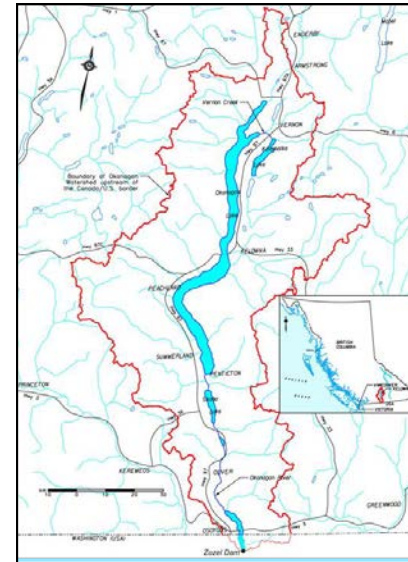
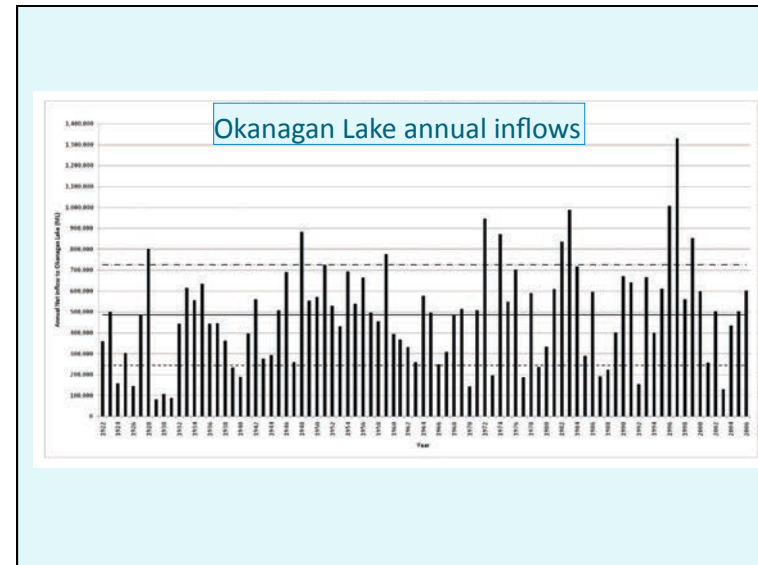
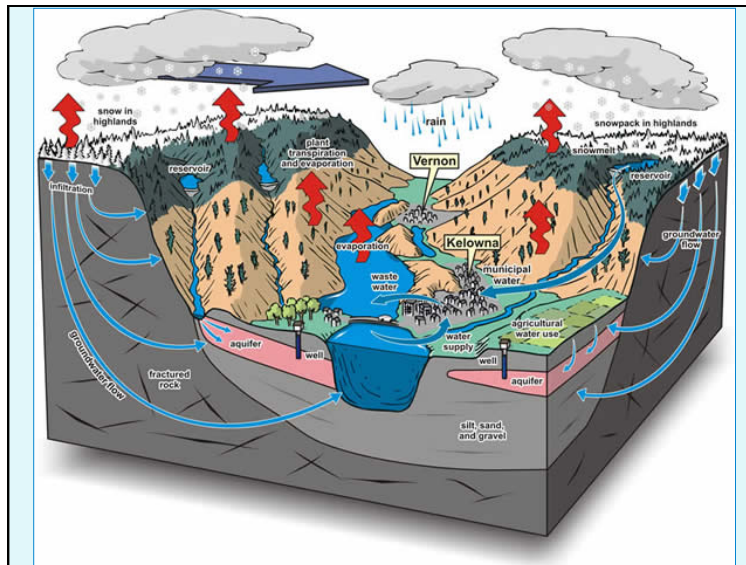


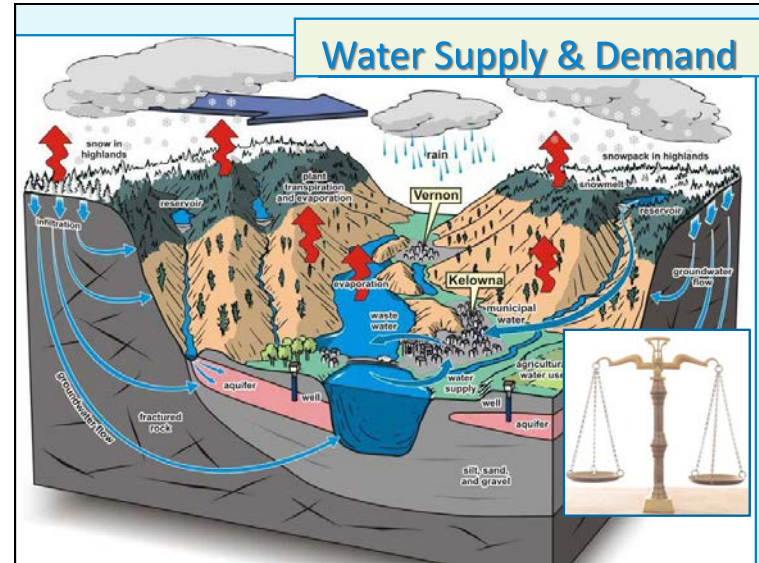
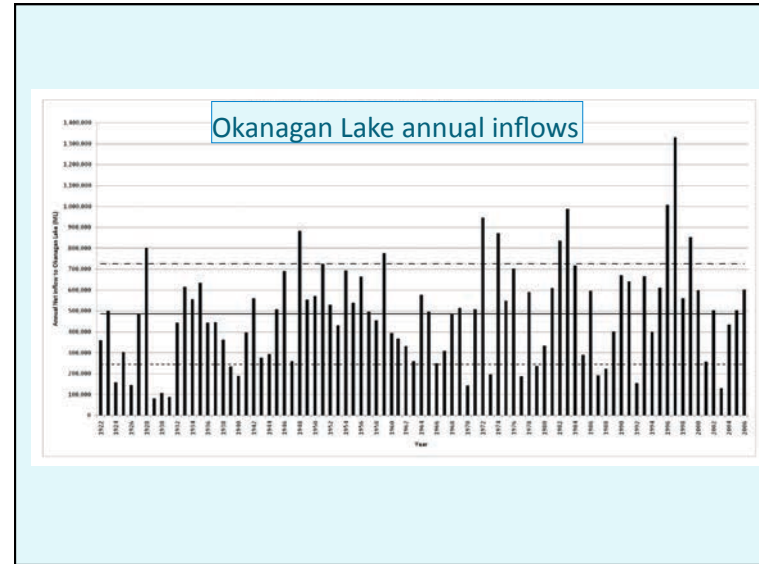
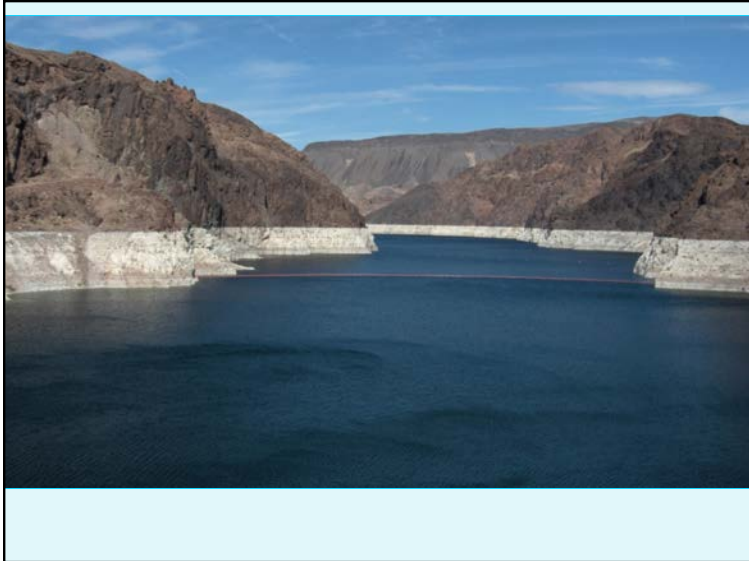
Okanagan Lake Water Science Forum 2011

Anna Warwick Sears, Ph.D.

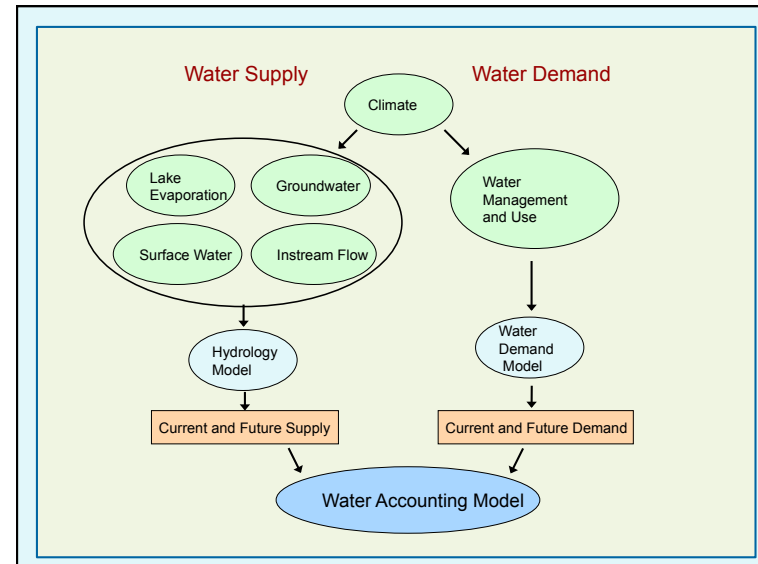


Okanagan Lake System



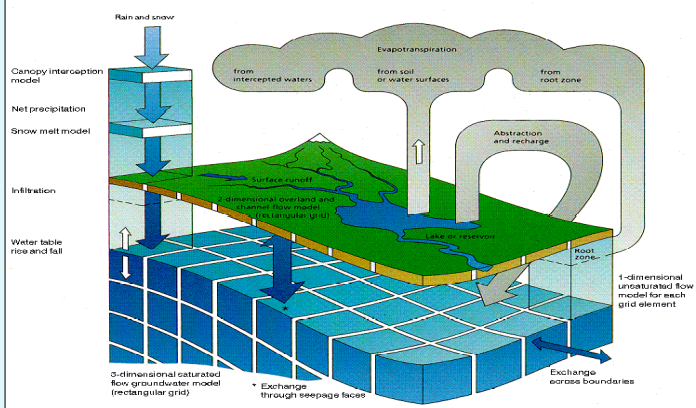


Project Partners

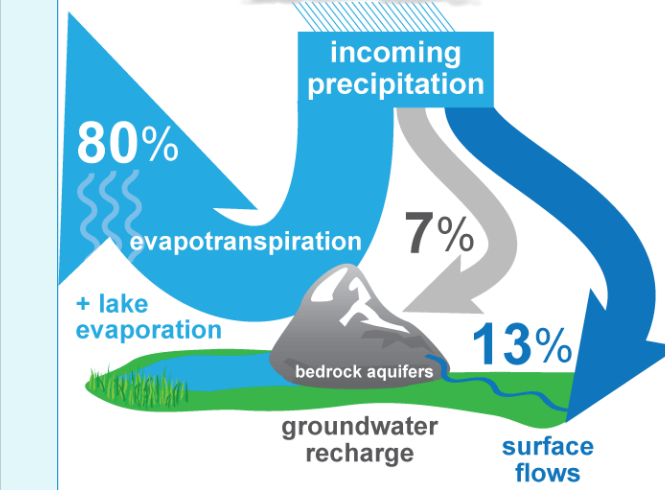


MIKE SHE

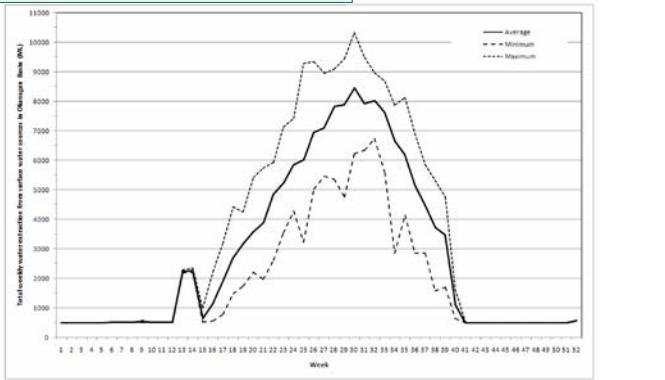
an Integrated Hydrological Modelling System
that covers all land-based phases of the hydrologic cycle



Current supplies

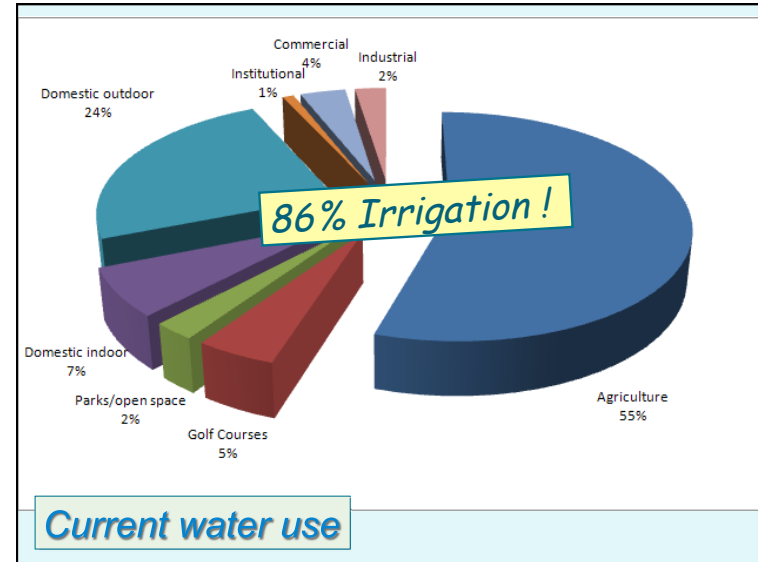


Current water demand



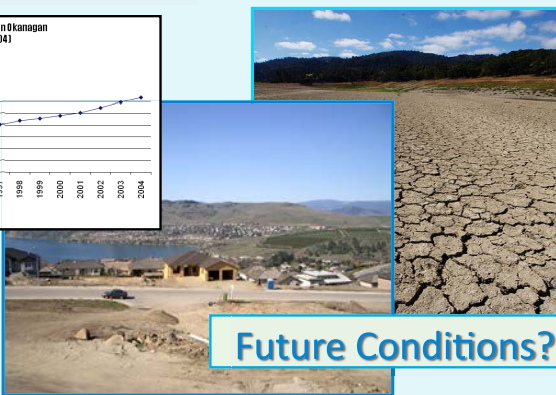
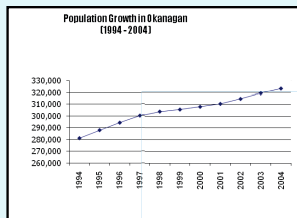
Note: Average, minimum, and maximum weekly totals over the 1996 to 2006 period are shown. Weeks 1-12 and 41-52 are periods when little to no irrigation occurs. The assumption of constant indoor water use is the reason for no variability during these weeks.

Figure 6.5 Total weekly water extraction from surface sources in the Okanagan Basin



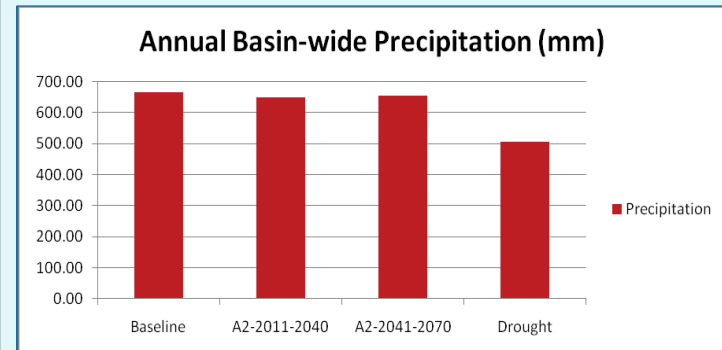
Current water use

Scenarios: climate change, land use, population growth, 3-year drought



Future Conditions?

Little change in average precipitation



Warm air, less snow



30 more frost-free days per year!

Seasonal Flow Changes – Mission Creek

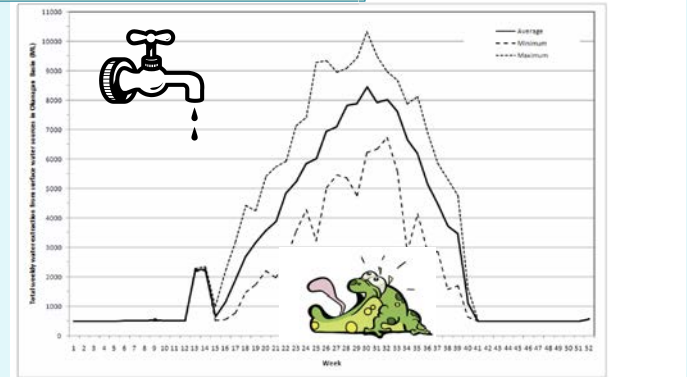
Scenario	June – Sept		Annual	
	Average	% change	Average	% change
Baseline: 1996-2006			144,351	
2011-2040, climate change only	58,662	-21%	151,887	5%
2041-2070, climate change only	37,792	-49%	149,581	4%

Summer lows

No average change



Current water demand

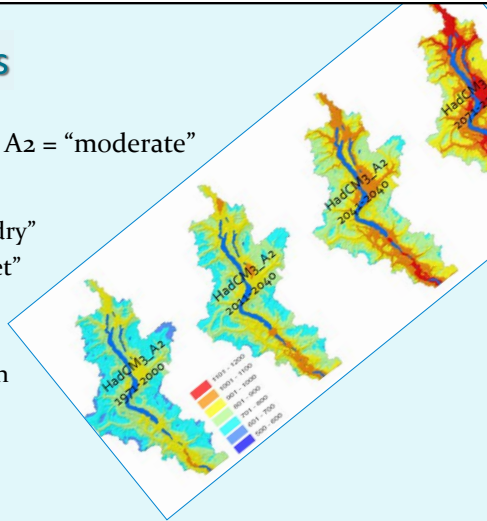


Note: Average, minimum, and maximum weekly totals over the 1996 to 2006 period are shown. Weeks 1-12 and 41-52 are periods when little to no irrigation occurs. The assumption of constant indoor water use is the reason for no variability during these weeks.

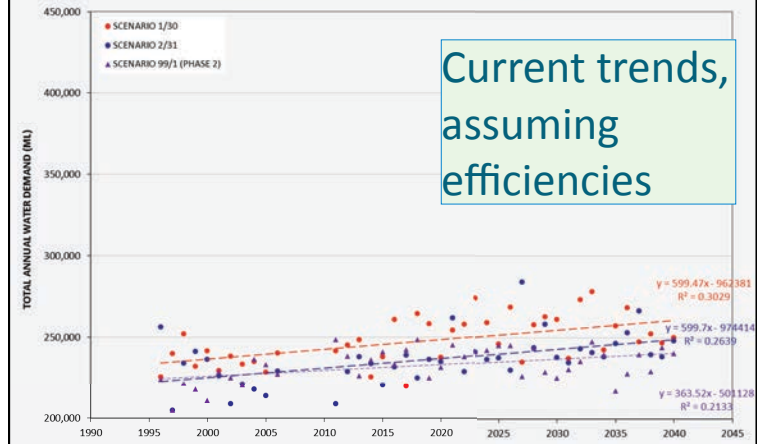
Figure 6.5 Total weekly water extraction from surface sources in the Okanagan Basin

New Scenarios

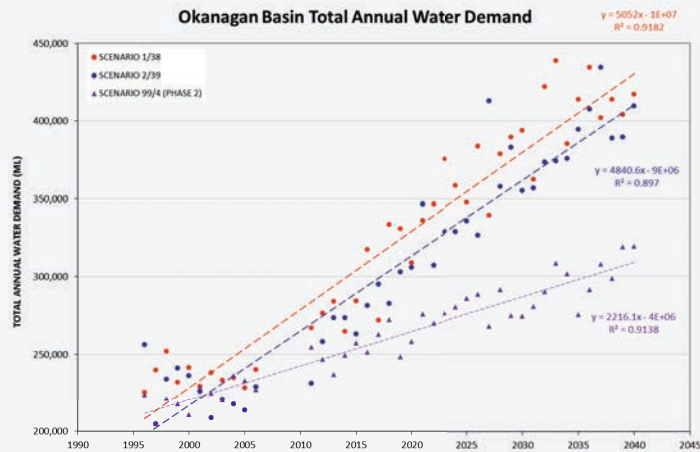
- Original: CGCM2 A2 = “moderate”
- Now:
 - HadCM3 A2 = “dry”
 - CGCM3 B1 = “wet”
 - More sprawl
 - 5 year drought
 - Greater variation



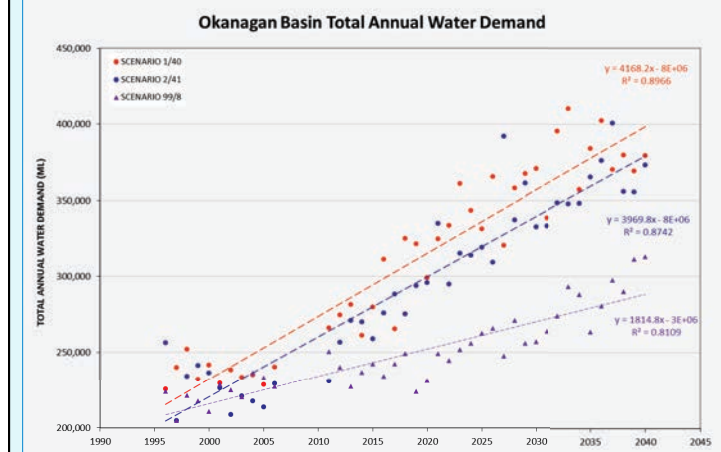
Okanagan Basin Total Annual Water Demand



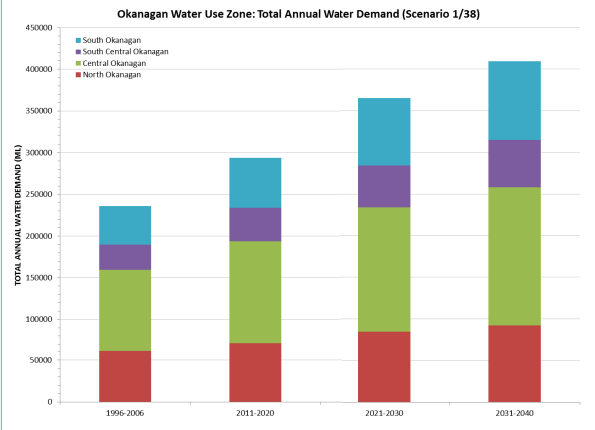
Urban sprawl and full irrigation



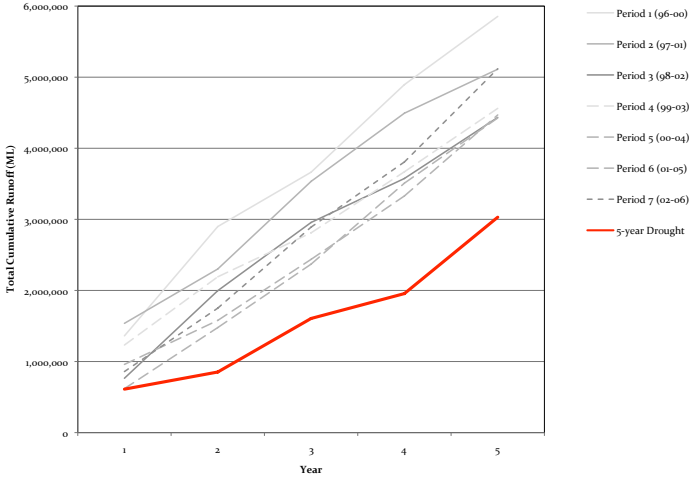
Efficiency improvements



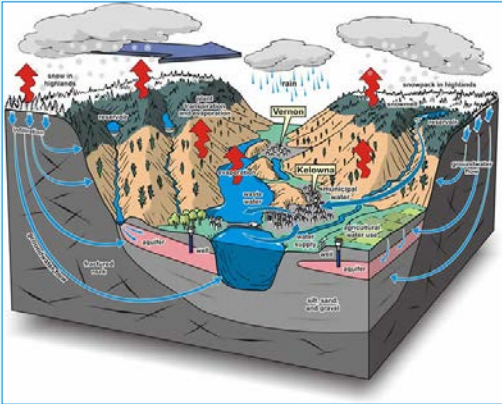
Worst-case water demands by location



Total Cumulative Runoff over 5 Consecutive Years: Baseline vs Drought



Ongoing updates



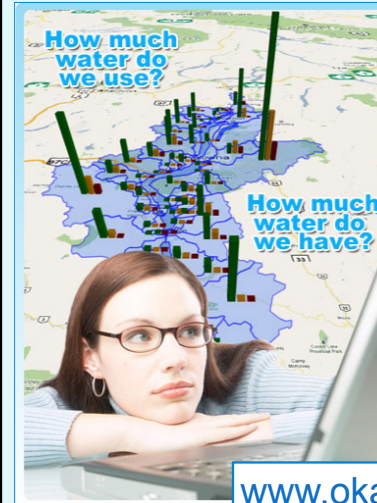
Environment Canada's

Okanagan Lake Evaporation Study



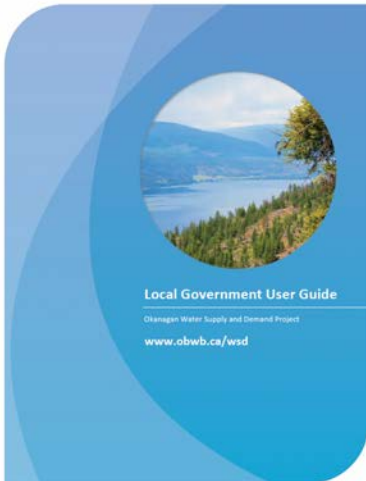
Hydrologic Connectivity Study

- Does water use in Vernon affect water availability in Osoyoos?



Data for the Public:

Okanagan Water Viewer



Data for Local Governments

Thank You!

