



CNA e-Tool Known Issues and Solutions

U.S. Department of Housing and Urban Development (HUD)

Federal Housing Administration (FHA)

October 2018



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1. User Access

1.1 Deactivation of User ID

Most secured web portals suspend a User ID after a certain period of inactivity. The maximum number of consecutive days of inactivity that trigger a lock-out varies widely depending upon perceived security risks. HUD systems lock-out any user after 90 days of inactivity.

Therefore, it is advisable that CNA e-Tool users log-onto the system at least once every two months to assure a safe margin so that no period of inactivity, illness or vacation results in loss of access.



1.2 Double Authentication of FHA Lender Users

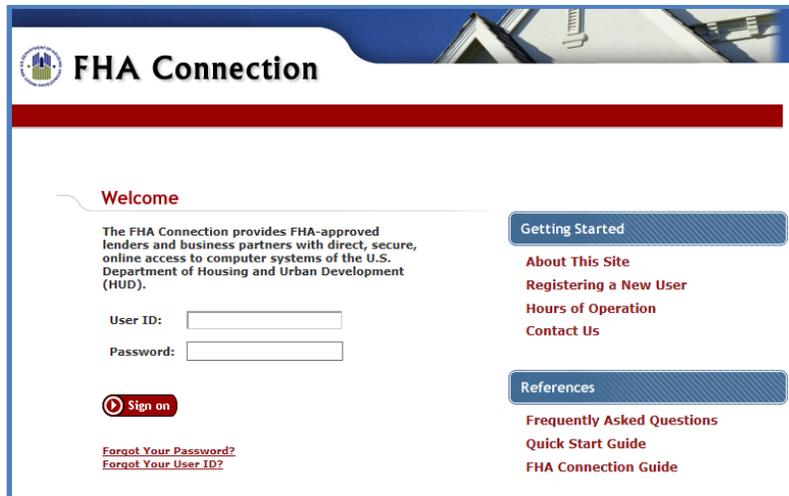
FHA Lenders using the CNA e Tool need to keep their User IDs “alive” in both FHA Connection as well as Secure Systems.

Even though an FHA Lender may access the CNA e-Tool by logging into [Secure Systems](#) directly, doing so regularly without also occasionally logging into FHA Connection will cause FHA Connection to lock them out. If a user is locked out of FHA Connection, they are also locked out of Secure Systems, and thus no longer able to access the CNA e Tool.

While double authentication can be an inconvenience, FHA Lenders using the CNA e-Tool should take the following steps at least once every two months to avoid lock-outs. (In future years HUD will implement a single sign-on between FHA Connection and Secure Systems to eliminate double authentication.)

Go to the FHA Connection portal at:

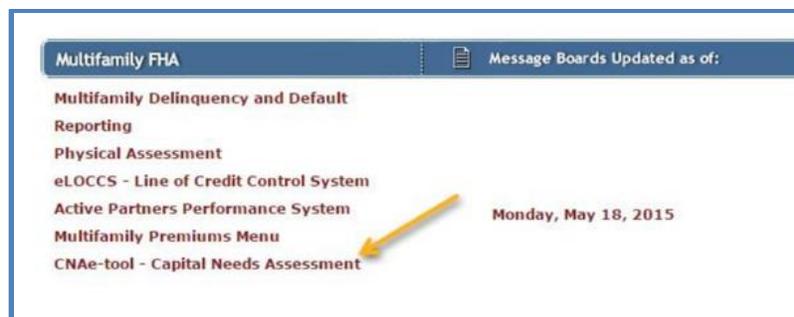
<https://entp.hud.gov/clas/>



- Login with the HUD-issued M ID and Password



- Click the Multifamily FHA button

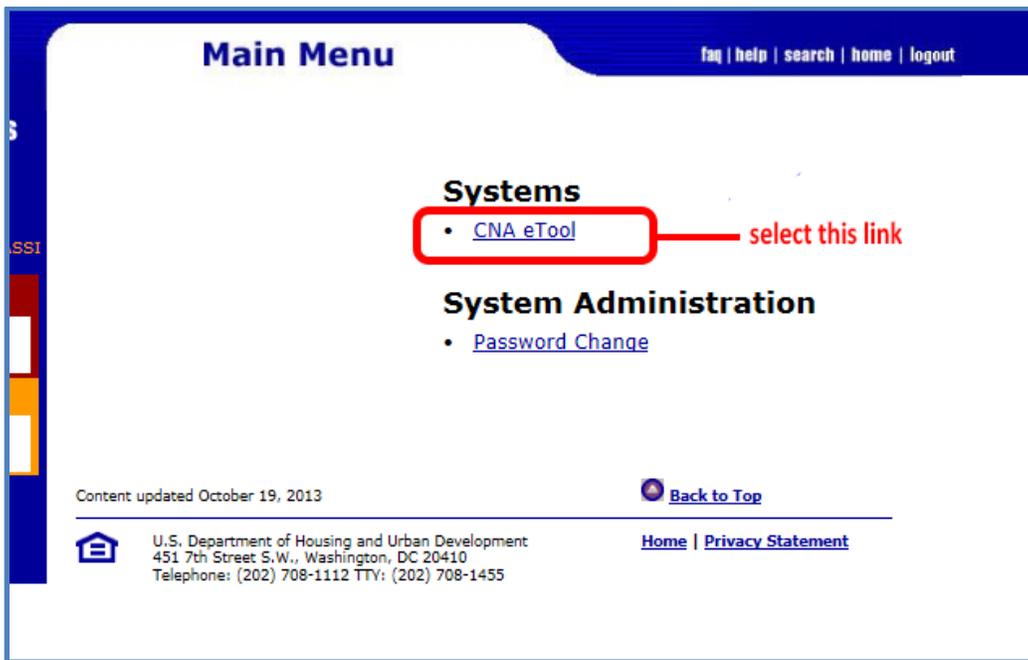


- Click the CNA e-Tool menu link which will redirect the user to Secure Systems. See below.



The screenshot shows the 'User Login' page. On the left, there is a blue sidebar with the text 'Secure Systems Single Sign On' and a small house icon. The main content area has a white background with a blue header containing 'User Login' and navigation links: 'faq | help | search | home'. Below the header are two input fields: 'User ID' and 'Password', followed by 'Login' and 'Cancel' buttons. A grey box with red text contains an 'ATTENTION' notice with four bullet points: 'Your User ID will be locked after three incorrect login attempts.', 'Forgot your password? Click this link to access Reset Password and other useful information.', 'There is an inactivity timeout of 30 minutes. Please save your work periodically to avoid being logged out.', and 'There is a session timeout of 4 hours. Once reached, you will need to re-authenticate after which you can resume work where you left off.' Below the notice, it says 'Content updated May 21 2016'. At the bottom, there is a home icon, contact information for the U.S. Department of Housing and Urban Development, and links for 'Home | Privacy Statement'.

- The FHA Lender must then login to [Secure Systems](#) with their M ID and Password
- Click Accept on the next screen to access the Secure Systems Main Menu



The screenshot shows the 'Main Menu' page. It has a blue header with 'Main Menu' and navigation links: 'faq | help | search | home | logout'. The main content area is white with a blue sidebar on the left containing 'SSI' and a vertical bar with red, white, and yellow segments. The main content has a heading 'Systems' with a red box around the link 'CNA eTool' and a red arrow pointing to it with the text 'select this link'. Below this is a heading 'System Administration' with a link 'Password Change'. At the bottom, it says 'Content updated October 19, 2013', a 'Back to Top' button, and contact information for the U.S. Department of Housing and Urban Development, along with 'Home | Privacy Statement' links.

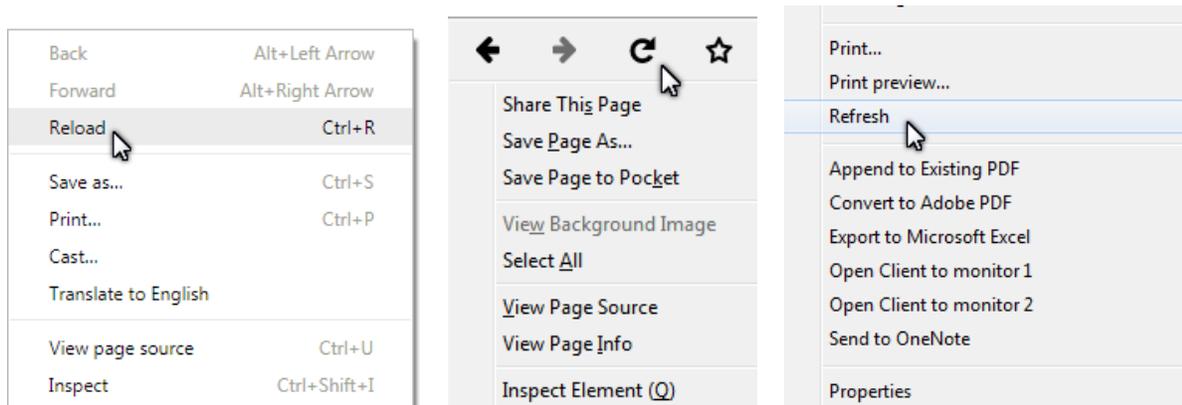
1.3 Blank Screen after Selecting CNA e-Tool

Some users have observed that a blank screen appears after clicking the “CNA e-Tool” link.

If the CNA e-Tool screen doesn’t display, the user should Refresh/Reload the screen. The proper method for Refreshing or Reloading a web page varies slightly from browser to browser.

Generally, every browser has a Reload icon that may look something like this . Click the icon. Alternatively, all browsers also have a Refresh/Reload link/icon in a dropdown menu which displays when the user right-clicks anywhere on the webpage. Below are examples from

Chrome, FireFox, and Internet Explorer. See Section 2 for more information on how user experience varies based on their chosen browser.



If the CNA e-Tool still fails to open, the user should close and reopen the browser, and log in again. If this fails to correct the problem, the user should clear the browser cache (see Section 2.1) and retry. If the user remains unable to open the CNA e-Tool, report this failure by e-mail, including screen shots of results, to CNAAccess@hud.gov.

1.4 E-mail Validation- *e-mail validation inactivated 3/3/2018*

2. User Interface/Experience – Browser Issues

2.1 Web Browsers and Cache

The CNA e-Tool has been tested with Internet Explorer, Chrome, FireFox, Vivaldi, and Safari. We recommend that users have the latest version of their browser when using the CNA e-Tool. Legacy versions of these web browsers may be functional, but the user may experience issues.

Clearing Web Browser Cache

After updating to a new browser version or if experiencing a page-load issue, such as the one described in Section 1.3, the user should clear their cache. (Clearing cache is also a best practice to ensure operational efficiency on the user’s computer.) Accessing the cache clearing function differs from browser to browser, and may also differ from one version of the browser to another.

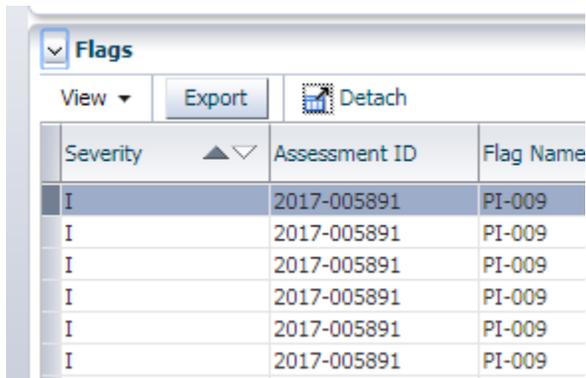
Below are sample links to instructions on how to clear browser cache. If the user’s browser interface doesn’t match what is pictured in the instructions, the user should search for “how to clear browser cache on” and specify the browser type and version. The internet is the best source for the latest instructions.

- [Google Chrome](#) 
- [Microsoft Internet Explorer \(IE\)](#) 
- [Mozilla Firefox](#) 

2.2 Exporting and Saving CNA Validation and Submission Data Panels

We have observed that the file naming and saving procedure for exports of data from either the Public Validation Engine or the Submission Portal varies among browsers, notably Microsoft Internet Explorer and Google Chrome, and may not be intuitive.

Data in most CNA e-Tool panels can be exported by using the “Export” button.

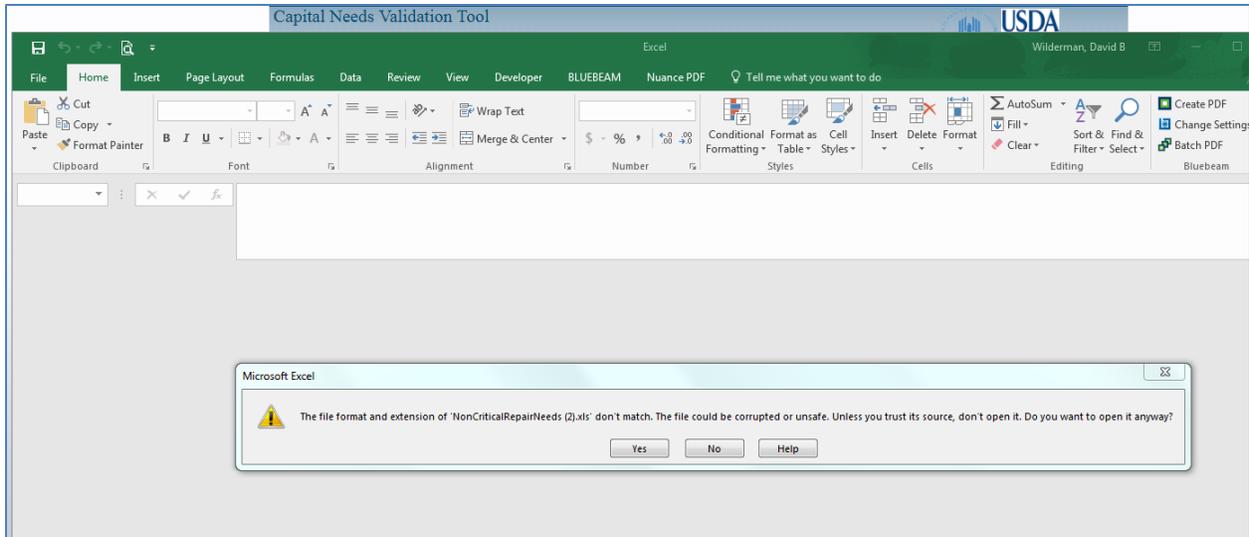


Severity	Assessment ID	Flag Name
I	2017-005891	PI-009

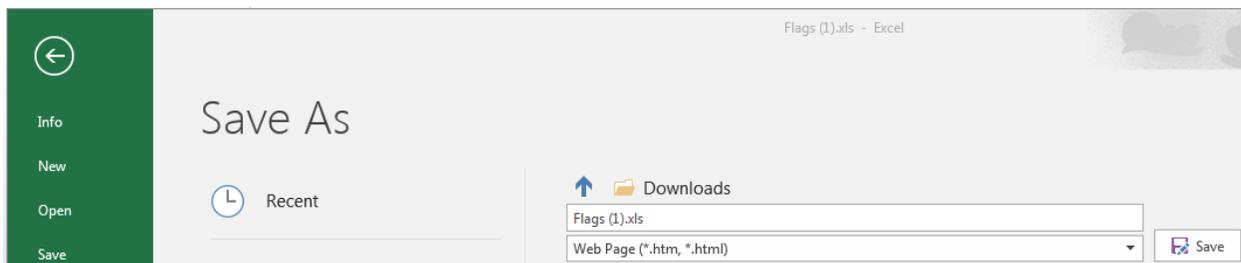
While the export will cause the data to display in Excel, the default file type is set to a web page (html). When saving the file on a local PC, the user must explicitly choose to save it as an Excel Workbook. The procedure for saving these exports as true Excel files differs slightly from browser to browser.

Google Chrome Example

When accessing the CNA e-Tool with Chrome, an export of data from a panel may appear as a file “*panel name.xls*” with an icon in the lower left of the screen. Alternatively, if the user has instructed Google Chrome to always open files of this type, they may see the following:



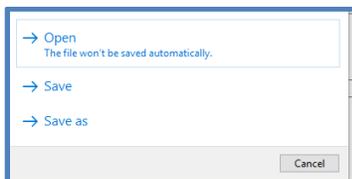
The user should click “Yes” to open the downloaded Excel file. Then the user may save the file to their computer, but should take care to save the file as an Excel workbook, rather than as a “Web Page html” file.



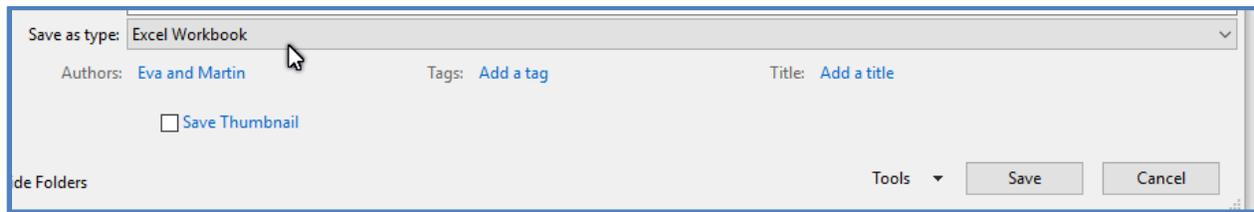
Microsoft Internet Explorer (IE) Example

Typically, Internet Explorer will ask the user what s/he wants to do (i.e., open or save the export file.) The dialog box appearance may vary among different versions of IE and/or the user’s desktop configuration.

Below are just two examples from IE:



Different versions of IE vary in what the user sees after selecting either “Open” or “Save” or “Save as”. As with Chrome, IE will default to a “Web Page html” file type. Accordingly, the user must explicitly choose an Excel Workbook as the file type when saving the file to their local PC.



2.3 Printing Reports – Internet Explorer Quirk

Certain standard, printable reports are available in the “Reports Panel” of the CNA e-Tool:



Shown here is the Reports Panel from the Submission Portal (aka Lenders’ portal). Note that the “Snapshot” report in this list does not appear as part of Validation results, but all four of these reports are also repeated for Agency staff in the Reviewer Tool.

Two of these reports do not print completely when accessed from Internet Explorer. By default, IE will print only the first page of the “Snapshot” and the “Building Unit Mix” reports. While it is possible that this fault may be fixed in future versions of IE, we strongly recommend using Chrome, which successfully prints all reports.

3. Known Calculation and/or System Errors

Below are descriptions and samples of known calculation errors, which will be corrected in a future release. Each description also notes alternative sources for the correct results.

3.1 Assessment Summary Report – Incorrect Count of Accessible Units

Corrected in Release 2.2, 3/3/2018

3.2 Estimate Period Recap, Snapshot, Accessibility Repairs Cost/Unit Error

Corrected in Release 2.2, 3/3/2018

3.3 Building Unit Mix, Property Summary, Parking Counts

Corrected in Release 2.2, 3/3/2018

3.4 New Year, Shelf Life Error **Corrected 7/30, Instructions thru 10/15/2018**

Assessment Tool 1.2 v 7 Corrected with Release 2.3 7/30/2018



Corresponding System Date Function Corrected in Release 2.3.2, 10/15/2018 Interim Anomaly & Instruction for Construction CNAs Validated or Submitted Prior to 10/15/2018

On January 5, 2018, several lenders and needs assessors noticed that financial schedule results for CNAs prepared and validated in 2017 changed on or after January 1, 2018.

This was because the CNA e-Tool application was programmed to identify the current year as the Relative Year "0". The application used an internal, independent clock not only to identify the current year, but also the date and time that a CNA is validated and/or submitted. Similarly, the Assessment Tool included a function to identify the current year and compared the current year to the year installed of components to determine their age. Consequently, on January 1, the current age of all identified components increased by one year, which also means that the Remaining Useful Life (RUL) decreased by a year. This unexpectedly altered results and did not allow for the standard 180 day shelf life of CNAs.

Assessment Tool 1.2 v 7 corrected this problem by deleting the automatic date function and substituting in its stead the calendar year of the date users enter in the "Date of Site Visit" box of the Assessment Scope sub-form of the Property form. (For existing properties this entry is the date of the site visit, but for new construction or substantial rehabilitation proposals users are instructed to enter the estimated date of Final Endorsement of the proposed loan.)

A corresponding date function operates in the system (i.e., in the Validation Engine, the Submission Portal and the Reviewer Tool). This function is changed until in Release 2.3.2 effective October 15, 2018. At that point the system also will read the "Date of Site Visit" in order to determine the calendar year which is Relative Year "0". The earlier (July 30) correction of the Assessment Tool enables users to complete work on an Assessment Tool for a CNA where the end of the shelf life for the work as well as the submission date may occur after January 1, 2019.

Between July 30 and October 15, 2018, the Assessment Tool and the system will not be using the same date formula. This will be of no consequence for CNAs prepared for existing properties. But for HUD Asset Development CNAs prepared for new construction or substantial rehabilitation programs [National Housing Act Sections 220, 221(d)(4), and 231] validation results will not show the correct coordination of Relative Years with calendar years and component age will calculate based on the current calendar year at the time of validation or submission. After October 15, 2018, the system will report such new construction CNAs correctly, using the calendar year of the "Date of Site Visit" entered by the the user as the estimated date of Final Endorsement.

Existing Properties

Thus for all existing properties the year in which the site visit occurs is defined as Relative Year "0" and the following calendar year is Relative Year 1 of the Financial Schedule. At submission (after Release 2.3.2 on 10/15/2018), a warning flag will appear if the date entered is more than 180 days prior to the date of submission.



These changes are illustrated in the following example for an existing property:

Capital Needs Assessment

Participants
Property
Sites
Unit Type Definition
Buildings
Units and Common Spaces
Utility Type Usage
Inspection Samples
Components
Alternatives
Repair Replace Recommendation
Narrative
Financial Factors
Repair Replace Decision

Property Information

Enter Property | **Assessment Scope** | Property Summary

HUD/USDA CNA Type & Program

HUD		USDA	
Type	Asset Development	Type	
Program / Event	223(f) Refi-Acq		

General CNA Factors

# Vacant Units	0	Date of Site Visit	07/15/2018
Minimum Sample %	10.0000	<i>* If CNA is for HUD, Asset Development for Programs 220, 221(d)(4) or 231, enter anticipated date of Final Endorsement</i>	
ASHRAE Energy Audit?	NO	User's CNA ID Number	
ASHRAE Auditor Name/Credentials			
Additional Tests?	NO		
Additional Test(s) Comments			

Add/Update

In this example showing a “Date of Site Visit” as July 15, 2018, the Relative Year “0” is calendar year 2018.

On the Components form users should enter the “Year Installed” for each Component ID as shown in the following example. This year should be the actual or estimated year when the item was installed, never later than the “Date of Site Visit.” Note that the current age and the Remaining Useful Life are calculated as of the date of the inspection.



Capital Needs Assessment

Participants

Property

Sites

Unit Type Definition

Buildings

Units and Common Spaces

Utility Type Usage

Inspection Samples

Components

Alternatives

Repair Replace Recommendation

Narrative

Financial Factors

Repair Replace Decision

Components

Choose Component

Need Category: Building Frame & Envelope | Need Item ID: Windows

Component Type: Storm/Screen Windows

Added Component IDs:

- Periodic seal coat
- Restripe parking and lanes
- Solar shield window screens**
- Unit living room & bedroom carpet

Delete

Enter/Modify Component Detail

Component ID: Solar shield window screens

Notes:

Unit Cost: \$22.00 | Unit of Measure: Each | Quantity: 64

Type of Utility: N/A | Usage / Year:

Year Installed: 2015 | Current Age: 3

Standard Estimated Useful Life: 7 | Standard Remaining Useful Life: 4 | Percent Standard Remaining Useful Life: 57.1400

Assessed Remaining Useful Life: | Percent Recommended Remaining Useful Life: 57.1400

Remaining Useful Life Comments:

TCO per Year: \$3.14 | Location: All windows

Add | Update | Close

New Construction/Substantial Rehabilitation (NC/SR)

For FHA insured construction loans [Section 220, 221(d)(4), and 231, but NOT 241(a)] the date entered for “Date of Site Visit” should be the estimated date of Final Endorsement of the loan (i.e., construction completed, monthly loan payments commence). This means that Relative Year “0” will be the calendar year in which Final Endorsement is expected (2020) and Relative Year 1 will be the next calendar year (2021).

The “Date of Site Visit” would be entered as in the following example for a new construction or substantial rehab project where Final Endorsement is expected in August 2020. Note that for this new construction proposal the “# Vacant Units” and the “Minimum Sample %” are both entered as “0” because the proposed project does not yet exist.



Capital Needs Assessment

Participants
Property
Sites
Unit Type Definition
Buildings
Units and Common Spaces
Utility Type Usage
Inspection Samples
Components
Alternatives
Repair Replace Recommendation
Narrative
Financial Factors
Repair Replace Decision

Property Information

Enter Property | Assessment Scope | Property Summary

HUD/USDA CNA Type & Program

Type	HUD	Asset Development	Type	USDA	
Program / Event		221(d)(4)			

General CNA Factors

# Vacant Units	0	Date of Site Visit	08/30/2020
Minimum Sample %	0	<i>* If CNA is for HUD, Asset Development for Programs 220, 221(d)(4) or 231, enter anticipated date of Final Endorsement</i>	
ASHRAE Energy Audit?	NO	User's CNA ID Number	
ASHRAE Auditor Name/Credentials			
Additional Tests?	NO		
Additional Test(s) Comments			

Add/Update

Meanwhile on the Components form users should enter “Year Installed” for each Component ID as the calendar year projected for Final Endorsement (2020) as in the following example. Note that the current age (0) and Remaining Useful Life (6) are calculated as of the calendar year of Final Endorsement. However, for substantial rehabilitation projects some components installed before rehab may be retained and reflected in future replacement planning. The “year installed” for these components should be the actual past year installed or a reasonable estimate if not precisely known.



Capital Needs Assessment

Participants

Property

Sites

Unit Type Definition

Buildings

Units and Common Spaces

Utility Type Usage

Inspection Samples

Components

Alternatives

Repair Replace Recommendation

Narrative

Financial Factors

Repair Replace Decision

Components

Choose Component

Need Category: Interiors-Dwelling Units | Need Item ID: Finished walls, ceilings, floors

Component Type: Carpet

Added Component IDs:

- Periodic seal coat
- Restripe parking and lanes
- Solar shield window screens
- Unit living room & bedroom carpet**

Delete

Enter/Modify Component Detail

Component ID: Unit living room & bedroom carpet

Notes:

Unit Cost: \$350.00 | Unit of Measure: Each | Quantity: 8

Type of Utility: N/A | Usage / Year:

Year Installed: 2020 | Current Age: 0

Standard Estimated Useful Life: 6 | Standard Remaining Useful Life: 6

Assessed Remaining Useful Life:

Percent Standard Remaining Useful Life: 100.0000

Percent Recommended Remaining Useful Life: 100.0000

Remaining Useful Life Comments:

TCO per Year: \$58.33 | Location: All units

Add | Update

Interim Instruction for NC/SR CNA Submitted Prior to 10/15/2018

But as noted, until October 15 the validated results of this sample case will display current age and Remaining Useful life based on the current calendar year (2018) and Relative Year 1 will be identified as 2019. After October 15, 2018, the results for this same CNA will be reported correctly, as described above. If such a CNA is submitted in the interim, the date entered as “Date of Site Visit” should be at or near the date the Assessment Tool is actually submitted and the “Year Installed” of components to be installed should be the same calendar year. This is the most accurate, albeit not perfect, approach since the result will align Relative Years (but not calendar years) with the correct timing of future replacements and will properly size annual needs forecast for the successive Relative Years resulting in an accurate financial plan based on Relative Years (not calendar years.)

~~However, underwriting a loan application requires due diligence conclusions fixed at a given date and enduring for a period necessary to evaluate transactions. These due diligence documents, such as appraisals and capital needs assessments, are dated and are deemed valid for what is often called a “shelf life.” The 2016 MAP Guide sets a shelf life of 180 days for a~~



CNA, but the system currently has an error since it may not report fixed results for any CNA shelf life which includes January 1. A further complication is that the MAP Guide specifies that the shelf life is measured as a number of days before the date of application with no allowance for how long thereafter a Firm Commitment may be issued and the transaction closed. Between application and commitment a CNA may be returned and resubmitted multiple times, sometimes exhausting its shelf life.

Accordingly, CNAs prepared in 2017 and submitted or resubmitted in 2018 may use the following workaround provided that the CNA remains within the required shelf life, i.e., the “Date of Site Visit” (located in cell G16 of the Property worksheet of the Assessment Tool) is not more than 180 days past.

In the Assessment Tool file:

- a. ~~Go to the Components worksheet, Column P, named “Assessed Remaining Useful Life” (ARUL).~~
- b. ~~Identify any component with a null or no entry in Column P and with a corresponding entry in Column Q which is greater than “zero”. Column Q is named “Standard Remaining Useful Life” (SRUL).~~
- c. ~~For each component identified in step “b”, enter in Column P the formula “=Q[current row#]+1”. That is if the identified component is in row 11, then the formula entry is “=Q11+1”~~
- d. ~~For each component where “=Q[currentrow#]+1” has been entered, go to column T and enter the following text note:~~

~~*The SRUL has reduced by a year during the shelf life of this CNA due to a change in the calendar year on 1/1/2018. An ARUL equal to the SRUL+1 has been entered.*~~

If the shelf life of the CNA has expired at the time of any resubmission, a new CNA is not required. However, the lender must use the financial schedule results produced by the CNA e-Tool validation response without changes to the Assessment Tool file as described in steps “a” through “d” above. This recognizes the actual passage of time, more than a half year, since the CNA was prepared.

This calendar year error will be corrected in a later release. The correction will allow the needs assessor/lender to designate which calendar year will be Relative Year “0” such that all validation and underwriting are based on this same calendar year. Provided that the designated calendar year is not earlier than the current year at the time of validation, submission or resubmission, a needs assessor or lender could change the calendar year designated as relative year “0.” For existing properties, the correction allows the user to protect the CNA Shelf Life when a January 1 date occurs in the interval and also to recognize in advance any changes in financial results that may occur if a CNA is resubmitted after a CNA



~~shelf life has expired. For construction proposals, the correction allows the user to select the expected year of construction completion as Relative Year "0."~~

3.5 Missing Flag Notes Error- 12/16/17 thru 3/2/18, Work-Around Ends August 2018

Corrected in Release 2.2, 3/3/2018

Entering Flag Notes after Release 2.3, July 30, 2018

While initiated as a solution to the "Missing Flag Notes Error", the flag notes work-around also worked as a substitute for a "save as draft" or "save work in progress" feature. A "save as draft" feature was added to the CNA e-Tool as of July 30, 2018. This change allows submitters to save partially completed submission steps as a draft and recall the draft later for further editing as many times as necessary prior to submission. A "returned" CNA may also be saved as a draft and then the user may edit flag notes and attachments, saving work as "draft" as many times as needed before resubmitting. (The "flag notes work-around" was a procedure of entering flag notes in an excel file downloaded from the Flag Notes panel of the Submission Portal after validating a CNA.) Accordingly, after August 31, 2018, the flag notes work-around will no longer be accepted. That is, lenders must enter flag notes in the the Flag Notes panel of the Submission Portal in lieu of exporting the Flag Notes panel as an Excel file, entering notes, saving the Excel file separately and attaching to the CNA at submission.

Interim Instructions To HUD Staff Reviewing CNAs Submitted on or before August 31, 2018

CNA submissions received from 12-16-17 until March 3, 2018, may lack flag notes entered by Lenders (submitters). CNAs with warning flags lacking any lender flag note explaining or resolving the flag should be returned. As of March 2, 2018, the missing flag notes error was corrected, but absent a "save work in progress" feature, Lenders were permitted to continue using the work-around (until August 31, 2018 as noted above.) In this period, Lenders will not enter flag notes in the Submission Portal Flags Panel but instead will enter them in column G of an excel file downloaded from that panel. They will then attach this excel file as an exhibit to the CNA when they submit. After March 3, Lenders have the option of continuing to use this method until improvements to the Submission Portal are completed. It is expected that Lenders will prefer this method except in cases where only a few warning flags appear in their validation results.

Accordingly, when staff log-in to the Reviewer Tool, locate, and open a CNA assigned to them for review, only flags, not flag notes, will appear in the Flags Panel. Lenders' flag notes will be found in an excel spreadsheet which should appear among the attachments listed in the Attachments Panel. After March 3, Lenders have the option to resume entering flag notes in the Submission Portal Flag Panel but likely will do so only if the number of warning flags is small, in which case these notes will appear in the Flag Panel and there should be no "Flagnotes" excel file attached.

1. The Lender’s excel file containing Lender’s flag notes should be named: Flagnotes-[*property name*]-[*CNA Assessment ID #*].xls or .xlsx and should be found among attachments in the Attachments Panel of a CNA when it is located and opened in the Reviewer Tool.

Component Type Name	Need Category ID	Need Item ID	File Type	Attachment Type	Document Date
NA	NA	NA	Sample HUD Custom SEP.xlsx	EPA Portfolio Mana...	2/14/2018
NA	NA	NA	San Jose Apts USGS seismic thresholds.pdf	Seismic Hazard An...	2/14/2018
NA	NA	NA	Flagnotes-Bay View-2018-#####.xlsx	Other	2/14/2018
NA	NA	NA	Bay View Apts-Photos.pdf	Other	2/14/2018
NA	NA	NA	Bay View Apartments Assessment Tool sample.xls	CNA	2/14/2018

2. Download the attachment and save it as a working file.
3. Compare the “CNA Assessment ID #” included in the name of the attached file to the number of the CNA submitted and assigned for review. If they are not the same, the Lender may have erred and submitted a file for a validation which is not the same as the submitted CNA.
4. Open the Flagnotes.xls (or .xlsx) file and compare the list of flags to the list observed in the Flags Panel of the CNA as shown in the Reviewer Tool. The flags shown in the Lender’s “Flagnotes” excel file should match the list observed in the Flag Panel.
5. On/after March 3, the system will supply an Occurrence Number for each flag and the combination of Flag ID and Occurrence Number (e.g. “DV-260 #7”) will be an auto-generated unique identifier for each flag.

Severity	Flag ID	Component Type Name	Flag
W	AA-002	After March 3, default flag sort is by Flag ID	The I or SE Asse
W	DA-003		The i below Comj

Here is how the Flag Panel results will appear on/after March 3, 2018.

Severity	Flag ID	Occurrence Number	Component Type Name	Flag Cause
W	AA-002	1		The EPA
W	DA-005	1		Complian
W	DA-005	2		Complian
W	DA-005	3		Complian
W	DA-005	4		Complian
W	DA-005	5		Complian
W	DA-005	6		Complian

- Read the Lender’s explanation for each W flag and determine whether the explanation is satisfactory based on MAP Guide requirements and sound underwriting.
- Further action is needed only if HUD staff conclude a Reviewer Response is required to any flag or flag note. If the number of such responses is small (2 or 3) then the reviewer can enter these in the Reviewer Response text box. If the number of responses is larger, staff should draft the note in Column H of the Flagnotes.xls file, save it, and then cut and paste their responses into the Flags Panel of the Reviewer Tool. Saving the response notes in the excel file will provide a back-up in case the reviewer inadvertently enters a response to the wrong flag.

Flag #	Severity	Flag ID	Flag Description	Component Type Name	Flag Cause Note	Lender Owner Response	H
1					Con Single site must comply with the design and construction requirements of the Fair Housing Act	This is an optional eTool submission. No SEP or SEDI reports are required for this project submission as it is before October 1, 2017.	Add reviewer response column here, enter comments as needed, save, then cut & past notes to Flags Panel in Reviewer Tool.
2	1	I	PI-009	Fair Housing Act covered Building		The project was built prior to 1990, which is less than July 11, 1990. According to the HUD	

Flags

View Add Edit Export Detach

Do these notes correct/explain flags per MAP Guidance?

Severity	Flag ID	Component Type Name	Flag Cause Note	Lender or Owner Response	Reviewer Response
W	AA-002		The EPA Portfolio Manager Report (SEDI or SEP) was not attached to the Assessment	Property not seeking Green designation. SOA 223(f).	
W	DA-003		The number of Sensory Impaired Units is below 2%	The PCNA includes installing audio visual alarms in 2% of the units as a Critical Repair.	If not, reviewer's response is entered here, either directly or cut and pasted from a Flagnotes.xls file
W	DA-005		Compliance requirements not met for Fair Housing Act Covered Unit; Site: Jefferson Villas, Building: 4A, Unit Type: B, Unit Number: 24	The Fair Housing Act Covered unit is not fully compliant. This deficiency has been cited as a Critical Repair.	
W	DA-005		Compliance requirements not met for Fair Housing Act Covered Unit; Site: Jefferson Villas, Building: 4A, Unit Type: As, Unit Number: 19	The Fair Housing Act Covered unit is not fully compliant. This deficiency has been cited as a Critical Repair.	
W	DA-005		Compliance requirements not met for Fair Housing Act Covered Unit; Site: Jefferson Villas, Building: 2A, Unit Type: BH, Unit Number: 9	The Fair Housing Act Covered unit is not fully compliant. This deficiency has been cited as a Critical Repair.	
W	DA-005		Compliance requirements not met for Fair Housing Act Covered Unit; Site: Jefferson Villas, Building: 2A, Unit Type: A, Unit Number: 10	The Fair Housing Act Covered unit is not fully compliant. This deficiency has been cited as a Critical Repair.	

Columns Frozen 2

- When the review of the CNA is complete, the reviewer should click “Ready for Decision”, notify the assigner that the review is complete and forward the saved Flagnotes.xls file to the assigner so that the Lender’s flag notes are available to the assigner when considering a decision.

9. If the CNA is returned, the Flagnotes.xls file should be retained pending a possible resubmission which may have a revised Flagnotes.xls file attached to it, whereupon a comparison of the two would be useful to the reviewer.
10. If, when, the CNA is approved, any Flagnotes.xls files saved in working files or folders may be deleted.

4. Common Assessment Tool User Errors

The Assessment Tool is an Excel template for entering data that the web-based components of the CNA e-Tool process and convert to a CNA. It is an .xls spreadsheet organized in a sequence of worksheets and Visual Basic forms where each form deposits data in its associated worksheet. Data may be entered in either the forms or the corresponding worksheets, but **users should rely on the forms for data entry to have a better understanding of the data requested and to avoid errors.**

The “Instructions for Use of the CNA Assessment Tool v1.2,” (“Instructions”) contain both an overall explanation as well as form by form guidance. The Instructions may be downloaded from the CNA e-Tool Homepage at:

<https://portal.hud.gov/hudportal/documents/huddoc?id=InstructforCNATool.pdf>

Until well experienced, users should keep the Instructions available and open to the section covering the form on which they are working. Following the instructions will help avoid errors.

Recorded tutorials for each form may be found on the CNA e-Tool Homepage at:

https://www.hud.gov/program_offices/housing/mfh/cna/wat

Most user errors fall into two basic types: “Data Load Errors” and “SQL Insertion Errors”.

4.1 Data Load Errors

A “data load error” occurs within the Assessment Tool (Excel spreadsheet) and is caused by an incorrect/inconsistent naming of an object. An object is a named item such as a participant, site, building, unit type, common space, component, alternative, etc. Each form is designed to allow users to create or name one or more objects and then describe the objects. One entry or combination of entries is the object name or ID. Other entries report facts or quantities concerning the object.

Worksheets and forms in the Assessment Tool are arranged in a logical sequence where later forms search for objects named on prior worksheets to supply data needed by the later form. An incorrect/inconsistent object name prevents a form from identifying and loading entries required by the logic built into the form. (See “Instructions for Use of the CNA Assessment Tool”, page 30 for Data Load Errors, page 32 for logical connections among Pre-Site Visit Forms, and page 89 for logical connections among On-Site Forms.)

A common cause of a data load error is incomplete editing of object names in the Assessment Tool file. An example is when a user creates a Component ID and a related Alternative and

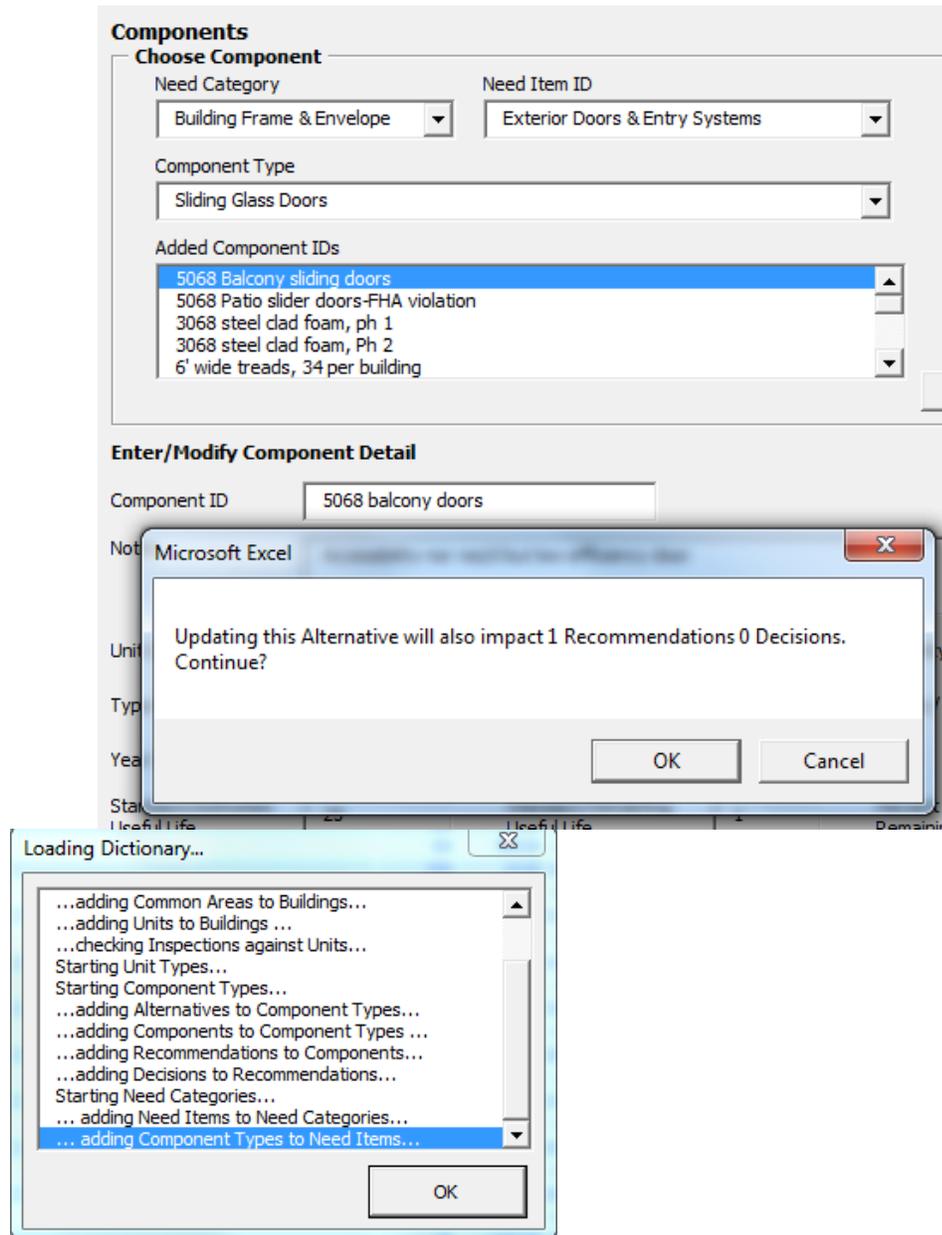


Recommendation, but then decides to change the name of the Component ID (even if only to correct a misspelling or to change capitalization). The user must make the same correction of the Component ID wherever it appears in an Alternative Pair and in a Recommendation. Failing to do so causes a Data Load Error when opening any of the forms.

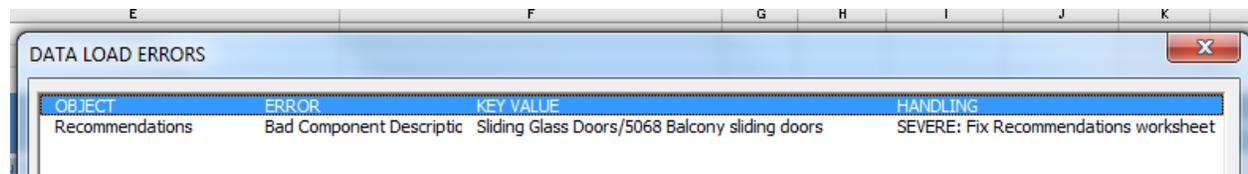
For example, a user names a Component ID “5068 bulcany doors” and then also creates Alternatives and a Recommendation for the Component named “5068 bulcany doors”. The user then recognizes the spelling error and decides to correct it by editing the Component ID, changing it to “5068 balcony doors”. This edit might be made using either the Components form or by editing the underlying Components worksheet. Regardless, the uncorrected name, “5068 bulcany doors” still appears in the Alternatives and Repair Replace Recommendations worksheets. As forms recalculate and search for data from related worksheets, in this example the Alternatives and Recommendations forms would search the Components worksheet for information on a component named “5068 bulcany doors.” However, since this Component ID name was edited by the user in the Components form or worksheet, it can no longer be found. The Alternatives and Recommendations forms are therefore unable to load the specified data.

When a user edits an object (e.g., a Component ID in the Components form or worksheet), the Assessment Tool does not automatically update other related worksheets, in this case the Alternatives or Repair Replace Recommendation worksheets. The Assessment Tool will warn a user if an edit made in a form impacts related entries in other worksheets not associated with that form, but no such warnings are triggered by edits made directly into worksheets. This is another reason users are encouraged to enter and edit data in forms.

When a Data Load Error occurs, this error message appears:



After clicking "OK" the user is advised of the location of the error:



Users can edit entries that are not object names without risking a data load error. For example, the street address of a participant can be changed, or the count of units of a certain type in a certain building, or the count of a certain Component ID. These entries are facts about the object but not the object name. Each time the “Open Form” button or the “Prepare Submit” button is used, the Assessment Tool recalculates by searching for named objects and revising any facts reported for each object.

4.2 SQL Insertion Errors

A sequel insertion or “SQL Insertion” error occurs in the CNA e-Tool system when an Assessment Tool file is validated. It is caused by data entry errors in the Assessment Tool that prevent the system from storing data into the database. Typical SQL Insertion errors include:

- entering text where a number is required;
- incorrectly formatting a field where a special format is required by the database, such as dates, decimal amounts, etc.;
- exceeding the character limit for an entry; or
- entering duplicate objects.

While uncured Data Load Errors within the Assessment Tool may also cause SQL Insertion errors when a file is validated, not all SQL Insertion errors are caused by Data Load Errors. This is because not every critical datum is an object used by logic embedded in other forms within the Assessment Tool. For example, Seismic Thresholds are not used by the logic in any form or worksheet. Yet because they are used by the CNA e-Tool system and must be stored in the database during validation, they will cause a SQL Insertion error if non-numeric values are entered in those fields.

4.3 Duplicate Objects Cause Errors

Each object name must be unique, otherwise objects cannot be distinguished in any formula where they are used. When an object name is used in the logic embedded within the Assessment Tool forms, a duplicate object name may cause an error because the form(s) cannot distinguish which data is to be loaded. Upon validation of an assessment file containing a duplicate object, a SQL Insertion error may result because the system is not able to store in the database more than one object with the same name.

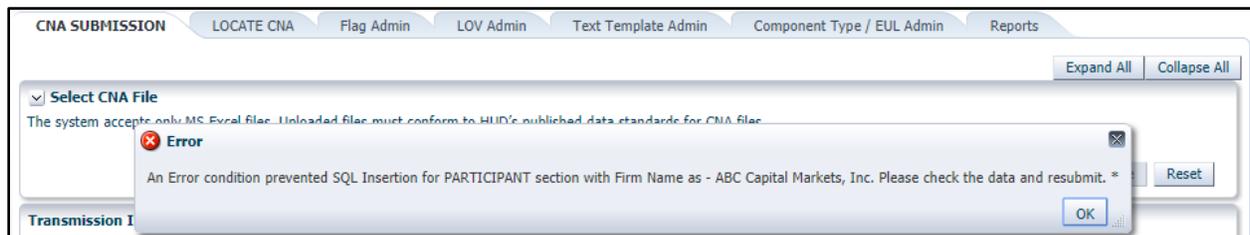
Creating duplicate objects has been prevented when using the forms. Users may receive an SQL error from validation when entering duplicate information directly into the worksheet.

Accordingly using Assessment Tool forms avoids duplicating objects. If the user is copying/pasting or entering data directly to worksheet rows, s/he must exercise care to avoid duplicating objects, or alternatively, creating unintended new objects that are apparent or “almost” duplicates. An example of an SQL error due to duplicates is shown below:

The user enters a duplicate Firm Name and Role directly into the worksheet.

Participant Information	
Firm Name	Role
ABC Capital Markets, Inc	Lender - Originator
Williams Properties Inc	Current Owner
Iota Engineering Inc	Needs Assessor
Multifamily Management Inc	Property Manager
Energys Concepts Inc	Energy Auditor
Applied Accessibility Associates	Other
ABC Capital Markets, Inc	Lender - Originator

Upon validating, the user receives the following error:



Apparent Duplicates

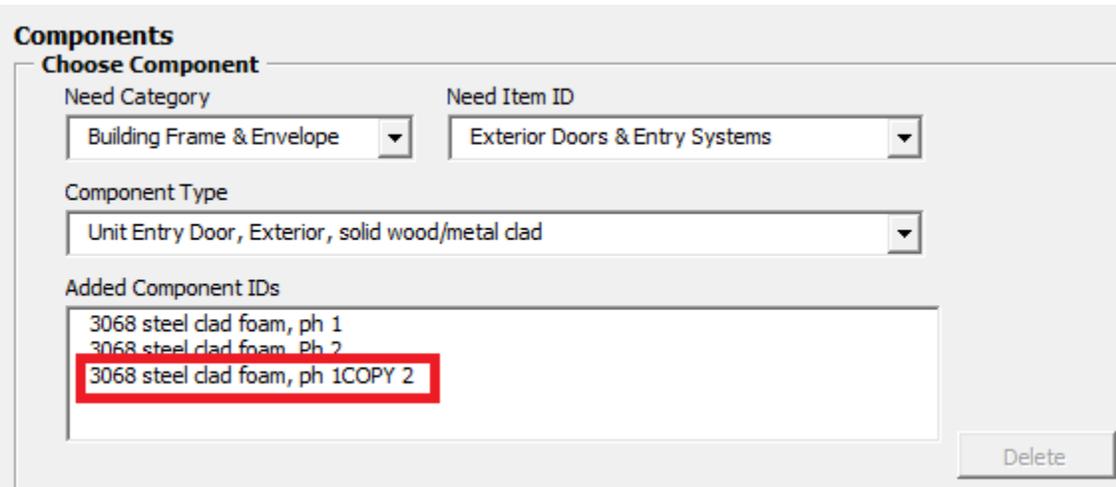
Users should keep in mind that the Assessment Tool and the CNA e-Tool portals do not speak/read English, they merely read a sequence of numbers, spaces, and/or characters. This means that different capitalization, spelling, and/or spacing of entries may represent a duplicate, but the system will recognize these as separate items rather than duplicates. While the user may be indifferent about spacing or capitalization, these differences are significant to the Assessment Tool and the CNA e-Tool portals. The user may see no difference between “5068 Balcony sliding door” and “5068 balcony sliding door,” but the system will. Consequently, when the user accidentally creates an apparent duplicate, the system cannot assist the user to identify the error. From the system perspective, a copy is either exact, or not a copy at all.

Not Every Duplicate Object Will Trigger a Warning - Generic Component IDs

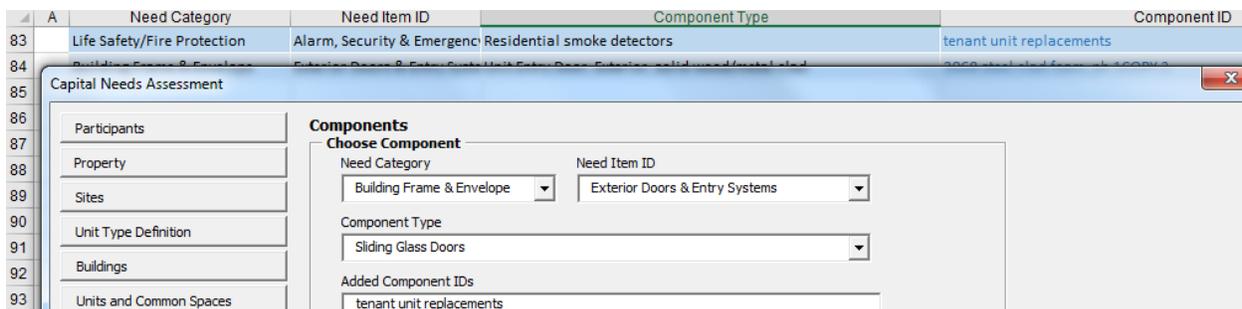
While the Assessment Tool is programmed to “catch” duplication errors and warn the user within the form, at least one possible duplication escapes easy detection within the worksheet. Component IDs can be duplicated when a non-descriptive, generic Component ID name is used for multiple Component Types. For example, “Railings, wood,” “Sliding Glass Doors,” and “Faucets & Valves” are Component Types. A user might describe the Component ID for each generically with the name “tenant unit replacements,” or “replace with like kind.” These generic, non-descriptive names are bad choices for several reasons.

First, this results in duplicate Component IDs which will cause errors, but the Assessment Tool was not programmed to provide an early warning or caution for this type of duplication. (This will be addressed in a future release, however.) Second, such generic Component IDs fail to communicate meaningful information when displayed in panels and reports where limited space prevents the display of the Component Type, Need Item, and Need Category. The reader cannot therefore determine whether the Component ID is a faucet, a door, or a railing. Component IDs should be specific rather than generic. Specific Component IDs both avoid the likelihood of duplication and communicate meaningfully.

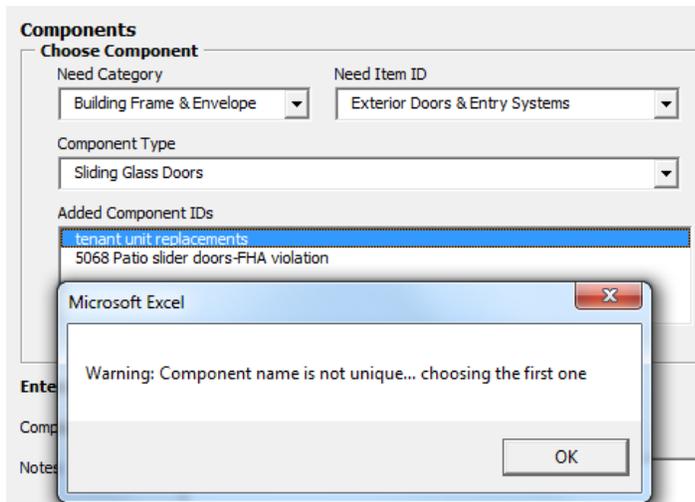
Shown here is an example of the Assessment Tool indicating that a Component ID is a copy:



Shown here is an example of a duplicate Component ID name for two different Component Types. The Assessment Tool gives the user no advance warning of this error.

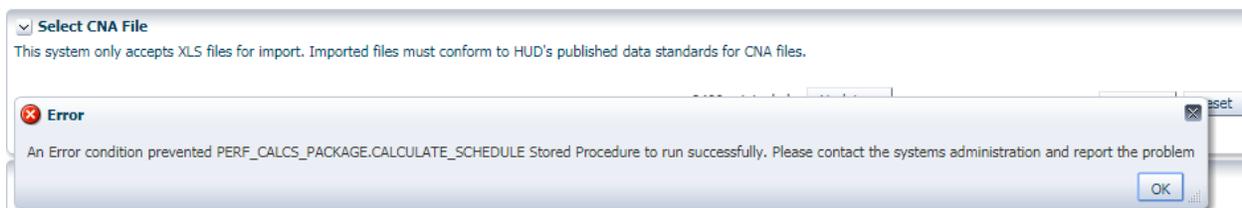


The best method for discovering this error is to click each Component ID in the Components form. If the selected Component ID is a duplicate, the following message appears:



The Assessment Tool is programmed to report all the data entries for the selected Component ID, but is unable to distinguish among the duplicates. As a result, it will choose the first, which may not be for the correct Component Type - in this example, a sliding glass door. Validating an Assessment Tool with the same Component ID name for various Component Types returns this error:

CNA VALIDATION



4.4 Invalid Data Types and Formats

As mentioned in Section 4.2, invalid data entries are user entries of the wrong format, such as:

- text when a number is required,
- entries not consistent with a required “list of values” (LOV, or ‘drop down list”),
- entries outside of a required range, or
- entries exceeding the permitted number of characters.

When validated, such mistakes usually trigger a SQL Insertion error. Most such errors can be avoided by following the “Instructions for Use of CNA Assessment Tool v1.2” (Instructions) or by utilizing the forms. The forms have data restrictions in place that warn the user of improper formats or auto-format an entry, e.g. a date

Users who enter data directly into the worksheet may still experience invalid data entries. The following subsections describe “invalid data” errors observed in recent user queries and help

desk requests. These are described in the order of the worksheets or forms within the Assessment Tool where the invalid entry occurs.

4.4.1 Add/Update Action Button is Not Live

As just noted, many entries in the Assessment Tool have been auto-formatted in order to help the user avoid data entry errors. However, a hazard of auto-formatted cells is that the “Add/Update” action button will not become live until after the auto-formatting is completed. This means the user must enter the datum and then move the cursor to another cell in order to make the “Add/Update” button live. An example of this is the “Date of Site Visit” entry on the Assessment Summary subform of the Property form. If the user edits an already entered date, the “Add/Update” button will not become live until after the user moves his cursor to another entry, allowing the auto-format task to complete.

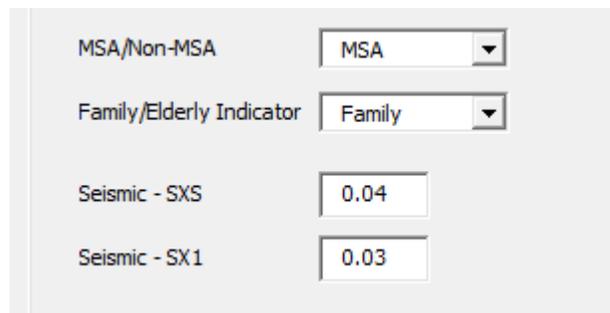
4.4.2 Dates

The Assessment Tool asks the user to enter various years/dates. The query will specify a “year” (e.g., “Year Installed” on the Components Form, or “Year Built” on the Buildings form) or will request a date including month, day and year (e.g., “Date of Inspection” on the Property Form, Assessment Scope sub-form.)

- When a year is requested the user must enter the 4-digit calendar year, e.g., 2017 or 1988.
- When a date is requested, users must enter the dates in the format: mm/dd/yyyy. If the user is utilizing the form, dates will be automatically updated to this format.
- A range of dates or years, or more than one date or year, are never acceptable. Consult the Instructions for guidance when more than one date seems appropriate.

4.4.3 Property Form - Seismic Threshold Entries Are Numbers Only

The entries for seismic threshold values located on the Property Form are numbers only. Do not add the “g” included in the downloaded USGS Seismic map report. If the user utilizes the form, data restrictions will prevent an invalid entry.

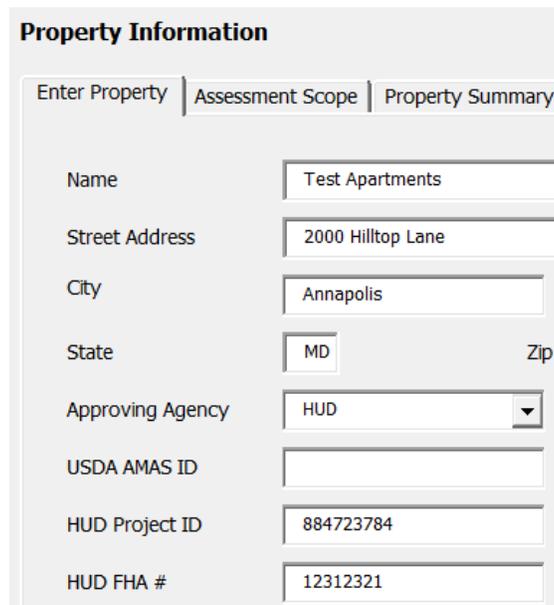


MSA/Non-MSA	<input type="text" value="MSA"/>
Family/Elderly Indicator	<input type="text" value="Family"/>
Seismic - SXS	<input type="text" value="0.04"/>
Seismic - SX1	<input type="text" value="0.03"/>

4.4.4 Property Form – Property ID Numbers

Modified in Assessment Tool 1.2 v 7 and Release 2.3, July 30, 2018

Entry cells for Property ID numbers (FHA, AMAS, Project ID [aka IREMS#]) should be left blank unless the actual number is known. Do not enter “0” or “n/a”. Currently the Project ID (aka IREMS #) and FHA # are used by the system to prohibit submission of another CNA for the same property while a prior CNA is subumitted, under review, or ready for decision. Similarly only one “saved as draft” version of a CNA is permitted at one time for a property. This limitation does not apply to returned or approved CNAs because these do not remain under review. As of Release 2.3, users are required to provide the ID number appropriate for the CNA Type and Program selected. Severe flags are thrown when not ID # is enterd or an incorrect combination is given.



Property Information		
Enter Property	Assessment Scope	Property Summary
Name	Test Apartments	
Street Address	2000 Hilltop Lane	
City	Annapolis	
State	MD	Zip
Approving Agency	HUD	
USDA AMAS ID		
HUD Project ID	884723784	
HUD FHA #	12312321	

4.4.5 Naming Unit Types

The types of units found in buildings are named and given certain characteristics on the Unit Types form and worksheet. In the order of forms, “Unit Type Definition” appears immediately before “Buildings”, indicating that Unit Types should be defined before buildings are defined in the Assessment Tool. Each defined Unit Type should reflect a unique combination of the number of bedrooms, bathrooms, and square feet.

The accessibility of a unit for persons with disabilities should NOT be used to define a distinct Unit Type. Accessibility is a design feature that can and should be true of units of all types found in a property. Indeed, statutes and rules require that accessible units be available proportionately among all types of units. The CNA e-Tool is designed to evaluate whether



accessible units are present in the requisite percentage by Unit Type. If, if all accessible units are segregated into “Accessible Unit Types” by the user, flags will occur for incorrect distribution since there will be no accessible units inspected for the other Unit Types.

Generally, the fewest possible Unit Types should be named because the sampling percentage is applied to the number of units of each Unit Type as well as to all of the units in each building. Naming more Unit Types increases the likelihood of oversampling. For this reason, units with the same count of bedrooms and baths but with minor differences in square footage may be included in a single named Unit Type reflecting their average size in square feet - provided that the difference in size is not in fact equivalent to an additional room, and that the actual range of sizes is described in the Narrative. In such cases, Assessors must still take care to provide accurate quantities for components measured in square feet of floor or wall area for any critical or non-critical repairs.

Finally, the number of baths is a value where whole numbers are not required. For example, a 2 BR, 1.5 ba (two-bedroom, one-and-a-half bath) unit would have “1.5” entered as the number of baths.

4.4.6 Recommendation Form - Duration & Months to Complete Are Numbers

A whole number - never a range and not text - is the only acceptable entry for “Duration” and “Months to Complete” on the Repair/Replace Recommendation form.

For “Duration”, the entry is a whole number of years before and after the “End of Cycle” year, over which years the cost of the recommendation will be spread in equal amounts. Duration is only used for future repairs, meaning the answer to “when?” is “End of Cycle.” A typical entry is 1 or 2. For some items like appliances, where an average number are proven to be replaced annually, the entry would be a value as close as possible to half the Remaining Useful Life (RUL) of the group of appliances identified as the Component ID. (Meanwhile the “Year Installed” for this group of appliances would be the current year minus half the RUL.) An entry other than a whole number will cause a SQL Insertion error.

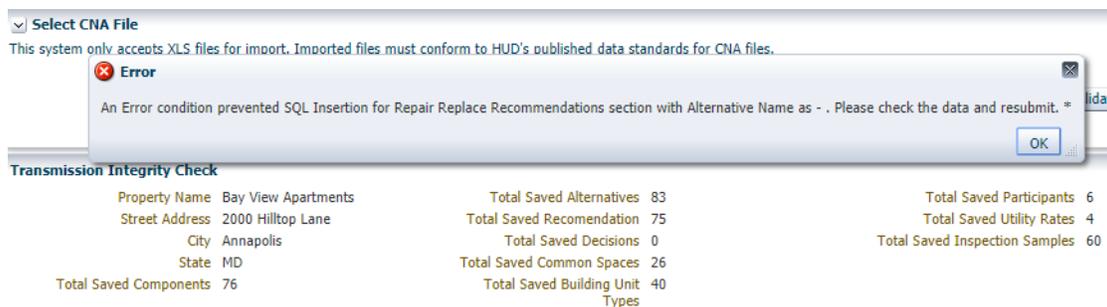
For “Months to Complete” the entry is the number of months from the beginning of construction (typically the closing date of the loan) required to complete the particular repair or replacement. “Time to complete” should only be entered when the answer to the question “when?” is “Now.” No entry should be made otherwise. Invalid entries in this cell will not cause a validation error.

4.5 Unflagged Validation Error - # Components ≠ # Recommendations

After validating an Assessment Tool file, users should always check the count of items recorded in the “Transmission Integrity Check” box. The number of Recommendations must equal the number of Components, and the number of Alternatives must equal or exceed the number of Components. No automated flag currently exists for this error. A future release will provide such a flag, and in the interim, HUD staff will have a custom flag to point out this error when it

occurs in a submitted CNA. These same counts of Components, Alternatives and Recommendations are also reported in the “Snapshot” found in the Reports panel of both the Submission Portal and the Reviewer Tool where Lenders and reviewers can confirm that the count of Components and Recommendations is the same and that the count of Alternatives equals or exceeds Components.

If the number of Recommendations is less than the number of Components, it means that a Component has been identified for which there is no Recommendation. In the example below, an Alternative was deliberately deleted from a row of the Repair Replace Recommendation worksheet, negating the Recommendation and causing a SQL Insertion error. However, the mere absence of a Recommendation for a Component ID will not cause an error or trigger an automatic flag.



5. Errors Due to System/Software Incompatibility

Some users may experience one or both of two errors identified as “SQL Insertion Error on All Objects” or “Compile – Automation Error, Catastrophic Failure”. These errors are related to the set-up and the version of their operating system and the version of MS Office they use to create the Assessment Tool. These errors seem to occur in combinations of newer versions of MS Office with older Windows operating systems. The following subsections describe the errors, their impact, and the recommended remedies/workarounds.

5.1 SQL Insertion Error on All Objects

This error is NOT related to wrong data formats or invalid data entries (i.e., user errors.) To the best of our knowledge, this error occurs when a user validates either an Assessment Tool workbook that they did not create on their PC (they received it through email, for instance) or a workbook they did create but later “Saved As” a new file name, and have not closed and reopened the file prior to uploading for validation.

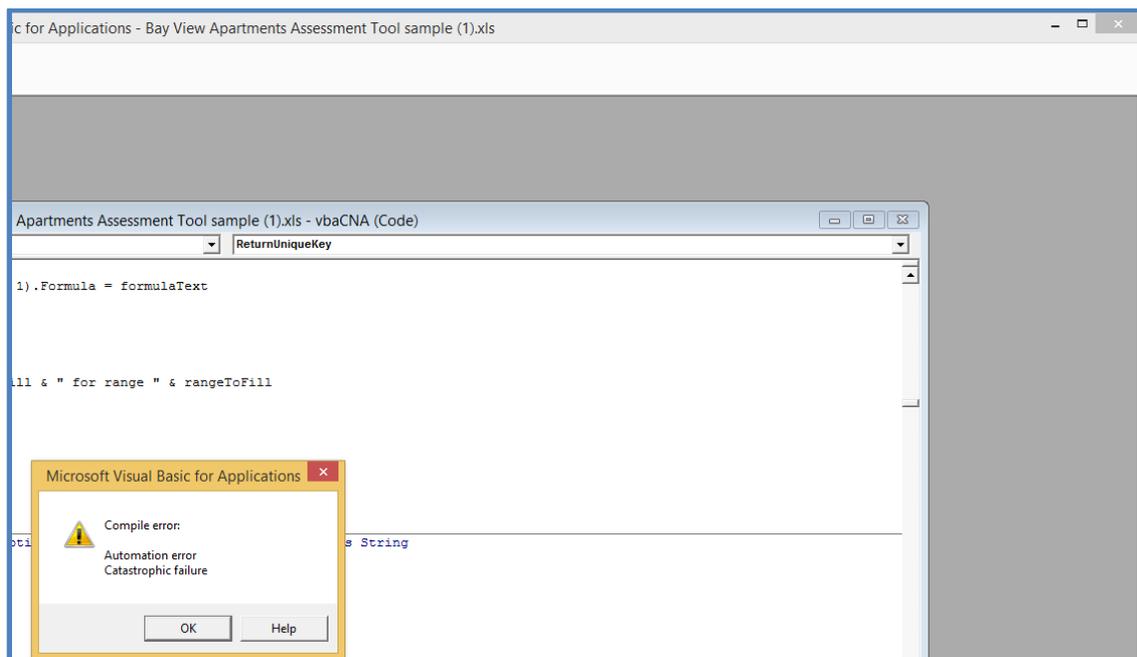


The fastest remedy is to open the saved workbook, click on the Participant Information worksheet, and then click the “Submit Prepare” button at the top right of the worksheet. This needs to be followed by a regular “Save” rather than a “Save As.” The workbook the user “prepared for submission” must be saved under the same name.

The same process can be repeated for workbooks received from elsewhere. It may not be enough to download it and then upload for validation. It needs to be opened, prepared for submission, and then saved in place.

5.2 Compile Error: Automation Error - Catastrophic Failure

Although this error appears threatening, it is harmless. It occurs when a user first opens the workbook. A Visual Basic code window is opened and an error popup is displayed, as pictured below.



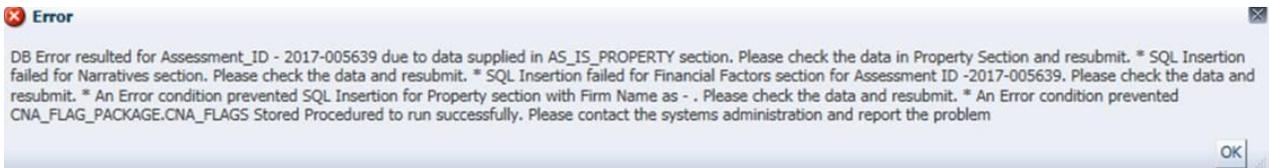


The fastest remedy is to click “OK” on the popup and then close blank grey screen (click the “x” in upper right corner) and/or the Visual Basic code window.

This error has been traced to certain versions of MS Office updated with Microsoft patches and run on certain operating systems. Since the Assessment Tool was first in development, MS Office and Windows have been updated several times. Below are results of our tests of various combinations of Windows Operating Systems and MS Office versions with both the 2003 version of Excel format (.xls) as well as the newer.xlsm version.

MS Office Version	.xls	.xlsm
Any Office with Mac	Fail	Fail
2010 with Windows 7	Good	Good
2010 with Windows 10	Good	Good
2013 with Windows 7	OK (a, b)	Fail
2013 with Windows 10	Good	Good
2016 with Windows 7	OK (a, b)	Good
2016 with Windows 10	OK (a, b)	Good

a. As described in Section 5.1, some users may see a lengthy SQL Insertion error when attempting to validate an Assessment Tool in an .xls format (see the picture below for an example of the error.) This error may happen when users receive an Assessment Tool they did not create on their PC or if they saved their own Assessment Tool using “Save As” under a different name, and proceed to upload it for validation. To remedy this error, the user may need to open the file, click the **Submit Prepare** button on the **Participant Information** tab, and then “**Save**” the file before uploading.



b. As described in Section 5.2, upon opening an Assessment Tool, a user may receive a Catastrophic Error popup on a screen showing Visual Basic code. If the user clicks “OK” on the error popup and closes the Visual Basic window, the Assessment Tool which is open under the Visual Basic screen will still run as expected.

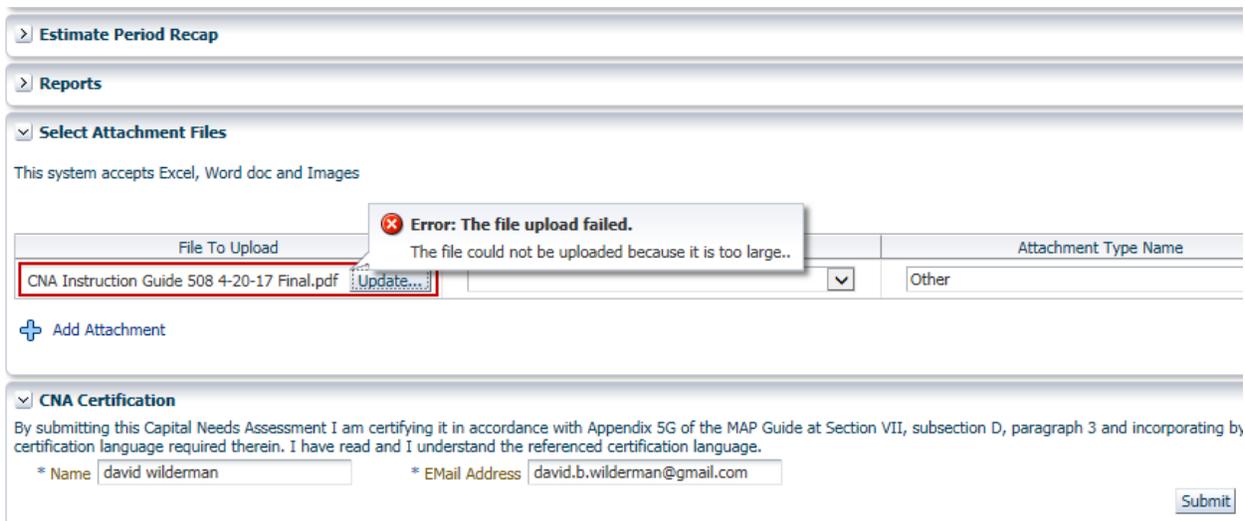
6. Attachments

In the CNA e-Tool system, attachments are intended to be documents that would typically be appendices or exhibits to a traditional paper CNA. Attachments are also used to submit annotated photo albums or galleries as well as narrative required to provide levels of detail not possible in the Narrative Form of the Assessment Tool which has a limit of 2,000 characters for each of the standard ASTM 2018-08 outline topics.

6.1 Attachment Size and Type Limits

Release 2.3 Increases Attachment Size Limit to 10 MB Each.

A user can upload as many attachments as required, but the size limit for each is 10MB. The user should be aware that the larger the file, the more time it will take to upload. The following file types can be accepted: image files such as JPEG, PDF, Word, ZIP files, and Excel documents. The picture below illustrates the error message a user sees when attaching a file that is larger than the 10MB limit.





6.2 Organization and Naming of Attachments

Attachments should be individually named and attached, rather than combined so that their identity and existence cannot be ascertained without downloading and opening the attachment. When the “Attachments” panel for a submitted CNA is opened, the list of attachment names should read like the list of exhibits or appendices in a traditional paper CNA.

Submitters should NOT attach .pdf or .doc files that are an entire, traditional CNA report or major portions thereof. Such combining of attachments negates a key objective and benefit of the CNA e-Tool system, which is to enable users to find information quickly and always in the same location without “thumbing” through multiple pages of combined narrative, charts, tables, photos, and related materials arrayed in a unique presentation.

7. CNA Retention Schedule

CNAs uploaded to the Validation Engine or the Submission Portal are stored in the database and retained based on their Status, as follows:

- Received for Validation = Four days if uploaded to the Validation Engine, 30 days when validated in the Submission Portal
- Saved as Draft CNAs = 180 days
- Submitted, Under Review, Returned = Three years
- Approved CNAs will be retained indefinitely in the database