Step-by-Step Guide: HCV Forecasting Tool
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Introduction

Simply, the objective of the Two-Year Tool (TYT) is to analyze a PHA’s utilization situation, which includes running basic leasing and spending scenarios to better inform decisions going forward in an effort to optimize the program. The guidance that follows is a detailed explanation of the use of this tool. There are many variables that affect a PHA’s HCV program, some outside of a PHA’s control and some that can be impacted by policy and operations; variables including Congressional funding, cost per unit trends, the rate at which participants leave the program (i.e. the attrition rate), and the rate at which vouchers are successfully leased (including both overall success and time-to-success). As such, many of the steps in this guide require judgment, as determining the value of projection variables can be subjective.

The key to a useful projection is consideration of these variables, and with that consideration, informed decisions can be made.

There are two sections specific to HUD and one specific to PHAs; these sections are labelled as such.

We encourage you to visit the HCV Tools Site, found here, as well as the bite-size training videos, found here.
HUD-Specific (Part I)

Process

The goal of the TYT is to facilitate a conversation with the PHA, in order to help in developing an informed strategy, for both the current and the following year, regarding voucher issuances, costs, and other decisions, in order to run an optimal and stable Housing Choice Voucher (HCV) program, to the extent allowable. The TYT allows for a straight-forward analysis using all of these variables beginning with the Monthly Utilization Report and ending with a conversation with the PHA.

You are encouraged to share forecasts with the PHA to facilitate your discussion with them, but be careful to label and/or characterize the TYT as “draft” or “for discussion only”. HUD does not dictate, nor require, a PHA to follow a specific leasing scenario. *To restate, PHAs make the final decisions, and HUD does not specify the number of vouchers a PHA should issue or lease.*

**Utilization Report**
- The Monthly Utilization Report serves as the "launching pad" for the Two-Year Tool. The most current version can be found on the Optimization SharePoint site.
- Type the 5-character PHA Code in the noted box (or, in the case of a combination PHA, enter both PHA Codes in the two noted boxes), then click the "Open Two-Year Tool" Button.
- This report contains a great deal of other information that the user can access by noting the additional tabs at the bottom of the workbook.

**Two-Year Tool**
- Validate information (e.g. RNP, cash and investments, success rate variables, EOP rate, time from issuance to lease-up, PUC, etc.)
- Experiment with different leasing scenarios, as well as other variable scenarios (e.g. proration, offset) to determine the best options for a PHA.

**PHA Conversation**
- Share spreadsheet with the PHA; discuss PHA’s variables.
- Discuss a PHA’s leasing plan; demonstrate the leasing scenarios in the TYT.
- On what key assumptions is the PHA basing its leasing plans?
- Note the PHA’s decisions or plans, correct and note any new information from the PHA.

**InfoPath Input**
- Upload the required information from the TYT to InfoPath after reading through the QA check on the "IP Input and QA Check “ tab of the TYT.
- Note the result of the conversation with the PHA; discuss the PHA’s plans and assumptions.
PHA-Specific

Settings

This workbook makes use of Visual Basic for Applications (VBA), a programming language used for many Microsoft Office applications. As the “running” of certain types of code creates security concerns, Microsoft sets up much of its Office Suite to default to a higher security level. In order for Tool to operate, one must change a few settings before opening the Tool. It is important to note, you may want to reset your settings after using the Two-Year Tool. Here is a little video to assist in this process.

(NOTE 1: Settings are particular to users; some or all of these steps may not be required by users.)
(NOTE 2: PHA users can now create TYTs with pre-populated TYT data with the instructions found here.)

The images below may vary slightly depending on your version of Office, but the substance of the changes should remain the same. Below are the steps, with images, to allow the Tool to run appropriately.

1) Open a blank workbook in Microsoft Excel.
2) Go to File → Options
3) Then Trust Center → Trust Center Settings

4) There are two main settings to uncheck – one within “Protected View” and one within “Macro Settings”. In “Protected View”, please uncheck “Enable Protected View for files originating from the Internet”.
5) In “Macro Settings”, please check “Enable all macros...”.

6) In “ActiveX Settings”, please check “Enable all controls...”.

7) Close Microsoft Excel and open the Two-Year Tool.
8) Again, based your Housing Authority’s IT policy, you may want to revert the above changes in security setting after using the Two-Year Tool.
9) Any issues whatsoever, feel free to contact Patrick at patrick.j.hatch@hud.gov.
Monthly Utilization Report

For HUD users, the most recent version of the Monthly Utilization Report can be found on the [here](#). For PHA Users, the most recent version of the Monthly Utilization Report can be found [here](#). The Monthly Utilization Report serves as the “launching pad” for the Two-Year Tool; in other words, it is the source of the data that is moved into the TYT. The report contains updated VMS and PIC data. Upon opening the Monthly Utilization Report, an analyst will see below.

For the vast majority of tools, you will first enter the five character PHA Code (e.g. MA002), into the yellow box denoted as such. Second, hit enter and you will see the applicable information for the selected PHA populate. Third, after making sure no other TYTs are open, select the blue “Open Two-Year Tool” button. This will open and populate the Two-Year Tool for the selected PHA. To note, if an analyst is exploring the effects of a possible transfer of one PHA’s program to another, you will note the “Transfer PHA Selection” just below. Enter the receiving and divesting PHAs. The two PHAs information will be combined, and an analyst will be able to run a Two-Year Tool for a combined PHA.

* For HUD users, this report contains lots of data, outside even of what is moved over into the Two-Year Tool. Please note the additional tabs at the bottom. This information can also prove useful in determining the details of certain TYT numbers.

** For both HUD and PHA users, when you click “Open Two-Year Tool”, you will be asked a few things. The first section, “Default Variable Adjustments” (applies only to HUD) asks about carrying forward some of the changes made in prior tools. Select the variable(s) you would like to use in the TYT.

An analyst is also asked if the Two-Year Tool should be generated with PBV attrition being offset (as these units should be filled upon vacancy). Offsetting attrition will occur in the leasing chart, Column G. The default option is to offset.

Additionally, the user is asked if the Tool should automatically trend the PUC based on past PUC movement (must have a strong, positive correlation to trend). The default is to trend.

Finally, there is also an option to say that the user is in the FMC. If that box is selected, the Two-Year Tool will open on the “Additional Disbursement” tab.
Two-Year Tool Detailed Steps

Two-Year Tool Variable Sections

After clicking the “Open Two-Year Tool” button in the Utilization Report, the TYT will open. Broadly speaking, the cells in yellow are editable by the analyst – they can be updated, changed, or zeroed out. The other cells are locked and are populated from the Utilization Report, or are formula-driven.

This report will walk through the primary sections; please see the blank tool below.
#1 – Beginning Year Reserves

The tool is populated with the HUD-established CYE HHR (see reconciliation enclosure), the HUD-estimated Excess Cash, the PHA-Held Cash as 12/31 of the prior year (from VMS), the HUD-Reconciled HHR, and the VMS-reported prior calendar year-end (CYE) RNP (Restricted Net Position – formerly Net Restricted Assets).

For purposes of budget authority, the tool uses the cash-supported year-end reserves (total reserves). It starts with the HUD-Held Reserves, adjusts for any PHA-Held Reserves (referred to as “Excess Cash”) – as calculated by the Financial Management Division (FMD), to come to a total reserve (HUD-Reconciled) number. This number is then subjected to a cap of the cash available at the PHA to support the FMC-calculated “Excess Cash”. Finally, a floor is put in place to assure the PHA does not start the year with reserves below $0.

In the example below, the PHA started with HUD-Held Reserves of almost $5.4 million. The FMD calculated an under disbursement (PHA spent more money than was disbursed) for the prior year of $3.1 million. This $3.1M, for prior year expenses, will be disbursed from the HUD-Held reserves to make the PHA “whole” for last year, thus lowering the amount available to spend this year. This, then, allows the tool to use the budget authority in reserves available for current year expenses. Were the “Excess Cash” to have been positive, and the cash lower, the tool would automatically use the lower of the two to assure the PHA has the cash in place to pay projected expenses.

Finally, the bottom box shows a comparison of “Excess Cash” to PHA-Reported prior year RNP. These two numbers (remember, “Excess Cash” is, essentially, the FMD’s calculation of a PHA’s end of year reserves) should be quite close. Please investigate differences through discussions between the Financial Management Center (FMC) and the PHA.
An analyst should retrieve and input the most current VMS information into the TYT. This includes current year unit months leased (UMLs) and current year housing assistance payments (HAP) expense. This information is entered into the “ACTUAL Leased Units” and “ACTUAL HAP” columns, in the corresponding month. The TYT includes a tool that will do this, after retrieving the Data Collection Report (DCR) from VMS, automatically. Please see “Access Additional Tools”.

The third piece of information to gather from VMS is vouchers on the street – found online “New vouchers issued but not under HAP contracts as of the last day of the month” which goes into Column F of the TYT. In lieu of data on the amount of vouchers issued each month by the PHA, an analyst can use the total vouchers on the street from the single, most recent month. This may be replaced with historic actual vouchers issued if available. However, when using vouchers on the street, we only use them for the most recent month, with no data input for prior months, otherwise we would be double counting. Enter this number in the most recent month of the “Vouchers issued, or projected to be issued” column.

The bottom of the TYT contains a “Graphs” button that will allow the user to choose from a few key graphs. Also, there is a comment box at the bottom of the tool that states key considerations to consider when updating and analyzing a tool, including information on RNP and SPVs. (In the case the PHA has a PBV or RAD program, a “PBV.RAD” tab will appear showing historical information related to the PHA’s PBV and/or RAD program, including information from VMS, PIC, and other HUD systems.)
#3 – Leasing Rate Variables

**Success Rate**

The success rate (Cell K5) is the percent of issued vouchers that are successfully leased (and not returned to the PHA). For example, if a PHA issues 10 vouchers and 7 are leased-up with 3 coming back to the PHA, the PHA’s success rate is 70 percent (7/10). The default success rate used in the tool is 70 percent, but should be updated with the actual PHA’s rate where available. This can be obtained from the PHA; additionally, the TYT provides a tool that allows for an analyst to track issuances and lease-ups to determine an actual success rate. Please see “Access Additional Tools”.

**Annual Turnover Rate (Attrition Rate)**

The annual turnover rate (Cell M5) is the percent of the program that turns over each year. For example, if a PHA has annual average units leased of 100, with a total of 10 end of participations (EOPs) for the year, the attrition rate is 10 percent.

The default attrition rate used in the Tool (Cell M5) is a staggered 12-month snapshot of EOPs, then compared to UMLs to generate an attrition rate. The information found below (Cell M6) is information as of the end of the prior month.

The amount of time it takes a PHA to perform the work of entering 50058 EOPs in PIC varies, in some cases taking a month or more. So, this staggered snapshot likely gives PHAs enough time to input all EOPs; for example, data for the 12 months ended 12/31/2017 would be pulled at the end of March 2018, or later. However, that data is older and may not capture any major EOP trend movements (though those are not frequent). So, the tool has two numbers – one likely complete, though delayed; the other, potentially incomplete, but current. In many cases, the numbers are close. In other others, it may warrant a conversation with the PHA to determine the best number to use in the Tool. Comparing the data is the key here. Of course, of course, if some other information is known that would cause the going-forward EOP rate to differ from these historical numbers, the Tool should use whatever rate is most likely to reflect attrition going forward.

**Time from Issuance to HAP Effective Date**

The time from issuance to HAP effective date (Cells K8-K12) is the speed at which vouchers issued are leased. Using the number from the success rate example above, say of the 7 that lease up, 2 lease up in the first 30 days, 1 in the 31-60 day range, and 4 in the 60 to 90 day range, then 28.5 percent would be in the “% Leased in 30 days” cell (2/7), 14.3 percent in the “% percent leased in 30 to 60 days” box (1/7), etc. As with the success rate, this information is pre-populated with default variables. The TYT provides a tool that allows for an analyst to better determine a PHA’s actual rates; please see “Access Additional Tools”. The information used here is only to estimate the speed at which vouchers lease up; for example, vouchers may lease up at varying times during the month but be put into the same 30-day group. This will inexactly measure some HAP costs, but it will provide a decent estimate overall.

**Estimated Inflation**

This box does not allow for user input. It is populated when HUD receives inflation numbers from PD&R. Absent that, the default rate is 100%. Individual PHA inflation factors can make a large difference during the planning process.
#4 – Per Unit Cost (PUC)

Per Unit Cost is the amount each voucher costs the PHA, on average, per month. The Two-Year Tool populates with actuals, where available, and then uses the last known actual going forward. In some cases, the last actual may contain an aberration that isn’t reflective of future months PUC. In many cases, PUCs are trending in one direction. As a result, in all cases an analyst should review this information and determine what modifications to make to the “Manual PUC Override” column.

The TYT contains a tab entitled “PUC.RB Analysis” that allows an analyst to examine the PUC and rent burden trends. This tab, as seen below, contains a chart showing three-month rolling averages, the month-to-month change, and a graph showing a PUC trend line. This information should be used to inform an analyst when adjusting PUCs in the “Override” column. There is a drop-down that allows a user to automatically transfer the projected three-month rolling average and linear trends to the Projection Analysis Tab. PLEASE EXERCISE CAUTION when using this option, as the projection, carried forward, is using data that may include aberrations, etc. that are not indicative of future trends. The tab also contains a chart showing rent burden over time, as well as a chart looking at a unit-weighted two-bedroom FMR over time.

Some key questions to consider:

- Is the most current month’s PUC indicative of cost trends, or is it an aberration?
- Does the three-month rolling average significantly differ from the last actual?
- Does the graph indicate a trend that using the last actual would omit?
- Do the graphs indicate a need to address rent burden by examining payment/subsidy standards?

In cases where PHAs made significant prior period adjustments (going back and changing prior VMS-reported months) that aren’t picked up in the Monthly Utilization Report, the TYT contains a tool that allows for the quick input of updated prior year UMLs and HAP. Please see “Access Additional Tools”.

Finally, there is a button “Material New Units at a Material New PUC”, that allows a user to incorporate newly funded vouchers that are, in size and/or PUC, enough different from the program-wide PUC to sway the overall average.
#5 – Budget Authority

The TYT allows for an analyst to run scenarios using different Years 2 and 3 HAP prorations (Cells H6 and H7) and Admin Fees percentages (Cells H11 and H12), as well as different Years 2 and 3 Offset numbers (Cells H8 and H9).

A proration of HAP Funds and/or Admin Fees means a PHA is eligible for $XX dollars, but because Congress appropriated an amount less than eligibility, the amount needs to be reduced to match the available dollars.

HUD has established, in prior years, a position of determining "excess" reserves based on size (<250 units, 12%; 250-499 units, 6%; >500 units, 4%). HUD then determines the amount of funds needed from the offset (for such objectives as raising the proration, supplementing the shortfall pot, etc.). Then, from this "eligible for offset excess reserve" pot of funds, HUD determines the percentage needed to attain the number needed for offset.

In other words, HUD determines a % of the "excess" reserve pot that is needed. This number is populated based on information from prior years and best-known information to date. In 2016 and 2017, HUD used a 14% and 16%, respectively, cut for "excess" reserves.

HUD, also, has a history of protecting certain categories from offset. Please see, for example, the 2018 funding notice. This tool takes into account the PHA size thresholds (see above discussion) and VASH full leasing reserve protection (just for the offset in Year 2).

While the TYT provides much of the other information shown on the left, these cells are available for adjustment based on information not contained in the Monthly Utilization Report. Notably, if a PHA receives an allocation of tenant protection vouchers during the year, ACC units and funding are awarded and need to be reflected in the TYT. This can be done via the “New ACC Units” tool found in the “Access Additional Tools” button.
Two-Year Tool Analysis

Understanding the variable input sections allows for the following analysis (see the * on the TYT – page 5):

1. Assess key spending and leasing projection results for Years One and Two. This is an initial check of a PHA’s position reflecting only the vouchers now on the street - with no issuance scenario for future months.

2. Test various issuance scenarios for the remainder of the calendar year and the following year (even, in “Access Additional Tools”, Year 3 and 4), determining how to best optimize leasing and spending. As we can see, this PHA has a CYE (Year 1) estimated reserve of 3.9 percent and a CYE (Year 2) estimated reserve of 3.4 percent. You may also notice that the PHA started Year 1 with an estimated 2.0 percent reserve.

3. In an effort to lease more vouchers, to lower the estimated CYE reserve in Year 1, but particularly in Year 2, one could experiment with leasing scenarios, as shown below (also shows PUC adjustment done after analysis of the “PUC Analysis” Tab). The issuing pattern shown below was chosen after some experimenting; there are other combinations of issuances that may result in a similar outcome.

As for Year 3, the tool shows the PHA will end with 1.7% in reserves.

This is just a rough idea of the kind of leasing that might be supportable and would serve as a start when comparing notes and discussing PHA plans.
The Year-End results are duplicated in the box to the left – “Summary Outcomes” (which can be turned on/off by clicking “Ctrl+b”). This box allows an analyst to run leasing scenarios without constantly scrolling up and down.

Additionally, the box will highlight, in red, situations where a PHA 1) exceeds its UMA allocation; 2) exceeds its available funds, thus the tool is projecting a shortfall; or 3) shows greater than X percent reserves based on size (<250 units, 12%; 250–499 units, 6%; >500 units, 4%) at the end of the year AND is leasing less than 95 percent of its available funds. It is IMPORTANT to note that each PHA’s leasing situation is unique and must be examined as such – do not run a tool to just avoid a red box.

A) Administrative Analysis

In addition to analyzing a PHA’s HAP projections, the TYT also contains a projection that analyzes a PHA’s Administrative Fees, expenses, and reserves to determine the going concern status. The TYT contains a summary of this information (with additional information found in “Access Additional Tools”).

The summary shows information related to operating revenues and expenses. The TYT will compare a PHA’s administrative spending per UML to its peer groups (both Earnings/UML & Size and Statewide), as well as show the amount of Unrestricted Net Position (UNP) (formerly Unrestricted Net Assets) with which a PHA is projected to end the year. In this example, the PHA is spending $82.62 on administration per UML based on its submitted VMS information, and this compares to its peer group with similar revenue and size of $78.38 – rather close. PHAs in the same State regardless of revenue per unit or size spent a little more per UML - $87.57.

There are no variables to manipulate when it comes to the Administrative Fees Analysis. Broadly, the analysis examines a PHA’s last official reported UNP, records actuals and projections where needed to estimate year-end UNPs, while taking into account current ports. It is only as estimate but serves as a great starting point for analysis. (NOTE: This analysis only considers a PHA’s reported administrative reserves and the associated administrative earnings and expenses. It does not include potential, additional outside funds.)

* The Administrative Fee Analysis Tab contains the support for the above shown chart. For estimating future month Admin Expenses, the TYT takes the average of expenses since the start of the prior year, and uses that number going forward. This can be adjusted by simply unprotecting the sheet (no password). Also, when estimating ports, the TYT uses the amount of ports to date for the year, then estimates to the end of the year using last actual. Additional information can be found in the comments within each cell.
B) Access Additional Tools Button

The TYT contains other tools via the “Access Additional Tools Button” – which has been alluded to throughout this document. Each of these additional tools contains instructions for its use, but an overview is provided below.

**New ACC Units:** Information input here, based on new unit awards such as TPVS, will load over into the TYT, so the proper UMAs and BA are included in the analysis.

**Budget Authority Detail:** Displays the funding detail, as well as new increments information, from HUDCAPS.

**Summary Document:** This tool will load the information, based on the analysis, into a one-page document that can be easily printed and presented as an executive level summary of the tool prepared.

**SEMAP Data:** This displays information related to historical PIC Indicator Scores and Designations, as well as the prior year’s leasing indicator scoring information.

**FMC Add'l Disb/Cash Mgmnt:** Helps PHAs track cash status for monthly payments, as well as estimate monthly HUD-Held Reserves; the FMC utilizes this tool for additional disbursements.

**Success Rate Tracking:** Allows a PHA to track actual success rate and time-to-success variables, as well as waiting list issuance success rate and, if needed, to modify the tool to look at lease-up rates in excess of 150 days.

**Input Accrual Information:** Allows for the TYT to capture HAP expenses not reported in VMS.

**VMS Data Upload:** Updates selected year with Data Collection Report from VMS. Also, this tool will load a copy of the VMS DCR into the TYT as a separate tab.

**Years 3 and 4:** Allows for a PHA to analyze its program into the 3rd and 4th years.

**Administrative Fee Analysis:** Provides detailed information related to projecting administrative revenue and expenses.

**Waiting List Management:** Analyzes (after inputting waiting list success rate; user may use “Success Rate Tracker” to track this) the number of people from the waiting list needed to meet projection goals.

**PBV/RAD Breakout:** Allows a PHA to run projection scenarios (e.g., leasing, PUC adjustments, etc.) by program type – PBV v. non-PBV, or even to break PBV into RAD1/non-RAD 1 PBV.

**VASH:** This allows for a specific analysis on a PHA’s VASH program, in much the same way as the tool works for a PHA’s overall program. Also, this tool contains a referral tool, that will allow one to determine the needed referrals to reach varying goals.

**FUP and NED:** Coming soon.

**Mainstream Projections:** Coming 2020.
HUD Specific (Part II)

PHA Conversation

It is at this point that HUD would provide the TYT to the PHA and obtain any projection that the PHA may have done. This will allow for a discussion of a PHA’s plans. To restate, HUD’s TYT should be labelled “for discussion only” or “draft”. The purpose of the discussion is to:

1. Determine if the PHA has a plan and whether it is based on a projection.
2. Determine if assumptions are reasonable and the key factors that went the TYT: funding, RNP, PUC, attrition rate, success rate, etc. are as accurate as possible. Here we are trying to ensure to help them avoid any major errors, as well as better inform our own assumptions.
3. Highlight any leasing opportunities or potential overleasing/overspending possibilities.
4. Discuss the PUC trend and the program decisions affecting PUC. PHA policies impacting PUC inherently contain tradeoffs. The objective is to ensure a PHA is deliberate and informed in making decisions, and knowing the repercussions of those decisions (e.g. payment standard changes).
5. Highlight the impact of decisions on following years and tentatively plan a course of action that stabilizes leasing and spending through the following year.
6. Demonstrate scenario testing so the PHA can see the different funding possibilities in the second and third years and position the PHA accordingly, seeing how much lead time they may need for attrition or issuing.
7. Have the PHA decide a tentative voucher issuance strategy for the current and following year, subject to monthly update.

InfoPath Input

After completing the TYT, and discussing with the PHA, the final step is to load the information – from both the tool and the conversation – into the PHA’s InfoPath checklist. Specific numbers from the TYT can be uploaded to InfoPath via the buttons found on the “IP Input and QA Check” Tab. First, assure you have read through the Quality Assurance (QA) Checklist (pictured below). It serves as the essential “Have I?” in ensuring a high quality checklist. Areas of concern will be highlighted in red. After doing the QA check, an analyst may use the buttons on the left to upload the numerical data.

Additionally, as with the TYT, the Administrative Fees contain a button on the “Administrative Fee Analysis” Tab that allows an analyst to upload the relevant information to the Finance/Admin checklist.

Conclusion

With increased exposure, the Two-Year Tool becomes increasingly easy to use. Its use will help HUD and PHAs, working together, serve more families better. The running of a successful HCV program is built on planning and adjusting; the tool was created to do just this. Please do not hesitate to reach out and ask questions.