IDAHO Department of Water Resources

Groundwater Model Development for the Wood River Valley

Presented by Sean Vincent, P.G.

May 4, 2015

IDWR

Talking Points

- Why do we need a model?
- Location of WRV model in relation to delivery call POD
- Roles and responsibilities
  - USGS, IDWR, IWRB, MTAC
- Project timeline
- Role of a model in a water delivery call

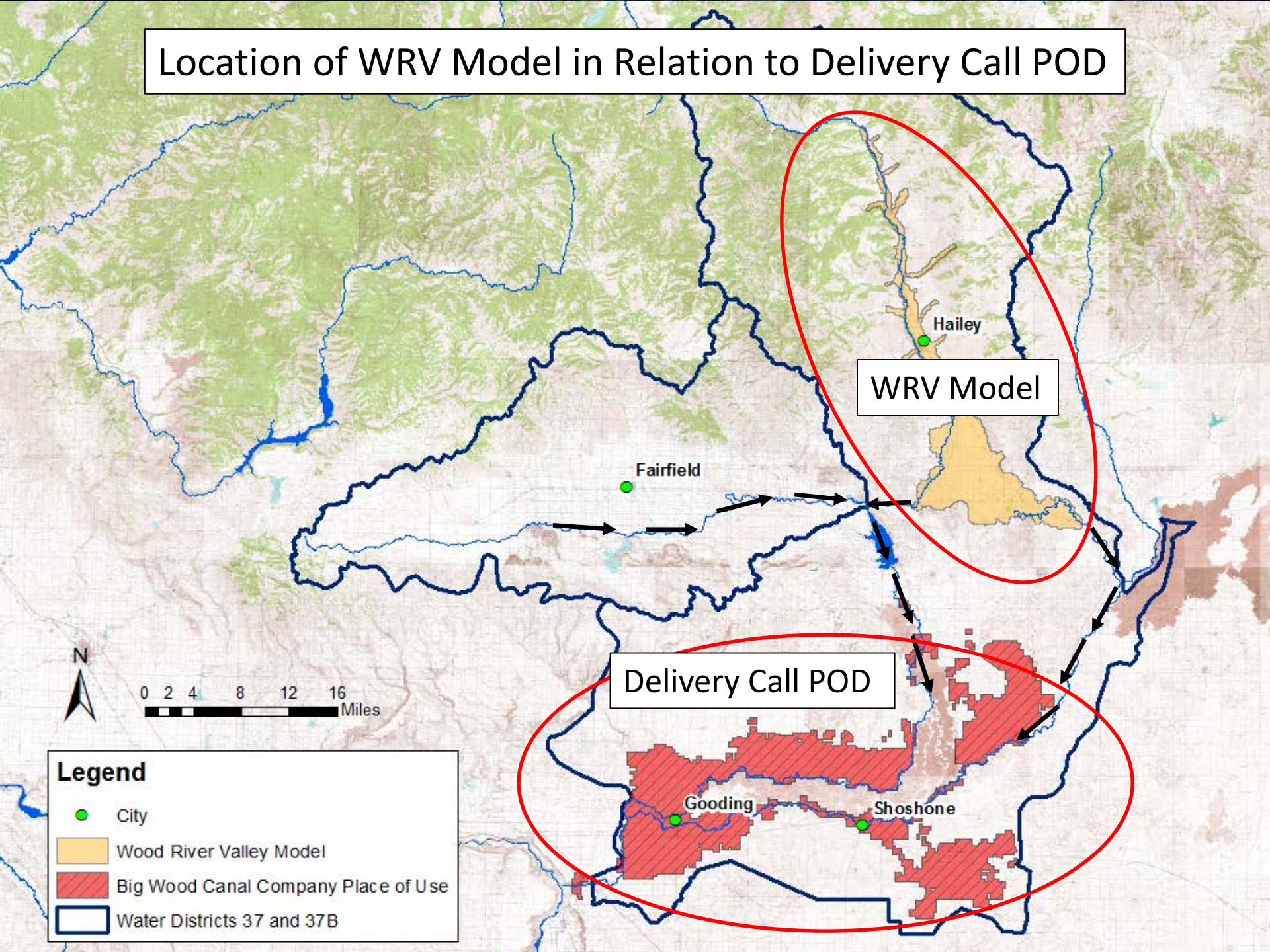
Why a groundwater flow model?

- This is not the answer:

> *"The flow model … is the first step toward restricting groundwater pumping from wells in the Wood River Valley"* (emphasis added, Idaho Mountain Express, April 26, 2013)

Why a groundwater flow model?

- Big Wood River upstream from Magic Reservoir fully appropriated (1980)
- Groundwater and surface water are hydraulically connected (1991)
- Need to be able to evaluate gw/sw interaction
- GW flow model is tool of choice for planning, water resource management, & conjunctive administration


Location of WRV Model in Relation to Delivery Call POD
Hailey
WRV Model
Fairfield
Delivery Call POD
N
0 2 4 8 12 16
Miles
Legend
City
Wood River Valley Model
Big Wood Canal Company Place of Use
Water Districts 37 and 37B
Gooding
Shoshone

Roles and Responsibilities

- USGS responsible for model construction & report preparation
  - Jim Bartolino – lead investigator
  - Jason Fisher – lead modeler

- IDWR is leading the model calibration effort and assisting w/ model construction
  - Mike McVay
  - Jennifer Sukow
  - Allan Wylie
  - Neeley Miller (IWRB)

- IWRB is anticipated user of model output & is providing project financing via the Aquifer Planning and Management Fund

USGS/IDWR modeling team

Jim Bartolino
USGS

Mike McVay
IDWR

Jennifer Sukow
IDWR

Allan Wylie
IDWR

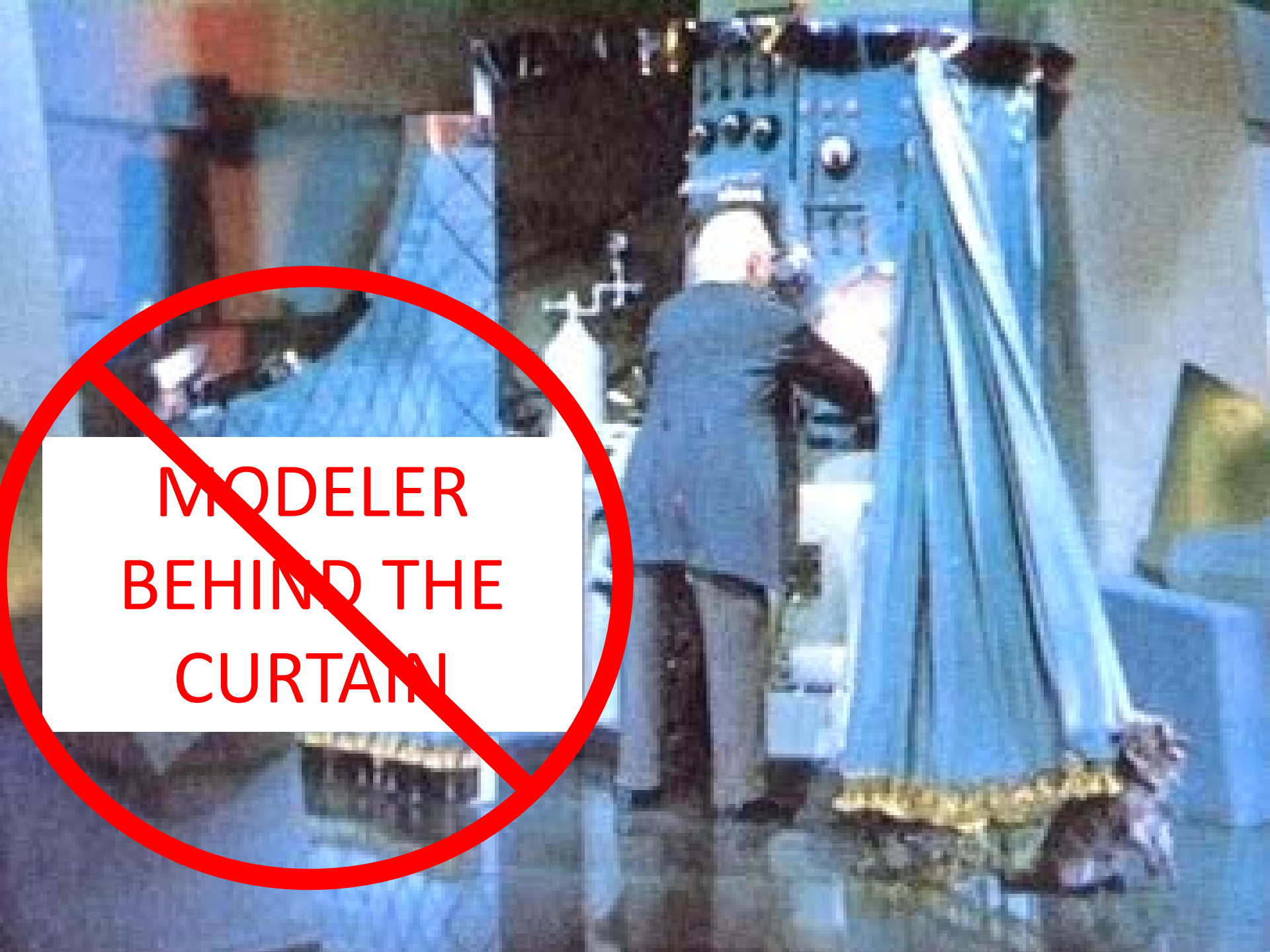
Jason Fisher
USGS

Neeley Miller
IWRB

Sean Vincent
IDWR

Roles and Responsibilities (cont'd)

- MTAC
  - Stakeholder group representatives
  - Vehicle for technical stakeholder input
    - Data sharing
    - Input on modeling methodology
    - Peer review of work products
  - Exchange of data/ideas provides for transparency


MODELER
BEHIND THE
CURTAIN

Project timeline

- Kickoff meeting - March 2013
- First bimonthly MTAC meeting - April 2013
- Initial model construction - April 2014
- Model calibration - June 2015
- Model rollout/USGS Scientific Investigation Report - end of 2015

Role of a model in a water delivery call

- A model is used to quantify the hydrologic impacts of pumping on groundwater and surface water resources (in both space & time)
  - Hydrologic impact ≠ material injury
  - A model generally is not needed to determine material injury → injury determined by Director based on factors identified in CM Rules
  - A model is often used to help determine priority dates, quantify mitigation benefits, & evaluate impacts of groundwater POD transfers

- Numerical model is the tool of choice but it's not the only tool. Other tools include:
  - Stream Depletion Analysis for gw to sw impacts → used to develop new policy for Water Supply Bank rentals in the WRV
  - Image Well Analysis for gw to gw impacts → used to predict water level drawdown

Summary

- Model of WRV aquifer system is being developed collaboratively by IDWR and USGS under the guidance of the MTAC
- Model development and documentation is ~ on schedule w/ anticipated release at end of 2015
- Model will be used to support conjunctive administration (among other purposes) but it's not the only tool & it's not necessary to determine material injury

Wood River Valley Groundwater Model Project Webpage

http://www.idwr.idaho.gov/WaterInformation/Projects/woodriver/

Sean Vincent
sean.vincent@idwr.idaho.gov
208-287-4853