Appendix H: Calculation Guidance

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Important Note: The former Appendix 8 from the HUD 4350.3 REV 1, Change 3 is included at the end of this document for historical reference only. The material in Appendix 8 is replaced by guidance in this Appendix H and a new spreadsheet (202D CertificationData Entry.xls).
Calculation Guidance

The purpose of this Appendix is to establish standard methodology for key calculations involving certifications, vouchers and special claims. All software vendors (including software developed in-house) are required to implement these algorithms. As a result, calculation differences between site, CA, and TRACS software should largely disappear.

It is possible that, in very rare situations, a calculation done on one hardware architecture using a specific compiler and floating point library will differ slightly from that done on another architecture, compiler, and library with the result that a rounded result will be different by $1. If, on investigation, it is determined that the specific difference is due to one of these circumstances, the site submitted value must be accepted by CAs and TRACS in accord with previously stated guidance from HUD. However, such situations should be seen very rarely and would usually require the developers of the software involved to determine whether this situation is, in fact, the case. An example of such a result would be a value that calculates to 1.494999 on one machine and to 1.495000 on another and where the differences are not related to the algorithms used. The first value becomes 1.49 and rounds to 1. The second becomes 1.50 and rounds to 2.

The rent calculation spreadsheet posted on the TRACS web site in the Documents area (202DCalculatingTenantRent.xls), shall be considered authoritative on issues of the correctness of calculations. In situations other than the architectural one mentioned above, when there is a difference between site and CA calculations, the subsidy paid by a CA shall be that determined by the spreadsheet. Similarly, the spreadsheets posted on the TRACS web site in the Documents area (202DNonCitizenRuleProration.xls, 202DAdjustmentCalculations.xls and 202DSpecialClaimsRounding.xls) serve as the official implementation for noncitizen rule proration, adjustment calculations and special claims calculations and should be used to resolve differences between site, CA and TRACS results in the same way as the rent calculation spreadsheet should be used for that purpose. The same is true of the other spreadsheets mentioned in this Appendix. 202DImputed Income Proration.xls demonstrates the required way to prorate imputed income should the OA choose to do so. The spreadsheet 202DCalculationsForRepayments.xls illustrates how to calculate the amount retained (where allowed) for Tenant repayment agreements and how to fill Section 7 record fields for a variety of (MAT30, Section 7 Record) transactions. The 202DCertificationDataEntry.xls spreadsheet incorporates the rules previously contained in Appendix 8 of the HUD Handbook 4350.3 Rev. 1 (releases prior to Change 4). Finally 202DRADPhase-In.xls shows how to perform a rent phase-in for the new Section 8 RAD subsidy type.

If your library of rounding functions performs banker’s rounding, you may need to write your own rounding function that follows the HUD rules.

Data Entry and Calculation Rules

It is important to keep in mind that mandatory automation means that many of the calculations included on a certification or voucher are done by software. The methodology used for certain calculations is contained in the spreadsheets mentioned in this appendix.

The former Appendix 8 of HUD Handbook 4350.3 Rev. 1 (releases prior to Change 4) gave guidance on calculation methodology. Those rules are incorporated into this appendix as well as the 202DCertificationDataEntry.xls spreadsheet and can be summarized as follows:
When rounding to the nearest dollar, round up at 0.50 and down at 0.49.

Intermediate calculations (those that are not submitted in a field in a MAT record) should be calculated to a higher precision but then rounded to the nearest penny at each step.

In a series of calculations, any result submitted in the MAT (printed on a certification form) is rounded to the nearest dollar and the dollar value used in the remaining calculations.

Calculations should be done in steps—not together. For example, in the case of calculating 30% of monthly adjusted income this is not to be implemented as \((\text{Adjusted} / 12) \times .3\) but rather as multiple steps:

\[
\text{Adjusted Income/ 12 (calculate the result to 6 or more decimal places)}
\]

\[
\text{Round the result to the nearest penny to get Monthly Adjusted.}
\]

\[
\text{Monthly Adjusted * .3 (calculate the result to 6 or more decimal places)}
\]

\[
\text{Round the result to the nearest penny to get 30% of Monthly Adjusted.}
\]

Another important rule is the principle of reporting each individual income, asset and asset income separately on a certification. Only expenses are totaled before being entered on the certification.

Note: The former HUD Handbook 4350.3 Rev. 1, Appendix 8 (versions prior to Change 4) did not address the rounding of negative numbers. The industry has adopted the convention of rounding the absolute value of a number where applicable and then restoring the sign. The value –36.5 becomes –37. This is the equivalent of ignoring minus sign in intermediate calculations and then restoring it for the final result.

**Certifications**

1. **Changing Algorithms—Transition Rules**

When changing algorithms for calculating rent and assistance along with supporting values, it is important that software vendors ensure that certifications already billed for and/or sent to TRACS do not change without being formally corrected. In other words, if a certification has been billing for $X in subsidy, that same amount should be billed up until the point of a gross rent change, unit transfer, a correction to the certification or other new certification.

However, to ease the transition to the new algorithms and to ensure that site software, CA software and TRACS all agree on values for certifications submitted after the full transition to new rules, all corrected certifications along with gross rents and unit transfers will recalculate the certification using the new rules once the site or CA software or TRACS has been updated to the latest version. Software will not attempt to preserve the old calculations.

If following this advice causes the tenant rent to change (in situations when it otherwise would not) the owner/agent should give the required notice to the tenant and begin collecting the new rent on the proper date.
Any dollar differences between the old and new rules should net out over many certifications and are not expected to cause a burden on any property.

2. Gross Rent Changes and Unit Transfers

Applying a gross rent change is not simply a matter of changing the assistance by the amount of the difference between the old and the new rent. The complete set of calculations outlined below under the heading Tenant Rent Algorithms should be completed, plugging in changed values for rents and utility allowances. For example, in Rent Supplement the TTP is the greater of 30% of monthly adjusted income or 30% of gross rent. In some cases, raising the gross rent will cause the tenant’s TTP to increase. In Section 236, a gross rent change will affect tenant rent for those paying basic rent or slightly above basic.

Where a household is subject to noncitizen rule proration, the need to recalculate is even more obvious. A given rent increase will almost always affect the tenant rent—not just assistance.

Similar examples exist for unit transfers to units with different rents and/or utility allowances.

Keep in mind that, when recalculating the certification, the ages of the household members stay as they were on the full certification that the GR or UT is based on. All that is done is to update the financial calculations.

The TRACS policy of rejecting certifications with $0 assistance will help eliminate a class of common errors. Often a gross rent change, say for $10, for a tenant with $0 assistance is submitted as a $10 subsidy increase from $0 to $10. Instead, such a tenant should be considered a Market renter. No subsidy is involved and a gross rent change would simply increase the rent the tenant is paying. If the rent change would result in the tenant now qualifying for subsidy, a termination from Market and an initial certification to subsidy should be done.

3. Financial Calculations

For the purpose of standardization, all financial calculations involving multiplication or division must be done as follows:

1. Calculate the result to 6 or more decimal places (5.003399).
2. Round the value to the nearest penny (5.003399 becomes 5.00).
3. If applicable, round the result to the nearest dollar, rounding up at .50 (5.00 becomes 5; 5.50 becomes 6; 5.49 becomes 5).

It is extremely important to follow the spreadsheet examples exactly. Do not combine two calculations in one line of code (234/12*.3) for example. Software implementations must agree with the published spreadsheets.

4. Tenant Rent Algorithms

The variables feeding into rent calculations are: Total Assets, Total Income from Assets, Imputed Income from Assets, Asset Income, Annual Income Amount, Adjustments to Income, Adjusted Income Amount, Contract Rent, Basic Rent, Utility Allowance, Gross Rent, Welfare Rent, and
Market Rent. From these, Total Tenant Payment, Tenant Rent, Utility Reimbursement, and Assistance Payment Amounts are calculated as applicable for each subsidy type.

5. Assets

Each asset should be stored as a value rounded to the nearest dollar. The rounded values are what are reported in a MAT file and used in other calculations.

Income from each asset is reported as a value rounded to the nearest dollar. When calculating an asset income by multiplying its fair market value (actual value) by an interest rate, follow the Handbook Rules above. In other words, multiply the rounded asset value by the interest rate, round the result to the nearest penny, and then round to the nearest dollar. However, do not multiply the asset’s cash value (as defined by HUD) by the interest rate as the cash value may be less than the actual asset value on which interest is paid.

Total Assets and Total Income from Assets are the sums of the individual rounded asset values and asset incomes. There should never be a discrepancy between the sums of the values and the reported totals. CA software and TRACS should report discrepancies of $1 or more for these totals starting with any files in 202C format.

Imputed Income from Assets is normally calculated by multiplying the applicable HUD Passbook Rate (Reported Passbook Rate Percent) by the Total Assets value if it is greater than $5,000. The result should be calculated to 6 decimals, rounded to the nearest penny and then to the nearest dollar. However, Handbook 4350.3, Rev 1, Change 3 added language allowing an owner to prorate the income of divested assets (when an imputed income calculation is required) instead of having to field requests from tenants for interim recertifications when divested assets reach a point greater than two years from the divested date. See 202DImputedIncome Proration.xls for the rules for performing these calculations.

6. Income

Each income should be reported as a value rounded to the nearest dollar. The rounded values are what are reported in a MAT file and used in other calculations.

HUD Handbook 4350.3 R1, C4, Paragraph 5-5.B tells us to convert periodic wages to annual income by multiplying:
1. Hourly wages by the number of hours worked per year (2,080 hours for full-time employment with a 40-hour week and no overtime);
2. Weekly wages by 52;
3. Bi-weekly wages (paid every other week) by 26;
4. Semi-monthly wages (paid twice each month) by 24; and
5. Monthly wages by 12.
A rounding to the penny and then to the dollar should be assumed. Whatever calculations the software does should follow the rules under Financial Calculations above and in 202DCertificationDataEntry.xls.

The various income totals on the 50059 (Total Employment Income, Total Pension Income, Total Public Assistance Income, Total Other Income, and Non-Asset Income) are the sums of the appropriate values. There should never be a discrepancy between the sums of the underlying
values and the calculated totals. CA software and TRACS should report discrepancies of $1 or more for these totals starting with any files in 202C format.

7. Calculating Adjusted Income

Unlike incomes and assets, the expenses used in adjusted income calculations are calculated and stored to the nearest penny. Only the appropriate totals are rounded to the dollar.

Deductions should be calculated in the order they appear on the 50059: Allowance for Dependents, Child Care (Work), Child Care (School or Look for Work), Disability, Medical, Elderly.

See HUD Handbook 4350.3 R1, C4, Paragraph 5-10 for details.

8. TTP, Tenant Rent, and Assistance

While Section 8, RAP, PAC, and PRAC use very similar methods for determining rent, there are differences. See 202DCalculatingTenantRent.xls. As a result Section 8 is presented alone; RAP and 202 PACs are presented together; and PRACs are presented together.

Noncitizen rule prorations apply only to Section 8, Rent Supplement, RAP, and Section 236. See Noncitizen Rule Proration below. When noncitizen rule proration applies, first calculate the TTP, rent and assistance using the rent calculation spreadsheet. Next use the appropriate values from those calculations as input to the noncitizen rule spreadsheet.

The 202DCalculatingTenantRent.xls spreadsheet published as part of this specification contains examples of calculations for each subsidy type. As mentioned above, the spreadsheet is the final arbiter with respect to the correctness of calculations. Example calculations are not shown in this document as the spreadsheet may change more quickly than the document.

CA and TRACS software should report $1 discrepancies for certifications reported in TRACS version 202C or later.

9. Noncitizen Rule Proration

The spreadsheet posted on the TRACS web site in the Documents area (202DNonCitizenRuleProration.xls) serves as the official implementation of these calculations and should be used to resolve differences between site, CA and TRACS in the same way as the rent calculation spreadsheet should be used for that purpose.

Prior to prorating the assistance, the full rent calculations outlined above in TTP, Tenant Rent, and Assistance above should be completed as certain values resulting from those calculations are used in the proration algorithms. Example calculations are not shown in this document as the spreadsheet may change more quickly than the document.

There seems to be some confusion in the industry as to which calculations apply to a Section 8, RAP or Rent Supplement tenant who resides in a Section 236 property. In these cases DO NOT
use the calculations as outlined in HUD Handbook 4350.3 R1, C4, Paragraph Exhibit 3-12. Use the calculations outlined in HUD Handbook 4350.3 R1, C4, Paragraph Exhibit 3-14.

CA and TRACS software should report $1 discrepancies for certifications reported in TRACS version 202C or later.

10. Calculating Income Limits for Families with More Than Eight Members

Family Size Adjustments
The statutory guidance governing income limits requires that income limits are to be higher for larger families and lower for smaller families. The same family size adjustments are used for all income limits. They are as follows:

<table>
<thead>
<tr>
<th>Number of Persons in Family</th>
<th>Percentage Adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>70%</td>
</tr>
<tr>
<td>2</td>
<td>80%</td>
</tr>
<tr>
<td>3</td>
<td>90%</td>
</tr>
<tr>
<td>4</td>
<td>Base</td>
</tr>
<tr>
<td>5</td>
<td>108%</td>
</tr>
<tr>
<td>6</td>
<td>116%</td>
</tr>
<tr>
<td>7</td>
<td>124%</td>
</tr>
<tr>
<td>8</td>
<td>132%</td>
</tr>
</tbody>
</table>

Income limits for families with more than eight persons are not included in the printed lists because of space limitations. For each person in excess of eight, multiply the four-person base by 100 + N*8%, where N = the number of family members above 4. (For example, the nine-person limit equals 140 percent [132 + 8] of the relevant four-person income limit.) Income limits are rounded to the nearest $50. Note: the Briefing document allows either rounding to the nearest $50 or not. We are requiring rounding so that site and CA software will calculate the same values and so that there is no dispute as to whether someone is above or below the income limit at admission or initial certification.

Example: Calculate the 11 person limit where the 4-person limit = 22900.

11-4 = 7
100+7*8 = 156%
22900 * 156% = 35724
Rounded result = 35700

HAP Vouchers

11. Voucher Creation

Keeping in mind that a CA will almost never build a voucher on the same date as does the site and given that there are differences between sites (and possibly vendors) in whether they transmit certs as they are done or batch them up as a package associated with a voucher, the following rules will help ensure that site and CA vouchers match even if sites are transmitting new certs daily. All vendors are expected to implement these rules governing exactly which certifications will appear on a voucher or be selected for adjustments.

The assumption is that the voucher date on a certification is correct (or at least the same at the site and CA level) in the sense that it accurately reflects the voucher that the site first intends to bill for or adjust the cert. If a CA were to change the cert's voucher date then, of course, the site and CA vouchers would not match as the change produces an intentional difference.
RAP and Rent Supp vouchers are billed for between the first and 10th of the month for the current month. In other words, if you bill on 8/5 you are billing for August.

All other program vouchers bill between the first and 10th of the month for the following month. In other words, if you bill on 8/5 you are billing for September.

Note: The chart below shows the earliest voucher that a certification with a given effective date may appear on a voucher. For a variety of reasons, it is possible that a cert will appear first on a later voucher but it can never appear earlier. For example, an August 1 AR may never appear on a voucher earlier than the August voucher. It may not appear on the July voucher even if it is completed and signed early.

Generally it is best to refer to the voucher month rather than the timing of when a voucher is created to avoid confusion in understanding the table below. So the August voucher (the August billing) will be produced during the first 10 days of August if requesting payment for a Rent Supplement or RAP contract but will be produced during the first 10 days of July if requesting payment for a Section 8, PRAC or PAC contract. It is important to realize that completed AR, IR and IC certifications effective the first of the voucher month are always included on the voucher even though they are not yet effective at the time the voucher is created for Section 8, PRAC and PAC. They are effective for the period of time covered by the voucher however. While the voucher requesting payment is created in advance, the payment is not actually generated until the effective date of the certification or later.

12. **RAP and Rent Supp:**

When billing for a month, ignore any certifications effective after the first of that month (any cert effective after 8/1 for the August voucher). Those certs will be picked up on the following month's voucher and will cause adjustments.

In addition, do not include any move-outs or terminations occurring on the first of the voucher month.

13. **All other subsidy types:**

When billing for a month, ignore any certifications effective after the first of the prior month (8/2 or later for the September voucher) with the exception of AR, IR, and IC certifications effective on the voucher date (9/1 for the September voucher) and GRs effective from the 2nd of the prior month through the 1st of the voucher month.
See the chart below for a summary of the rules.

<table>
<thead>
<tr>
<th>Certification Effective</th>
<th>RAP / Rent Sup</th>
<th>Other Subsidies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aug First</td>
<td>Aug First</td>
</tr>
<tr>
<td>AR</td>
<td>Aug</td>
<td>Aug</td>
</tr>
<tr>
<td>IR</td>
<td>Aug</td>
<td>Aug</td>
</tr>
<tr>
<td>IC</td>
<td>Aug</td>
<td>Aug</td>
</tr>
<tr>
<td>MI</td>
<td>Aug</td>
<td>Aug</td>
</tr>
<tr>
<td>MO</td>
<td>Sep</td>
<td>Sep</td>
</tr>
<tr>
<td>TM</td>
<td>Sep</td>
<td>Sep</td>
</tr>
<tr>
<td>GR</td>
<td>Sep</td>
<td>Sep</td>
</tr>
<tr>
<td>UT</td>
<td>Aug</td>
<td>Sep</td>
</tr>
</tbody>
</table>

With this model, it does not matter when the voucher is built with the obvious exception of a cert being added after a first build with the intention that it appear on a second build and provided that it meets the guidelines above.

Under these guidelines, if you build a Section 8 September voucher on 8/2 it does not matter if a move-in occurs on 8/3 or a unit transfer on 8/4. If the voucher were rebuilt on 8/6 it would be identical to the first one. More importantly, when the CA builds it on 8/12 it will match the site voucher exactly as it will be based on the same certs even if the CA has received the MI and the UT in the meantime.

14. Adjustment Calculations

202C Note: The final version of this section differs considerably from the 2004 original draft. Some members of the working group proposed an alternate model that is more accurate than the old one in certain cases and provides the additional advantage of a common procedure no matter how complex the set of adjustment events. HUD policy signed off on the new model and the 4350.3 will be revised accordingly. All software must switch to the new model for their 202C releases.

202D Note: With the exchange of full assistance and adjustment detail records between sites and CAs, it is critical that all software implement adjustments in exactly the same way to simplify the comparison and reconciliation process. To that end, the rules below are being clarified to deal with questions that have arisen since 202C. All software must implement these rules.

The spreadsheet posted on the TRACS web site in the Documents area (202DAdjustmentCalculations.xls) serves as the official proper implementation of these calculations and should be used to resolve differences between site, CA and TRACS in the same way as the rent calculation spreadsheet should be used for that purpose.
See 202DAdjustmentExamples.pdf for examples of how the 2.0.2.D adjustments are presented on the voucher. The Amount column (new in 202D) shows the calculation total for each row. The Requested column shows the net adjustment for the household and unit. The Requested column has a different meaning in 202D than it did in 202C.

**Full Certification Unit Transfers:** Because a request for clarification of the adjustment rules for these cert types was made after the 202D spec was frozen, some of the guidance given here is optional for 202D and will be so noted below.

- As with adjustments for partial cert UTs, full cert UTs will adjust both for the “in” side of the transaction and the “out” side.
- Unlike partial cert UTs, some full cert UTs will be effective on the first of the month corresponding to the voucher date in a Rent Supp or RAP contract (a 5/1/13 IR/UT reported on the May 2013 voucher). In these cases, there are no adjustments as is the case for other situations where a cert is effective on the voucher date (5/1 AR reported on the May voucher). The fact of a change in household composition, TTP or Tenant Rent is unrelated to whether or not adjustments are generated. Only the cert effective date relative to the voucher date is important. If the cert effective date is less than the voucher date, adjustments are needed. If the date is equal to the voucher date, there are no adjustments.
- Certification Types (MAT30, Section 4, Field 9). There are both mandatory and optional cert types. These cert types are applicable ONLY to adjustment records. There is no change to any of the cert types used for any other section of the HAP voucher.
  - No other cert types are permitted.
  - For example, this means that the In side of a full cert IR/UT could be reported either as an IR or as an IR-I
  - The Optional cert types will become mandatory in a future TRACS release.
- All software is expected to generate correct adjustment billing for full cert UTs. This means that there will be adjustment records for both the old and new units. What is optional for 202D is the generation of a zero billing row for the Out transactions. In a future TRACS release, the generation of the zero billing row will become mandatory.
- Initial Certifications:
  - UTs between contracts: The IC-I would usually not have an out transaction if this is a UT between contracts. On the other contract you would have a TM—not a IC-O. There would be no IC-O on the new contract and no TM.
  - For a within contract IC/UT you would not have an out transaction because the household is not currently subsidized—they moved in at market or were previously terminated. In this case the IC-I is behaving like a normal IC or MI—there are no prior transactions. Even if there were a TM the day before the IC-I (this makes no sense in the same contract) you have a TM for the out side of the transaction—not an IC-O.
  - I's and O's for MIs and ICs could occur in one other scenario--The original transaction was for an incorrect unit and we now need a * (correction) transaction to change the unit to the correct one. So for a unit number correction only, there would be an IC-O or MI-O.
To summarize the adjustment model, no matter what type of certification is the subject of an adjustment, you always reverse the prior billing for the tenant and unit for the period of the adjustment and then re-bill for the same period applying any new or changed certifications.

- Notes, definitions and issues
  - **Starting Month**—the month during which the first new or corrected certification is effective. “First certification” is defined as the new or corrected certification with the earliest effective date. The exception to this rule is the case where a MO or TM or UT-Out is effective on the last day of the month. Since full subsidy is earned in that month, the starting month is defined as the following month.
    - Note: If, for example, a previously transmitted MO is changed such that its effective date is in a different month (original = 10/30; correction = 11/1) the start date needs to be the first of the month of the earliest effective date of the two MOs.

  The **Starting Date** within the starting month is the first of the month except for the case of a MI, IC or UT-I that is effective on other than the first and there are no transactions for the same tenant and unit effective prior to the MI, IC, or UT-I. In this latter case, the Starting Date is the effective date of the earliest certification.

  - **Ending Month**—either (1) the earlier of the month prior to the current voucher or (2) the month during which billing changes caused by new or corrected certifications end. To give an example of the latter. Suppose we have a 1/07 AR and a 1/08 AR. After the latest AR is processed, the tenant confesses to additional income on the 1/07 cert. The change does not impact the 1/08 AR. The AR* for 1/07 is put on the 4/08 voucher. The adjustment period for the 1/07 AR* is defined as 1/07 to 12/31/07—not to 3/31/2008.

  The **Ending Date** is either the day before the current voucher (case 1 above) or the last day of the month the last changed cert is effective (case 2 above).

  Note: Current TRACS rules require that all partial certs be retransmitted as corrections following the correction of the full cert on which they depend. The practical effect of this rule is that only full certs will end a series of adjustments. So, if we have AR followed by TM as prior billing and then have an AR* as new billing, the adjustment period runs through the current voucher because we transmit a TM*. However if we have AR, followed by TM followed by IC for prior billing and we then correct the AR but not the IC, the adjustment period runs to the end of the month of the last day the TM* is effective (the end of the month of the day prior to the IC effective date). To make this latter case concrete, suppose the IC is effective 3/13 and is the first unchanged cert. The Ending Date for the adjustment is 3/31. Should the site software fail to correct a subsequent partial cert as required, the ending date would be the end of the month of the day prior to the partial cert effective date.

  - **Adjustment Period**—The time period from the Starting Date through the Ending Date. There may be no gaps in the date ranges covered by the certifications in either the prior or new billing block of the adjustment even if one or more certifications have the same assistance in prior and new billing.
o **Partial month billing** is calculated in the usual way (calculate the daily rate to 6 or more decimals using the number of days in the month as the divisor; round to 2 decimals; multiply by the number of days; round to the dollar). If billing for a certification involves two partial months, the result of each partial month calculation is rounded to the dollar. All certifications are assumed to be in order by effective date.

o **New and Changed certifications**—A new or changed certification is defined as any certification whose anticipated voucher date is equal to that of the current voucher. We perform adjustment calculations for any new or changed certification whose effective date is less than the voucher date whether or not the new or changed certification alters the TTP, assistance or rent. For example, on the January voucher a correction to a prior cert is reported whose only change is to add a middle initial for a household member. This certification will appear on the adjustments page giving back the old assistance and rebilling for the same amount resulting in a net adjustment of $0. The logic in this case is to show that the software recognized that it processed or received a corrected cert for the voucher.

o **Adjustment**—All new and changed certifications for a unit and tenant combination are presented as part of what can be viewed as a single adjustment with multiple detail lines.
  - Under this model a UT is presented as two adjustments
    - Out adjustment for the old unit
    - In adjustment for the new unit
  - The date range for the adjustment consists of the months from the Starting Month through the Ending Month.

o **Sort Order**—The sort order is Unit Number by Household by Prior or New Billing (Prior before New) by Effective Date. A blank line separates each unit/household block of transactions. So, if a retro GR causes adjustments for two different households in unit 1, the adjustment for household 1 is separated from the adjustment for household 2 by a blank line. This sort order can result in the two parts of a UT (UT-I and UT-O) appearing on widely separated pages of the voucher. See MAT Guide Chapter 4, Section 4.39.3 for requirements on unit sorts.

o **Prior and New Billing**—Prior means any certification active within the adjustment period that has appeared on a voucher earlier than the current voucher. New means any certification, including both previously billed and new certifications, active during the adjustment period. The Prior Billing block of an adjustment reverses billing. The New Billing block re-bills.

Within Prior or New Billing, a transaction may appear only once. For example, suppose that a 1/1/11 AR has been transmitted and paid on the Jan 11 HAP voucher. On the February HAP a 12/16/10 MO is reported. The MO appears once in the New Billing adjustment rows and is billed for the period 12/17/10 to 1/31/11. Also, the certification that is considered active on a specific date within Prior or New Billing is the most recent one processed. For example, if you have an AR and a subsequent correction to the AR, both with the same effective date, in Prior Billing, the correction is the active certification on the AR date. The original AR is ignored.
Note: There is no requirement to print negative numbers in red.

- The algorithm is:
  - Calculate and Reverse Prior Billing for the adjustment period (the Starting Date through the Ending Date)
    - For each certification previously billed (voucher month is < the current voucher)
      - Calculate the subsidy earned by each certification
      - Reverse the billing
  - Calculate New Billing for the adjustment period
    - For each certification currently billed (voucher month is <= the current voucher) including new and changed certifications.
      - Calculate the subsidy earned by each certification
      - Add to the new billing
  - Adjustment (Requested amount) = the net of the reversed prior billings and the new billings.
  - Note: since the date range is from the first of the Starting Month through the end of the Ending Month, the first certification used in the calculations may be effective prior to the Starting Month. Subsidy earned prior to the Starting Month is ignored.
    - For example: A GR is effective 2/15. The previous cert with the highest effective date is a 1/1 AR. The billing for January is ignored when calculating the adjustment.
  - Note: Partial month billing is calculated in the usual way (calculate the daily rate to 6 or more decimals; round to 2 decimals; multiply by the number of days; round to the dollar)

15. **Adjustment Calculation Implementation Issues**:

The question arises concerning what to do, after implementation of these guidelines, when a certification is corrected that was originally adjusted using other methodology (not calculated using the 202C/202D procedures). There are three logical possibilities:

1. Recalculate the old adjustment using the old methods and calculate the new one using the new rules.

2. Pretend that the old adjustment was done using the new methods and proceed as you would when correcting a certification that was adjusted using the new methods.

3. Calculate the changed adjustment using the methods in place prior to 2.0.2.C/2.0.2.D.

The TRACS 202C working group decided on option 2 as it is the only one that will result in common results for both site and CA software. This should eliminate a large number of manual adjustments on one side or the other. However, it is recognized that this solution may cause a burden on accounting software at the site level.
Special Claims

The spreadsheet posted on the TRACS web site in the Documents area (202DSpecialClaimsRounding.xls) serves as the official proper implementation of these calculations and should be used to resolve differences between site and CA calculations in the same way as the rent calculation spreadsheet should be used for that purpose.

In addition to clarifying what values should be used in certain fields, the spreadsheet, for the first time, specifies the proper rounding for each field. All calculation and rounding rules have been approved by HUD policy.
Appendix 8

HUD-50059 Data Entry Rules

Included for historical reference only
From the 4350.3 REV 1, Change 3

Note: Appendix 8 was dropped from HUD Handbook 4350.3 REV 1 in Change 4. Appendix H of the MAT Guide (above) is now the authoritative reference to HUD’s data entry and rounding rules.

Appendix 8: HUD-50059 Data Entry Rules

Appendix 8 provides:

- Data entry rules for the HUD-50059;
- Examples of rounding; and
- Data entry rules for TRACS transmissions.

1. Data Entry Rules for the HUD-50059 Data Requirements

A. Round up at $0.50. This procedure is consistent with the data entry instructions for TRACS.

<table>
<thead>
<tr>
<th>Amount</th>
<th>Rounded Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$49.49</td>
<td>$49.00</td>
</tr>
<tr>
<td>$49.50</td>
<td>$50.00</td>
</tr>
</tbody>
</table>

B. Carry decimals from one step to another on calculations made before a TRACS entry is made.

Each calculation in the following examples is performed prior to the TRACS submission. Therefore, actual numbers are used in each calculation.

2. Examples of Rounding

A. In computing an individual tenant's income, an hourly wage should be computed as follows:

**(40 hours per week x 52 weeks = 2,080 hours per year)

Example:

33.25 hours per week x 52 weeks x $5.11/hour
33.25 x 52 = 1,729 hours per year

1,729 x $5.11 = $8,835.19*

Note that the owner carried the decimals from one step to the next because these are pre-TRACS calculations. The owner will go on to enter $8,835 as the income for this individual into the HUD-50059 data, which will then be transmitted to TRACS. See the discussion below on TRACS data-entry requirements.

B. A family has the following assets: $1,331.49 (Savings); $4,322.50 (IRA); $3,255.50 (cash value of life insurance). The owner will round each asset to the nearest dollar and enter the rounded amounts into the HUD-50059 data, which will then be transmitted to TRACS.

$ 1,331 Savings
$ 4,323 IRAs
$ 3,256 Life Insurance
$ 8,910 Total Cash Value of All Assets

C. In calculating amounts for adjustments such as Total Medical Expenses, each expense should be calculated and rounded to the nearest $0.01. The expenses to the $0.01 are added together to produce a total that is then rounded to the nearest dollar.

$33.66 Prescription
$236.00 Doctor’s visit
$269.66 Total
Enter $270 in the HUD-50059.

3. Data Entry Rules for TRACS Transmissions

Owners and software vendors must follow the instructions included in the MAT Guide regarding data entry for TRACS transmissions (e.g., right/left justifications, number of fields, field length, etc.).

- Only whole numbers may be transmitted to TRACS.
- When rounding, dollar amounts must be rounded down at $0.49 and up at $0.50.

Do not carry decimals through several transactions once a TRACS entry has been made.
### Example

<table>
<thead>
<tr>
<th>Family Member</th>
<th>Actual Amount</th>
<th>Reported to TRACS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$ 7,655.49</td>
<td>$ 7,655</td>
</tr>
<tr>
<td>2</td>
<td>$ 8,400.50</td>
<td>$ 8,401</td>
</tr>
<tr>
<td>3</td>
<td>$ 3,900.47</td>
<td>$ 3,900</td>
</tr>
<tr>
<td></td>
<td>$ 19,956.20</td>
<td>$ 19,956</td>
</tr>
</tbody>
</table>

In this example, each individual member's actual earned income, rounded to a whole number, is submitted to TRACS.

### Example – When Computing TTP in MAT 10, Field 64 of the HUD-50059

Annual income in the following example had already been determined and entered as a record in the TRACS submission. Therefore, it is already a rounded number. *(NOTE: These are only a sample of the calculations used to determine TTP.)*

- Annual Adjusted Income divided by 12 months = Monthly Adjusted Income
  
  $6,525 / 12 = $543.75  ($6,525 was previously entered and is a rounded number.)

- Monthly Adjusted Income multiplied by .30
  
  $543.75 x .30 = $163.125 = 163.13

  This amount has not been entered into TRACS, so the owner would use the decimals.

- The amount that the owner enters for TTP would be the highest of the three amounts provided in Exhibit 5-9. That amount would be rounded when it is entered into the HUD-50059.

  *(NOTE: It would be incorrect for the owner to use the actual amount of annual income in this calculation, since Annual Income has already been entered onto the HUD-50059.)*
Example

Again, in the following example of correct rounding, the individual income amounts are rounded because they are transmitted to TRACS. A member of a household had the following earned income:

<table>
<thead>
<tr>
<th>Family Member</th>
<th>Actual Earned Income</th>
<th>Amount Entered in the Data Requirements and Submitted to TRACS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$3,298.46</td>
<td>$3,298 *</td>
</tr>
<tr>
<td>1</td>
<td>$5,024.49</td>
<td>$5,024</td>
</tr>
<tr>
<td>1</td>
<td>$1,655.50</td>
<td>$1,656</td>
</tr>
<tr>
<td>1</td>
<td>$9,977.99</td>
<td>$9,978</td>
</tr>
</tbody>
</table>

*The amounts submitted to TRACS are rounded.

NOTE: Prior to 9/95, if an individual had multiple income sources for one type of income (e.g., wages), the owner entered the total amount. Now, the owner enters each income source for a type of income. Since each source of income is listed on the HUD-50059 and then transmitted to TRACS, each entry must be rounded.