

COSTS OF NEW AND CONSERVED WATER

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COSTS OF WATER SUPPLIES PROJECT

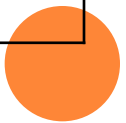
Research in 2 phases, funded jointly by the Colorado Water Conservation Board and the Colorado Water Institute (at CSU)

- Phase 1: How much does it cost (\$/acre-foot of firm yield) to meet new M&I demands through: (1) new supply projects, (2) agricultural-to-urban water transfers, and (3) conservation (demand management)?



Summary of Phase 1 Results: Costs for Meeting New Demands

Water Source	Data Used	Cost in \$/AF (of firm yield)
New Projects	NISP (DEIS), SMWSA Master Plan, SDS (FEIS), et al.	~ \$16,200
Water Transfers (ag-to-urban)	CBT and non-CBT transactions reported by <i>Water Strategist</i>	~ \$14,000
Conservation (i.e., avoided demand)	22 Water Conservation Implementation Plans (CWCB), Conservation Roundtables (SWSI), Denver Water reports	~ \$5,200



PHASE 2 QUESTION: HOW CAN COST DATA (AS IT BECOMES AVAILABLE) BE COMPILED IN A WAY THAT SUPPORTS MEANINGFUL, POLICY-RELEVANT COMPARISONS?

Need a System That:

- Considers both upfront (capital) costs and ongoing operating costs;
- Considers both utility-borne and customer-borne costs;
- Show how the allocation of costs modifies the incentives (and thus the behavior) of both the utilities and the customers



Table 5. Conceptual Framework for Relative Costs Accounting

		<i>Utility</i>	<i>Consumer</i>
<i>Annual Costs</i>	Capital-Related Costs	A = Utility Capital Costs	B = Consumer Capital Costs
	Other Costs	C = Utility O&M Costs	D = Consumer Water-Use Costs
<i>Annual Revenues</i>	Income	E = Utility Income	F = Consumer Income
<i>ANNUAL TOTALS</i>		G = Net Utility Profit/Loss	H = Net Direct Consumer Costs
<i>COMBINED ANNUAL TOTALS</i>		I = Total Costs	

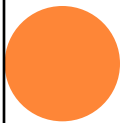
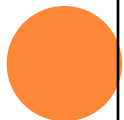


Table 6. Costs of New Projects (\$/AFY) [Phase 1 and Selected Appendix N Options] (\$/AFY)

		<i>Utility</i>	<i>Consumer</i>
<i>Annual Costs</i>	Capital-Related Costs	A = Utility Capital Costs \$1,600	B = Consumer Capital Costs \$0
	Other Costs	C = Utility O&M Costs \$688	D = Consumer Water-Use Costs \$2,288
<i>Annual Revenues</i>	Income	E = Utility Income (+\$2,288) (credit)	F = Consumer Income \$0
<i>ANNUAL TOTALS</i>		G = Net Utility Profit/Loss \$0	H = Net Direct Consumer Costs \$2,288
<i>COMBINED ANNUAL TOTALS</i>		I = Total Costs \$2,288	

Table 9. Costs of Conservation (\$75 Toilet Rebates) (\$/AFY)

		<i>Utility</i>	<i>Consumer</i>
<i>Annual Costs</i>	Capital-Related Costs	A = Utility Capital Costs \$340	B = Consumer Capital Costs \$959
	Other Costs	C = Utility O&M Costs \$0	D = Consumer Water-Use Costs \$0
<i>Annual Revenues</i>	Income	E = Utility Income \$0	F = Consumer Income (+\$225) (credit)
<i>ANNUAL TOTALS</i>		G = Net Utility Profit/Loss \$340	H = Net Direct Consumer Costs \$734
<i>COMBINED ANNUAL TOTALS</i>		I = Total Costs \$1,074	



Comparison of Scenarios (\$/AFY)

Cost Category	Scenario	
	New Projects	Toilet Rebates
A	\$1,600	\$340
B	\$0	\$959
C	\$688	\$0
D	\$2,288	\$0
E	(+\$2,288)	\$0
F	\$0	(+\$225)
G (Net Utility Costs)	\$0	\$340
H (Net Direct Consumer Costs)	\$2,288	\$734
I (Total Costs)	\$2,288	\$1,074



MAJOR CONCLUSIONS

- Good cost data is hard to find (the public should demand better), but conservation is often the least-cost means to meet water demands
- We need to develop better ways to compare and use cost data to make public policy decisions; revenue models may need to be changed to align the economic incentives of utilities with the economic incentives of society
- Cost is only one consideration in deciding what actions to take (or not take)



THANK YOU

- If you want to see the report, visit the project tab of the Western Water Policy Program:

<http://www.waterpolicy.info/projects/costofnewwater/>

Or just email me: douglas.kenney@colorado.edu

