



AWE Tracking Tool - Version 2.0

Changes Made to the Conservation Activity Library Parameters

The table that follows documents the changes made to the parameters of conservation activities included in the Tracking Tool library as part of Version 2 of the Tracking Tool. In addition to these activity-specific changes, the following global changes were also made to the library:

1. The fixed setup cost of \$10,000 was removed from each activity's cost specification. The model now prompts the user when importing a library activity that they must enter an appropriate set-up cost for their local circumstances.
2. The library documentation included with the User Guide has been revised and updated. Included with each activity is a text box laying out the basis for the library default parameter values.

Table of Changes to Activity-Specific Parameters

Library Activity	Changes to Parameters
1. Residential Surveys, Single Family	<ul style="list-style-type: none"> • Participant Savings, Gas (Therms/Gal) corrected to account for split between indoor and outdoor water savings
2. Residential Surveys, Multi Family	<ul style="list-style-type: none"> • Savings, Per Unit (gpy) changed from 10,950 gpy to 4,015 gpy to reflect average water savings for an indoor survey resulting in one showerhead, toilet displacement device, and faucet aerator, per CUWCC (2005). Note this corrects a typo in the Version 1.2 library which set unit savings at 10,950 rather than 4,015. • Participant Savings, Sewer (gpy) corrected to reflect average water savings for an indoor survey resulting in one showerhead, toilet displacement device, and faucet aerator, per CUWCC (2005)
3. Residential ULF Toilet Rebates, Single Family	<ul style="list-style-type: none"> • None
4. Residential ULF Toilet Rebates, Multi Family	<ul style="list-style-type: none"> • None
5. Residential HE Toilet Rebates, Single Family	<ul style="list-style-type: none"> • Utility Costs, Initial Variable (\$/Unit) changed from \$180 to \$200 (rebate of \$150 and admin cost of \$50/rebate) • Participant Costs, Initial (\$) changed from \$120 to \$100 (toilet purchase cost of \$200 plus install cost of \$50 less rebate of \$150) <p>Note: rebate and admin costs normalized to be consistent with ULF Toilet Rebate costs. The HE rebate is assumed to be \$50 more than the ULF rebate to account for higher HE toilet cost and incentivize HE toilets. Admin costs are assumed to be the same for ULF and HE rebates.</p>
6. Residential HE Toilet Rebates, Multi Family	<ul style="list-style-type: none"> • Utility Costs, Initial Variable (\$/Unit) changed from \$180 to \$200 (rebate of \$150 and admin cost of \$50/rebate)

Library Activity	Changes to Parameters
	<ul style="list-style-type: none"> Participant Costs, Initial (\$) changed from \$120 to \$100 (toilet purchase cost of \$200 plus install cost of \$50 less rebate of \$150) <p>Note: rebate and admin costs normalized to be consistent with ULF Toilet Rebate costs. The HE rebate is assumed to be \$50 more than the ULF rebate to account for higher HE toilet cost and incentivize HE toilets. Admin costs are assumed to be the same for ULF and HE rebates.</p>
7. Residential HE Toilet Direct Installation, Multi Family	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/Unit) changed from \$300 to \$265 (toilet purchase cost of \$175 – which assumes a \$25/toilet bulk purchase discount – plus install cost of \$40 – which assumes a \$10/toilet bulk install discount – plus program admin cost of \$50/toilet)
8. Residential LF Showerhead Distribution, Single Family	<ul style="list-style-type: none"> None
9. Residential LF Showerhead Distribution, Multi Family	<ul style="list-style-type: none"> None
10. Residential HE Washer Rebates, Single Family	<ul style="list-style-type: none"> Savings, Useful Life (yrs) changed from 12 to 11 years to match EPA Energy Star Life Cycle Cost Calculator assumptions for residential washers. Utility Costs, Initial Variable (\$/Unit) changed from \$300 to \$200 (\$150 rebate plus admin cost of \$50/rebate) Participant Costs, Initial (\$/washer) changed from \$0 to \$150 (price premium of \$300 for HE washer, per EPA and DOE (2004), less rebate of \$150) <p>Note: Utility rebate costs normalized to be consistent with how rebate costs are estimated for other fixtures (e.g. toilets)</p>
11. Residential HE Washer Rebates, Multi Family	<ul style="list-style-type: none"> Participant Costs, Initial (\$/washer) changed from \$0 to \$420 (price premium for high capacity common area washers less typical rebate, as reported by Fox (2003) and Battelle PNL (2000))
12. Residential Irrigation Controller Rebates, Single Family	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/Unit) changed from \$400 to \$300 (\$250 rebate plus admin cost of \$50/rebate) Participant Costs, Initial (\$) changed from \$100 to \$250 (average controller cost of \$350, per Aquacraft (2009), plus average install cost of \$150, per Jordan, Lang, and Gonzales (2004), less rebate of \$250)
13. Residential Irrigation Controller Financing, Single Family	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/Unit) changed from \$200 to \$135 (assumes utility pays controller supplier \$100 to buy-down customer financing rate from 10% to 7% on capital costs of \$800 – new controller plus 20 high-efficiency spray nozzles – plus program marketing and admin costs of \$35/controller)
14. Residential Turf Replacement Rebates, Single Family	<ul style="list-style-type: none"> Participant Costs, Initial (\$) changed from \$500 to \$1,188 (assumes replacement cost of \$1.00/sqft less utility rebate of \$0.45/sqft, per Las Vegas turf replacement program data) <p>Note: This corrects a typo in the Version 1.2 library which set the participant cost at \$500 rather than \$1,188</p>
15. Residential Water Efficient Irrigation Nozzles, Single Family	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/Unit) changed from \$8.50 to \$10 per nozzle (assumes a direct installation program with purchase cost of \$3.50/nozzle plus install cost of \$5.00/nozzle plus admin cost of \$1.50/nozzle. Note that Version 1.2 library did not include program admin cost.
16. Residential Meter Installation, Single Family	<ul style="list-style-type: none"> Savings, Per Unit (gpy) changed from 16,233 gpy to 37,840 gpy (assumes an average reduction of 25.9%, per Maddaus (2001) and average per account residential water use of 400 gpd, per REUWS. The basis for the Version 1.2 library meter savings rate of about 11% is unknown and is not consistent with the reviewed literature.

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	<ul style="list-style-type: none"> Participant Savings, Sewer (gpy) changed from 6,493 gpy to 15,136 gpy (assumes 40% of water savings come from indoor uses that would otherwise have discharged to the sewer – e.g. leaking toilets)
17. CII ½ GPF Urinal Rebates	<ul style="list-style-type: none"> None
18. CII ULF Toilet Rebates	<ul style="list-style-type: none"> This measure has been separated into two different measures <ul style="list-style-type: none"> Rebates for Tank-Type Toilets Rebates for Valve-Type Toilets Tank-Type Toilets <ul style="list-style-type: none"> Utility and participant cost parameters are the same as for Residential ULF Toilet Rebates, Multi Family Valve-Type Toilets <ul style="list-style-type: none"> Utility rebate costs are increased to \$225/toilet to reflect higher cost of valve-type toilet replacement (rebate of \$175 plus admin cost of \$50/rebate) Participant costs are increased to \$125/toilet (toilet purchase cost of \$225 plus install cost of \$75 less rebate of \$175)
19. CII HE Toilet Rebates	<ul style="list-style-type: none"> This measure has been separated into two different measures <ul style="list-style-type: none"> Rebates for Tank-Type Toilets Rebates for Valve-Type Toilets Tank-Type Toilets <ul style="list-style-type: none"> Utility and participant cost parameters are the same as for Residential HE Toilet Rebates, Multi Family Valve-Type Toilets <ul style="list-style-type: none"> Utility rebate costs are increased to \$275/toilet to reflect higher cost of valve-type toilet replacement (rebate of \$225 plus admin cost of \$50/rebate) Participant costs are increased to \$125/toilet (toilet purchase cost of \$275 plus install cost of \$75 less rebate of \$225)
20. CII Laundromat Washer Rebates	<ul style="list-style-type: none"> Utility and participant costs are assumed to be the same as for Residential HE Washer Rebates, Multi Family. The utility cost decreases from \$460 to \$370 and the participant cost increases from \$0 to \$420 per rebate.
21. CII Dishwasher Rebates	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/unit) increase from \$340 to \$1,000 (equal to approximately ½ the cost differential between conventional and Energy Star rated commercial dishwashers, per EPA’s Life Cycle Cost Calculator for Commercial Dishwashers) Participant Costs, Initial (\$) decreases from \$1,340 to \$1,000 (equal to cost differential of \$2,000 between conventional and Energy Star rated commercial dishwashers and utility rebate)
22. CII Kitchen Spray Rinse Valve Replacements	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/Unit) decreased from \$200 to \$150, per CUWCC (2004a)
23. CII Kitchen Food Steamer Rebates	<ul style="list-style-type: none"> Savings, Useful Life (yrs) reduced from 15 years to 10 years to match MWDSC (2008) program assumptions Participant Costs, Initial (\$) increased from \$0 to \$640 (avg cost differential between conventional and high-efficiency steamer of \$1,125, per PEC (1999), less rebate of \$485)
24. CII Cooling Tower Retrofit Rebates	<ul style="list-style-type: none"> Savings, Per Unit (gpy) reduced from 371,470 to 209,880, per MWDSC (2008). Estimated savings based on conductivity controller retrofit. Savings, Useful Life (yrs) reduced from 10 to 5, per MWDSC (2008). Useful life adjusted to match MWD conductivity retrofit rebate program assumptions.

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	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/unit) reduced from \$1,900 to \$625 to match MWD conductivity retrofit rebate costs Participant Costs, Initial (\$) reduced from \$24,100 to \$2,225. Previous estimate reflected cost for major retrofit of entire cooling system, per Koeller & Company. Revised estimate reflects mid-point cost for conductivity and /pH controller retrofits less utility rebate.
25. Large Landscape Surveys	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/unit) reduced from \$620 to \$571. Cost assumes an average site size of 2 acres and is from CCWD (1994), adjusted to 2008 dollars. Previous estimate applied a unit cost per acre, ignoring scale economies, and did not adjust dollars to 2008. Note: landscape program costs have been updated to employ consistent assumptions across the different landscape programs.
26. Large Landscape Water Budgets	<ul style="list-style-type: none"> Utility Costs, Initial Variable (\$/unit) reduced from \$3,001 to \$2,952. Utility cost assumed to include initial landscape site survey (\$571), development of site-specific water use budget (\$881), and customer incentives for irrigation system improvements (\$1,500). Cost is based on 2 acre average site size. Note: landscape program costs have been updated to employ consistent assumptions across the different landscape programs.
27. Large Landscape Irrigation Controller Rebates	<ul style="list-style-type: none"> Utility Costs, Initial Fixed (\$) reduced from \$2,120 to \$2,071. Utility cost assumed to include initial landscape site survey (\$571) and customer incentives for irrigation system improvements (\$1,500). Cost is based on 2 acre average site size. Note: landscape program costs have been updated to employ consistent assumptions across the different landscape programs.
28. Large Landscape Turf Replacement Rebates	<ul style="list-style-type: none"> None