

FACT SHEET

Agricultural Diversion Demand Methodology

This fact sheet summarizes the methodologies used to estimate agricultural diversion demands in the SWSI Update



Previous Methodology

Water demands and shortages for irrigated crops at the field level were estimated in SWSI 2010. Irrigation water requirement, water supply limited consumptive use, and crop water shortages were estimated and aggregated at a basin level.



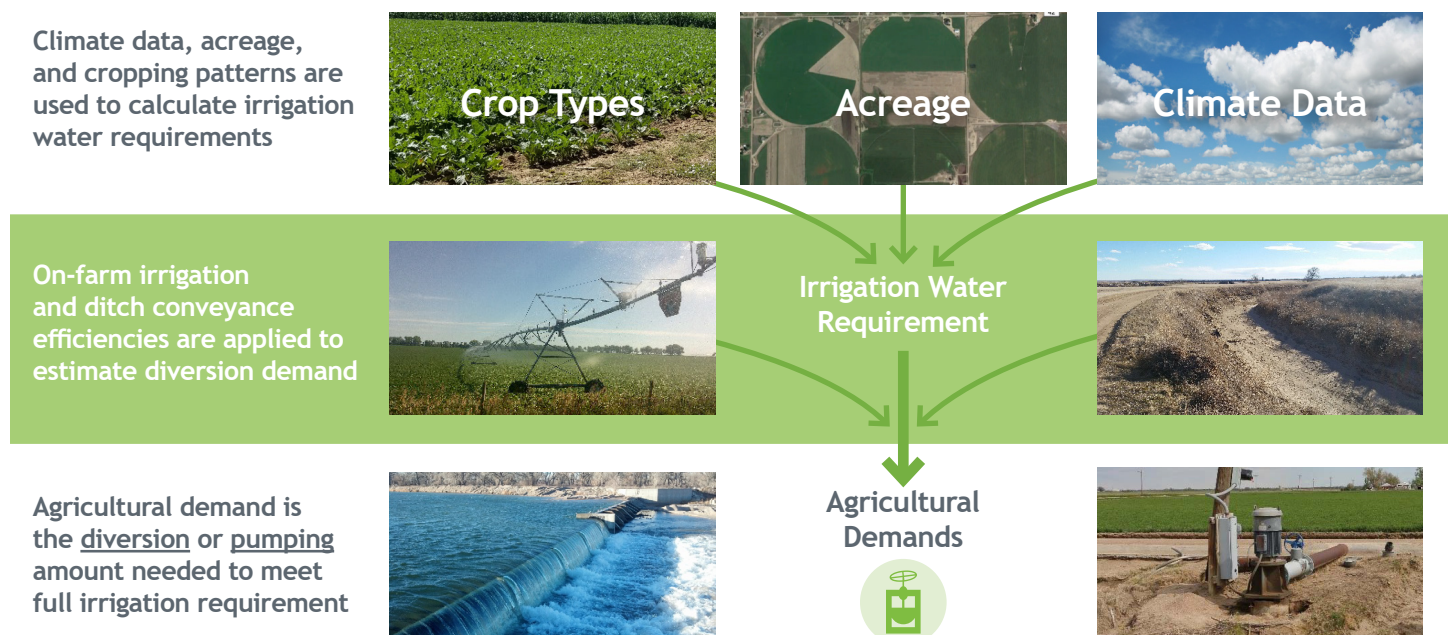
Updated Methodology:

In the SWSI Update, crop water demands will again be estimated. In addition, the river diversions or pumping necessary to meet crop water demands will also be estimated. Total agricultural water demands will account for consumptive needs at the field level plus the conveyance losses or pumping inefficiencies. As a result, agricultural demands (and gaps) will be higher than in SWSI 2010.

Why did we make this change?

- Allows the use of planning models to analyze planning scenarios from Colorado’s Water Plan
- Provides information and tools for basin roundtables to use in analyzing “what if” scenarios and for evaluating the effectiveness of future projects
- Provides consistency with estimates of municipal and industrial demands

Calculation Process for Current Agricultural Water Demands



Agricultural Diversion Demands under Planning Scenarios

Agricultural diversion demands in the year 2050 will be estimated under each of the five future planning scenarios described in Colorado's Water Plan

A Business as Usual	B Weak Economy	C Cooperative Growth	D Adaptive Innovation	E Hot Growth
Water Supply: 3 water drops	Water Supply: 3 water drops	Water Supply: 2 water drops	Water Supply: 1 water drop	Water Supply: 1 water drop
Climate Status: 3 thermometers	Climate Status: 3 thermometers	Climate Status: 3 thermometers	Climate Status: 5 thermometers	Climate Status: 5 thermometers
Social Values: 3 trees	Social Values: 3 trees	Social Values: 5 trees	Social Values: 5 trees	Social Values: 1 tree
Agri. Needs: 2 icons	Agri. Needs: 4 icons	Agri. Needs: 4 icons	Agri. Needs: 4 icons	Agri. Needs: 4 icons
Mbl Needs: 3 glasses	Mbl Needs: 1 glass	Mbl Needs: 2 glasses	Mbl Needs: 3 glasses	Mbl Needs: 4 glasses

Future agricultural diversion demands will be adjusted by the factors in the table below

Key Driver	Water Demand Model Parameter	Parameter Adjustment by Scenario				
		Business as usual	Weak Economy	Cooperative Growth	Adaptive Innovation	Hot Growth
Land Use Changes (urbanization and groundwater acreage sustainability)	Acres of Crops	+ -	+ -	+ -	+ -	+ -
Climate Conditions*	Irrigation Water Requirement	Current	Current	In-between	Hot and dry	Hot and dry
Technology Changes	Irrigation Efficiency	+ -	+ -	+ -	+ -	+ -

*See Water Supply Methodology Fact Sheet for more information on climate conditions.

OUTPUT: Future, hypothetical monthly agricultural diversion demands for ditch systems and groundwater users in each basin will be estimated for each of the five planning scenarios. The demands will be developed on a monthly basis and will reflect wet, normal, and dry conditions along with the key drivers described in the table above. The agricultural diversion demands will be input into surface water allocation models to estimate the amount of water available to satisfy the agricultural diversion demands under each planning scenario. Diversion demand that cannot be satisfied will be defined as the agricultural demand gap.

FOR MORE INFORMATION

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<http://cwc.state.co.us/water-management/water-supply-planning/Pages/SWSIUpdate.aspx>



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