



To: Illinois SAG

From: James Gin, Christopher Frye, Laura Agapay-Read, Guidehouse

CC: ComEd, Nicor Gas, Peoples Gas, North Shore Gas, Opinion Dynamics, Guidehouse

Date: September 8, 2023

Re: Deviation to Residential Free Rider Algorithms for Reporting in 2023 – Test Results

In Spring 2023, Guidehouse proposed a deviation from the TRM residential free ridership algorithms to test improvements to these.¹

Guidehouse tested both the TRM and alternate algorithms to determine which better represents self-reported free ridership using results from a survey that Guidehouse administered to participants of Nicor Gas' Home Energy Savings program. The survey asked all respondents questions necessary to calculate free ridership for both the TRM method and the alternative method. Guidehouse then calculated free ridership for each method for each respondent, and then randomly selected 70 respondents for review. (Responses where the absolute difference between algorithm results was less than 0.10 were excluded from review.)

For each of the 70 respondents, two evaluators independently reviewed the two free ridership results and verbatim response to the following question:

Please describe in your own words any impact that the free home assessment and [Measure] had on your decision to [Implement the Measure]?

The question was designed to collect a verbal description of the respondent's free ridership. Working independently, each evaluator then selected the result that better represented the verbatim response for each respondent, without knowledge of the algorithm used to calculate each result. When neither result was an obvious match, the evaluator indicated whether this was because the verbatim response was ambiguous or because the two results were too close to differentiate.

¹ <https://www.ilsag.info/wp-content/uploads/SAG-Deviation-Memo-for-Res-FR-2023-05-10.docx>



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Table 1 shows results of the test, listing the count of each classification by each evaluator. The alternative algorithm was evaluated to be more representative of the verbatim responses, almost three times (59%) as often as the TRM algorithm (21%).

Table 1. Residential Free Ridership Algorithm Test Results

Algorithm Closer to Verbatim	Reviewer A	Reviewer B	Total	Percent of Total
Alternate	44	39	83	59%
TRM	12	17	29	21%
Ambiguous	8	13	21	15%
Draw	6	1	7	5%
Total	70	70	140	100%