Quarterly Project Status
April 25, 2007

Vashon-Maury Island
Water Resources Evaluation

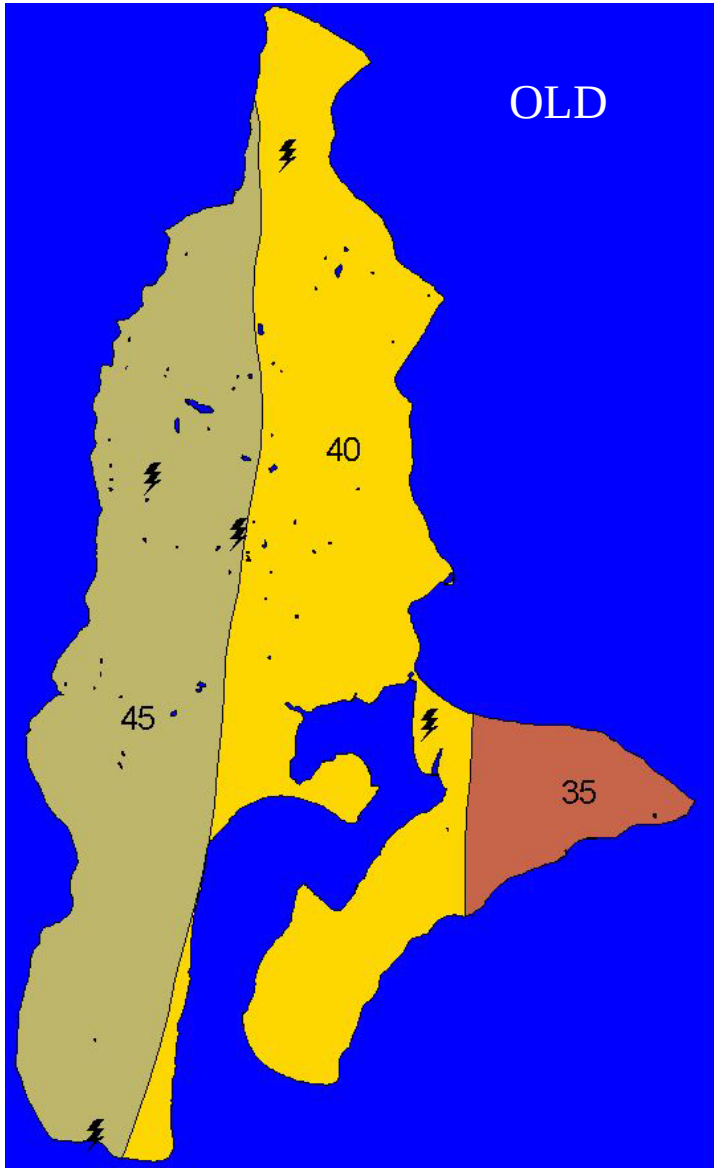
Quarterly Review

- Ongoing monitoring overview
- WRE report update
- Modeling update
- Budget
- Next Quarter

Island Monitoring

- Precipitation gauging
  - Site 28Y (VMI LF) meteorological station
  - New precipitation map of VMI (next slide)
  - Plan to telemetry some sites
  - Web presentation of data
- Stream Gauging
  - Plan to telemetry some sites
  - Web presentation of data
- Stream WQ sampling
  - 7 sites

VMI Rainfall Contours



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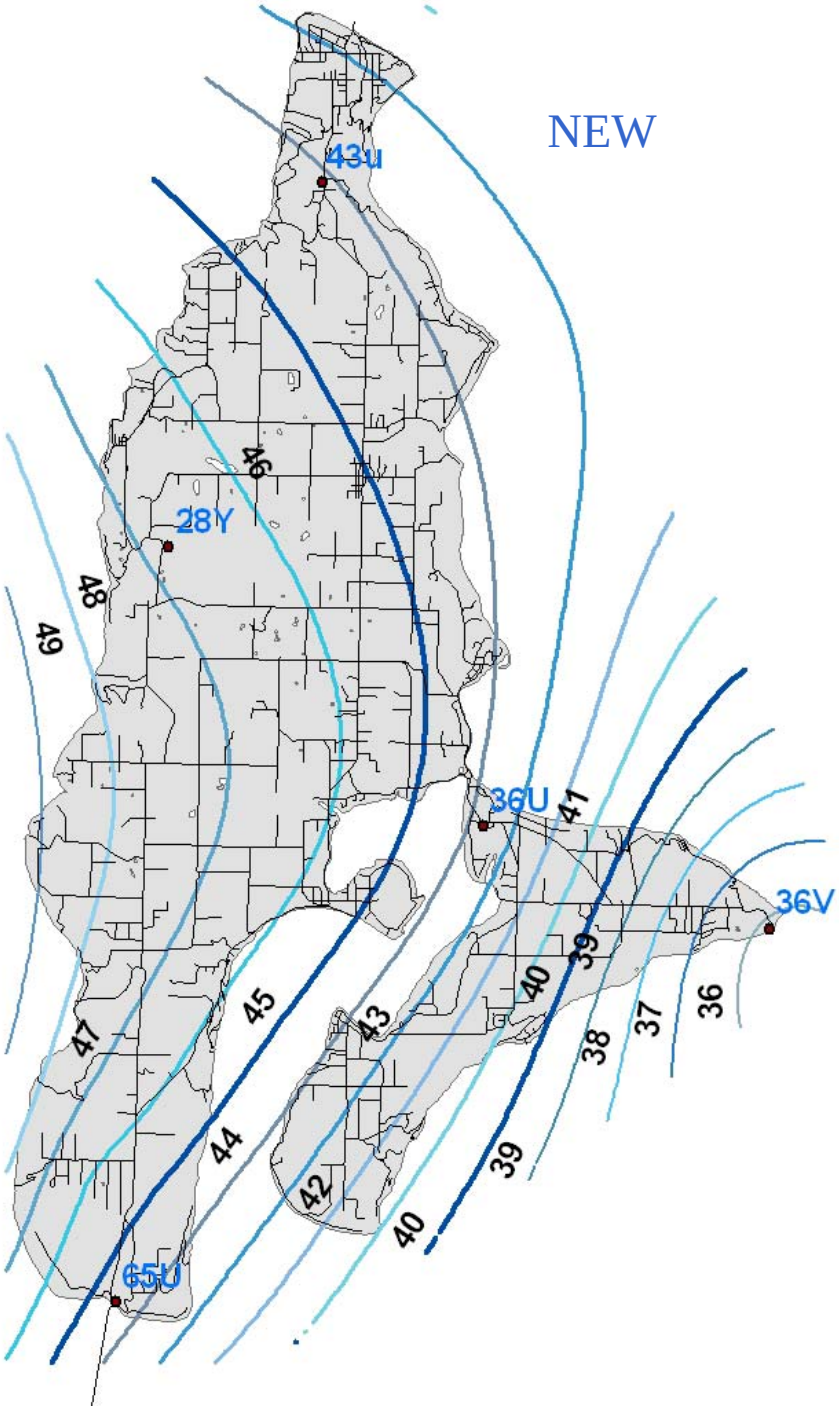


Island Monitoring con't

- WL survey continuing
  - 30 sites
- Water Quality monitoring (June)
  - Environmental indicators at current sites
    - Arsenic, Chloride and Nitrate+Nitrite
  - Baseline parameters at new monitoring sites

WRE Reports Update

- Next report
  - Workplan update
- Completed:
  - 2006 Water Resources Data report
    - Available on the web soon
  - 2005 Data Reports
    - Available via the web

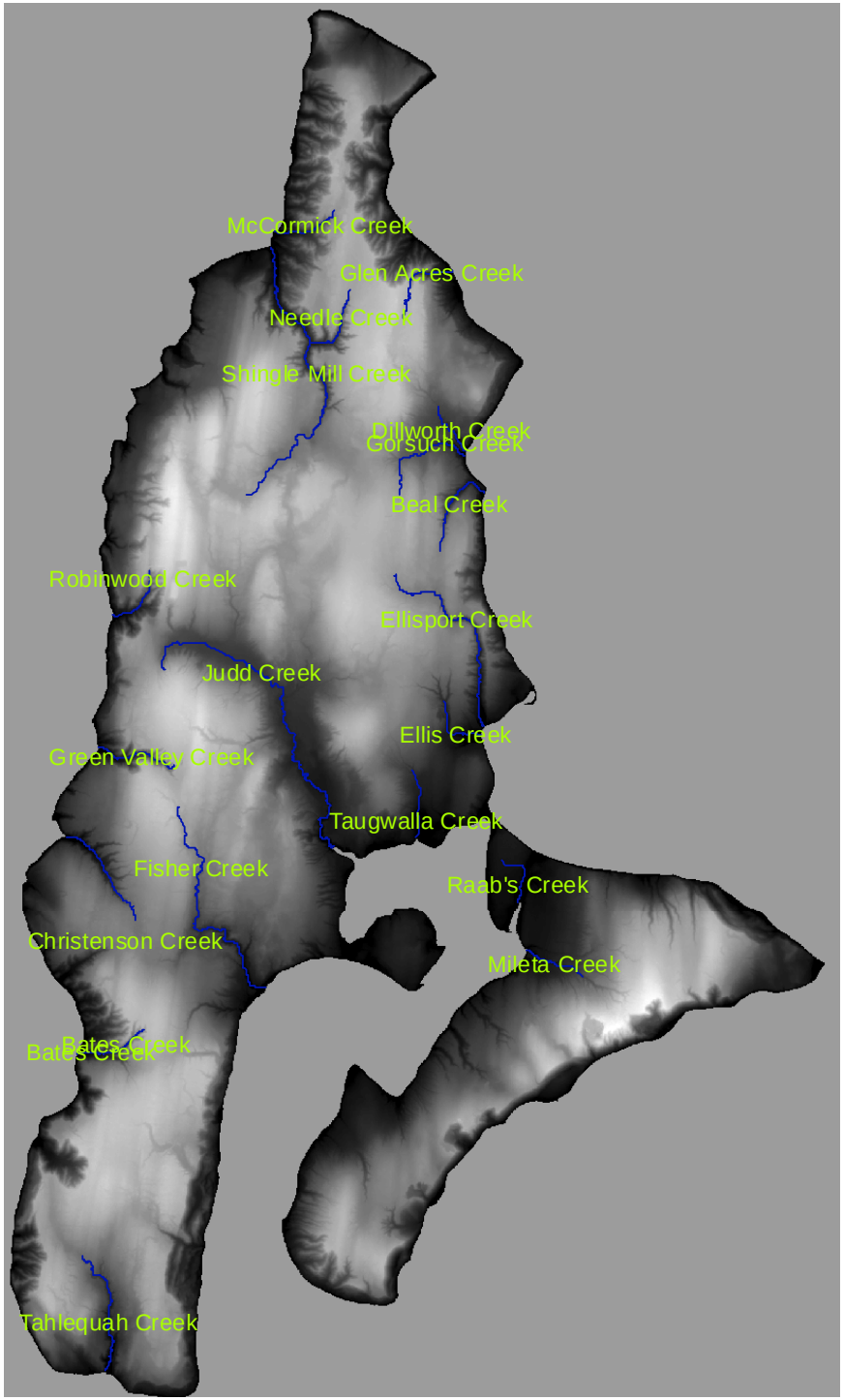
http://dnr.metrokc.gov/groundwater

WRE Phase II Modeling

- Conversion of Phase I model completed
- Rivers added
- Wells & Springs added
- SW-GW connection
- Steady-State water balance

Mike-SHE Streams

19 Creeks added into the model



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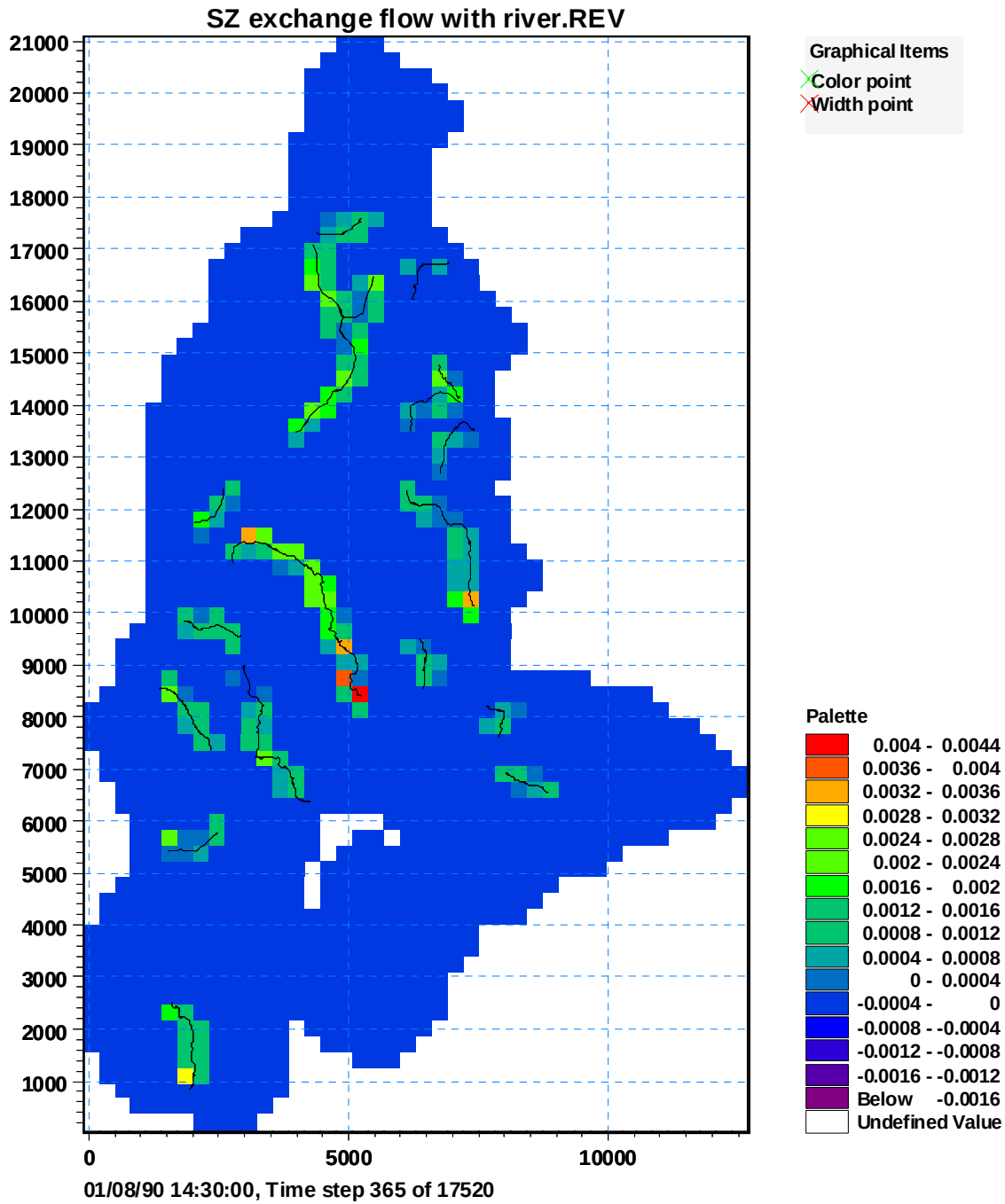
Surface/Ground water exchange

Flow into rivers

Red = more GW
Blue = no GW



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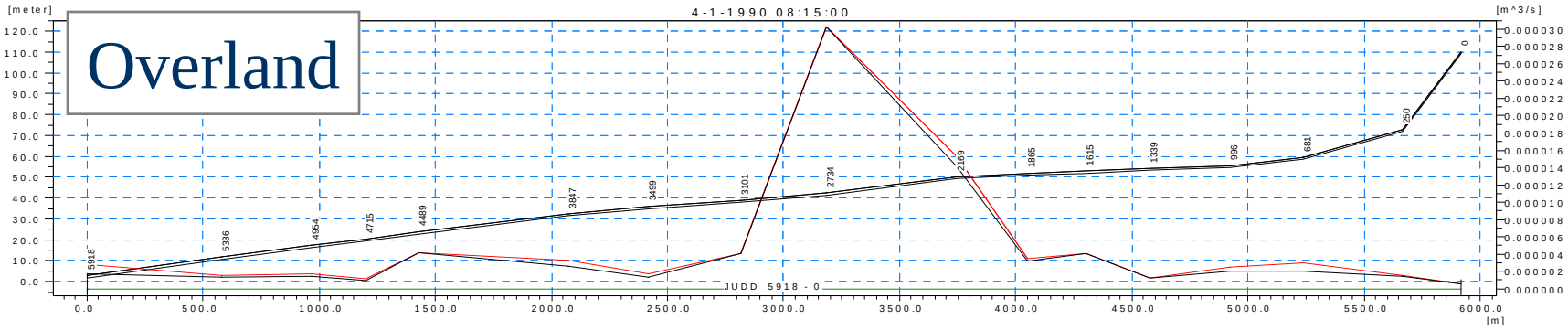
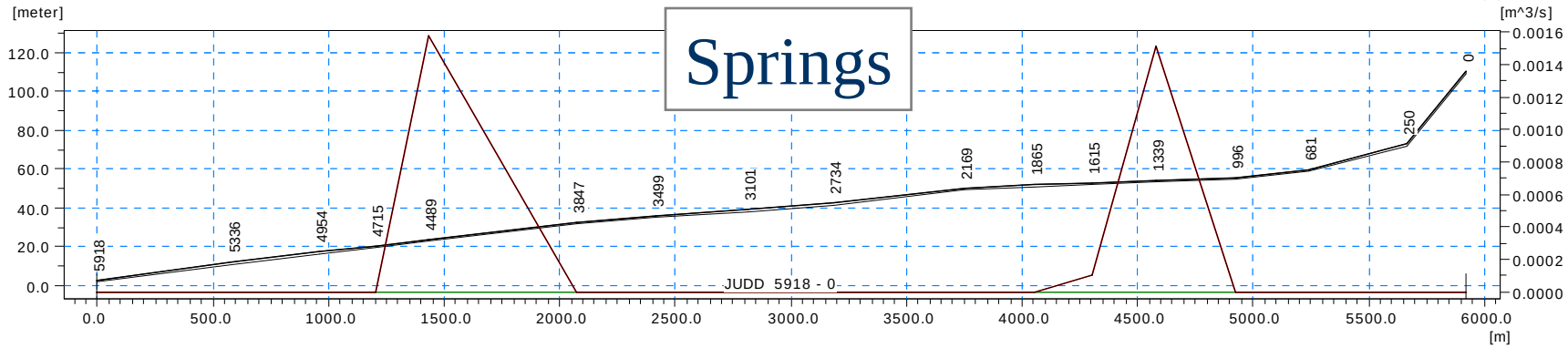
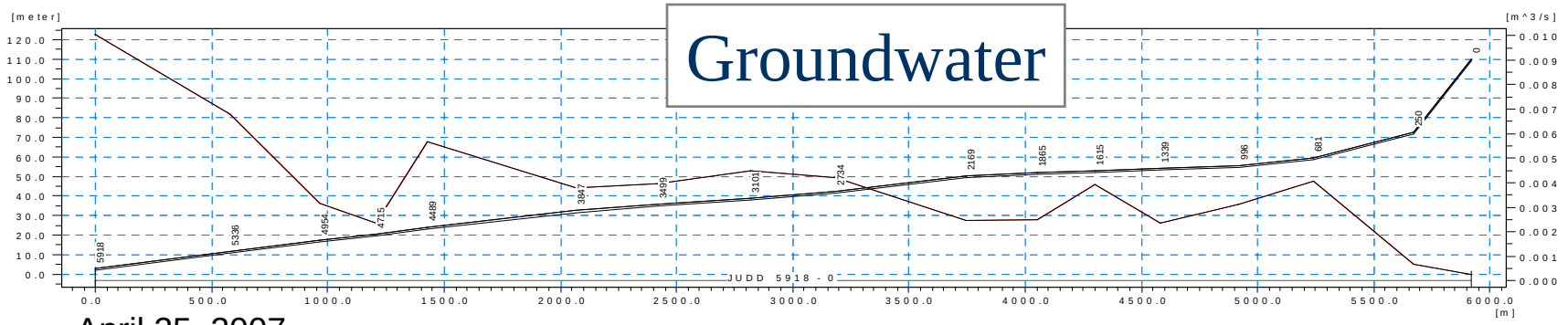
Judd Creek Profile







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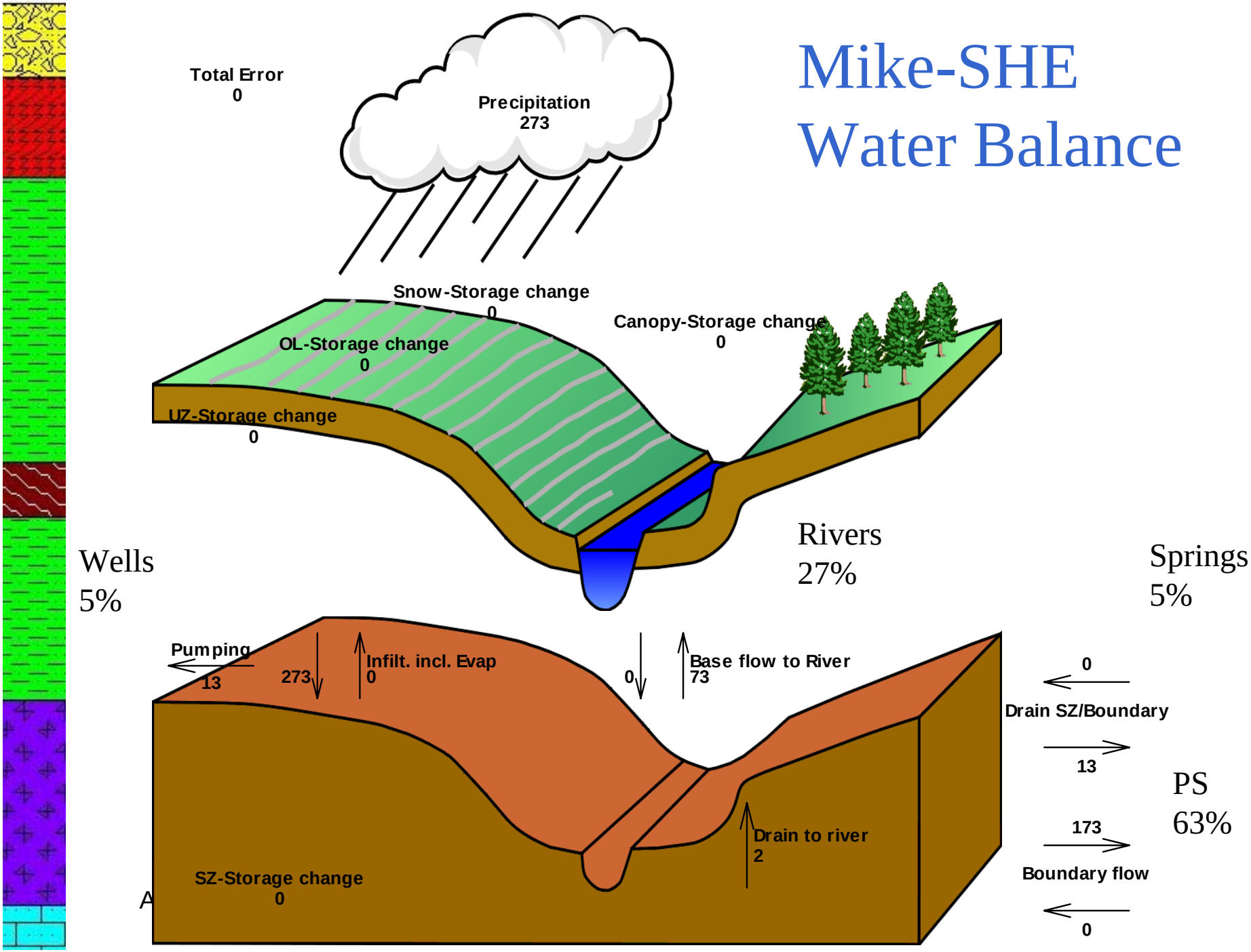
Mike-SHE Water Balance



Water Balance - comparison

	WRE	Mike-She	Carr	GWMP
recharge (gpm)	16455		6107	20960
outflows				
Puget sound	80%	63%	20%	38%
Streams	12%	27%	80%	62%
Wells	5%	5%	--	--
Springs	3%	5%	--	--

Adapted from VMI WRE Phase I GW Model Report Table 4-2

WRE Modeling: Next steps

- Refine recharge based on new ppt map
- Run transient (vary over time) conditions
- Work on scenarios – three major scenarios (next slide)
- Timeline:
  - Next quarter:
    - recharge improvements
    - Transient runs
    - Beginning scenarios

WRE Modeling: Future Scenarios

- Population growth – effects of increased pumping and surface withdrawals.
- Summer low flow conditions – connections to groundwater and impacts from population growth.
- Climate Change – effects of changing rainfall and temperature on water use/availability.

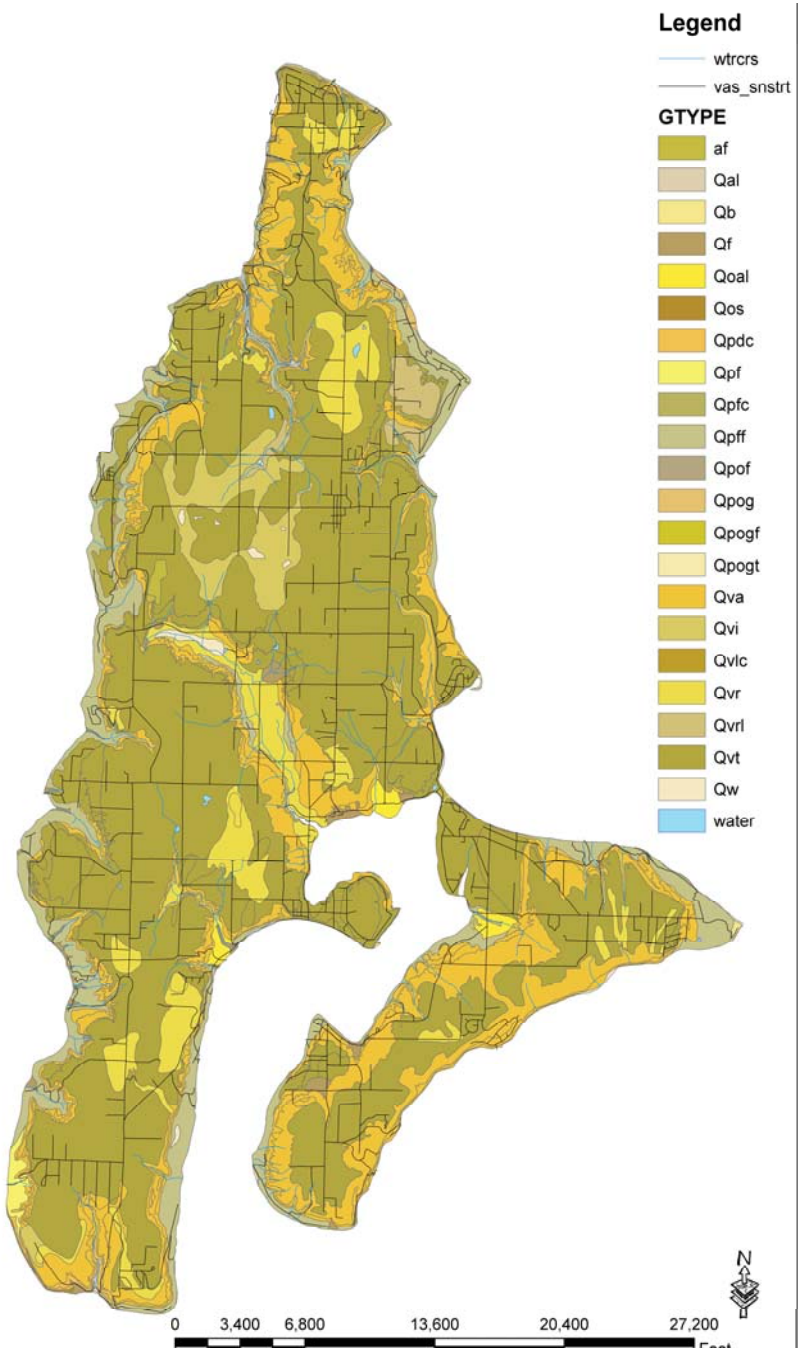
Budget

- Project budget for 2007 is $314,479
  - expenditures to date: $93,013
  - 30% of budget

- Future expenditures
  - Additional Monitoring wells ~ $117,000
  - Activity tentative scheduled for fall

Next Quarter

- Grant support
  - Final report
- Working with UW to publish VMI geology map
- Continued activities
  - Gauging
  - Modeling
  - WQ/WL



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Regional GW issues

- Vashon Build-out Article (Feb, 2007)
  - Bob Powell's analysis of KC Assessor data
- Bainbridge Island Saltwater intrusion Study
  - WRE-like project including an island-wide MODFLOW model
- USGS Chambers-Clover GW modeling
  - Part of the long-term watershed (WRIA 12) planning process