

Changes from Version 2.0 of the economic model released on April 13, 2020:

Changes in the 'Inputs' tab

	Inputs removed/replaced	Cells in Version 2.0	Input added	Cells in Version 3.0	Explanation
1	N/A	N/A	Reported leaks on service connections (mains to curb stop)		To include reported leaks both on mains and from mains to curb stop, instead of only on mains. This impacts the flow rate of reported leaks and annual reported leakage volume in the model.
2	Estimated average number of reported leaks	B31	<ul style="list-style-type: none"> Number of unreported leaks per year on mains Number of unreported leaks per year on service connections (mains to curb stop) 	B39 B40	To include unreported leaks both on mains and from mains to curb stop, instead of only on mains. The user can inform the model on whether there are many small leaks or a few large leaks, thus impacting the costs to repair.
3	Estimated average flowrate for unreported leaks	B30	N/A	N/A	The unreported leakage is calculated in the Calculation tab or entered by the user in B37. The number of leaks, if entered by the user, will help calculate the flow rates of those leaks.
4	N/A	N/A	Average unit cost of leak repair for laterals and service lines (mains to curb stop)	B47	The opportunity to include the cost of repair for unreported leaks from mains to curb stop provides greater flexibility

					to input large versus small leaks to reflect relative cost differences.

Changes in default values of inputs:

	Input	Default value in Version 2.0	Default value in Version 3.0	Justification
1	Unit average cost of leak detection surveying per mile (including upfront and maintenance costs)	\$605 per mile	\$595 per mile	The prior default value erroneously double-counted the pinpointing costs, which was clarified on conversations with vendors and consultants that provided the data. \$595 per mile includes detection and pinpointing costs.
2	Marginal avoided cost of water	\$1126 per acre-foot	\$1093 per acre-foot	The prior default value was not converted to present value (2020). This error has been corrected.
3	Average annual rise in price of water	5.6%	5.9%	The prior estimate double-counted one of the historical years in its calculation as pointed out in one of the comment letters. This error was corrected. Additionally, the marginal price of water from the Metropolitan Water District for 2020 was included in the estimate.

Changes in the ‘Calculations’ tab

Color coding was removed from all cells in the ‘Calculations’ tab to indicate that all cells were either linked to inputs or calculated. The calculations

Calculations	Cells in Version 3.0	Explanation
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1	Calculations for reported leaks on service connections and laterals (main to curb stop)	B24 through B27	To include reported leak volume from mains to curb stop
2	Calculations incorporating the number of unreported leaks found on mains and from mains to curb stop	B32 through B38	To accommodate for smaller leaks that could lead to higher costs in repairs

Changes in the ‘Output’ tab

	Output	Cell	Explanation
1	Calculation of estimated real loss in distribution system by 2028, in acre-feet	C9	Corrected an error which linked to a sum of real loss for 2026 instead of 2027 for the standard. This volume now reflects the sum of real loss over the 12 months of 2027, to align with compliance through the audit year of 2028.
2	Benefit-Cost ratio (2022 to 2027)	G16	The Benefit-Cost ratio reflects the benefit-cost ratio from the beginning of 2022 to the end of 2027 to include the entire implementation timeline, as opposed to a period of the first five years.

Changes in the ‘Collected Data and References’ and ‘Equations’ tab

- The ‘Collected Data and References’ tab now includes all background information that was used to develop the default values, including any updated or new values on leak detection costs, repair costs, marginal avoided cost of water and rise in price of water.
- The Equations tab includes updated equations based on added inputs and calculations.

Updates to regulatory framework

The regulatory framework has undergone the following updates and additional work:

- Staff included an off-ramp and revised the qualifying off-ramp threshold to the 20th percentile of the reported real loss averaged over 2017 through 2019, which is 16 gallons per connection per day or an equivalent volume of water loss per mile of pipe (1184 gallons per mile per day), depending on the metric in which any given supplier reports water loss to DWR. The previous threshold was 10 gallons per connection per day.

- The allowed variation in the data quality requirement to qualify for the off-ramp for suppliers reporting in gallons per mile per day has been corrected to 740 gallons per mile per day from 200 gallons per mile per day, by using the median and average value for connections per mile to convert the allowed variation from a per connection basis to a per mile basis.
- Standards have been updated per the changes made in the model from Version 2.0 to Version 3.0
- A supplier may use three out of the four years of audit data (2017-2020 audits) to establish its baseline water loss if the supplier has an outlier value. A supplier may discard one outlier value, including a negative value. (A reported real loss value varying more than 10 gallons per connection day from the rest of the data used to calculate the baseline real loss would qualify as an outlier.)
- Suppliers may comply with their water loss standard by demonstrating a real loss value at or below their standard in either their 2026 or 2027 water loss audit (updated from using only the 2028 water loss audit value).
- The deadline for submitting adjustments to input values for the economic model will be extended by one year to 2023.
- The deadline for submitting responses to questionnaires on data quality and documentation for qualifying for the off-ramp has been extended to January 1, 2023 to align the timeline with water loss audit submissions.
- Language in the draft questionnaires has been modified and clarified for ease of understanding, data quality control and consistency across responses.

Staff has initiated a peer review process for the model from a third-party expert academic panel of reviewers.