT OF
ECOLOGY
State of Washington



Conceptual Model



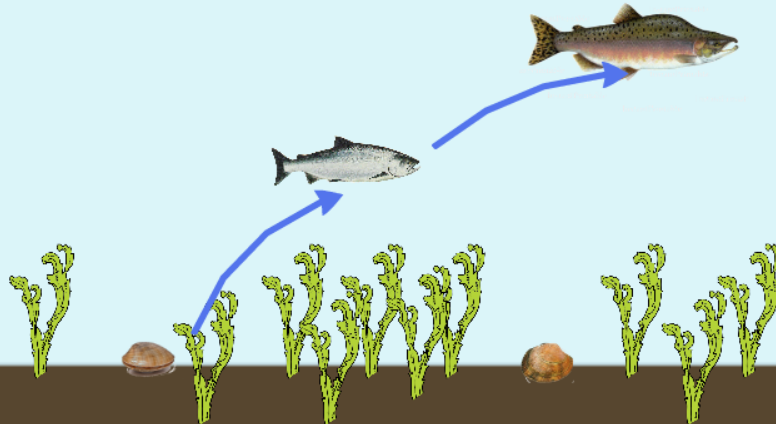
Receiving Water Model (EFDC)

- Tidal Flux
- Resuspension
- Deposition
- Degradation

Food Web Model

(Arnot and Gobas & DYMBAM Model)

- Bioaccumulation in food chain/tissues

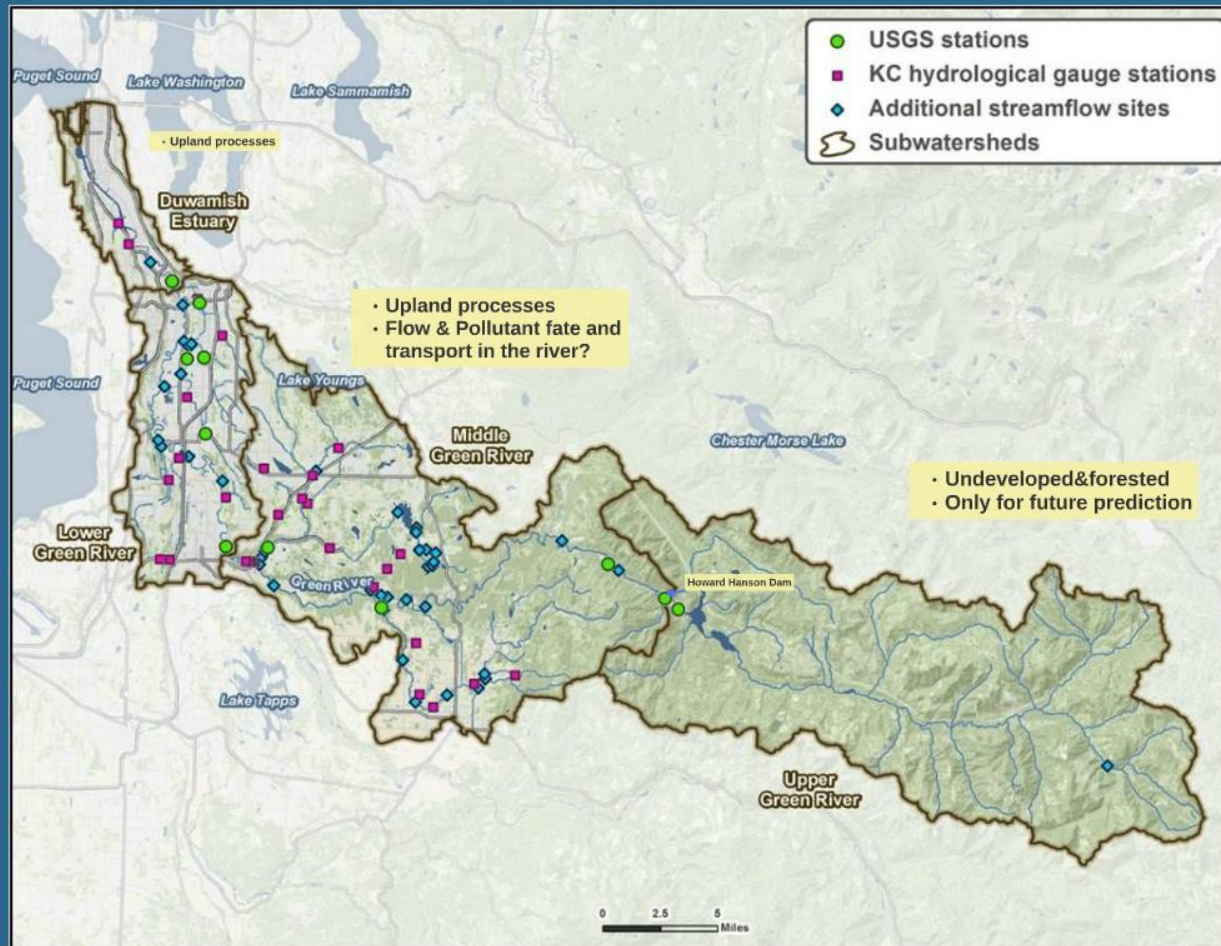


Data and Model Evaluation Memo Outline

- *Modeling domains*
- *Supporting data and parameter selection*
- *Data needs for model configuration and calibration*
 - *Ongoing data collection*

Watershed Model domain

- Four primary subwatersheds



Chester Morse Lake

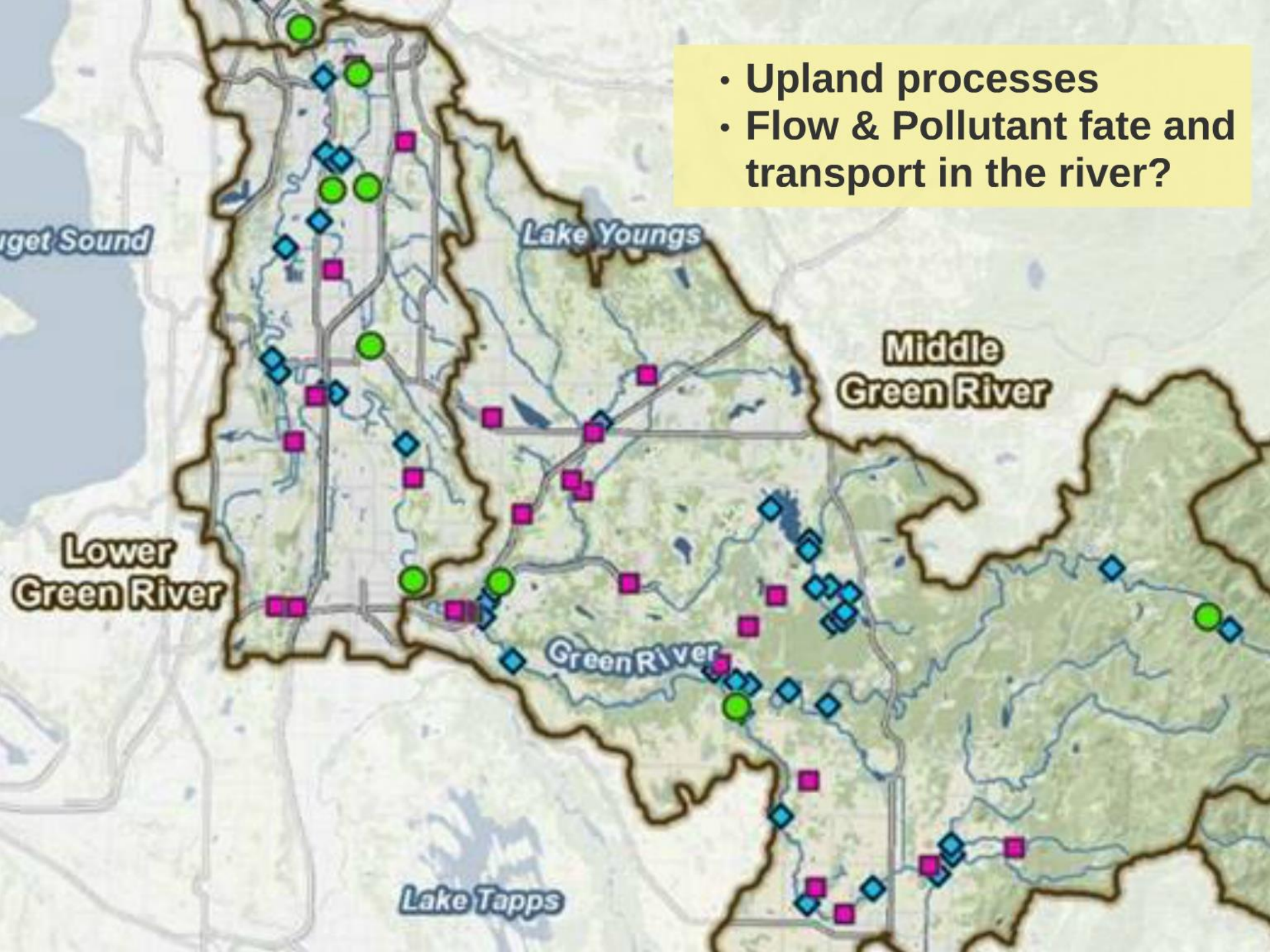
- Undeveloped & forested
- Only for future prediction

Howard Hanson Dam

**Upper
Green River**

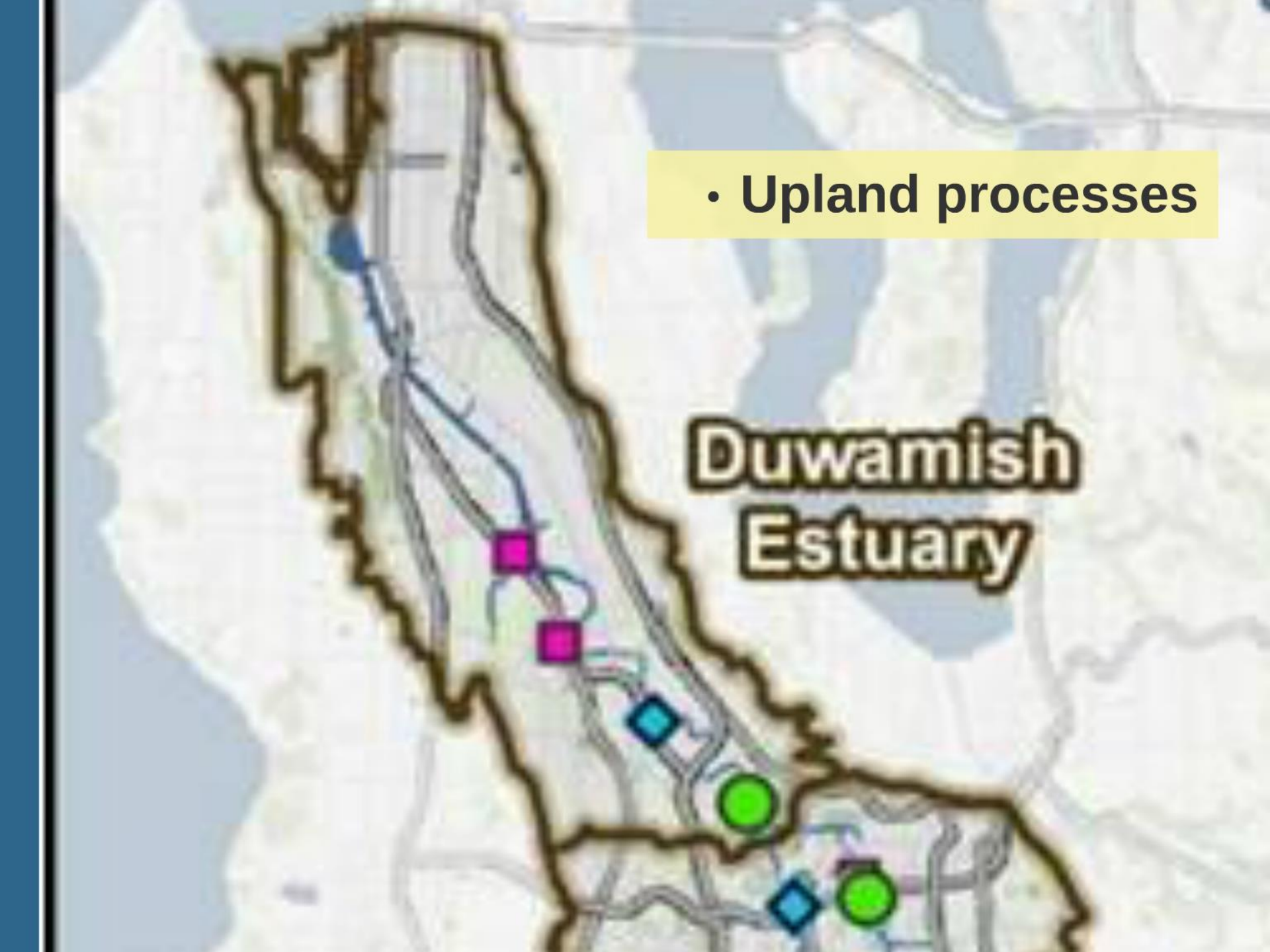


- Upland processes
- Flow & Pollutant fate and transport in the river?

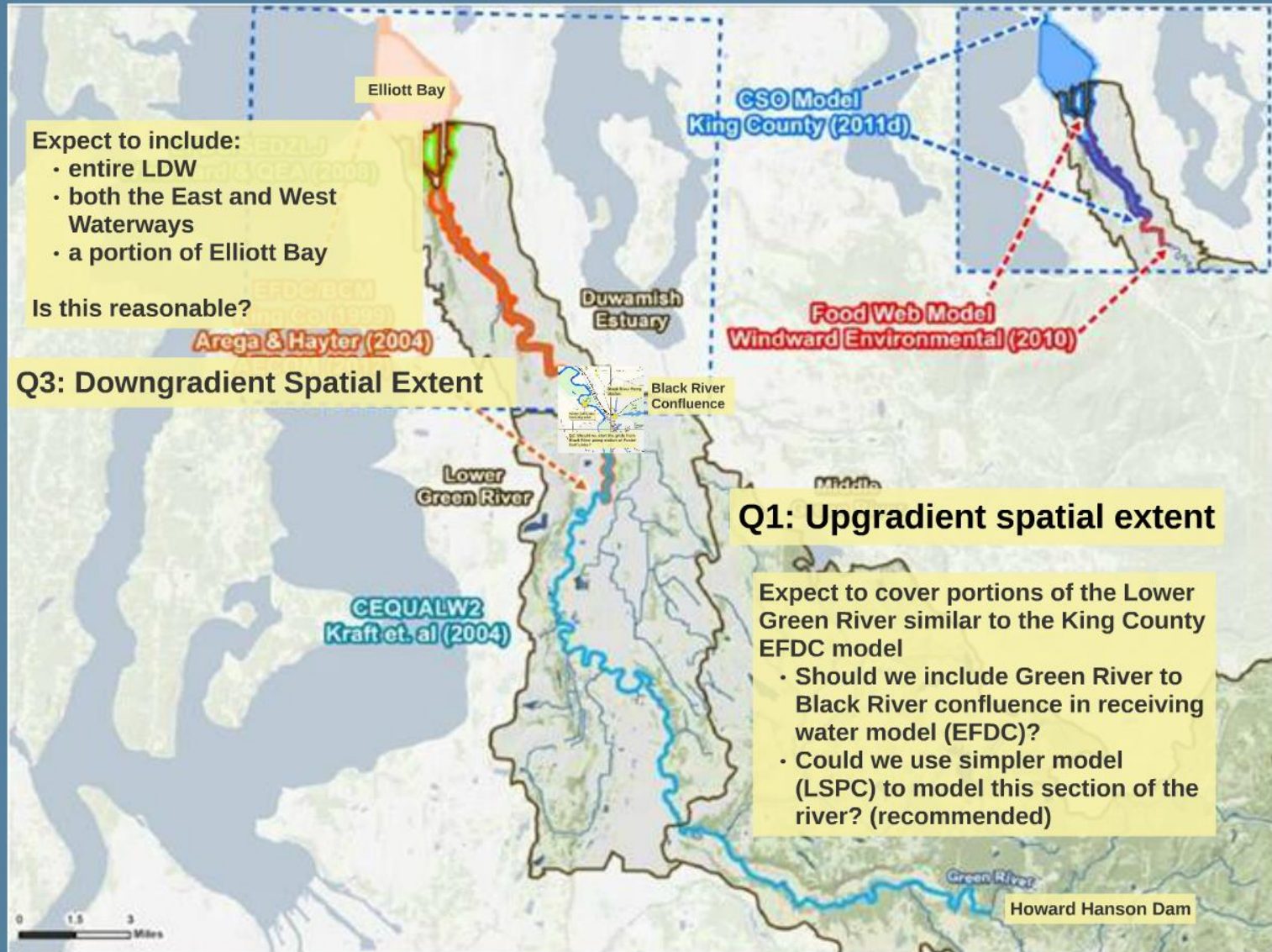


- Upland processes

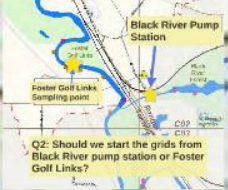
**Duwamish
Estuary**

A map of the Duwamish Estuary system. The estuary is outlined in brown and contains a network of waterways. Several sampling locations are marked with colored symbols: a blue circle at the top, two pink squares, two blue diamonds, and two green circles. The text 'Duwamish Estuary' is written in a bold, black, sans-serif font with a white outline, positioned to the right of the estuary's main channel.

Receiving Water Model Domain



Black River Confluence

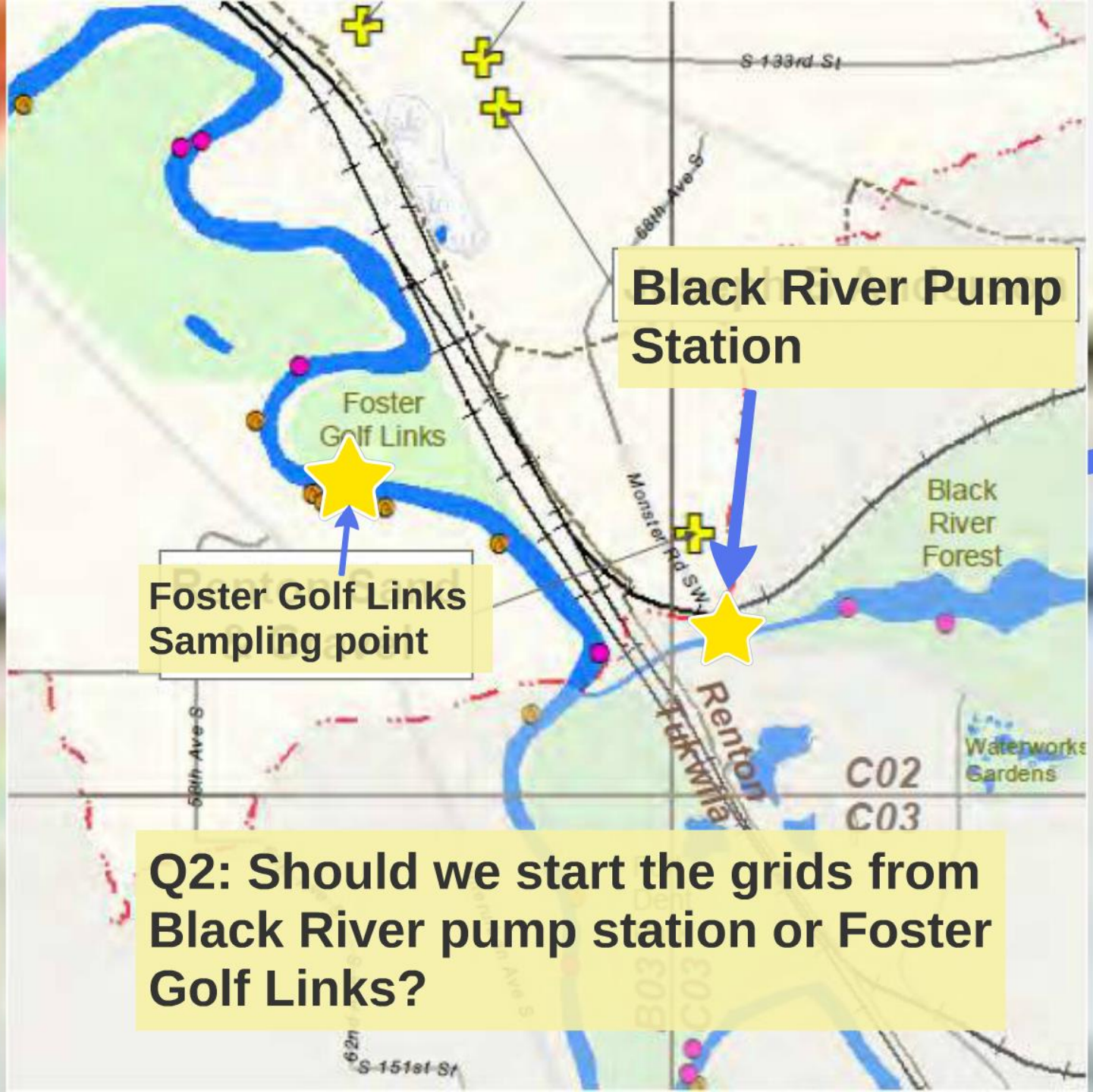


Q1: Upgradient spatial extent

Expect to cover portions of the Lower Green River similar to the King County EFDC model

- Should we include Green River to Black River confluence in receiving water model (EFDC)?
- Could we use simpler model (LSPC) to model this section of the river? (recommended)

Howard Hanson Dam



Black River Pump Station

Foster Golf Links Sampling point

Q2: Should we start the grids from Black River pump station or Foster Golf Links?

**B
C**



Elliott Bay

Expect to include:

- entire LDW
- both the East and West Waterways
- a portion of Elliott Bay

Is this reasonable?

Arega & Hayter (2004)

Q3: Downgradient Spatial Extent



Lower

Food Web Model Domain

- The Food Web Model domain will be a subset of the EFDC model domain.
- The focus should be in the LDW, but could be extended upstream if needed.



Q4:

- Will the Food Web Model focusing only on the LDW (5 mile stretch) provide enough information?
- Will we miss anything?

Parameters selection

Conventional

- **Ammonia-N**
 - **DO**
- **Temperature**
 - **pH**
- **Bacteria**

Toxics



- **Metals** (8)
- **PCBs** (209 congeners)
 - **PAHs** (17)
 - **Phthlates** (6)
- **Other SVOCs** (14)
- **Pesticides** (7)
- **Dioxin/Furan**

Toxics



- **Metals** (8)
- **PCBs** (209 congeners)
 - **PAHs** (17)
 - **Phthalates** (6)
- **Other SVOCs** (14)
 - **Pesticides** (7)
 - **Dioxin/Furan**

RECOMMEND



Conventional

- **Ammonia-N**
 - **DO**
- **Temperature**
 - **pH**
- **Bacteria**

Toxics



- **Metals** (8)
- **PCBs** (209 congeners)
 - **PAHs** (17)
 - **Phthlates** (6)
- **Other SVOCs** (14)
- **Pesticides** (7)
- **Dioxin/Furan**

- Q5: Should we include conventional?



- **Question?**
- **Comment?**
- **Red Flag?**
- **Suggestion?**

Questions about Model Development?

- Not enough information to fully resolve the question yet.
- Will be discussed in future meeting or as part of the draft QAPP review.

