Utility Allowance Services for Tax Credit, Public Housing, and Section 8 Housing Choice Voucher Programs

TECHNICAL DOCUMENTATION

600 Twentyninth Place Ct., Ste 1014
Charlottesville VA 22901
t) 434-885-0953
f) 434-885-0954
Sales@Zappling.com

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Context

Utility allowances typically must be at least annually reviewed and updated when there is change of 10% or more per IRS and HUD regulations. [26 CFR § 1.42-10 & 24 CFR § 982.517]

For example, per 24 CFR 982.517(c)(1), a PHA must review its schedule of utility allowances each year, and must revise its allowance for a utility category if there has been a change of 10 percent or more in the utility rate since the last time the utility allowance schedule was revised. The PHA must maintain information supporting its annual review of utility allowances and any revisions made in its utility allowance schedule.

This technical documentation report serves to provide context and methodology for utility allowance calculations.

1. Zappling Background and Experience

Zappling was founded in 1994 to provide timely and professional engineering services to a variety of clients. Zappling places special emphasis on energy and water conservation services in its practices. The Zappling professional staff includes licensed engineering professionals, certified energy managers, utility allowance specialists, RESNET professionals, and support staff.

Zappling has worked with agencies that administer affordable housing programs since 1985. Through our work with authorities who provide housing for as many as 25,000 tenants and as few as 150 tenants, we have a keen understanding of Housing and Urban Development (HUD) requirements as they relate to operating and capital budgets, codes and standards, and special incentive programs.

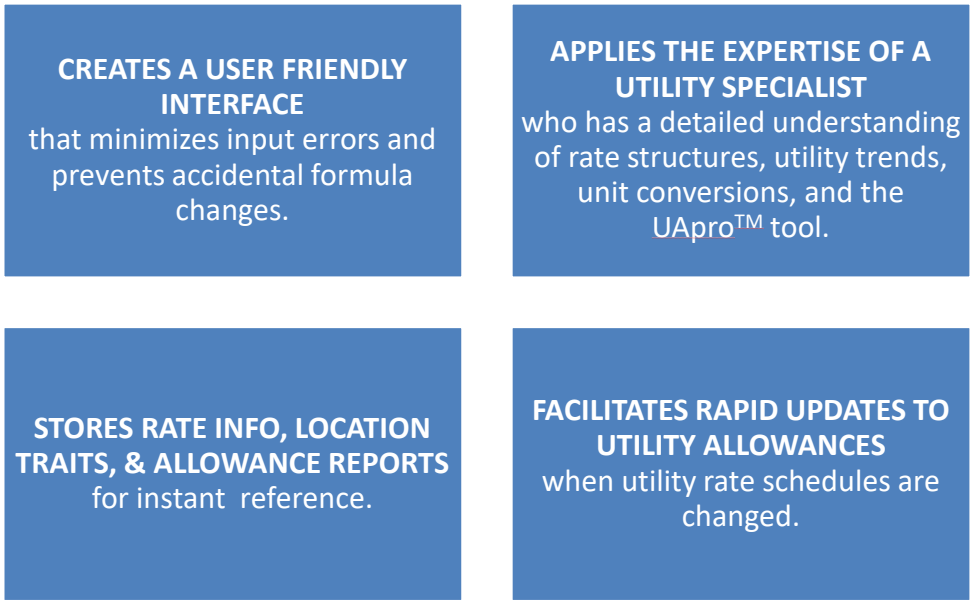
Zappling has calculated utility allowances for Public Housing Authorities with individually metered utilities since 1994. **In September 2005, HUD Washington contracted with Zappling (P.O. S4C5AAC0062) as the technical member of the team that evaluated, modified and verified a spreadsheet for calculating allowances for Section 8 housing units**. Zappling engineers developed techniques to improve the accuracy of the allowances; we added formulas to account for residence age and the presence of heat pumps. Zappling's work is detailed in "Utility Model Evaluation HUD Report 050930.pdf." **Zappling's revisions and additions were merged into the HUD Utility Schedule Model, which is a spreadsheet published on the HUD User web site as an acceptable method for calculating utility allowances.**

Using the data and regressions that we submitted to HUD, Zappling developed the web-based tool UApro™ in 2006. Currently, Zappling services over 200 housing authorities, 100s of private properties, and has performed thousands of utility allowance studies to date. **Over 95% of our clients renew their subscription after their first year** – their testament to customer satisfaction.

2. UApro™ Development

After contributing to the calculations behind the HUD Utility Schedule Model, Zappling saw opportunities for improving its usability. Zappling was unsatisfied with the Excel format of the HUD Model published on the HUD User website. The spreadsheet format was cumbersome and posed a high risk of accidentally changing cells that should not be modified – mistakes that could be amplified over the course of several years. Zappling aimed to create a higher-performance tool that incorporated the same equations while minimizing the potential for input errors and maximizing the efficiency of the calculation process. In response, Zappling created the web based tool UApro™ in 2006.

UApro™ has a user-friendly web interface that references the same consumption database and accounts for the same variables as the HUD Utility Schedule Model. **Given the same utility rate schedules, the allowances generated by UApro™ replicate those generated with the HUD Utility Schedule Model.**
However, UApro™ has additional advantages because it:

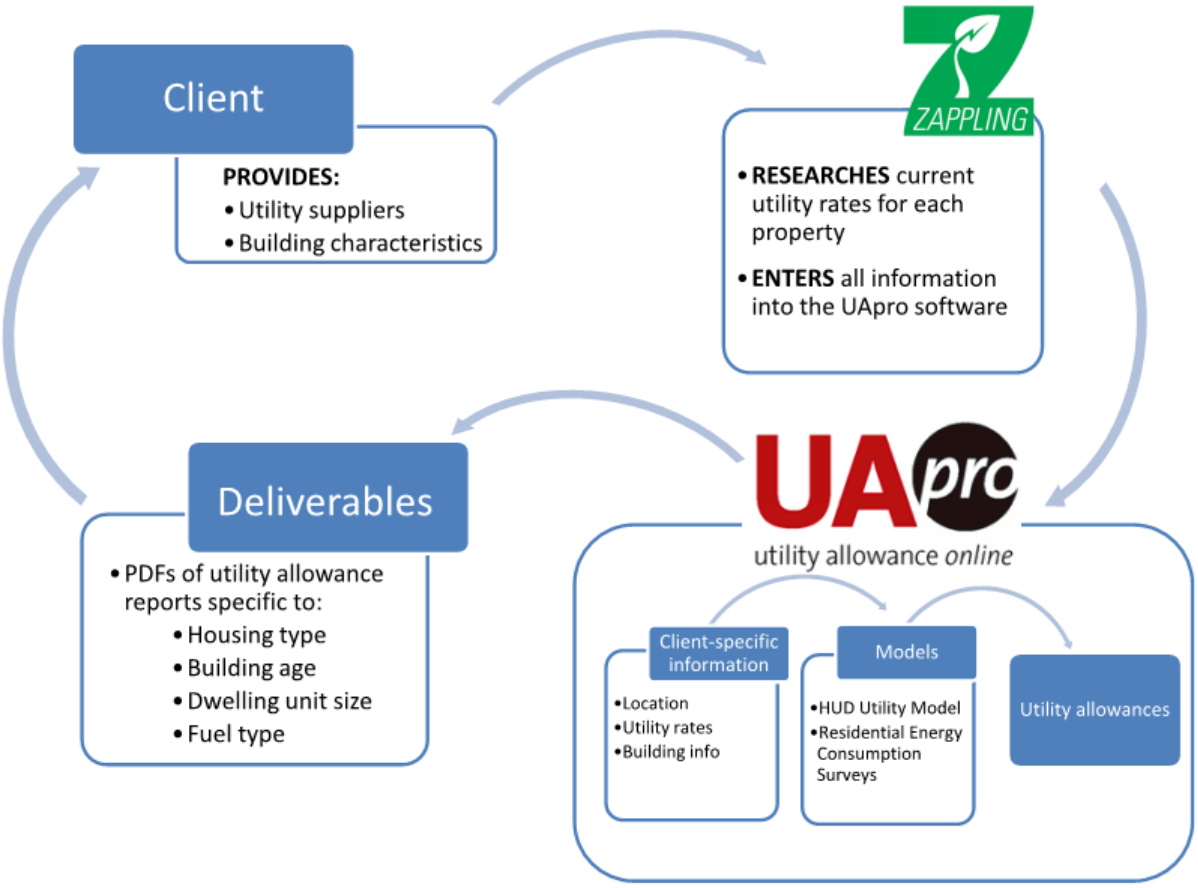


3. Methodology

The HUD spreadsheet linked to UApro™ uses average consumption data along with local utility rates and weather trends to compute utility allowances for specific unit types at specific locations. Regressions from an energy consumption database are used to estimate reasonable consumption values for a specific location. Energy consumption data are available from the Residential Energy Consumption Survey (RECS), which is a nation-wide study conducted and periodically updated by the United States Department of Energy. The RECS database is formatted such that utility data for climate region, housing unit type, size, heating system, fuel, and end-use can be extracted with multi-variate linear regressions. These regressions are then used to compute consumption allowances specific to individual unit characteristics. Finally, location-specific weather data[1] are applied to localize the heating and cooling consumption values. For bedroom sizes greater than five, a linear regression extrapolation will be used based on the utility allowances dollar values for bedrooms one through five.

Water and sewer data is collected from a variety of sources[2] and varies by state, per HUD's formulas. For public housing authorities, if client requests a different water/sewer consumption to be used, Zappling may utilize an engineering methodology or rely on a consumption-based approach based on a per capita consumption number scaled to occupancy per bedroom. Consumption reports available upon request.

Visual Overview of the UApro™ System



1 Heating degree days, cooling degree days, and typical low temperature are provided by the National Oceanic and Atmospheric Administration

Additional allowances and variations
Beyond base allowances, there are variations or adjustments that may be needed to either reflect energy performance characteristics of the housing stock, and/or reflect needs to the tenants. These are enumerated as follows:

Energy Savings Design (Green schedules)

- Energy Star Certification – represents 18% in energy savings, if the residence being estimated meets the Environmental Protection Agency (EPA) standard as an Energy Star property.
- LEED certification – represents a 25% energy reduction, if the property meets the LEED standards according to the U.S. Green Building Council (USGBC).
- Significant Green Retrofit - signifies an 18% impact on energy efficiency, if the building has had an energy saving rehabilitation to any of the following systems in the last 5 years: 1.Heating 2. Cooling 3. Lighting 4. DHW systems 5. Appliances 6. Building envelope 7. Water measures 8. On-site generation. If the respective property qualifies, as verified by Zappling personnel through Zappling's Green retrofit procedure, Zappling will separately attach the respective checklist and rationale as supporting documentation

Medical equipment allowances/reasonable accommodation for housing agencies
Concordant with 24 CFR part 8, a family with an individual with disabilities may make a request to the housing agency, if they need a higher utility allowance as a reasonable accommodation. The housing agency must approve the higher utility allowance to make the program accessible to, and usable by, the family member with a disability (24 CFR 982.517(e)). Zappling medical equipment allowances are a standardized schedule that specifies common medical equipment, usage characteristics, and expected monthly allowance based on recent local utility rates. These, if requested by the housing authority, will be prepared and attached separately.

Utility hook-up fees for housing agencies
Under 24 CFR 982.624, the PHA is required to establish utility allowance for manufactured home space rentals that for the first twelve months of assistance must include a reasonable amount for utility hook-up charges payable by the family. These fee schedules are attached separately

Simplified allowances for housing agencies
Simplified allowances leverage the most common structure and utility types to generate a distilled allowance schedule that is broadly applicable to the authority. If applicable, documentation outlining the key structure type/types, utility types, and approach will be attached separately

Other attachments provided separately (if applicable)

- Rate documentation – rates may rely on averages, regressions, or most common utility type
- Locality-specific compliance documentation
- Utility allowance schedules
- Green retrofit checklist documentation for Significant Green Retrofit option
- Medical equipment/reasonable accommodation schedule
- Utility hook-up schedule
- Simplified allowance documentation

4. Demonstrated Compliance

UApro™ is compliant with Federal Regulations governing the development and use of utility allowances for Low Income Housing Tax Credit units. Effective July 29, 2008, 26 CFR 1.42-10 was updated to include a wider variety of acceptable calculation methodologies, including the HUD Utility Schedule Model and the Energy Consumption Model. Table 1 details how UApro™ complies with the requirements of the HUD Utility Schedule Model calculation method.

Table 1: IRS Regulation Comparison - Utility Allowances for Tax Credit

Calculation Method	26 CFR 1.42-10	UApro™
HUD Utility Schedule Model	A building owner may calculate a utility estimate using the "HUD Utility Schedule Model" that can be found on the Low-Income Housing Tax Credits page at *http://www.huduser.org/datasets/lihtc.html* (or successor URL).	Zappling was part of the technical team that developed the HUD Utility Schedule Model. UApro™'s database uses the same Residential Energy Consumption Survey (RECS) data as the HUD Utility Schedule Model. In addition, UApro™ uses the same regressions to connect regional climate data with energy consumption patterns for heating and cooling.
	Utility rates used for the HUD Utility Schedule Model must be no older than the rates in place 60 days prior to the beginning of the 90-day period under paragraph (c)(1)of this section.	Specialists at Zappling research the most currently available utility rates at the beginning of each annual subscription as part of our professional setup.

UApro™ is also compliant with the HUD regulations for Section 8 Housing Choice Voucher and public housing utility allowances. Tables 2 and 3 highlight the key ways in which UApro™ complies with 24 CFR 982.517 and 24 CFR 965.501-507.

Table 2: HUD Regulation Comparison - Utility Allowances for Section 8

24 CFR 982.517	UApro™
The PHA must maintain a utility allowance schedule for all tenant-paid utilities, for cost of tenant-supplied refrigerators and ranges, and for other tenant-paid housing services.	UApro™ provides an online library of all utility allowances for electricity, gas, oil, water, sewer, and trash for typical dwelling units and typical tenant-supplied appliances.
The utility allowance schedule must be determined based on typical cost of utilities and services paid by energy-conservative households that occupy housing of similar size and type in the same locality. In developing the schedule, the PHA must use normal patterns of consumption for the community as a whole and current utility rates.	UApro™ uses the extensive RECS database produced by the US Energy Information Administration for similar housing sizes and types in the locality. The data is adjusted to the local weather determined by the Housing Authority code. UApro™ facilitates the use of the actual and current rate schedules as published by the utility companies.
In the utility allowance schedule, the PHA must classify utilities and other housing services according to the following general categories: space heating; air conditioning; cooking; water heating; water; sewer; trash collection; other electric; refrigerator; range; and other specified housing services.	UApro™ calculates space heating, air conditioning, cooking, water heating, water, sewer, trash collection, other electric, refrigerator, range, and other specified housing services as individual items and presents them on the output forms.
A PHA must review its schedule of utility allowances each year and must revise its allowance for a utility category if there has been a change of 10 percent or more in the utility rate since the last time the utility allowance schedule was revised. The PHA must maintain information supporting its annual review of utility allowances and any revisions made in its utility allowance schedule.	UApro™ provides supporting documentation for all utility rates used in the utility allowance calculations that be submitted in the annual review or audit process.

Table 3: HUD Regulation Comparison - Utility Allowances for Public Housing

24 CFR 965.501-507	Regulation	UApro™
§ 965.505 (a)	The objective of a PHA in designing methods of establishing utility allowances for each dwelling unit category and unit size shall be to approximate a reasonable consumption of utilities by an energy conservative household of modest circumstances consistent with the requirements of a safe, sanitary, and healthful living environment.	UApro™ calculates utility allowances using a model developed for HUD based on the Energy Information Administration's Residential Energy Consumption Survey (RECS) database. The data is a sampling of typical households throughout the US.
§ 965.505 (b)	Allowances for both PHA-furnished and resident-purchased utilities shall be designed to include such reasonable consumption for major equipment or for utility functions furnished by the PHA for all residents (e.g., heating furnace, hot water heater), for essential equipment whether or not furnished by the PHA (e.g., range and refrigerator), and for minor items of equipment (such as toasters and radios) furnished by residents.	By using the RECS database, UApro™ includes all applicable consumptions for a typical residence throughout the United States.
§ 965.505 (b2)	The climatic location of the housing project.	UApro™ adjusts for local climate conditions based upon the PHA's HA code or zip code.
§ 965.505 (b3)	The size of the dwelling units and the number of occupants per dwelling unit.	UApro™ calculates allowances for zero (0) through five (5) bedrooms.
§ 965.505 (b4)	Type of construction and design of the housing project.	UApro™ calculates allowances for single family detached, single family attached, low rise apartments (2-4 units), larger apartment buildings (5+ units), and manufactured homes.
§ 965.505 (b6)	The utility consumption requirements of appliances and equipment whose reasonable consumption is intended to be covered by the total resident payment.	The data used by UApro™ includes samplings from a wide range of households throughout the country.