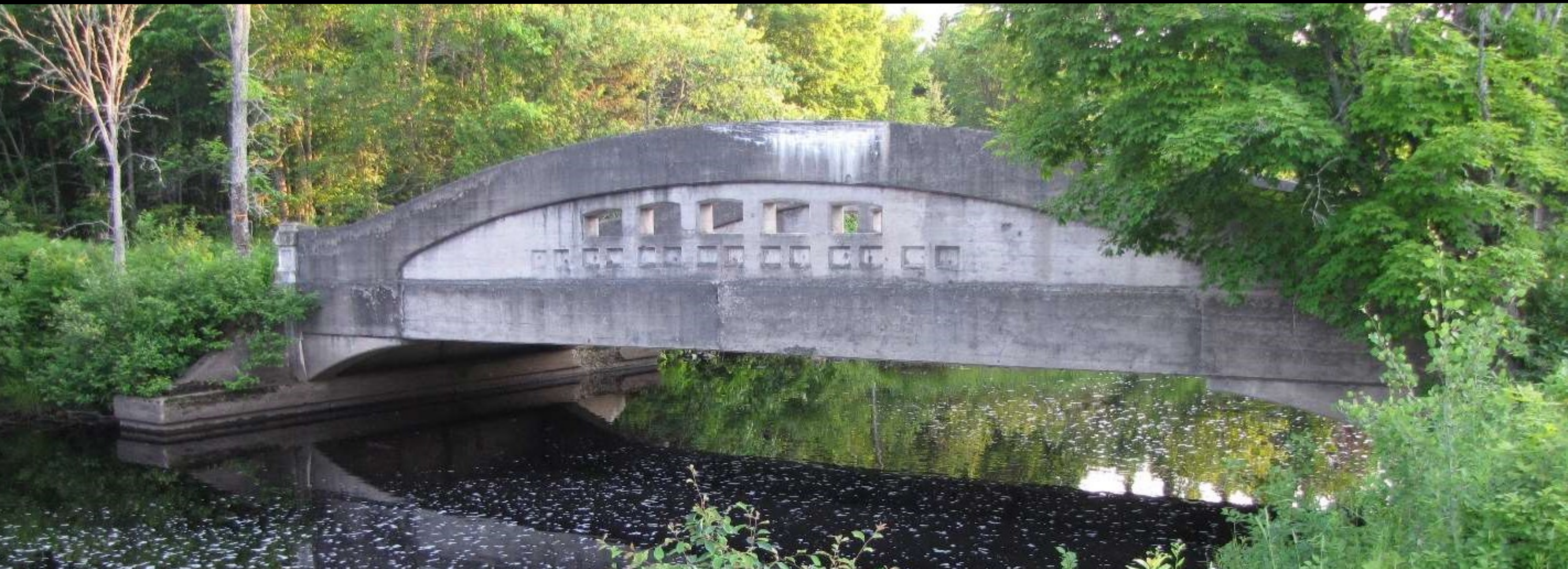
Instruction Guide

for using the

Bridge Asset Management Plan Template

Michigan Transportation Asset Management Council

Center for Technology & Training



Contents

This document provides instruction for creating a customized asset management plan template for your specific agency by using the “BridgeAMP-Data_v####.xlsm” and “BridgeAM-Budget_v####.xlsm” tools and accompanying folders and files (including “BridgeAMP_v####.docm”, “appendixes1-2.docx”, and “Michigan County.csv”), distributed to you by the Center for Technology & Training (CTT) in collaboration with the Transportation Asset Management Council and the Michigan Department of Transportation.

Bridge asset data for your agency will need to be entered into the Microsoft Excel workbook. A portion of this data is a custom MiBRIDGE output, available by download from MiBRIDGE. For this Instruction Guide, the custom MiBRIDGE data will be referred to as [Your Agency].csv/.jsp.

Another portion of the bridge asset data for the customized Microsoft Word template relies on your agency’s answers to asset management questions. The workbook will parse the data for the Microsoft Word template. This Instruction Guide will detail how to enter data into the Excel workbooks and, subsequently, generate a customized bridge asset management plan template in Word.

For more information

? Select this symbol to learn more information about the tool.

! Select this symbol to discover where related requirements and/or recommendations can be found.

Saving the tools on your computer

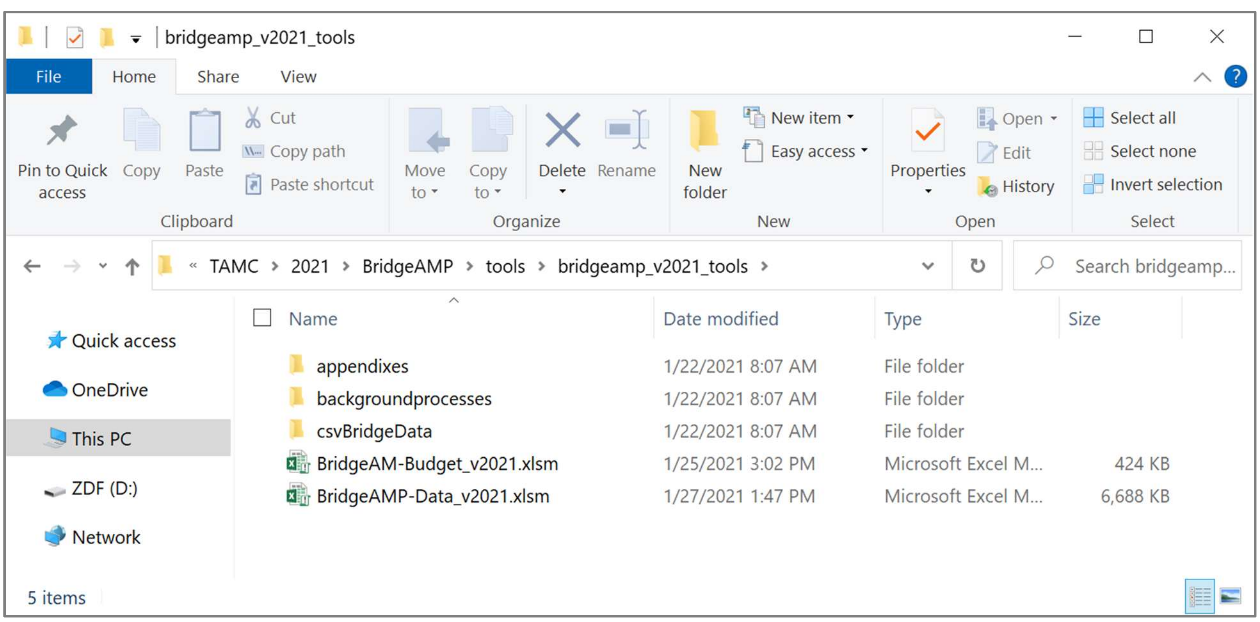
The tools for creating a customized bridge asset management plan template can be downloaded as a zipped file from ctt.mtu.edu/asset-management-resources. After unzipping the tools folder, it is recommended that the "bridgeamp_v####_tools" folder be saved in your Documents or My Documents folder or on your desktop; if it is desired to rename this (sub)folder, use a unique name such as "BridgeAMP-2021". ***Please note: DO NOT RENAME the included folders or files at any time. Also, if your computer system backs up your files to an online cloud service, you will need to save the asset management plan tools to a USB drive and work with the files on the USB drive.***

The tools within the "bridgeamp_v####_tools" folder consist of (see figure below):

- the two .xlsm files, "BridgeAMP-Data_v####.xlsm" and "BridgeAM-Budget_v####.xlsm", housed in the main folder
- three subfolders
    - the "backgroundprocesses" subfolder that contains the generic Word template "BridgeAMP_V####.docm"
    - the "csvBridgeData" subfolder that contains a generic dataset "Michigan County.csv" and that serves as a repository for your custom MiBRIDGE data .csv or .jsp file (i.e., [Your Agency].csv/.jsp)
    - the "appendixes" subfolder that contains "appendixes1-2.docx" and that serves as a repository for printouts of Appendixes 3, 4, and 5.

Do not rename these files or folders.

It is also recommended that any other content needed for your bridge asset management plan—such as logos and images—be kept in this folder, as well.



Obtaining your custom MiBRIDGE export

To create a customized bridge asset management plan, you will need a custom MiBRIDGE export of your bridge data. To download this export:

1. Log in to MiBRIDGE (see https://www.michigan.gov/mdot/-/media/Project/Websites/MDOT/Programs/Bridges-and-Structures/MiBRIDGE/Help-Access-MiBRIDGE.pdf for instructions).
2. Select the **Reports** menu.
3. Select **Network Summary Report** from the *Reports* drop-down menu.

⇨ The *Network Summary Report* page will display.

4. Select **Export Asset Management Report** at the bottom of the *Network Summary Report* page.

⇨ Your custom MiBRIDGE export will download in .jsp format.

NOTE: If you need your data in .csv format, open Excel, select **File** > **Open**, navigate to the .jsp file and select **Open**, and then save the file as a .csv file ("CSV (Comma delineated)").

NOTE: If you do not see the Export Asset Management Report option, you will need to contact MDOT-Bridge-Data-Request@michigan.gov for assistance in obtaining your custom MiBRIDGE export.

5. Find the custom MiBRIDGE export from the download location, cut the file and paste it in your "*bridgeamp_v####_tools*" folder "*csvBridgeData*" subfolder.

Entering data into the BridgeAMP-Data.xlsm tool

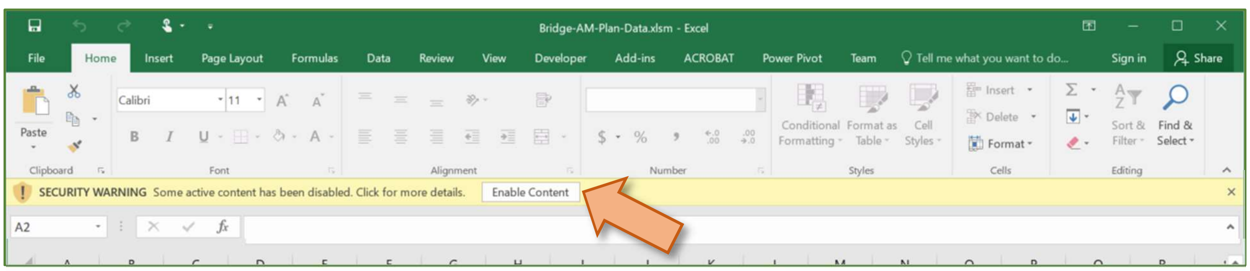
The BridgeAMP-Data.xlsm tool is an Excel workbook that allows you to enter and process your agency's bridge data and will subsequently populate the Word template, which you will personalize for your agency's bridge asset management plan. This tool runs calculations in the background so that the data you enter will be parsed into the appropriate formats for the bridge asset management plan.

NOTE: Several worksheets in the BridgeAMP-Data.xlsm workbook are protected to prevent inadvertent changes. A number of those protected worksheets require a password to unprotect the sheet. If a worksheet is password protected and you wish to modify it, the password is "password".

Using the XLSM File for the First Time and Setting a Trusted Location

You will see a security warning when you open a macro-enabled Microsoft Office file for the first time. If this file is from a trusted source, select **Enable Content**.

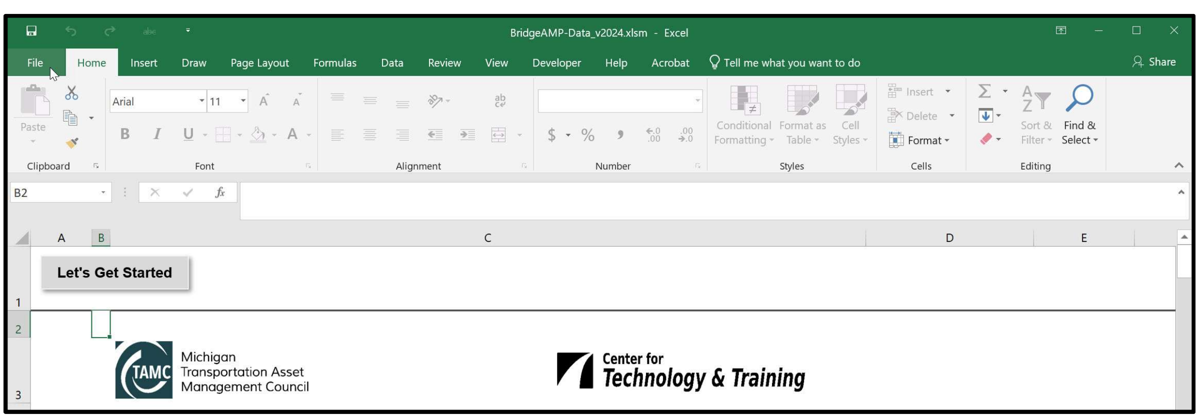
NOTE: You must enable macros for this workbook to function.



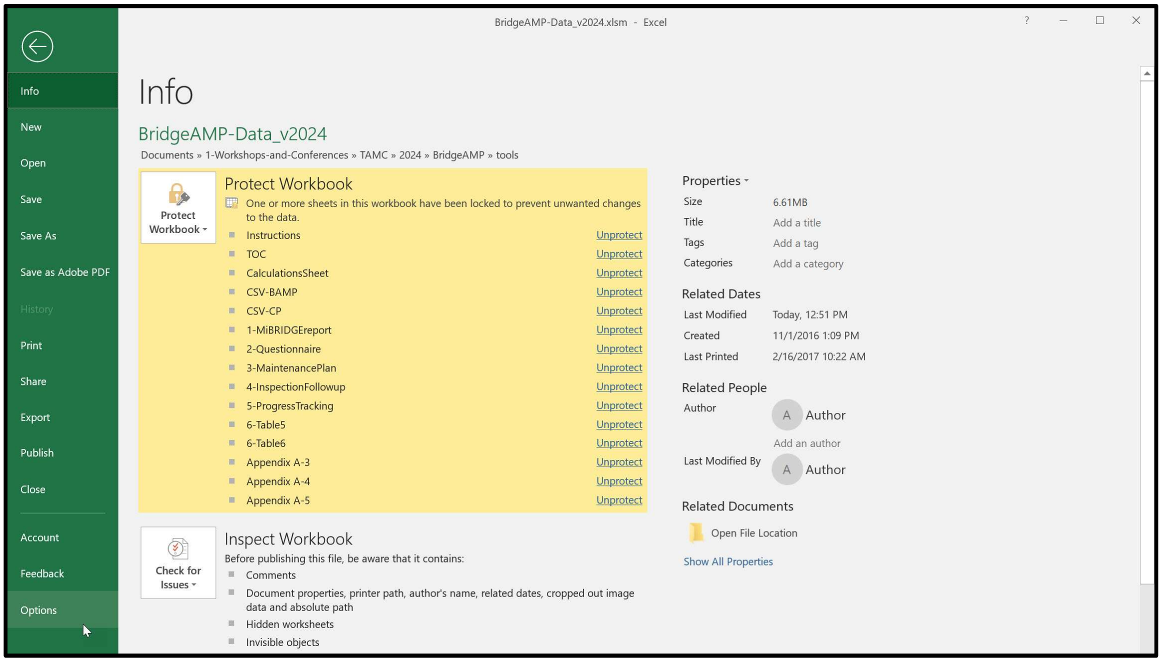
You will also need to set the folder containing your bridge asset management plan tools as a trusted location.

NOTE: This set of directions will work for setting trusted locations through either Microsoft Word or Excel.

1. Select **File**.

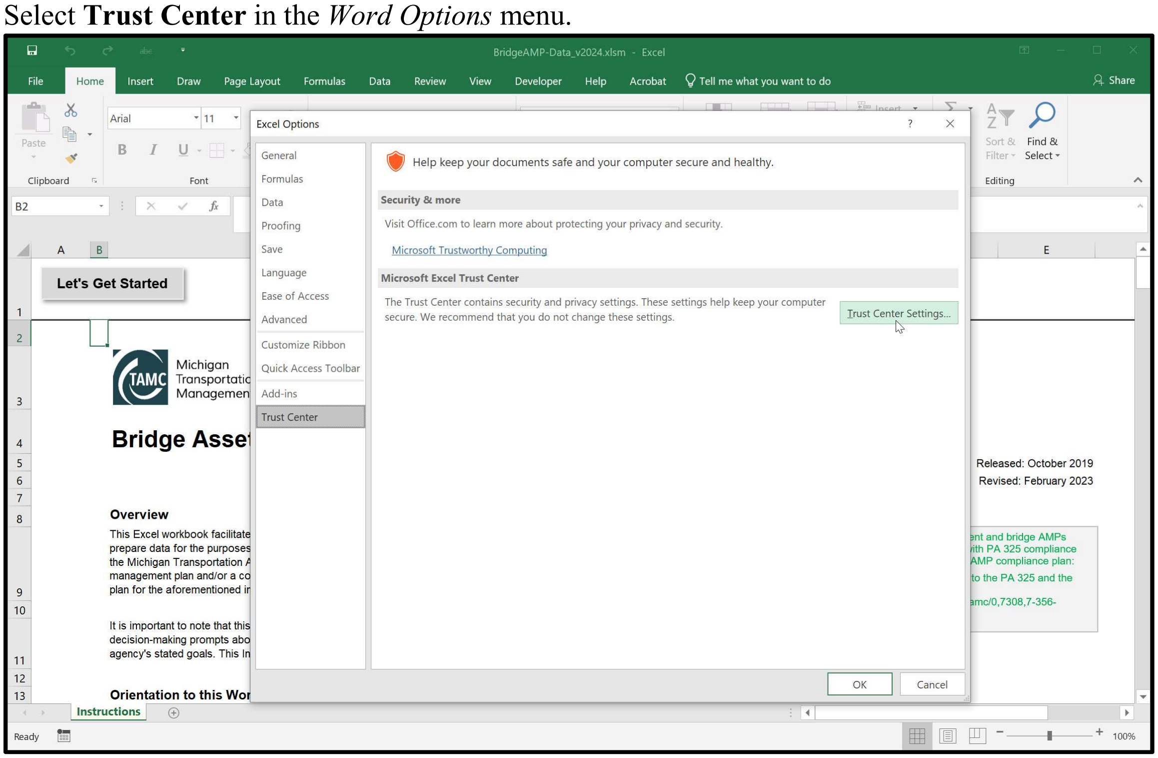


2. Select **Options**.



⇨ The *Word Options* window will appear.

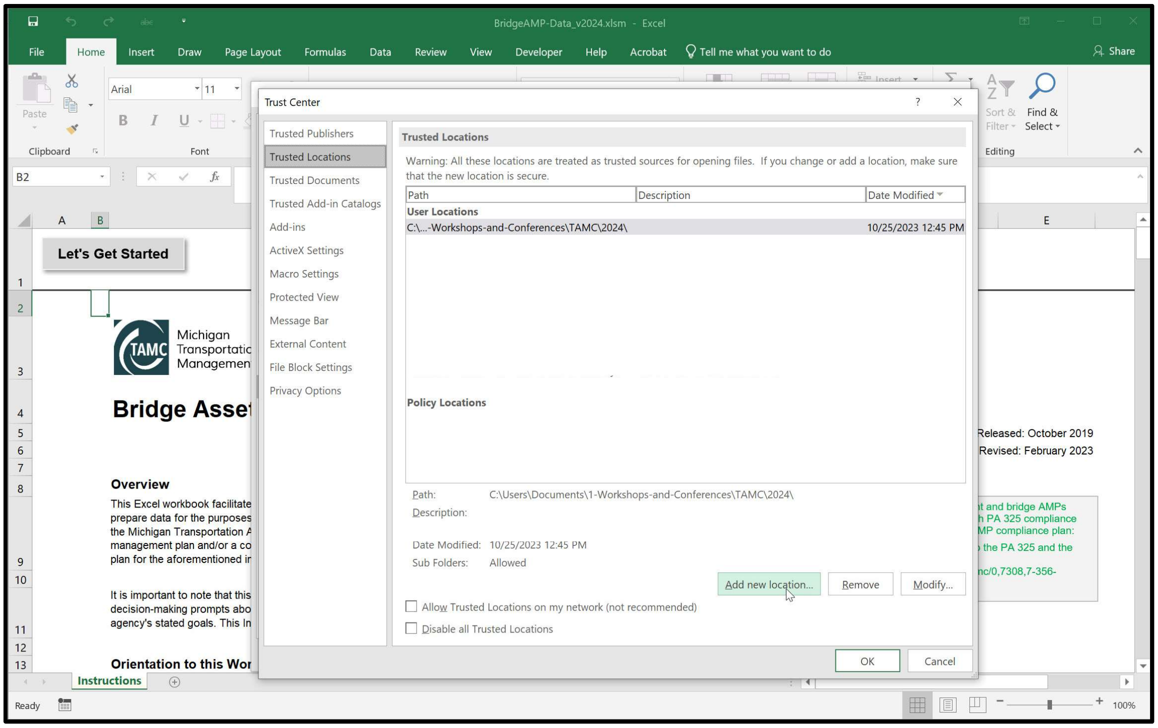
3. Select **Trust Center** in the *Word Options* menu.



4. Select **Trust Center Settings…**

⇨ The *Trust Center* window will appear.

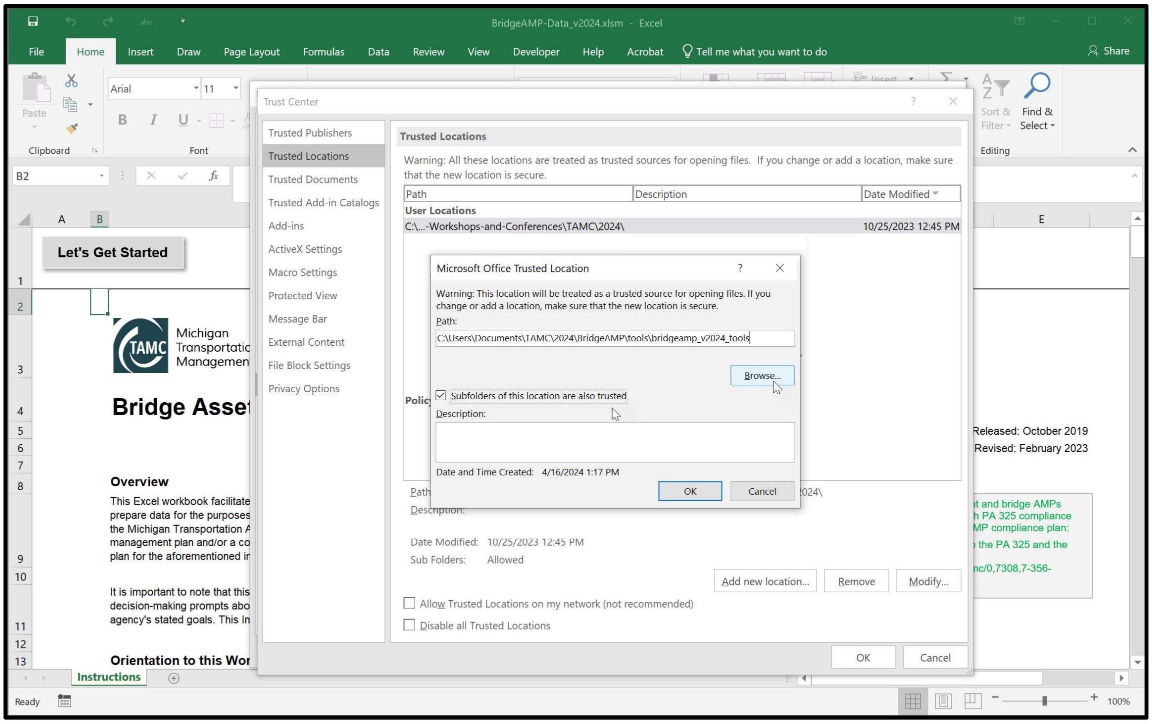
5. Select **Trusted Locations** in the *Trust Center* window menu.



6. Select **Add new location…**.

⇨ The *Microsoft Office Trusted Locations* window will appear.

7. Select **Browse**.

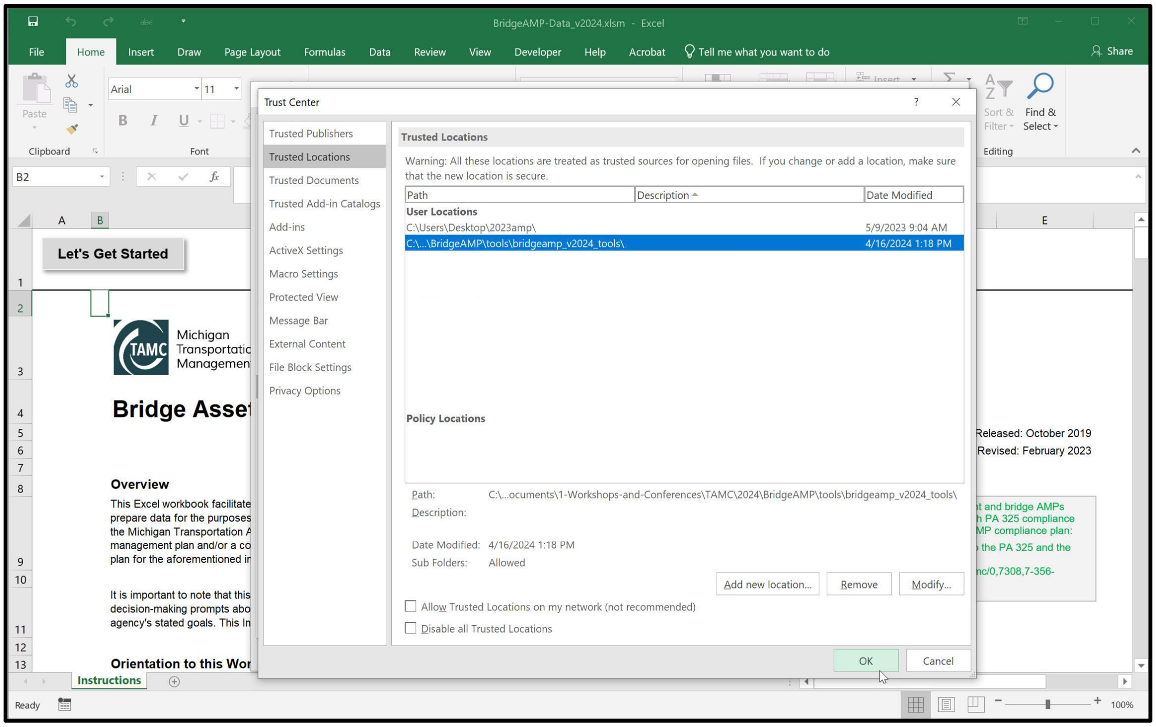


⇨ The *Browse* window will appear.

8. Browse to the folder you wish to set as a trusted location and select that folder in the main pane of the window; select **OK**.

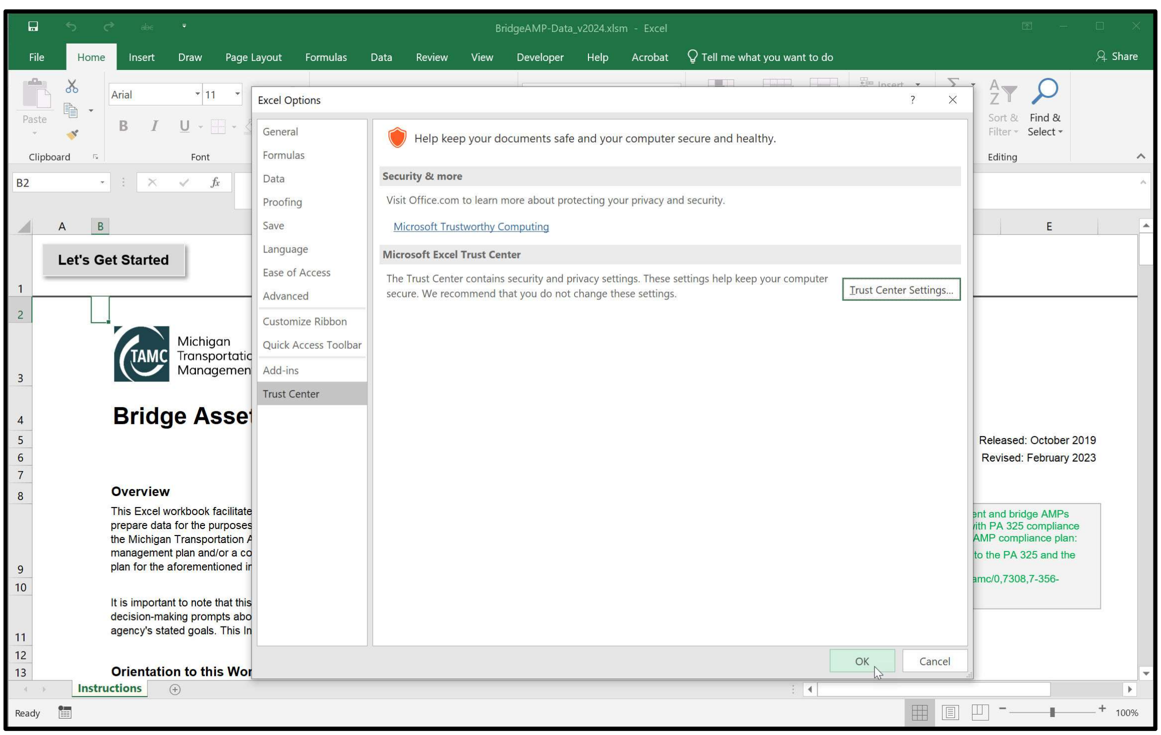
⇨ The selected folder's path should appear in the *Microsoft Office Trusted Locations* window.

9. Select **Subfolders of this location are also trusted**; then, select **OK**.



10. In the *Trust Center* window, select **OK**.

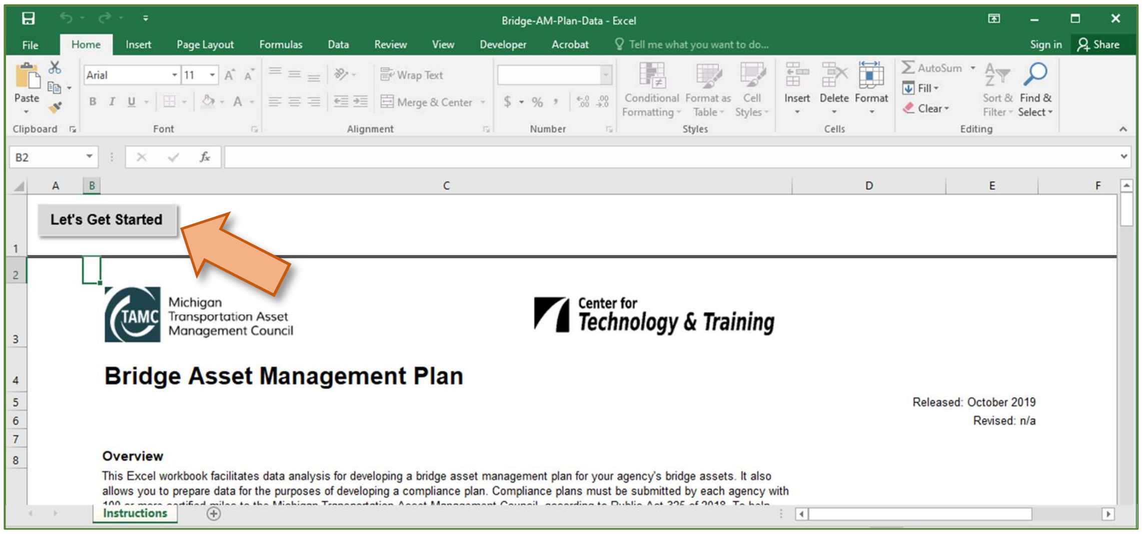
⇨ Your selected folder has now been set as a trusted location.



Instructions Worksheet

NOTE: When you open the BridgeAMP-Data.xlsm file, you will be greeted with a welcome message in the *Instructions* worksheet. Please read the entire sheet before beginning. Then:

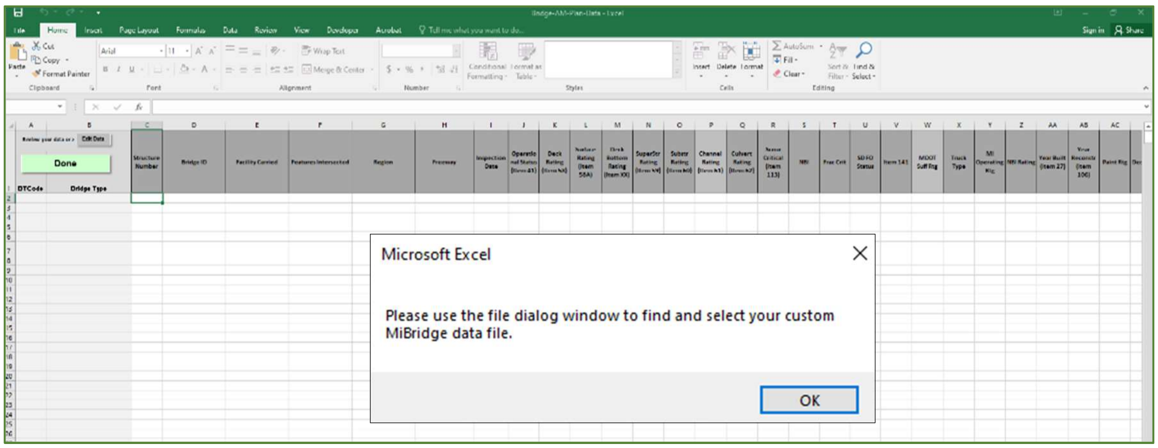
1. Select **Let's Get Started**.(see figure below).



1-MiBRIDGEreport Worksheet

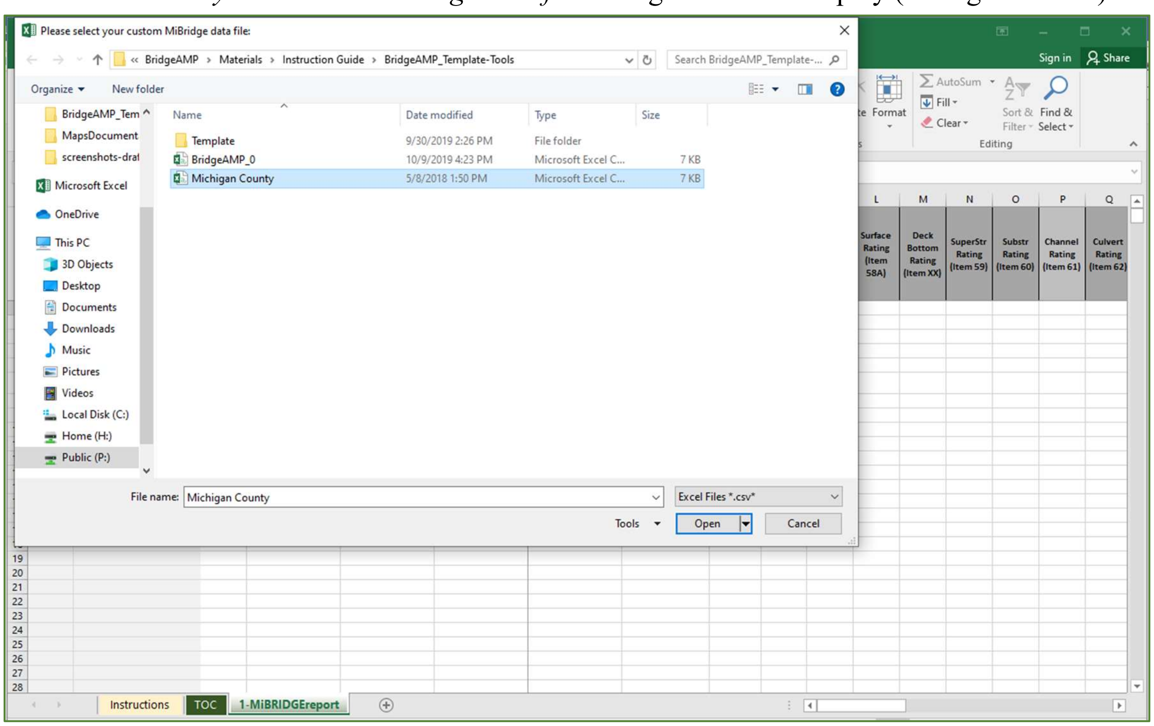
NOTE: The *1-MiBRIDGEreport* worksheet requires a customized MiBRIDGE dataset; this dataset will be provided to you during the workshop on the USB drive. By selecting **Let's Get Started** on the *Instructions* worksheet, you will be guided through the importing of your data. If this process fails, you may unhide the *1-MiBRIDGEreport* worksheet, unprotect the worksheet, copy the data in the [Your Agency].csv/.jsp file, and paste it in the appropriate columns in the *1-MiBRIDGEreport* worksheet. The steps for manually importing your data are detailed in a note after Step 3.

⇨ The *Please use the file dialog window…* message box will display when you automatically progress to the *1-MiBRIDGEreport* worksheet (see figure below).



1. Select **OK** in the message box.

⇨ The *Please select your custom MiBridge data file* dialogue box will display (see figure below).



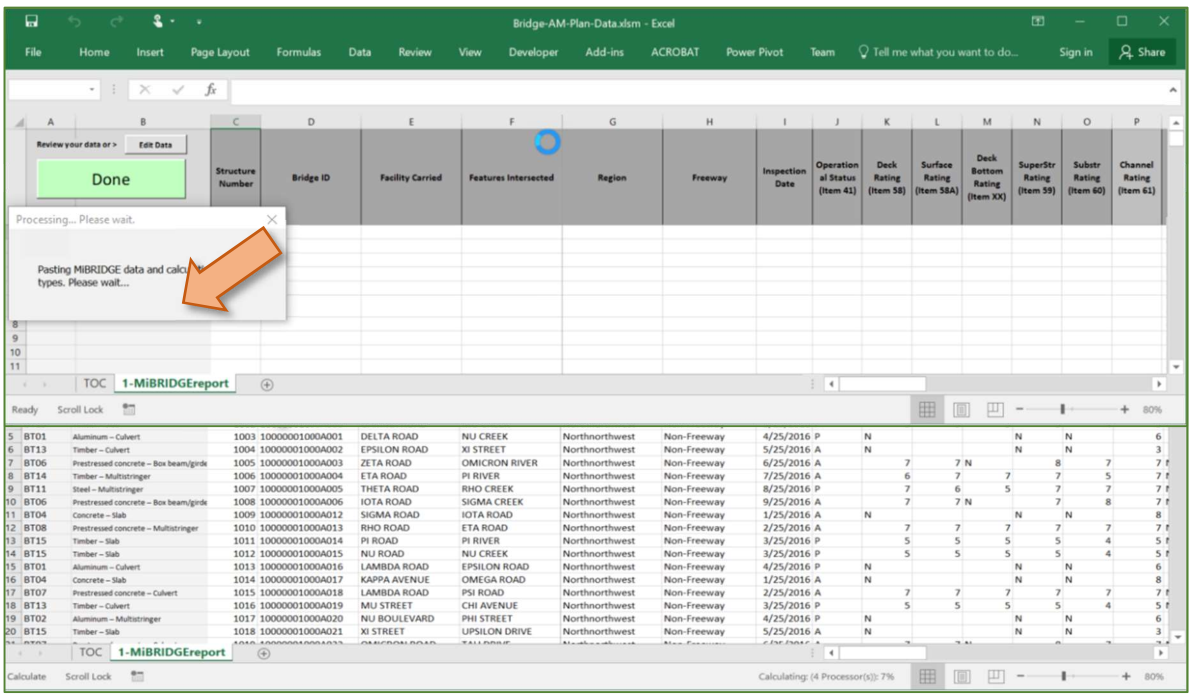
2. Navigate to the *csvBridgeData* folder and select the [Your Agency].csv/.jsp data file that you in the dialogue box, and select **Open**.

⇨ Excel will automatically import your MiBRIDGE data. It may take a few minutes to process all the data.

3. Review the imported data, select **Save** in order to save your work before continuing, and select **Done** (see figures below).

   NOTE: It is recommended that you ***save your work*** before selecting **Done** since the MiBRIDGE import takes a while. If you encounter any errors in using the Excel workbook, you can resume your work from this save point (see figure below).

   NOTE: If you need to edit any of the imported MiBRIDGE data, select **Edit Data**. Then select **Done**.



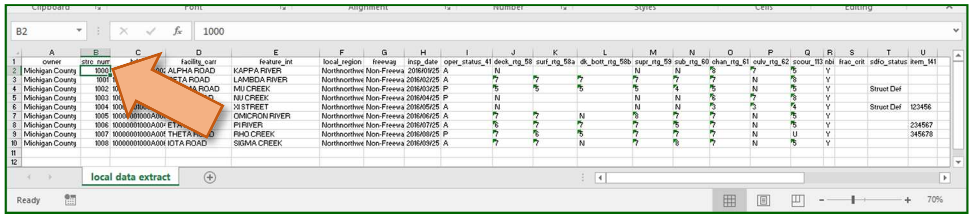
NOTE: If necessary, you can manually import the data using the following steps:

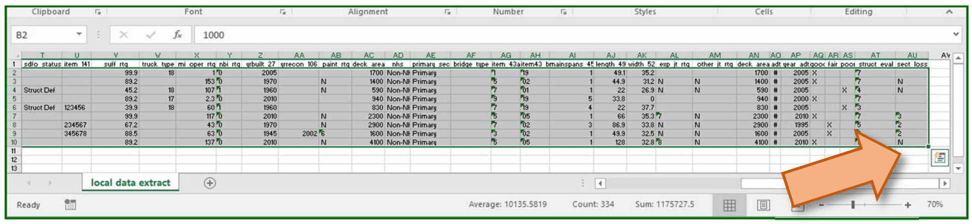
a. Open the [Your Agency].csv/.jsp file.

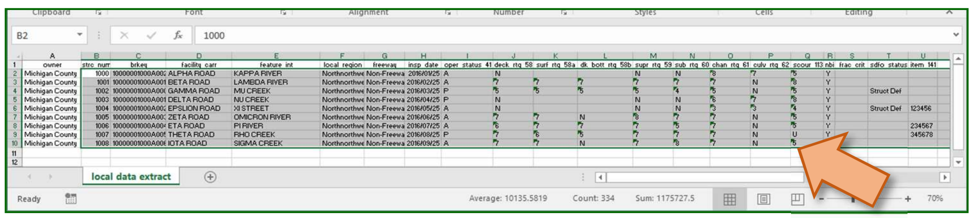
b. Copy data in the [Your Agency].csv/.jsp file.

   i. Highlight the cells from the first column, first row of data—***excluding*** "owner" data ***and excluding*** the headings—through the last column, last row of data.

NOTE: The data most likely begin in cell B2. It will end in column AU; the last row depends upon the number of bridges in your agency's inventory.







c. Copy data from [Your Agency].csv/.jsp's *local data extract* worksheet:
In the *Home* ribbon, select **Copy** from the *Clipboard* group.

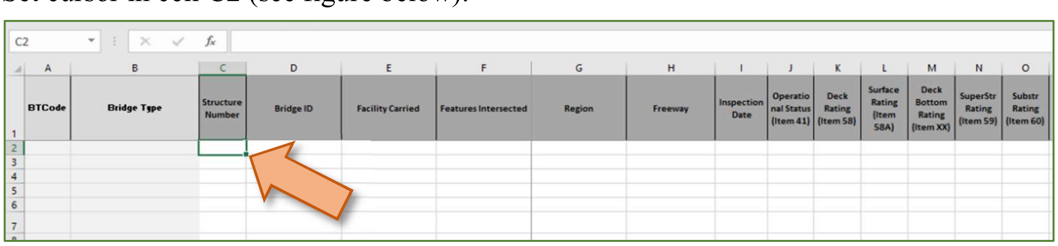
OR: Right-click on the highlighted cells; select **Copy** from the dropdown menu.

OR: Use the **Ctrl** + **C** keyboard shortcut.

d. Return to or open the BridgeAMP-Data.xlsm file.

e. Select the **1-MiBRIDGEreport** tab to access the *1-MiBRIDGEreport* worksheet (see figure below).

f. Set cursor in cell C2 (see figure below).

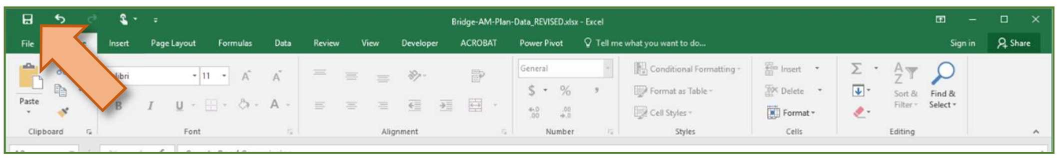


g. Paste data into the *1-MiBRIDGEreport* worksheet:
In the *Home* ribbon, select **Paste** from the *Clipboard* group.

OR: Right-click in cell C2; select **Paste** from the dropdown menu.

OR: Use the **Ctrl** + **V** keyboard shortcut.

NOTE: Microsoft Excel will take a while to process all of the formulas that depend on the data that you just pasted into the Excel workbook.



h. Remember to select **Save** in order to save your work before continuing.

2-Questionnaire Worksheet

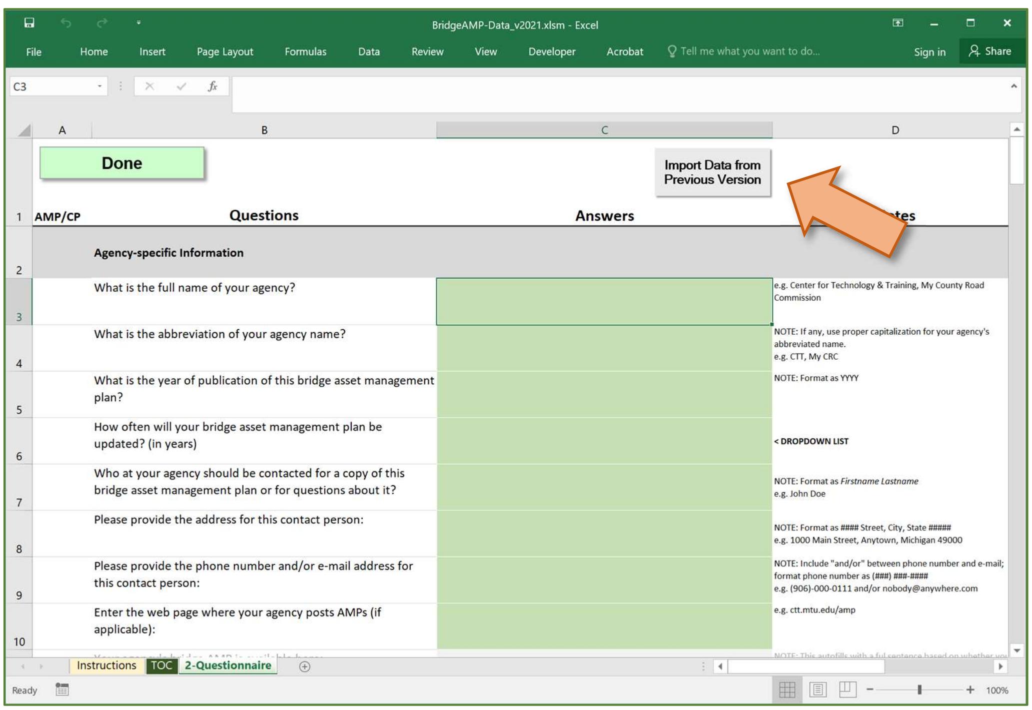
NOTE: The *2-Questionnaire* worksheet requires your response to several questions that will help tailor your asset management plan content. By selecting **Done** on the 1-MiBRIDGEreport worksheet, you will automatically progress to the questionnaire. If this process fails at any point, you may visit the *TOC* worksheet and unhide the *2-Questionnaire* worksheet (see figure below).

NOTE: The *2-Questionnaire* worksheet and several of the following worksheets are protected in order to provide guidance in modifying only the necessary cells. Throughout the Excel template, heading rows should not be altered; altering heading rows will prevent data from transferring into the Word template.

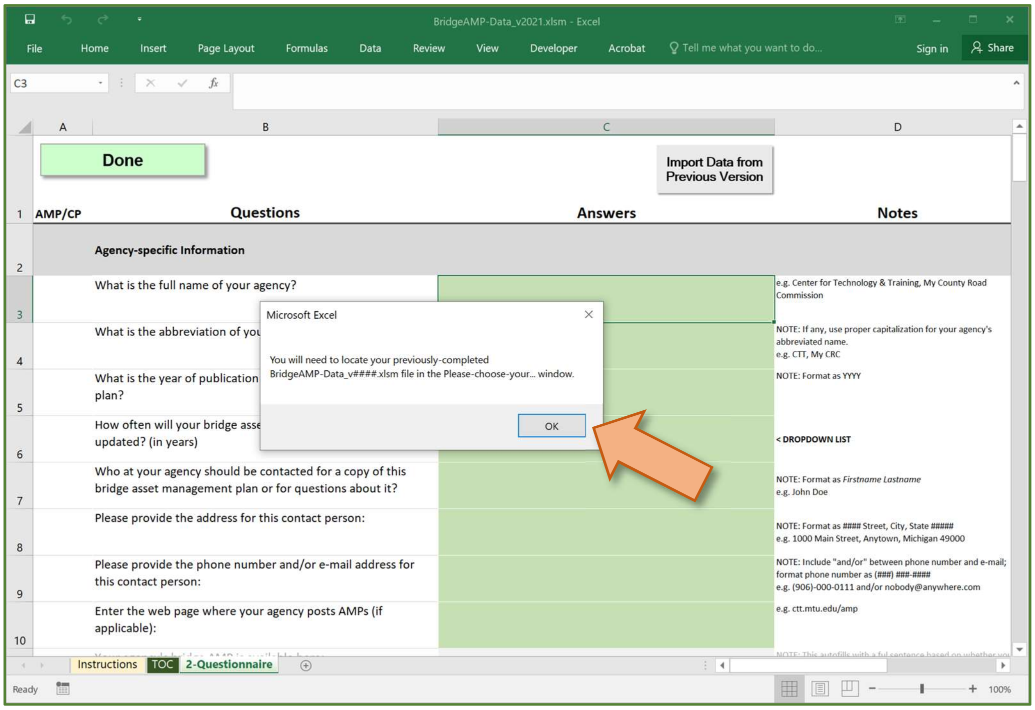
1. Answer the questions on the questionnaire (see figure below).

NOTE: If you have previously completed the 2019/2020 versions of the bridge asset management tools, you can import your fill-in data into the 2021 and newer versions of the tool:

a) Select **Import Data from Previous Version** (see figure below).

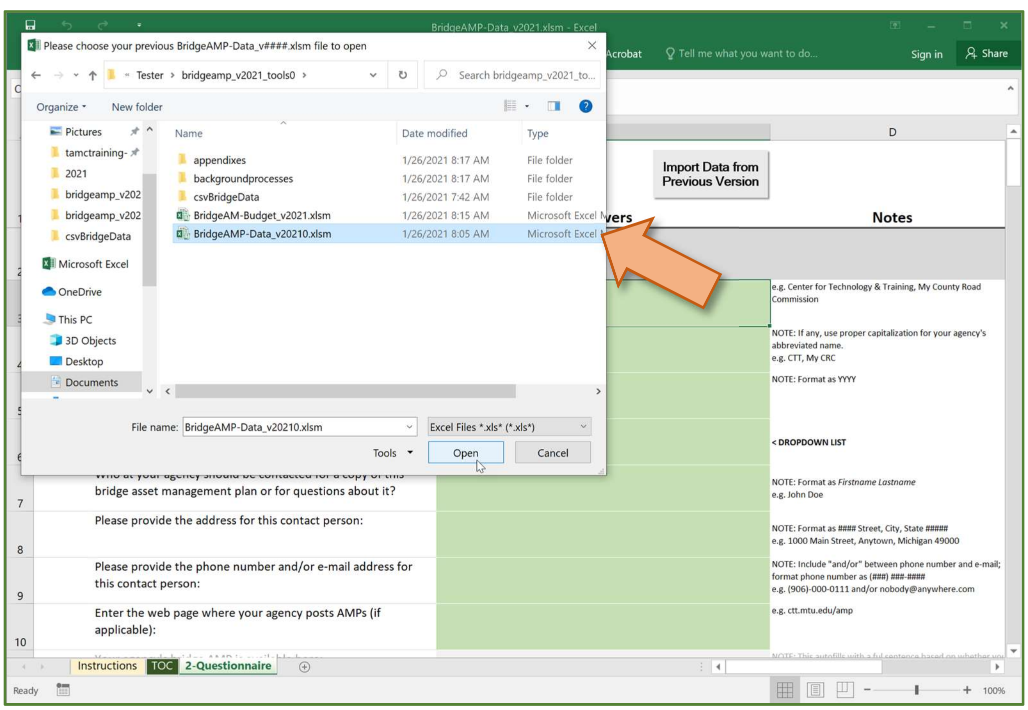


⇨ The *You will need to locate…* window will display (see figure below).



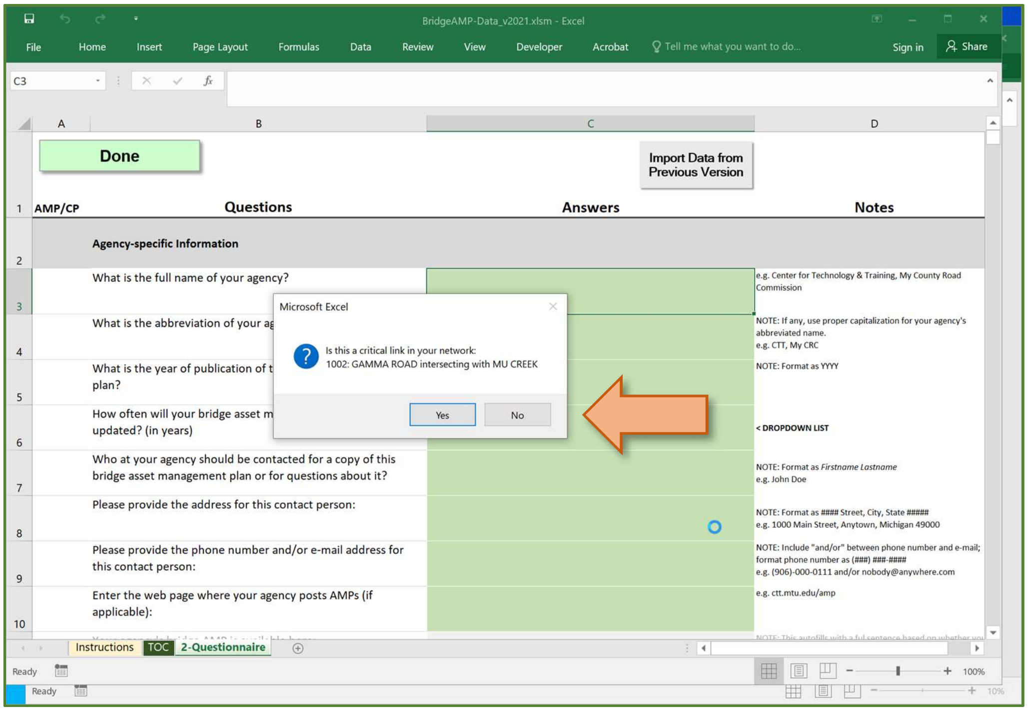
b) Select **OK** in the *You will need to locate…* window.

⇨ The *Please choose your previous BridgeAMP-Data_v###.xlsm to open* window will display (see figure below).



c) Select the file in the *Please choose your previous BridgeAMP-Data_v###.xlsm to open* window, and select **Open** (see figure above).

⇨ The prompts to identify posted/close bridges that are critical links will display (see figure below).

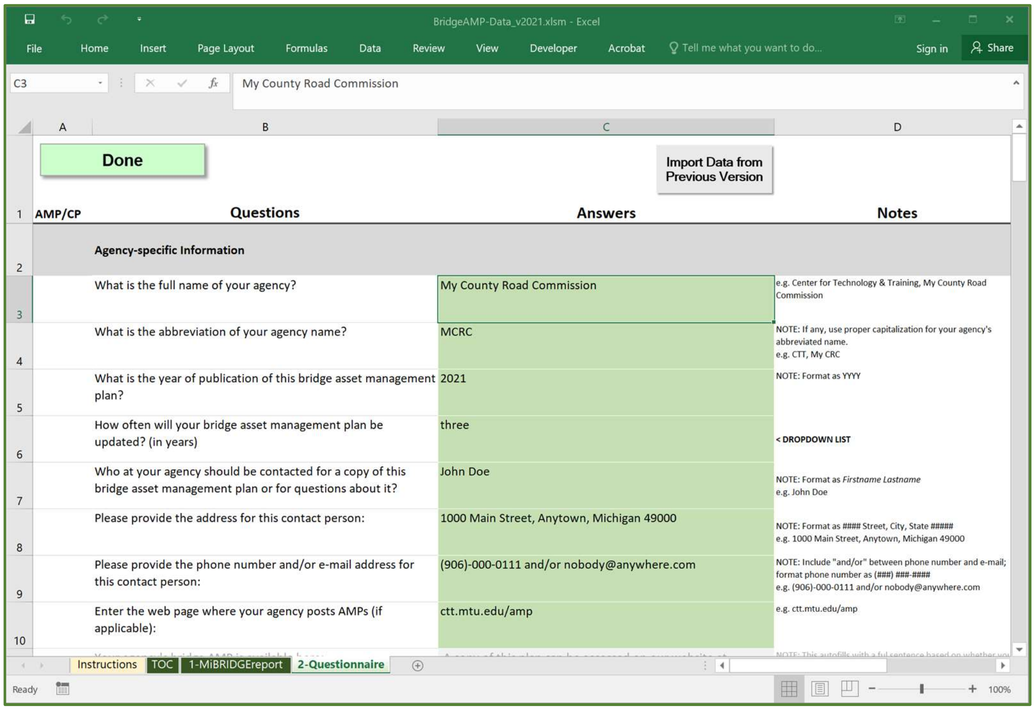


d) Select **Yes** to identify posted/closed bridges that are critical links.

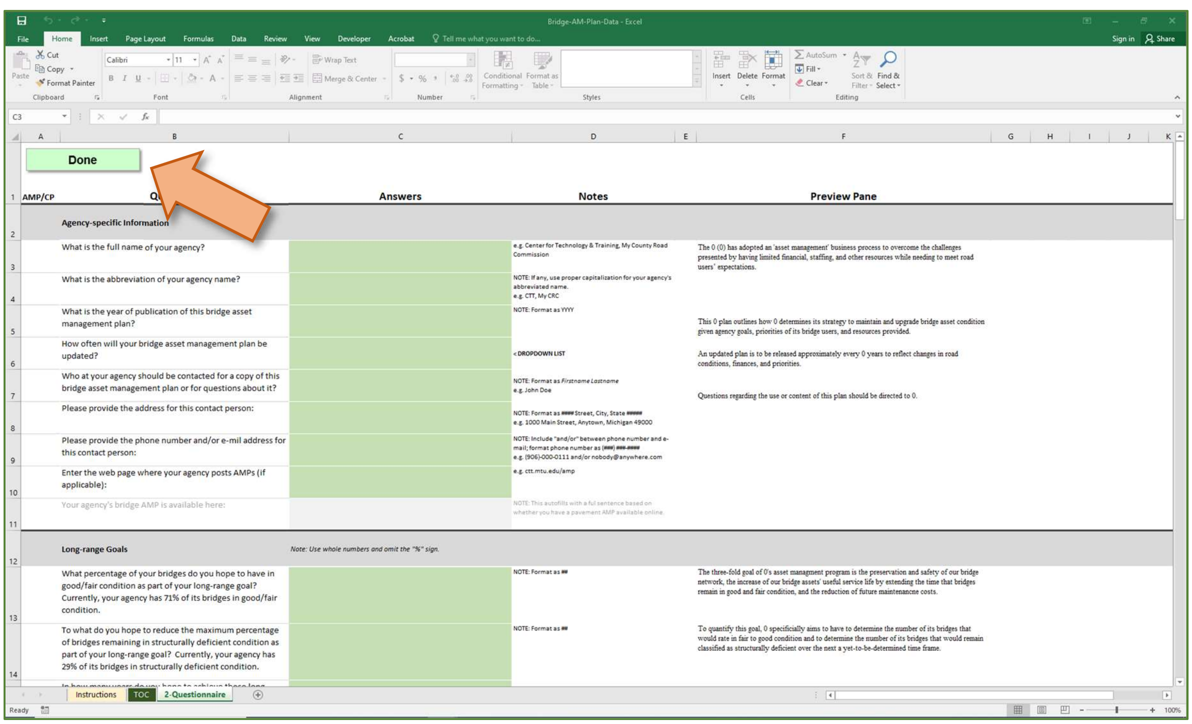
OR

Select **No** to identify posted/closed bridges that are not critical links.

⇨ After the last posted/closed bridge has been reached, the import process will continue until all of the data has been transferred into the current tool. The current data will appear on the 2-Questionnaire worksheet once the process is completed (see figure below).

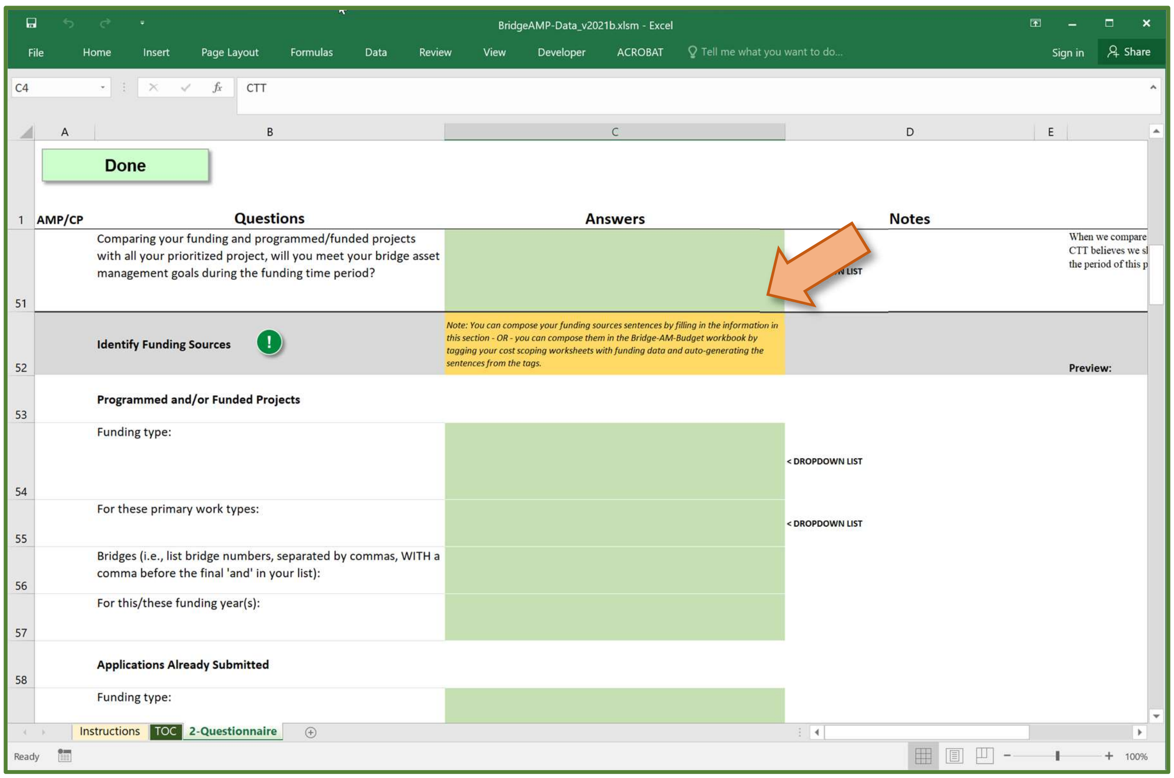


NOTE: You are only able to type in green or red cells in Column C. Column B (white cells) contains the questions, Column D (white cells) contains answer prompts and/or examples to make sure you format responses correctly, and Column F (white cells) contains preview text that will update to illustrate how the answer will be reflected within the context of the asset management plan (see figure below).

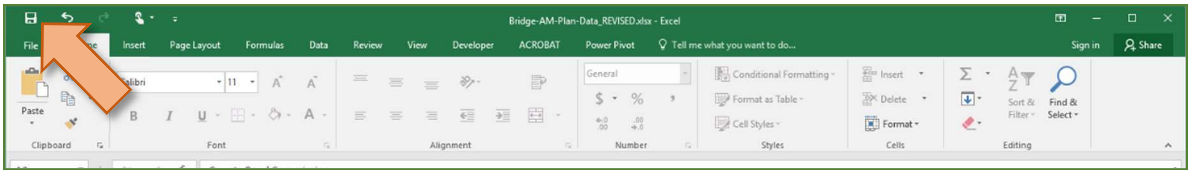


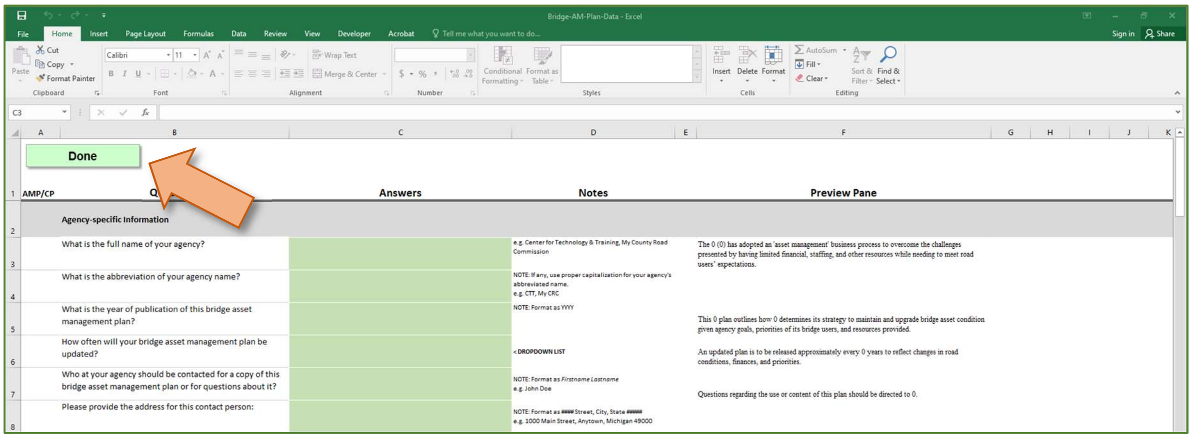
NOTE: Some green cells are dropdown lists. If none of the listed answers appropriately reflects your agency's situation, select the blank entry in the dropdown list, and then type your answer into the green cell; note that in some cases this is discouraged.

NOTE: The sentences for the 2. Financial Resources section of the bridge asset management plan are created either in the BridgeAMP-Data.xlsm tool or the BridgeAMP-Budget.xlsm tool (with the latter being possibly easier to compile). To create the financial resources sentences in the BridgeAMP-Data.xlsm tool, complete the 2-Questionnaire worksheet's Identify Funding Sources section (see figure below). The tool will look for blanks in this section to determine if you are creating your financial resources sentences here or electing to create your financial resources sentences in the BridgeAMP-Budget.xlsm tool.



2. Review your responses, select **Save** in order to save your work before continuing, and select **Done** (see figures below).



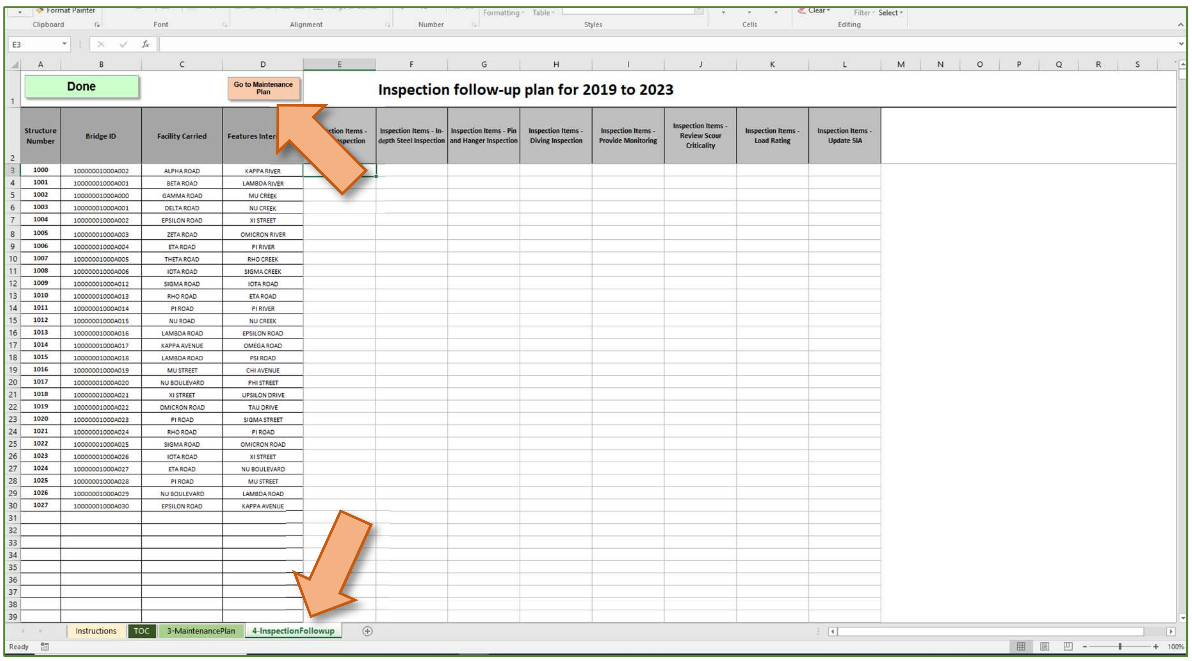


⇨ You will be directed to the *3-MaintenancePlan* and *4-InspectionFollowup* worksheets.

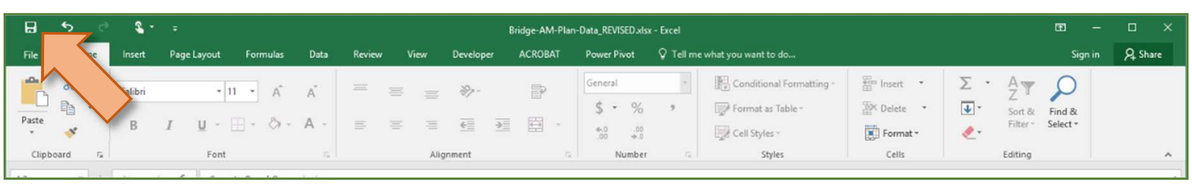
3-MaintenancePlan and 4-InspectionFollowup Worksheets

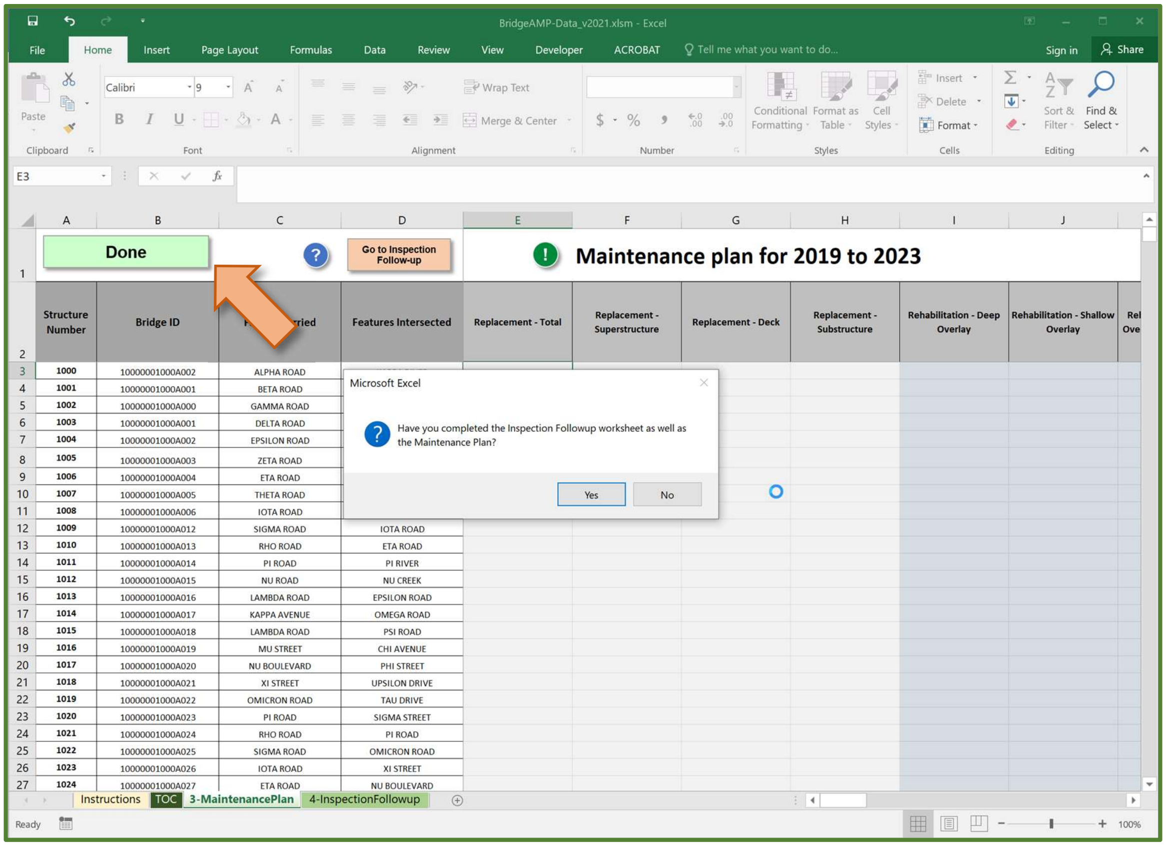
1. Begin indicating your agency's plan for maintenance and inspection follow-up by inserting a lowercase "x" (alternatively, you may choose to use "h", "m", "l" for high, medium, and low priority items to correspond with your agency's prioritization metric, which can be optionally indicated in the BridgeAM-Budget.xlsm workbook) in its corresponding replacement, rehabilitation, proposed preventive maintenance, and/or proposed scheduled maintenance item—in *3-MaintenancePlan*'s columns E through AQ—and in its corresponding inspection follow-up item—in *4-InspectionFollowup*'s columns E through M (see figure below).

   NOTE: You can toggle between the *3-MaintenancePlan* and *4-InspectionFollowup* worksheets using the **Go to…** button or the worksheet tabs, indicated by the green arrows in the figure below.



2. Review your responses, select **Save** in order to save your work before continuing, and select **Done** (see figures below).





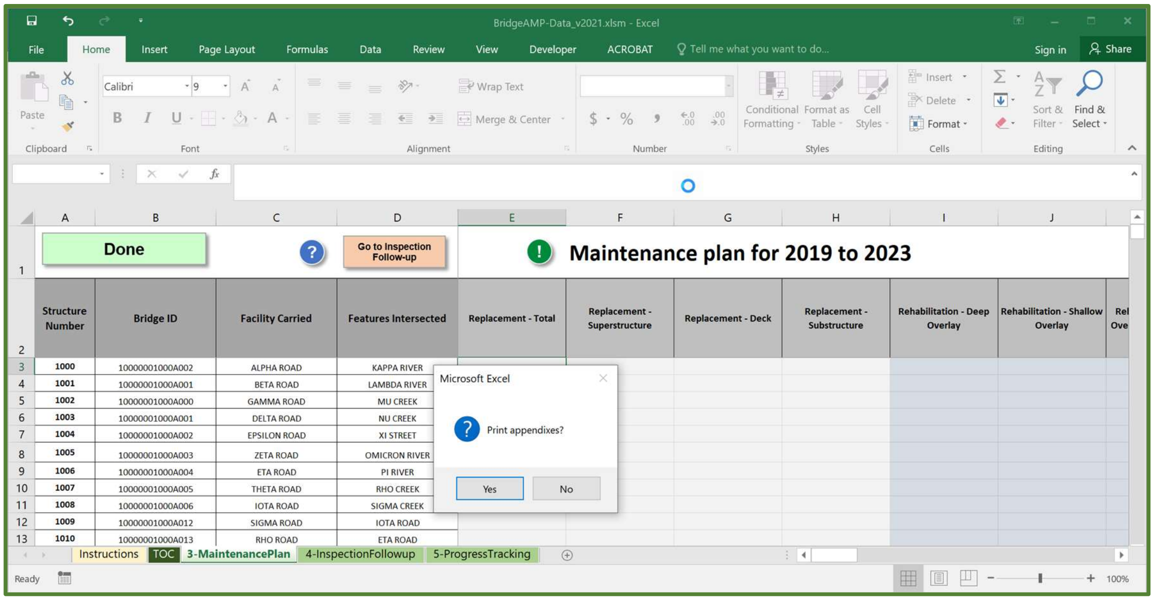
⇨ You will be asked to confirm whether you completed both the 3-MaintenancePlan worksheet and the 4-InspectionFollowup worksheet (see figure above).

3. Select **Yes** if you have completed both worksheets, and proceed to step 3 step result.

   OR

   Select **No** if you still need to complete one of the worksheets, and return to step 1.

⇨ A *Print appendixes?* window will display (see figure below).



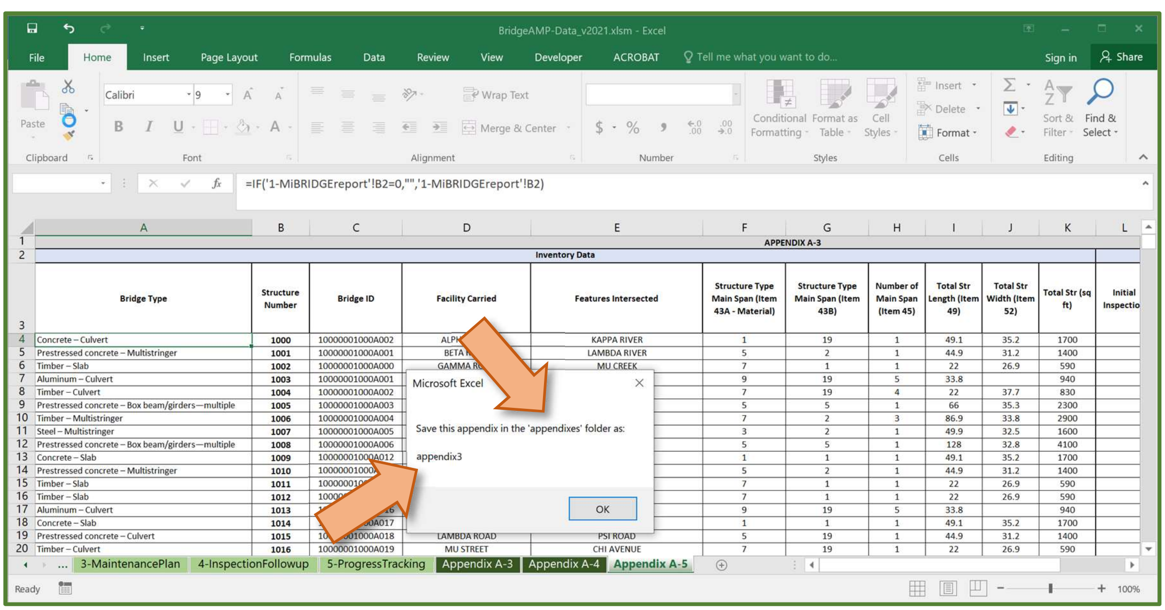
4. Select **Yes** to print appendixes (see figure above), and proceed to step 4 step result.

   OR

   Select **No** to skip printing appendixes (see figure above), and proceed to this instruction guide's section on the *5-ProgressTracking* sheet.

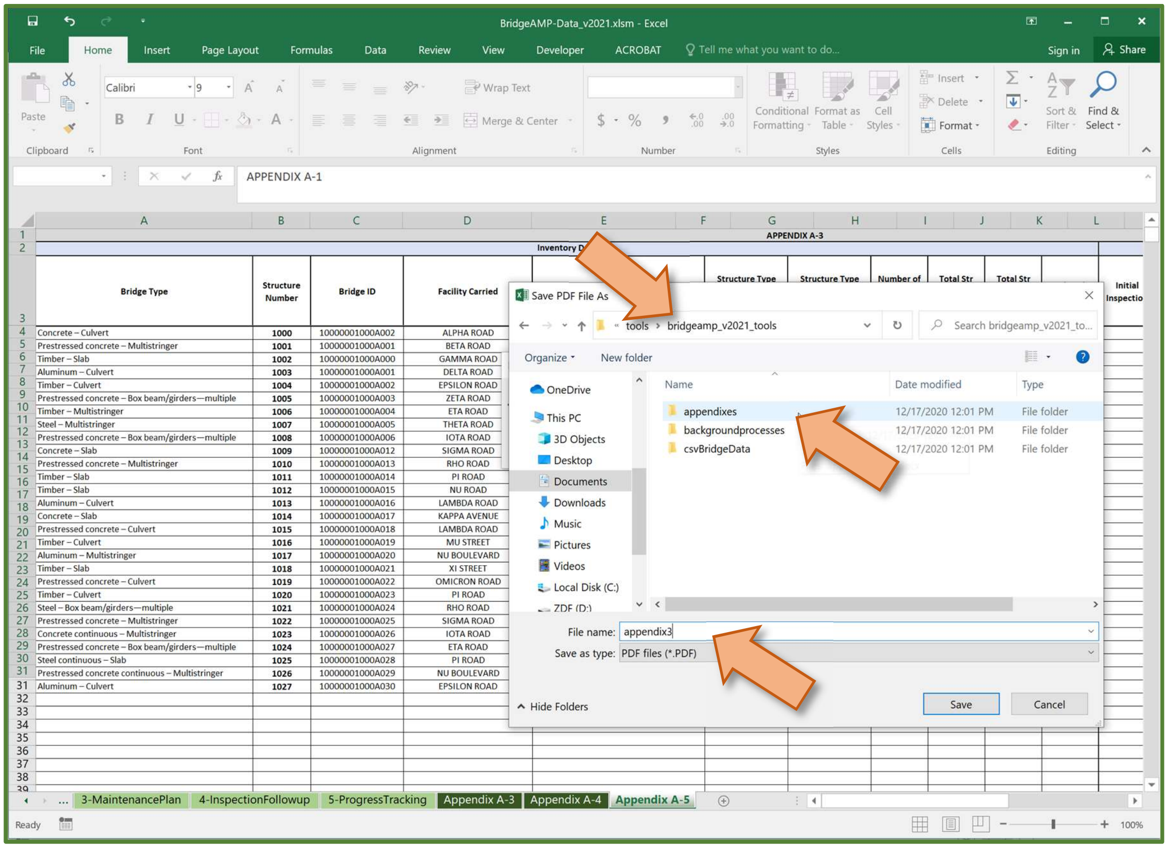
⇨ The *Save this appendix in…/as…* dialogue box will display (see figure below).

NOTE: Pay special attention to the specified folder and the save-as name. It is critical that all of these PDFs are stored in the appendixes subfolder and named "appendix3", "appendix4", and "appendix5" respectively for automation in future steps to function correctly.



5. Select **OK** in the the *Save this appendix in…/as…* dialogue box (see figure above).

⇨ The *Save PDF File As* file dialogue box will display (see figure below).

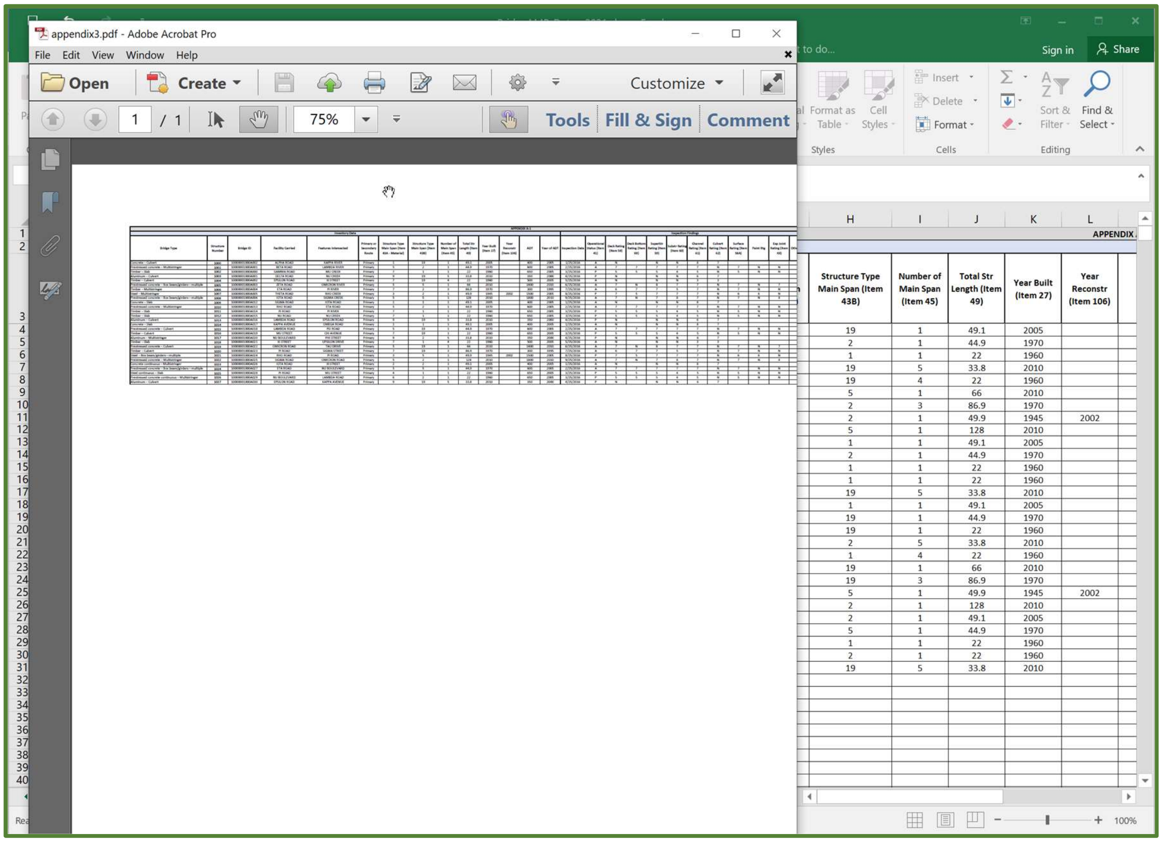


6. Navigate to the appendixes subfolder, located within the bridge asset management tools folder, in the *Save PDF File As* file dialogue box, and enter the file name that displayed in the *Save this appendix in…/as…* dialogue box—the first time “appendix3”, the second time “appendix4”, or the third time “appendix5”— in the *File name* field (see figure above).

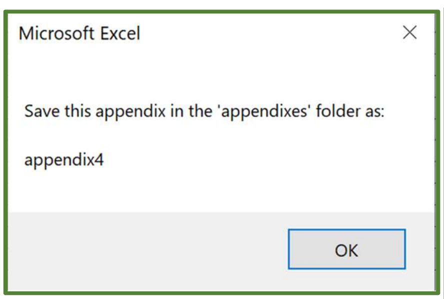
7. Select **Save**.

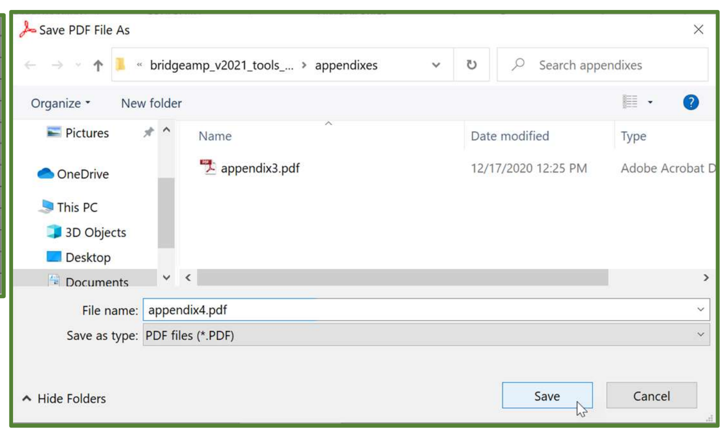
⇨ The appendix will print to a PDf, and Acrobat Reader (or your default PDF reader) will open and display the PDF file (see figure below).

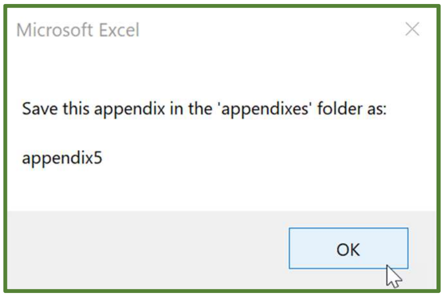
NOTE: You may need to close the Acrobat Reader (or your default PDF reader) in order to see the next dialogue box.

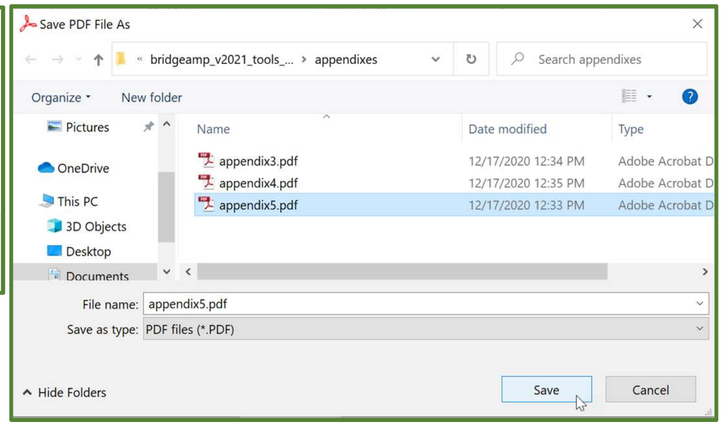


8. Repead steps 5 through 7 two more times for appendix 4 and appendix 5 respectively.





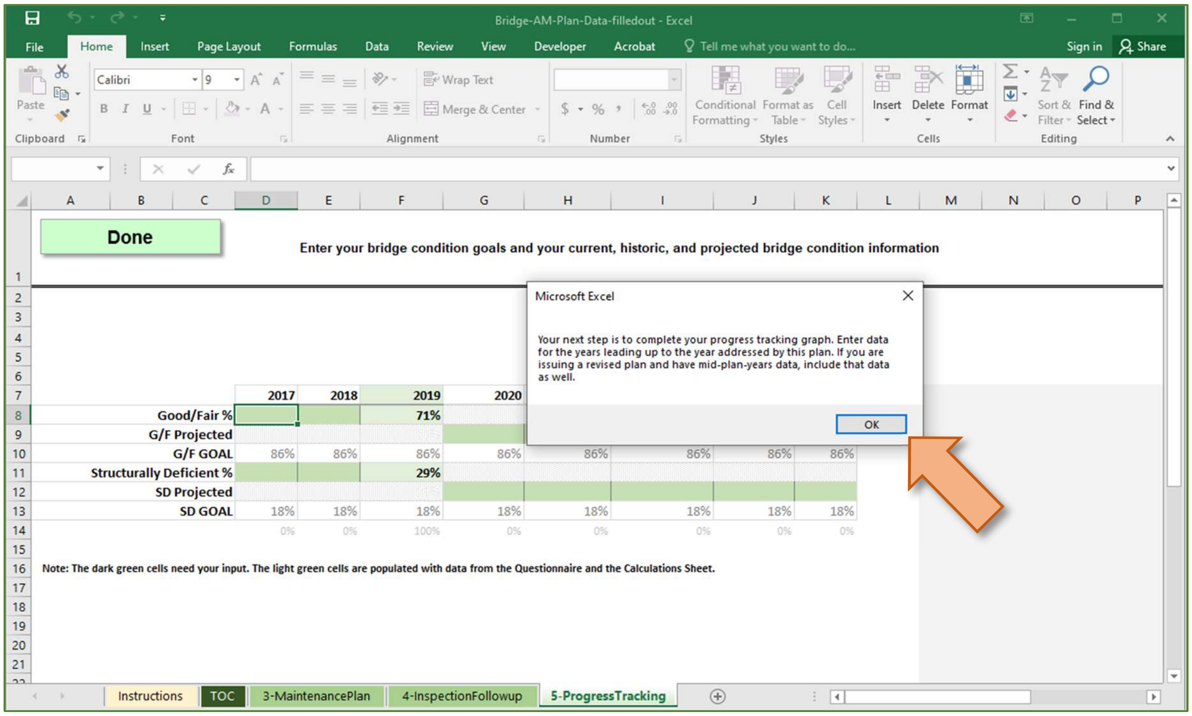




⇨ You will be directed to the *5-ProgressTracking* sheet.

5-ProgressTracking Worksheets

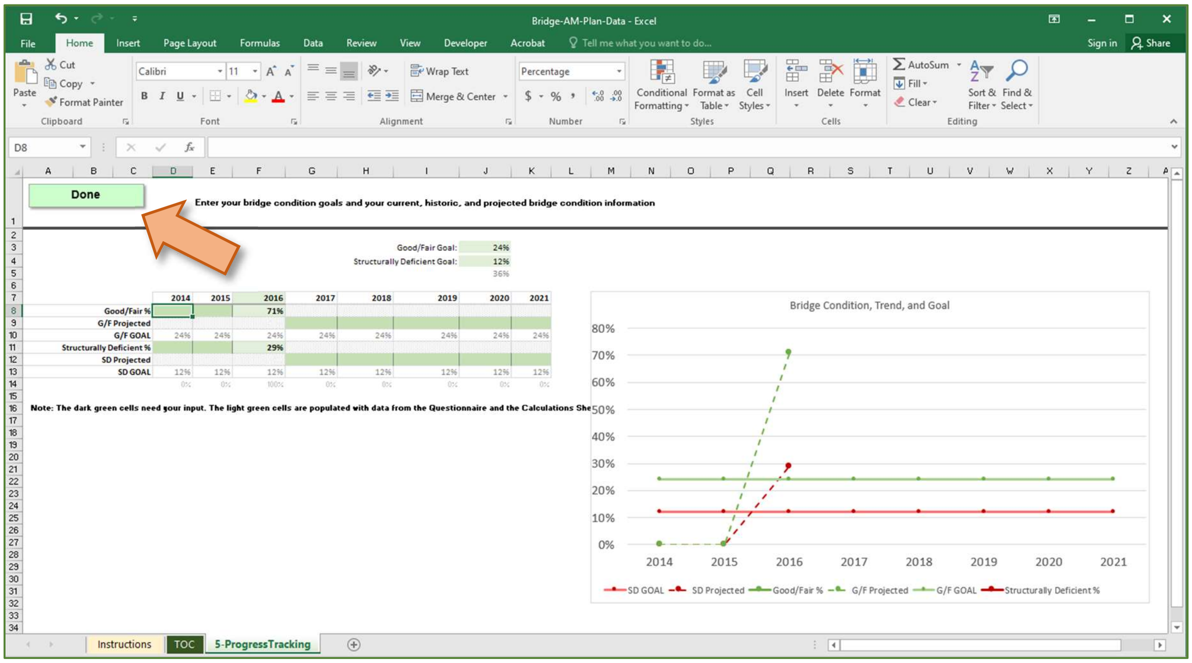
1. Select **OK** in the message box after reading the information.



2. Fill in the green fields of the chart with bridge condition goals and your historic (Columns D and E), current (Column F), and projected bridge condition (Columns G through K) information. The graph to the right of the table will update automatically as data is entered into the chart.

   NOTE: The Goal/Fair Goal (J3), the Structurally Deficient Goal (J4), and the year (F8) data come from your answers to the goals section of the *2-Questionnaire* worksheet (cells B13, B14, and B23, respectively). If you wish to change these goals or the years reflected in the graph, you will need to make the change on the *2-Questionnaire* worksheet.

3. Review your responses and the graphs, and select **Done**.

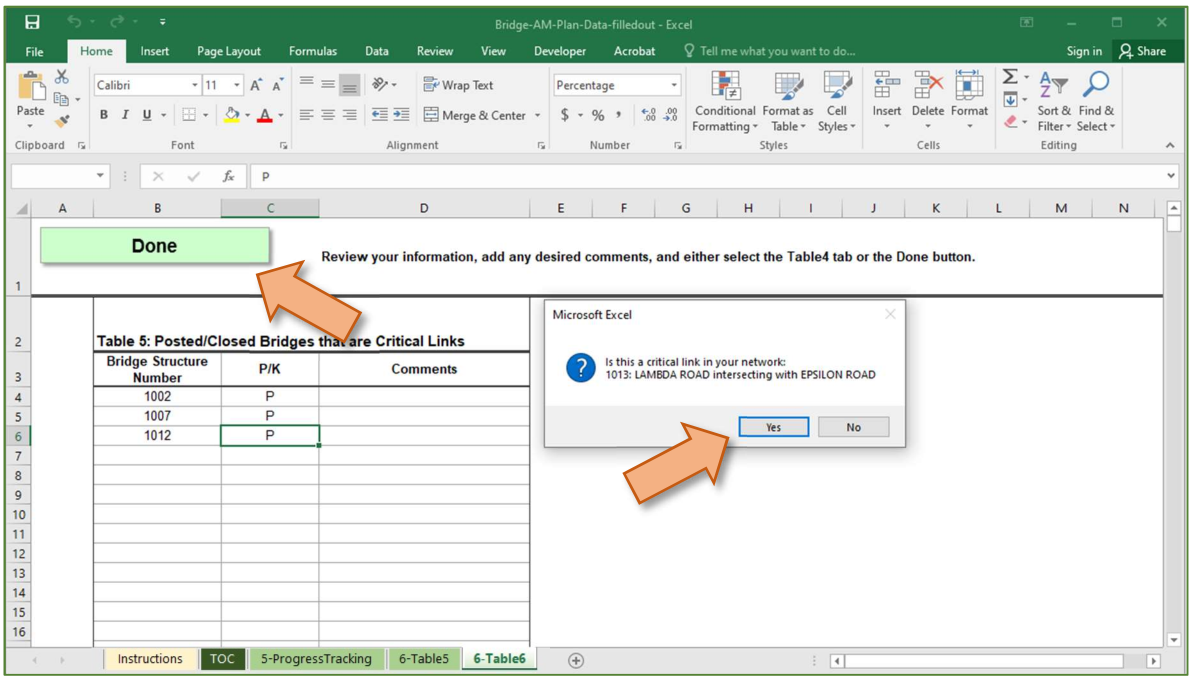


⇨ A message box will display to notify you that you are proceeding to the next step of the creating tables for scour critical bridges and posted/closed bridges. You will then automatically proceed to the *6-Table5* worksheet.

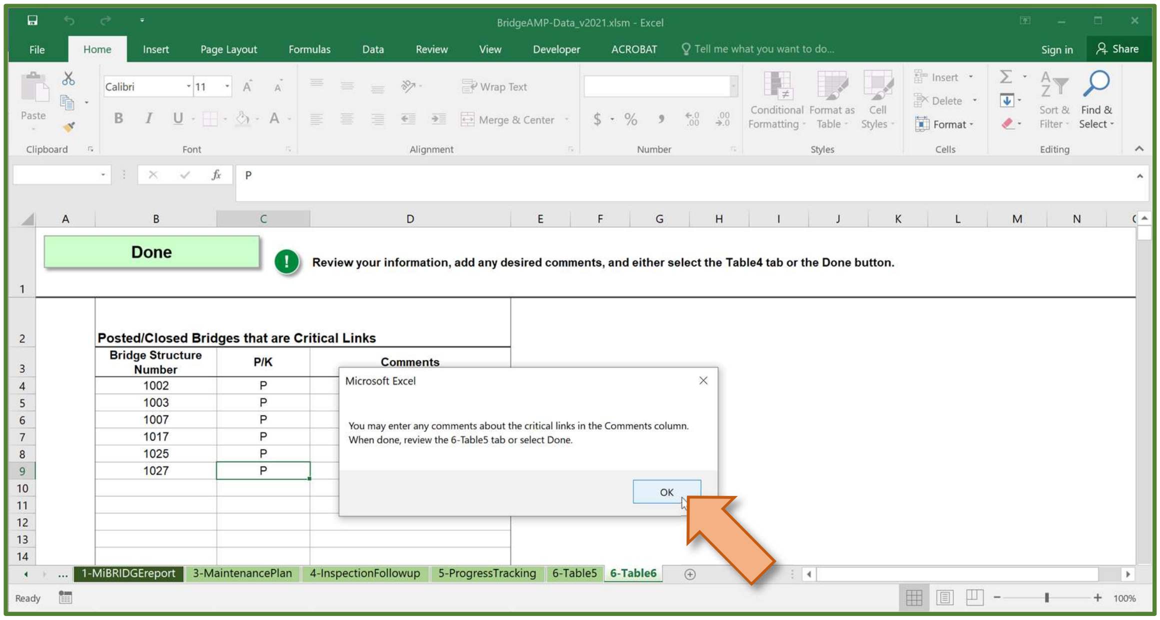
6-Table5 and 6-Table6 Worksheets

NOTE: Table 5 in the bridge asset management plan identifies scour critical bridges. This data will be pulled from your MiBRIDGE data, so you will automatically proceed past Table 5 to Table 6, which lists posted/closed bridges in your jurisdiction and requires you to identify them as critical links.

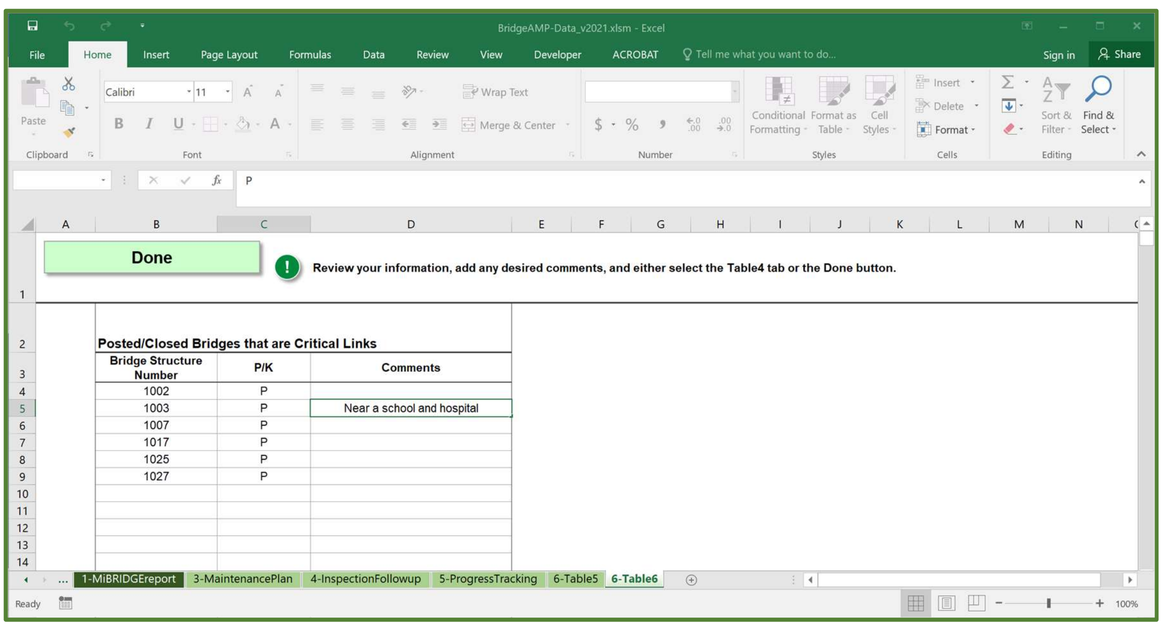
1. Select **Yes** or **No** in the dialogue box depending upon whether the specified bridge is a critical link (see figure below).



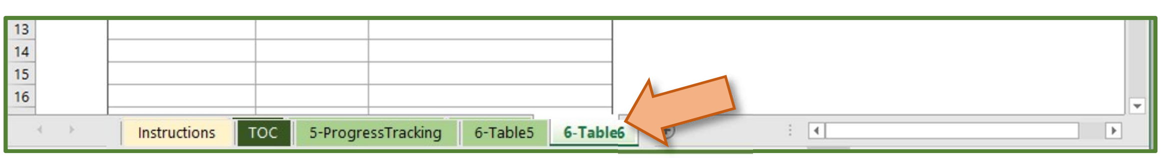
⇨ All the critical links will be displayed in *Posted/Closed Bridges that are Critical Links*. The *You may enter any comments…* dialogue box will display (see figure below).



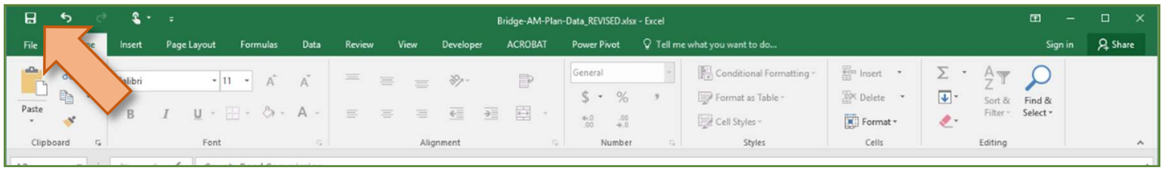
2. **OPTIONAL:** Add comments about the critical-link posted/closed bridges in the *6-Table6* worksheet Column D (see figure below).



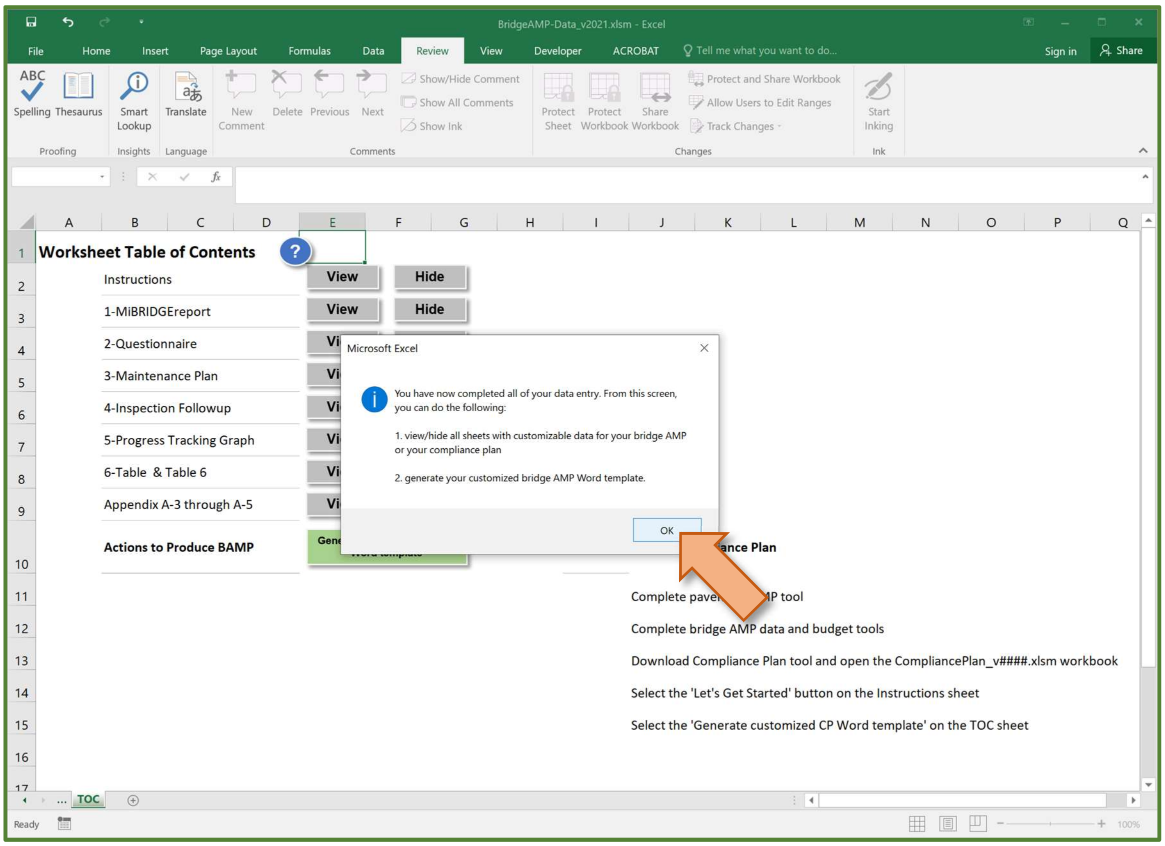
3. Review both *6-Table5* and *6-Table6* worksheets, using the tabs to toggle between them (see figure below).



4. Select **Save** in order to save your work before continuing, and select **Done** (see figure below).



⇨ You will advance to the TOC worksheet, and the *Your have now completed all your data entry…* dialogue box will display (see figure below).



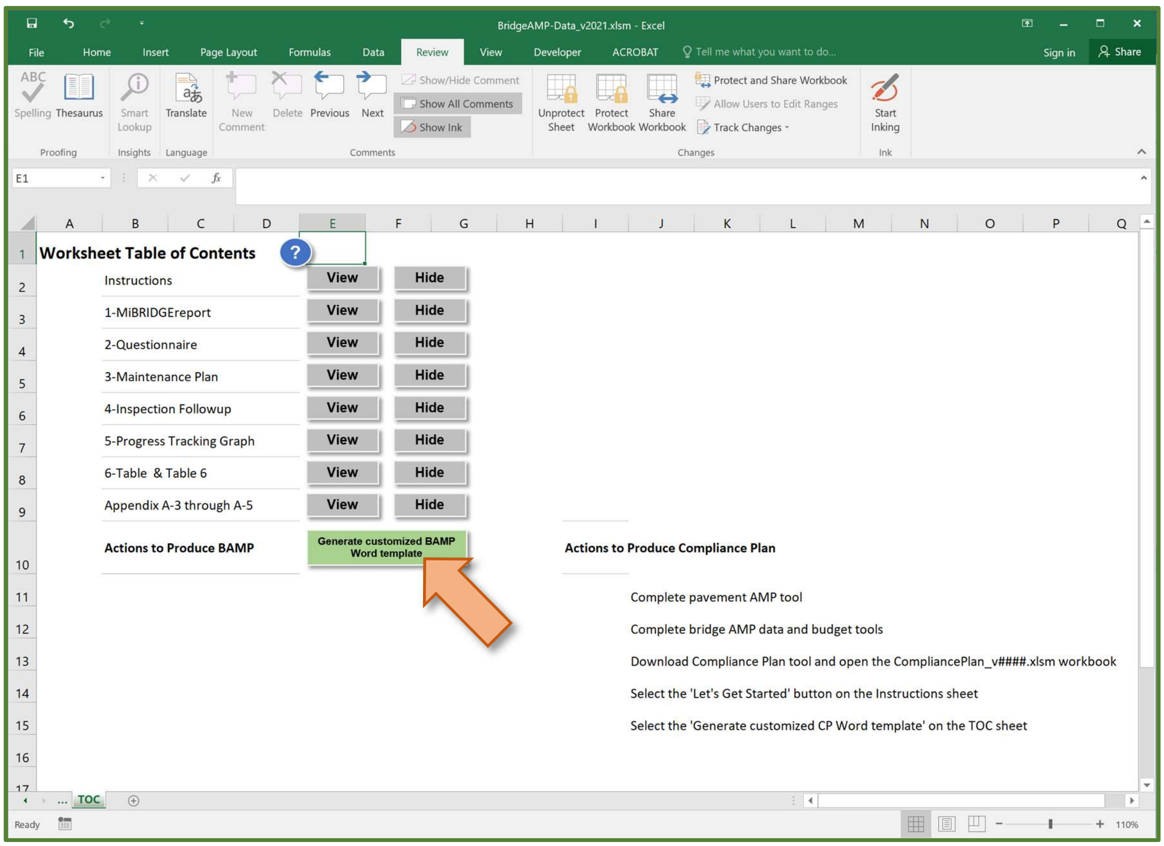
5. Select **OK**.

TOC Worksheet

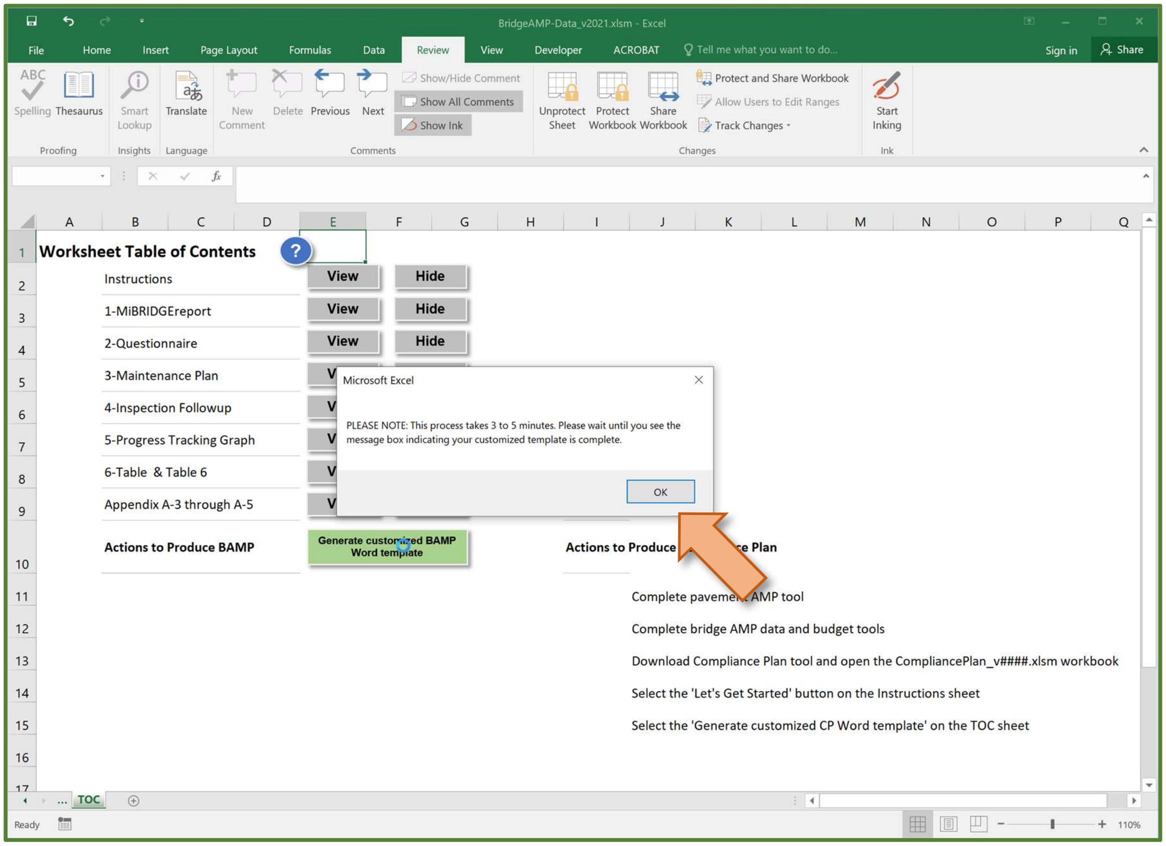
NOTE: The *TOC* worksheet serves as an access point to the various worksheets in your workbook, and becomes available for viewing once finished with the Instructions worksheet. The TOC worksheet also serves as the location from which you can build your Bridge Asset Management Plan (see figure below).

Build a Bridge Asset Management Plan

1. Select **Generate customized BAMP Word template** on the *TOC* worksheet's contents item Actions to Produce BAMP (see figure below).

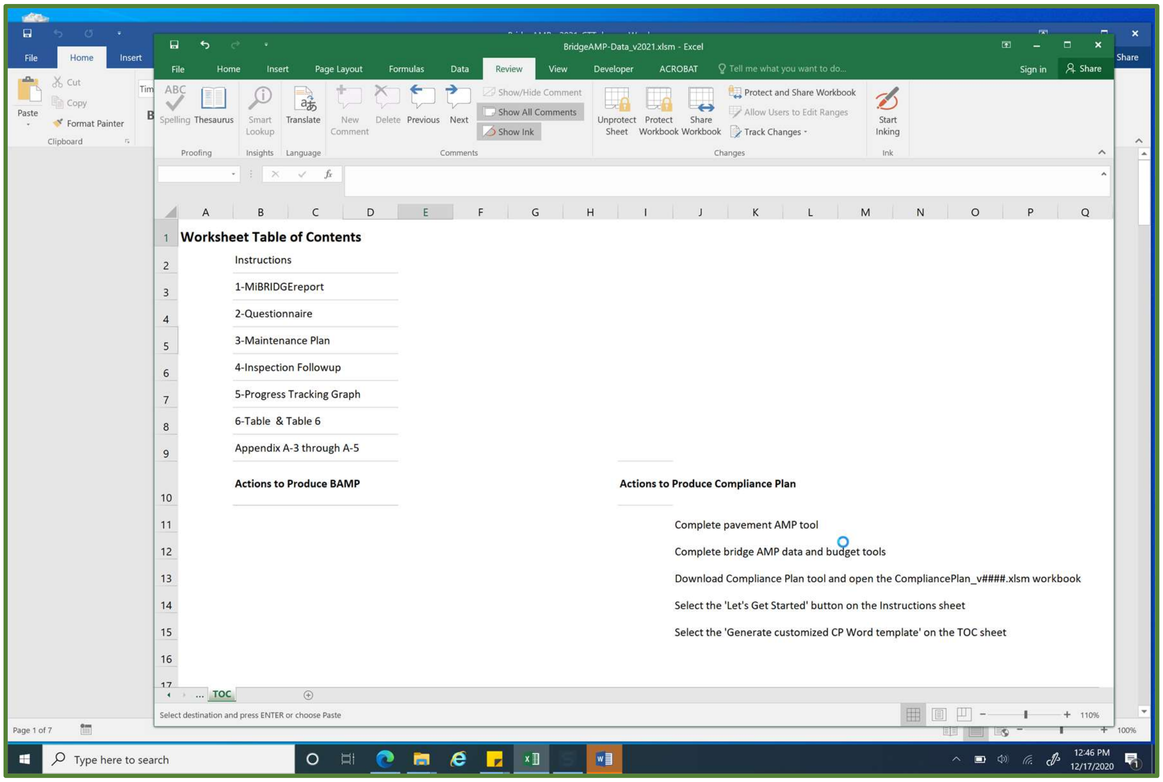


⇨ The *PLEASE NOTE: This process takes 3 to 5 minutes…* dialogue box will display (see figure below).

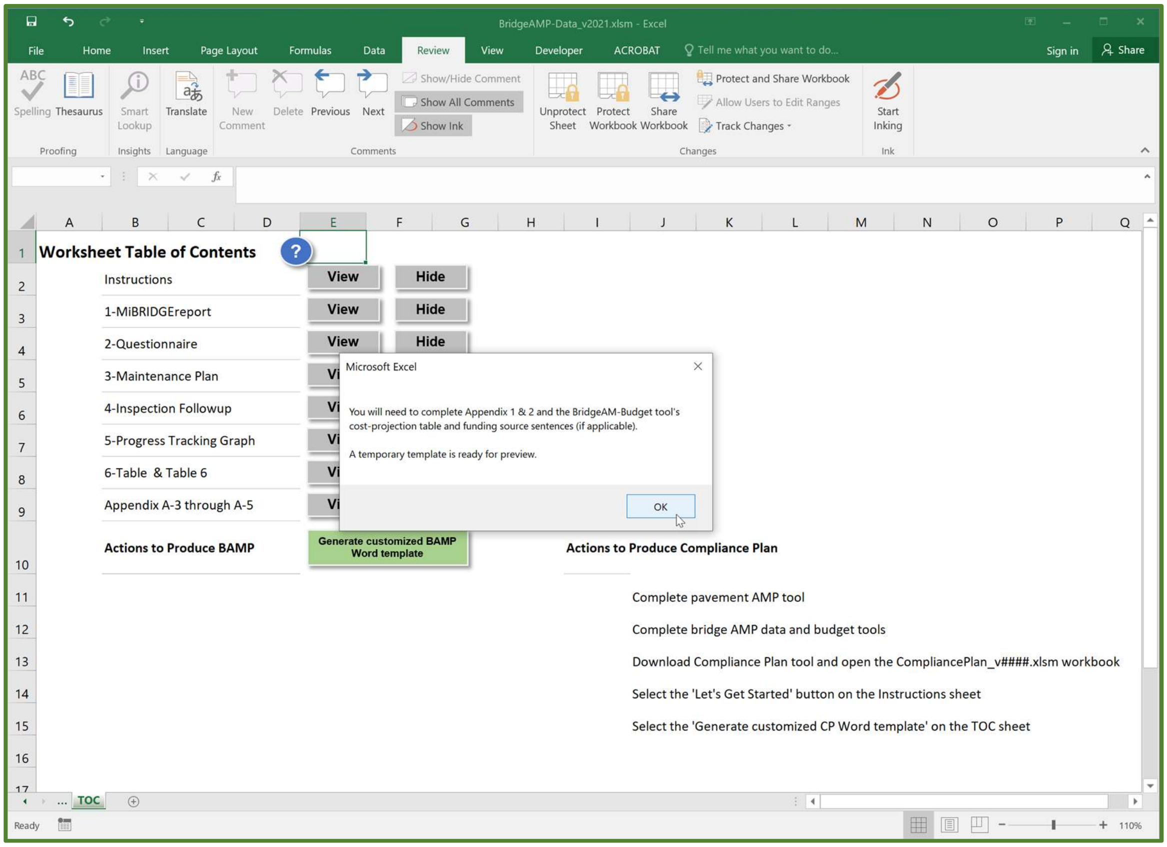


2. Select **OK**.

NOTE: The process to generate the customized bridge asset management plan Word template takes about three to five minutes. During this time, just allow Microsoft Office to run the generation process. You will see Microsoft Word automatically open and close; this is part of the process (see figure below). No user input is necessary during this process.

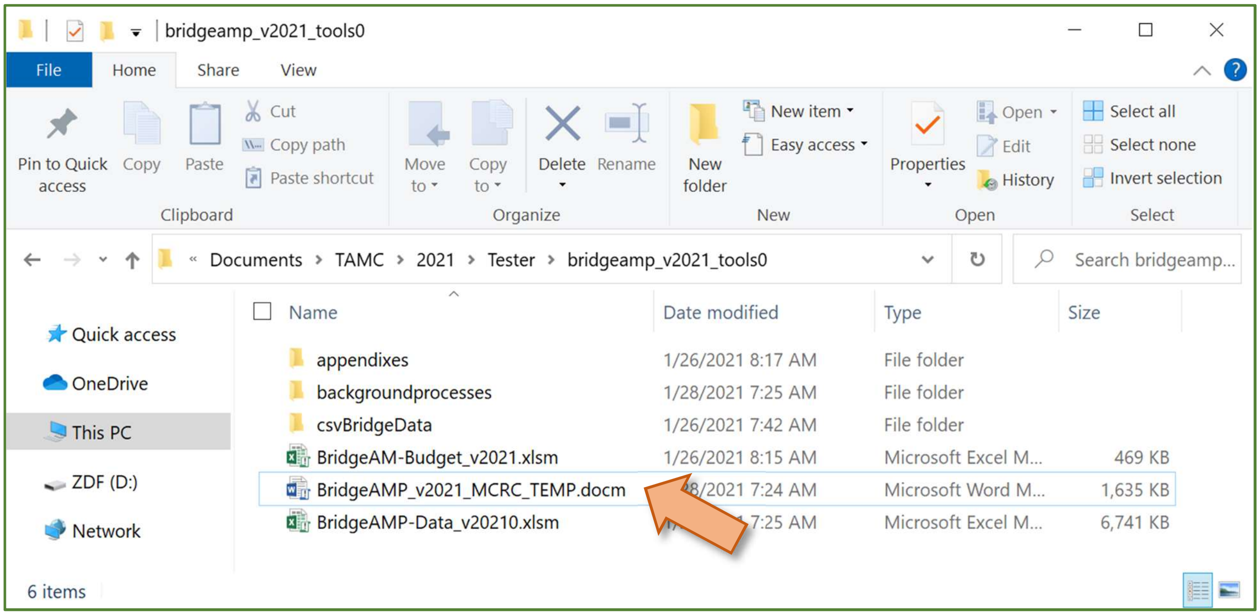


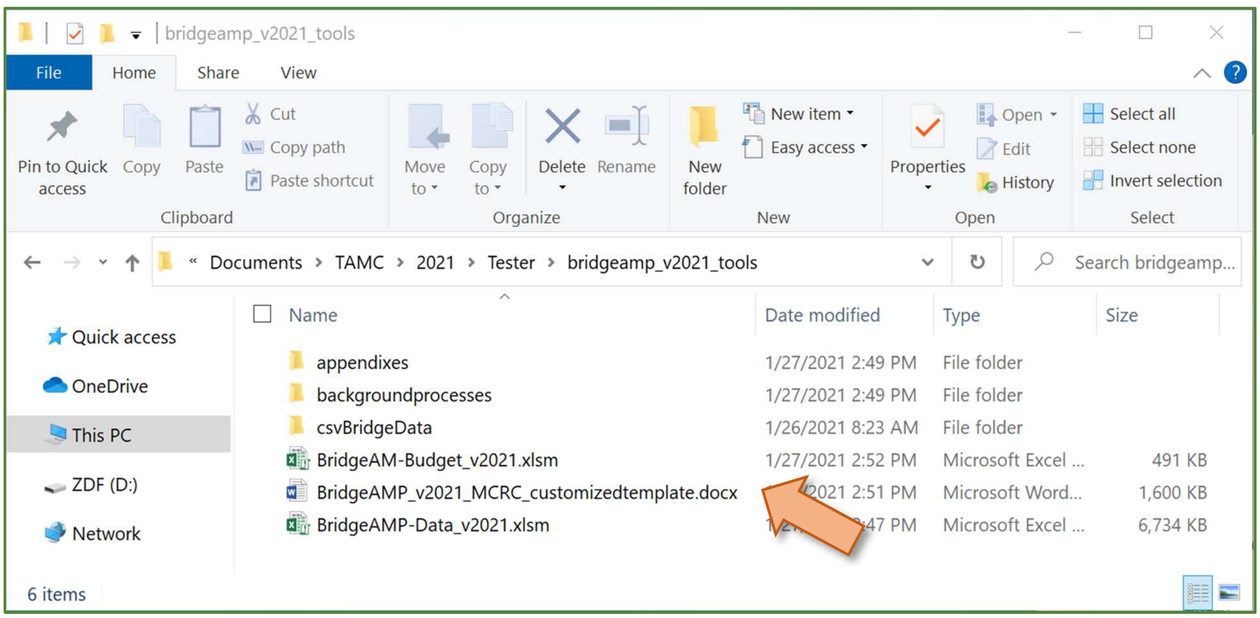
⇨ Once the customized bridge asset management plan Word template has been generated, the *You will need to complete…* dialogue box will display (see figure below).



3. Select **OK**.

NOTE: At this point, you will have either a temporary template or a finalized template (see figures below). If you have a temporary template, you must complete steps to create financial resources content (i.e.g, funding source sentences) in the BridgeAM-Budget.xlsm tool; this will replace the temporary template and generate a finalized template. The temporary template is for preview purposes only (refer to the section Opening the Word template in this instruction guide for more information on opening the template); ***do not make any changes to the temporary template that you want to see reflected in your final document***. If you have a finalized template, you can skip the steps for creating funding source sentences in the BridgeAM-Budget.xlsm tool. Both the temporary template and the finalized template require a cost projection table (generated in the BridgeAM-Budget.xlsm tool) and completion of Appendix 1 and Appendix 2. Proceed to the section ***Generating annual cost projection/gap analysis data from the budget template*** in this instruction guide.





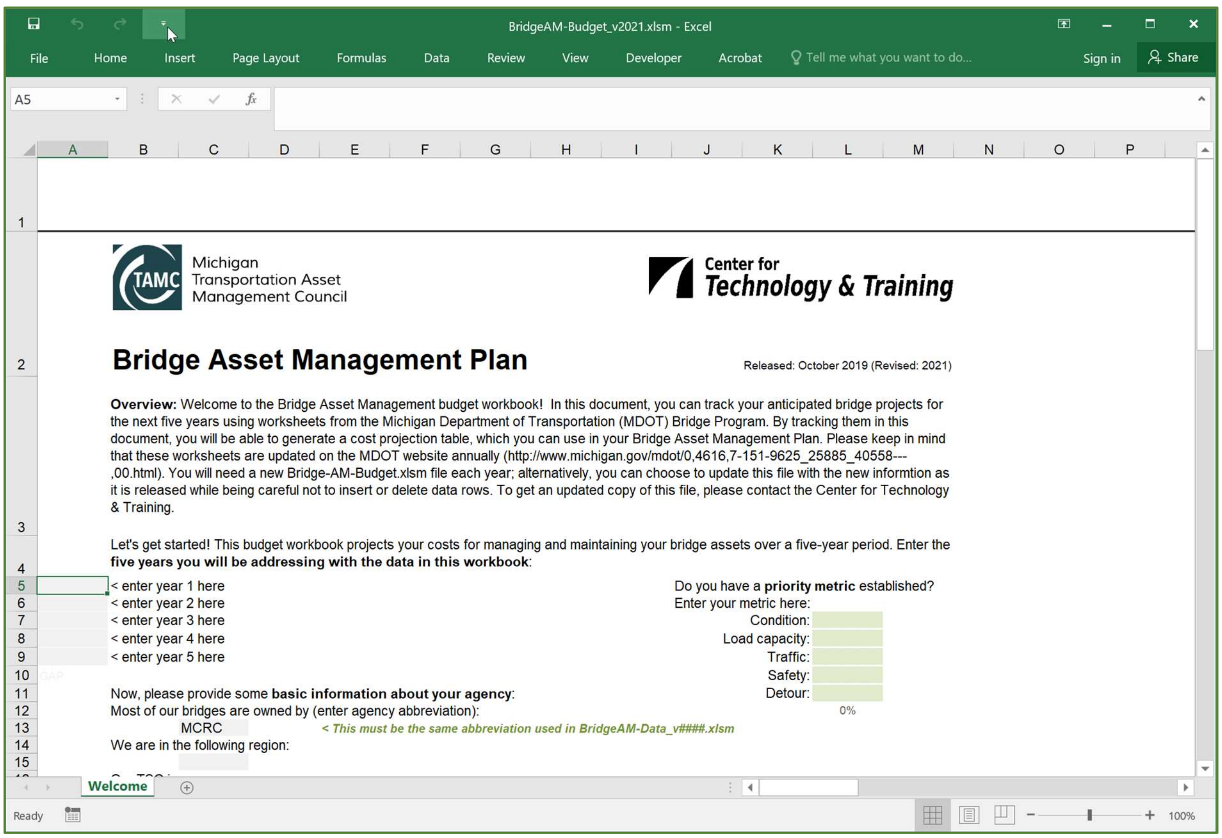
NOTE ABOUT BRIDGEAMP-DATA.XLSM: There are two additional worksheets built into the BridgeAMP-Data.xlsm file—the Agency-Data-Summary worksheet and the CalculationsSheet worksheet. These two worksheets are hidden and protected. They are embedded with formulas to parse the data from the Websource spreadsheet into a format that is usable by the asset management plan's Word template. If it is necessary to access these worksheets, unhide and unprotect them; be aware that unhiding and unprotecting them leaves them vulnerable to inadvertent changes that will render the Excel file useless for inserting data into the Word template.

Generating financial resources content and cost projection/gap analysis table from the budget tool

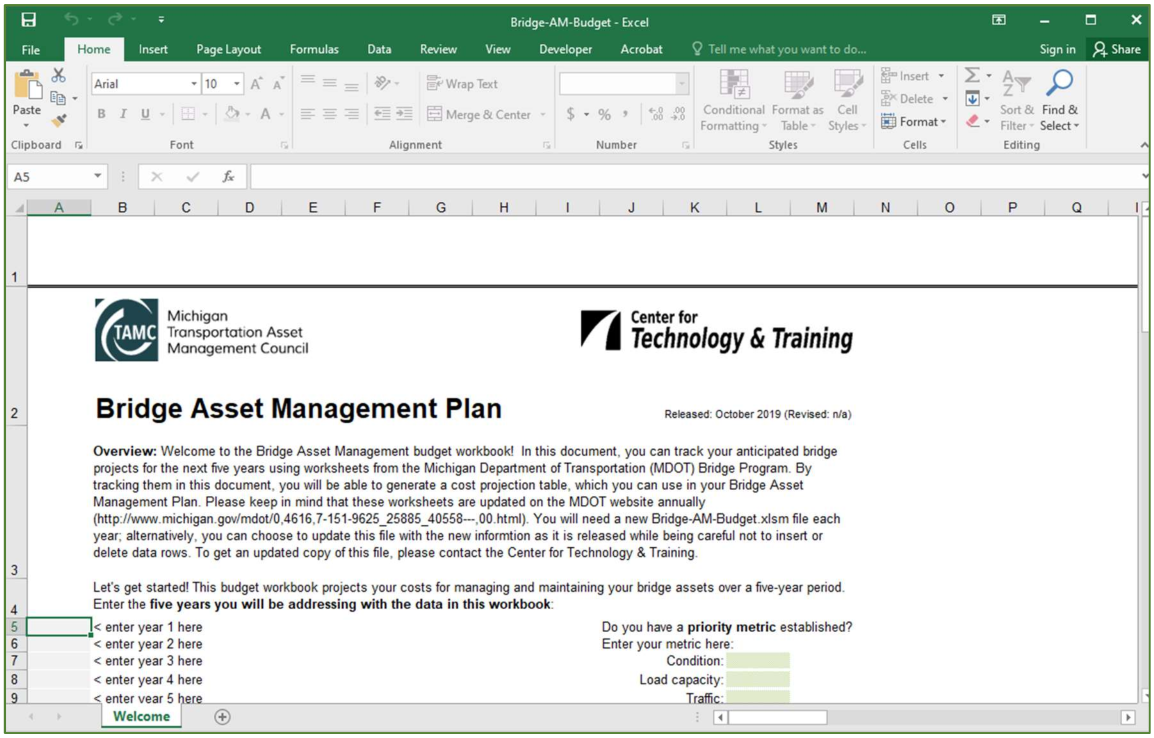
The BridgeAM-Budget_v####.xlsm Excel file is a comprehensive budgeting tool that allows you to plan your bridge maintenance budget allocations by organizing various types of bridge maintenance projects and their associated costs. It also helps to identify gaps in funding.

Welcome Worksheet

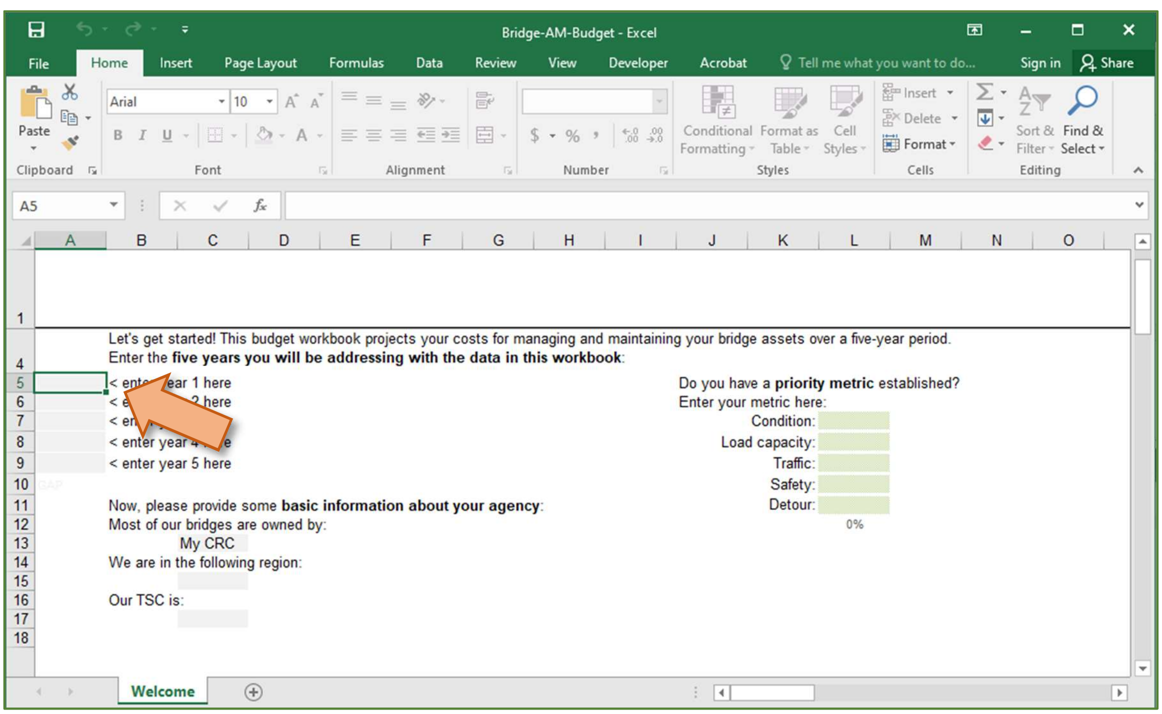
NOTE: On startup, the BridgeAMP-Budget_v####.xlsm tool will automatically open, copy, and paste the agency abbreviation from the BridgeAMP-Data_v####.xlsm into cell C13 (see figure below). ***The agency abbreviation must be exactly the same in both the data and the budget tools***.



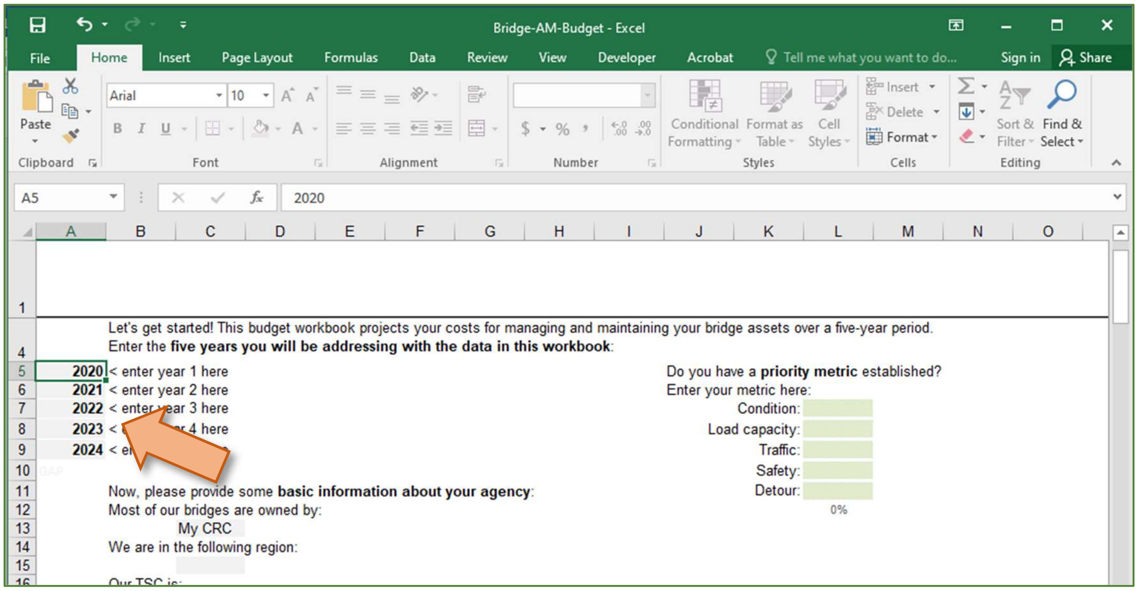
NOTE: When you open the BridgeAM-Budget.xlsm file, you will be greeted with a welcome message in the Welcome worksheet (see figure below). If you see the security warning, refer to *Using the XLSM File for the First Time* in this Instruction Guide.



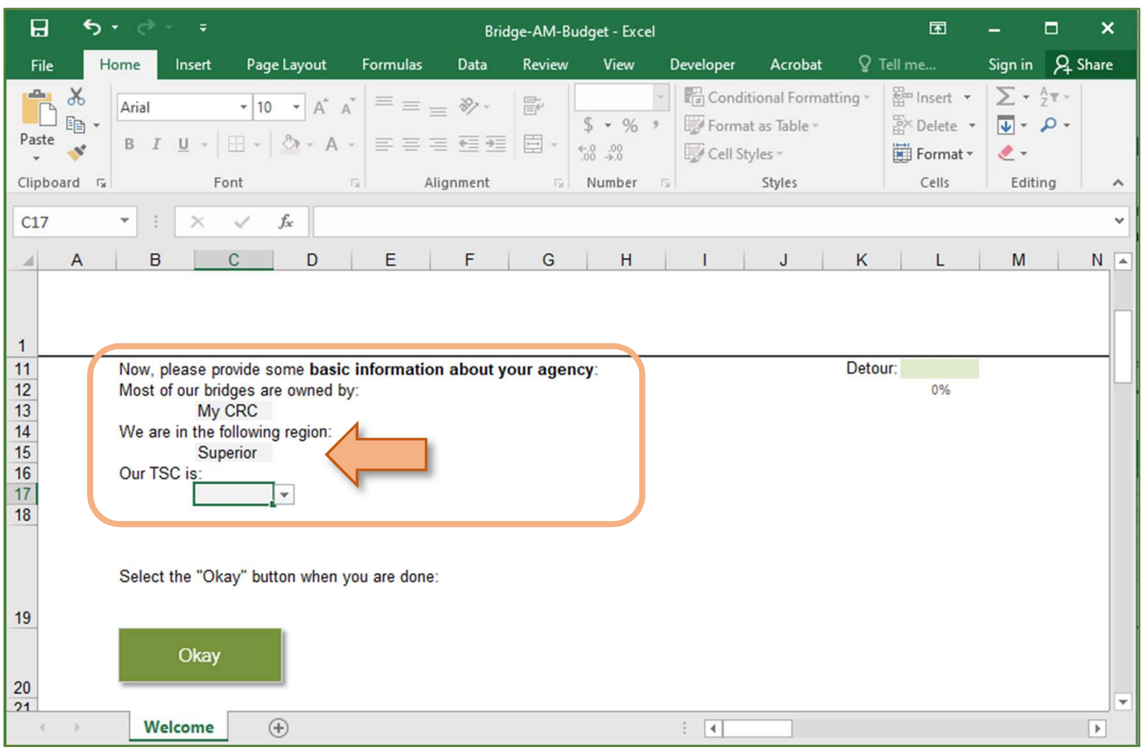
1. In cell **A5**, enter the first year of the five-year range that your asset management plan will address (see figure below).



⇨ The four subsequent years will automatically populate (see below).



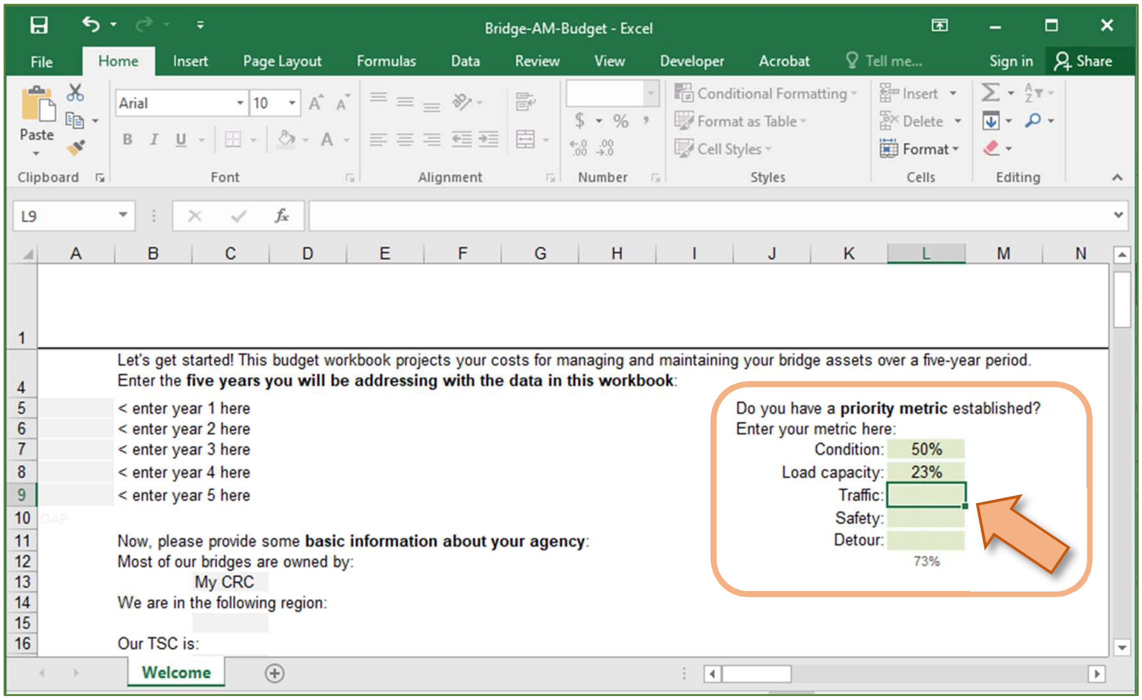
2. Enter your agency's region and TSC using the dropdown lists; if necessary, update your agency's abbreviated name (see figure below).



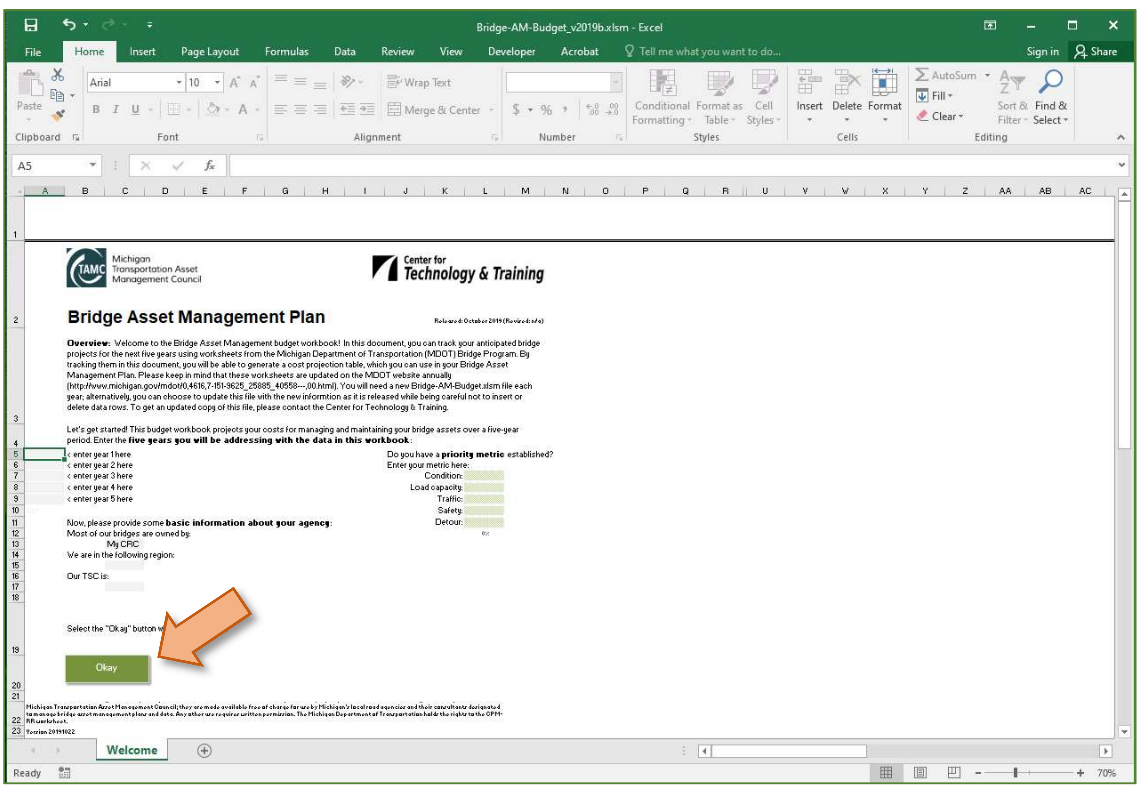
NOTE: The agency abbreviated name ***must be the same as*** the agency abbreviated name entered in BridgeAMP-Data_v####.xlsm on the 2-Questionnaire worksheet in cell C4.

3. **OPTIONAL:** Enter your priority metrics (see figure below).

NOTE: The total will display at the bottom to ensure the metric equals 100%.

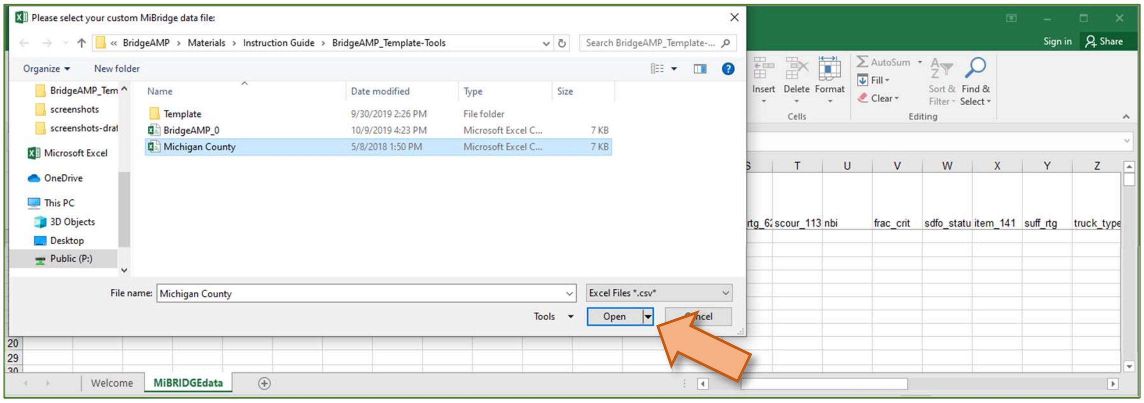


4. Select **Okay** (see figure below).



⇨ You will automatically proceed to the MiBRIDGEdata worksheet and the *Please select your custom MiBridge data file* dialogue box will display (see figure below).

5. Select [Your Agency].csv/.jsp file from the location that it is stored on your computer (see figure



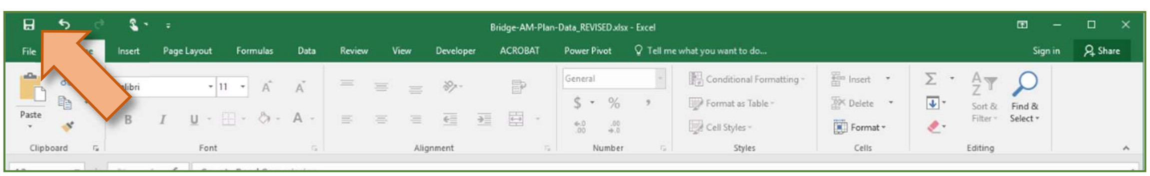
below).

6. Select **Open** (see figure above).

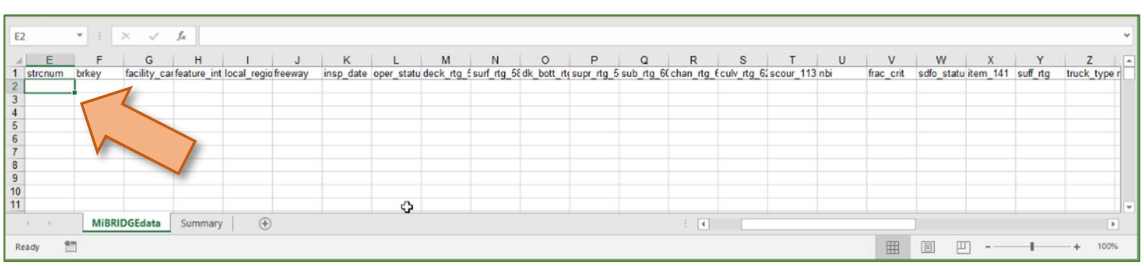
⇨ Excel will automatically import your MiBRIDGE data, and you will be directed to the Summary worksheet.

7. Select **Save** to save your work before continuing (see figure below).

   NOTE: It is recommended that you ***save your work*** at this point in order to avoiding having to re-import your MiBRIDGE data.

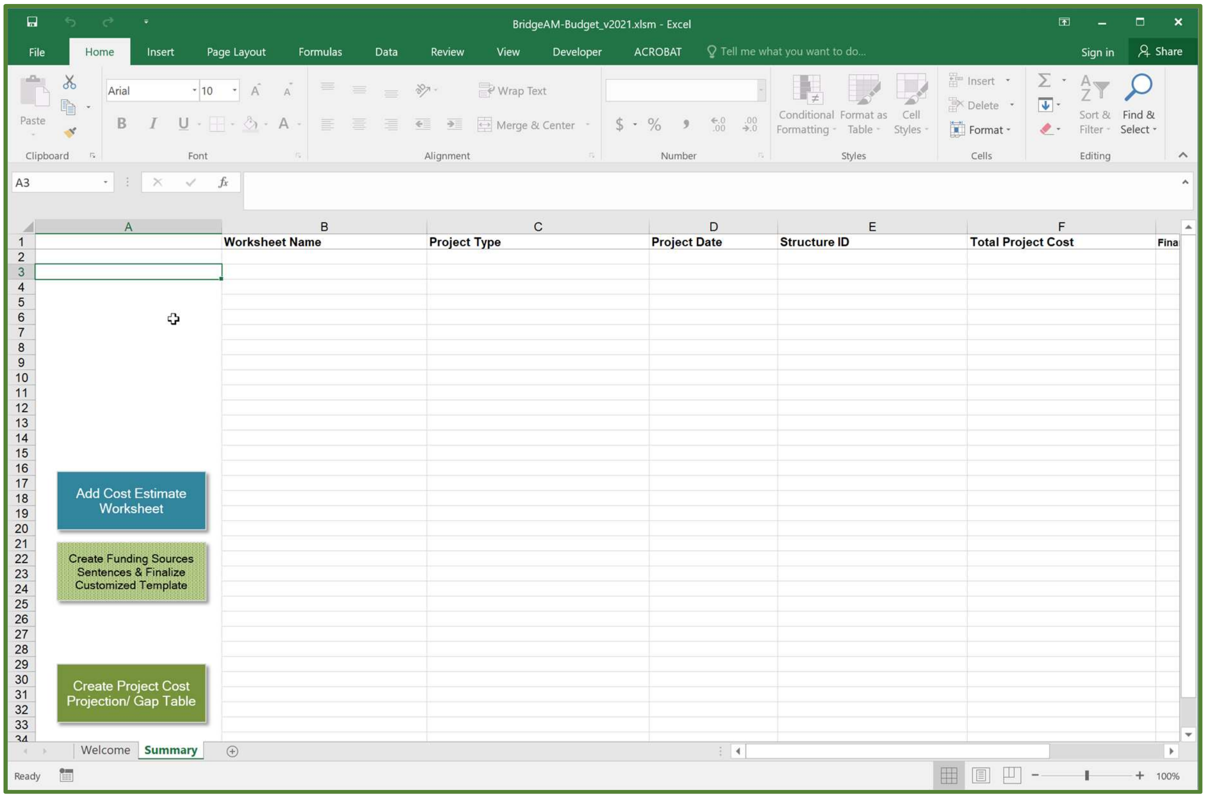


NOTE: If necessary, you can manually import the data by unhiding the MiBRIDGE worksheet, select the E2 cell, and following the steps at the end of the BridgeAMP-Data.xlsm's 1-MiBRIDGEreport procedure (see figure below). ***Remember to hide the MiBRIDGE worksheet in your BridgeAM-Budget.xlsm before continuing.***



Summary Worksheet

The initial worksheet is the blank *Summary* sheet. This sheet will summarize worksheet names, project types, project dates, bridge identification numbers, and total project costs as you add data to the workbook (see figure below).

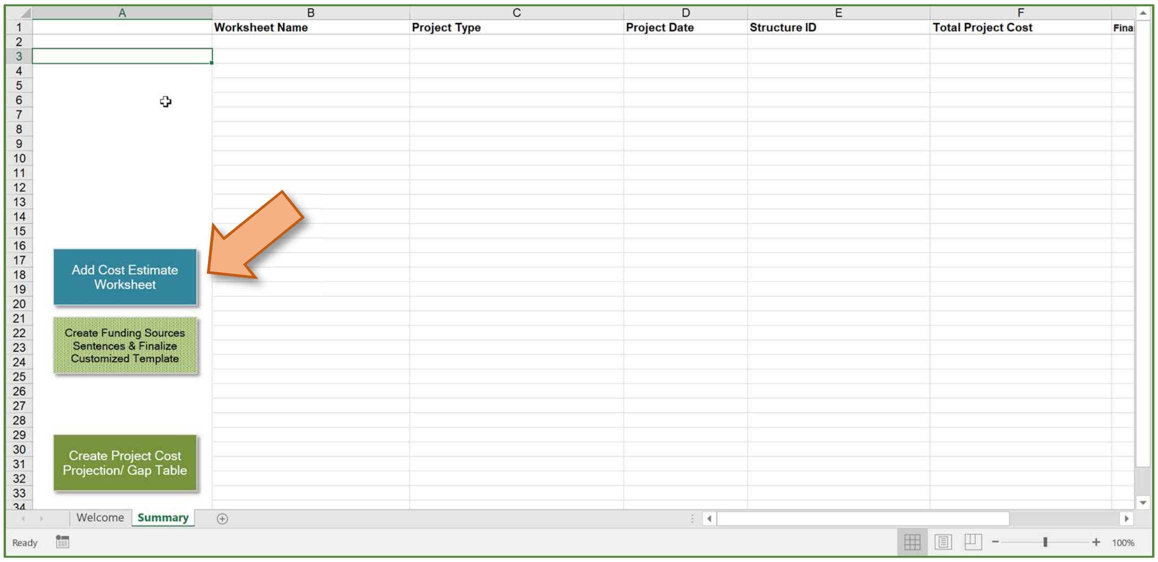


Adding Bridge Cost Estimates

NOTE: The *Bridge Cost Estimate Worksheet* itemizes key cost information for each of your bridge projects. The information will be added to the summary worksheet for transformation into a cost projection and gap analysis table that can be easily inserted into the asset management plan.

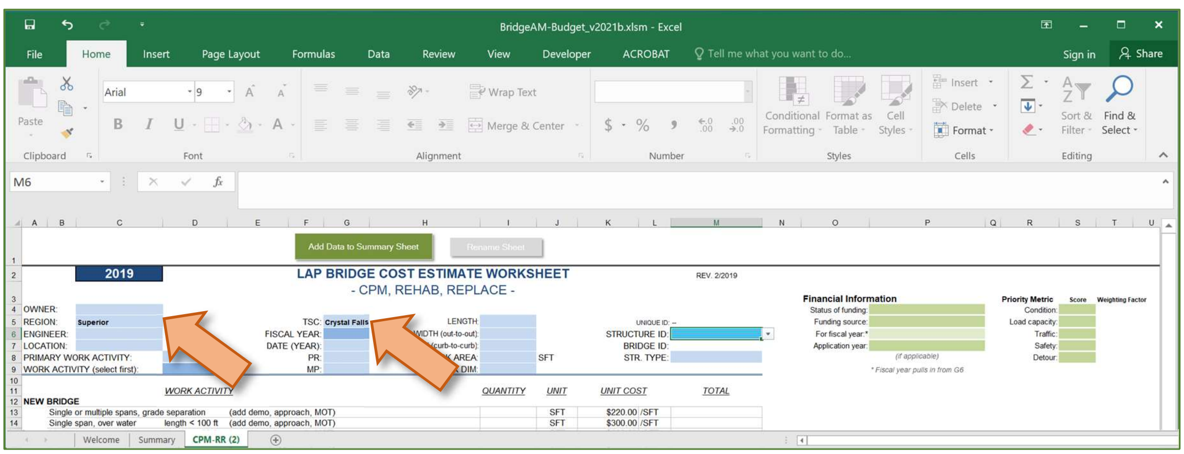
NOTE: All dark green and dark blue fields in the main header section of the *Bridge Cost Estimate Worksheet* must be completed. Dark green fields to the right of the main header section (i.e., financial information and priority metric scores) are optional.

1. Create a new *Bridge Cost Estimate Worksheet* by selecting **Add Cost Estimate Worksheet** on the *Summary* worksheet (see figure below).



⇨ The new *Bridge Cost Estimate Worksheet*, by default labelled as "CPM-RR (2)", will become the active worksheet.

NOTE: Information from the Welcome worksheet will automatically transfer to the *Cost Estimate* worksheet's *REGION* and *TSC* fields (see figure below). The *FISCAL YEAR* dropdown list options are also set based on your input on the Welcome worksheet (see figure below).



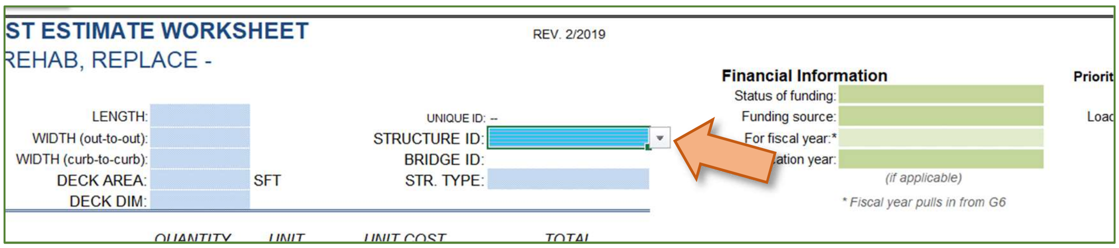
2. Fill in the mandatory fields, highlighted in dark blue, by following the bright blue highlight for field information that must precede other field entries (see figure below).

   NOTE: All dark-blue highlighted fields must be completed; the *STRUCTURE ID, PRIMARY WORK ACTIVITY*, and *FISCAL YEAR* fields determine the *UNIQUE ID* field, which will become the name assigned to this specific worksheet. The other fields are present for bookkeeping and have no effect on any other part of the workbook.

NOTE: The bright blue highlight begins on the *STRUCTURE ID* field and progresses to the *WORK ACTIVITY* field. After the *WORK ACTIVITY* field has been completed, the dark-blue highlighted *PRIMARY WORK ACTIVITY* field and *FISCAL YEAR* field must be completed.

a. For the *STRUCTURE ID* field, select a bridge structure number from the dropdown list (see figure below).

⇨ Information about the structure will automatically populate many of the light blue fields after the Structure ID is chosen.

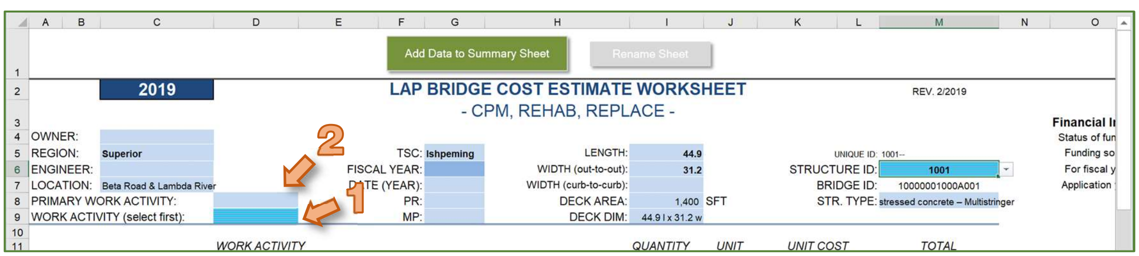


b. For the *PRIMARY WORK ACTIVITY* field:

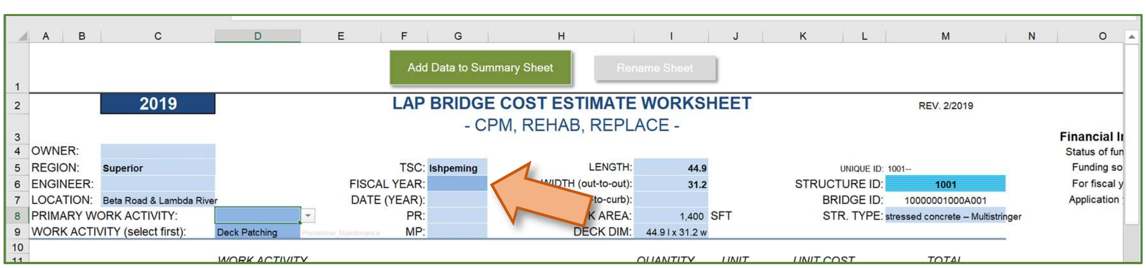
   i. Begin by selecting a *WORK ACTIVITY* from the drop-down list associated with the *WORK ACTIVITY (select first)* (see figure below).

⇨ The dropdown list associated with *PRIMARY WORK ACTIVITY* is populated based on your selection for *WORK ACTIVITY (select first).*

   ii. Select the *PRIMARY WORK ACTIVITY* from the dropdown list associated with the PRIMARY *WORK ACTIVITY* (see figure below).

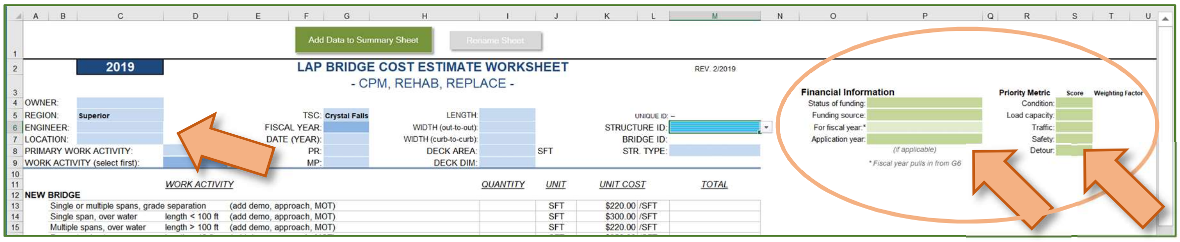


c. For the *FISCAL YEAR* field, select a year from the dropdown list (see figure below).



3. Fill in the optional fields (see figure below): 1) engineer, location, date, PR, MP, length, width, deck area, and deck DM; 2) financial information; 3) priority metric.

   NOTE: The Financial Information section is ***required*** if you plan to generate the funding sources sentences using the BridgeAMP-Budget.xlsm tool. Status of funding and funding source information ***must be*** selected from the dropdown menus.

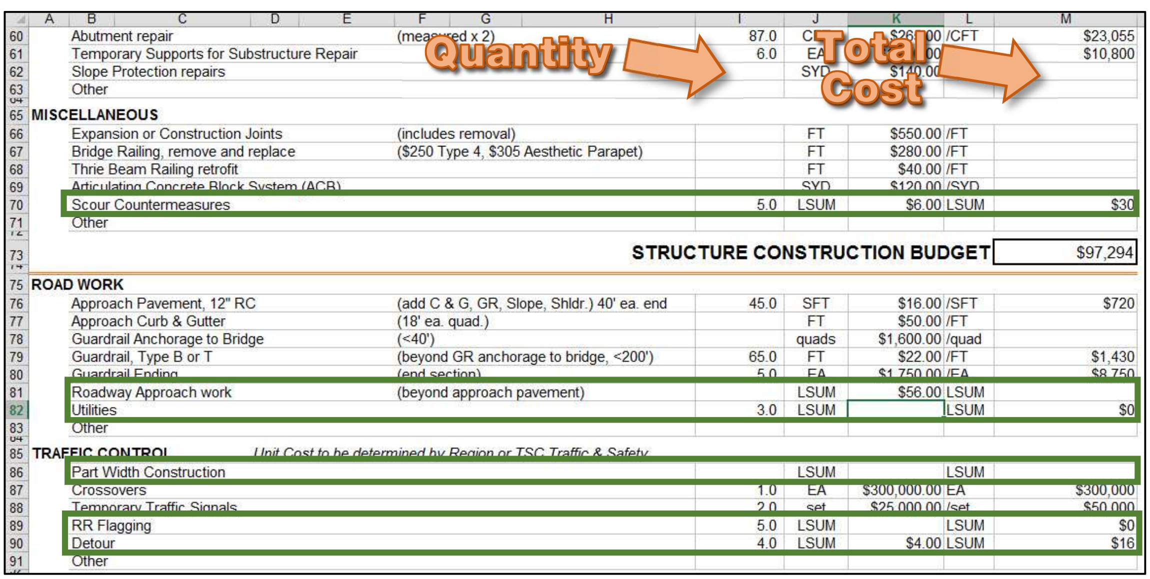


4. Enter quantity in the *Quantity* column for each item needed for the project in the *New Bridge, New Superstructure, Widening, New Deck, Demolition*, *Deck Repair/Treatment*, *Superstructure Repair*, *Substructure Repair*, *Miscellaneous*, *Road Work*, and *Traffic Control* sections; if necessary, update the unit cost (note that you will need to unprotect the worksheet to update unit costs) (see figures above and below).

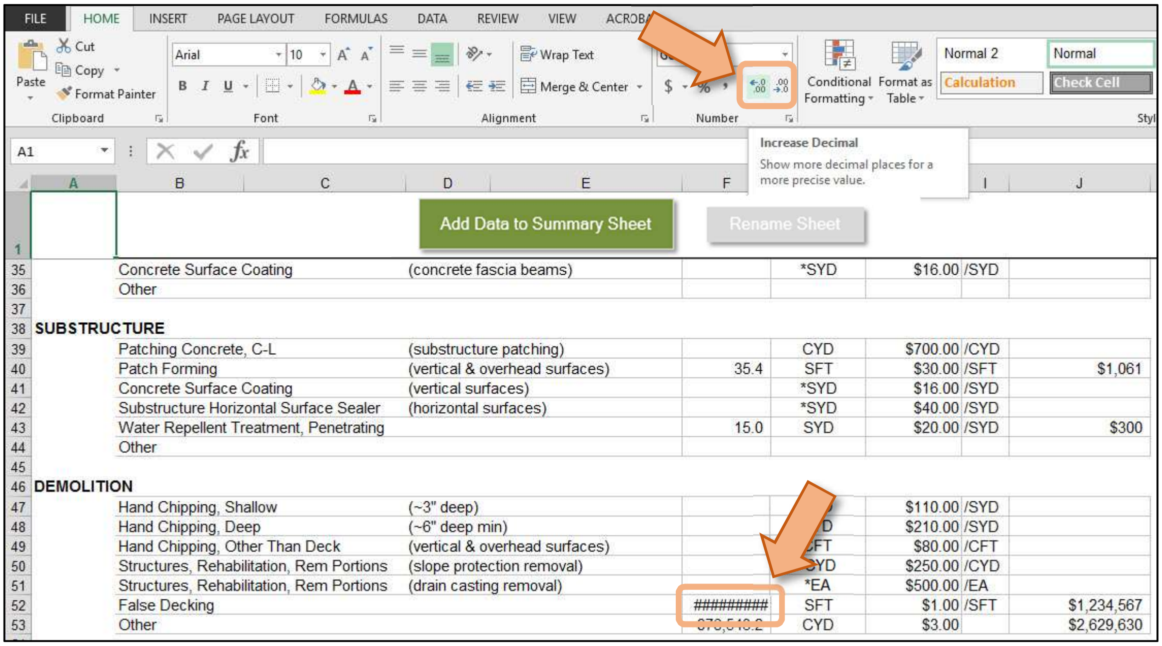
   NOTE: The *Total* cost will automatically update (see figure below).

   NOTE: Some line items are calculated as lump sums (i.e., "LSUM"). They will have blank or $0 *Total* cost unless both *Quantity* and *Unit Cost* columns are completed (figure below).

   NOTE: Any amounts entered into the *Quantity* column will, by default, only display up to one decimal point. This setting can be changed with the **Increase Decimal** and **Decrease Decimal** buttons in the *Number* group of the *Home* ribbon (see figure below).

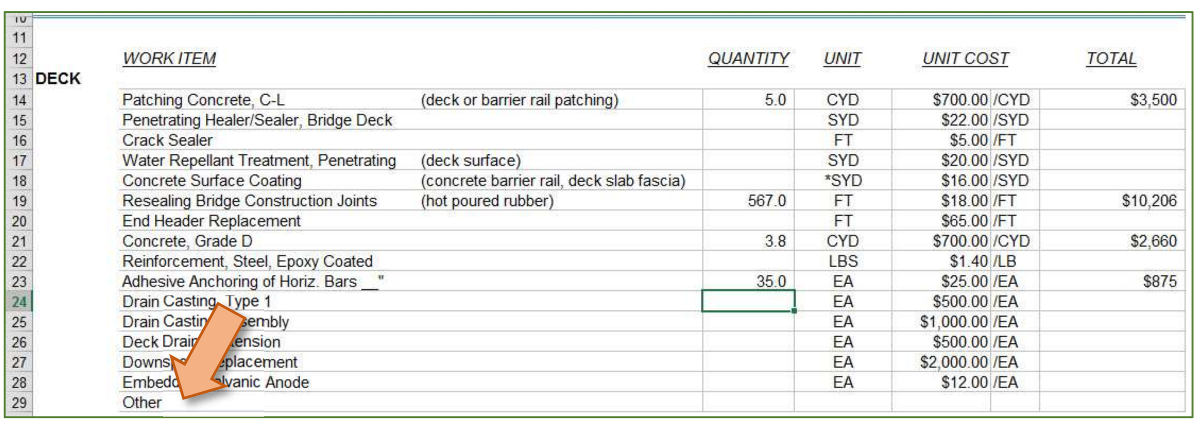


NOTE: Any numbers greater than six digits entered in the *Quantity* column will appear as hash tags. Increase the column width to view the entire number (see figure below).

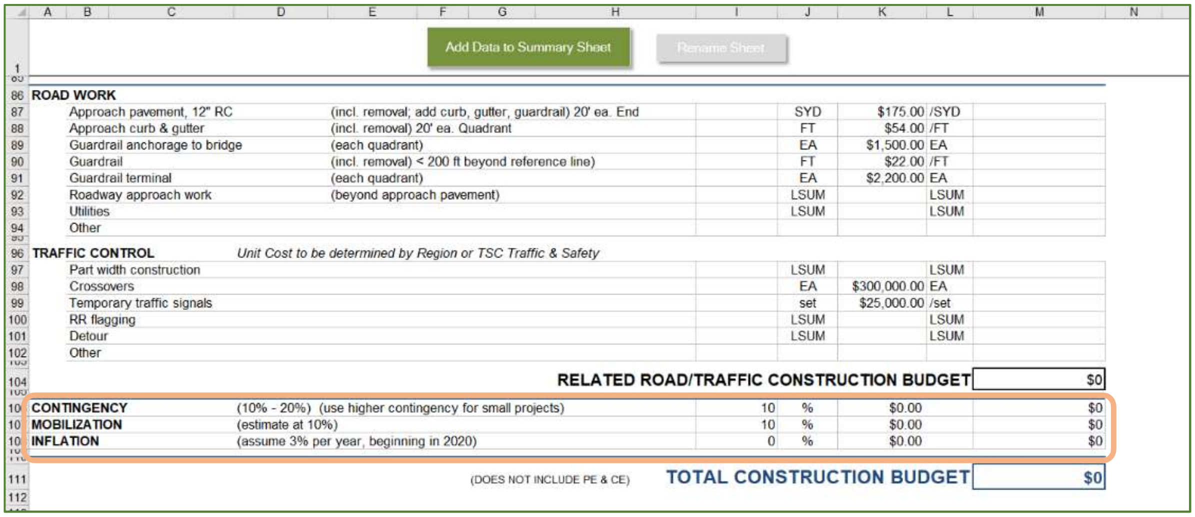


5. OPTIONAL: Enter unique work items in the *Other* line item, inputting *Quantity*, *Unit*, and *Unit Cost* accordingly (see figure below).

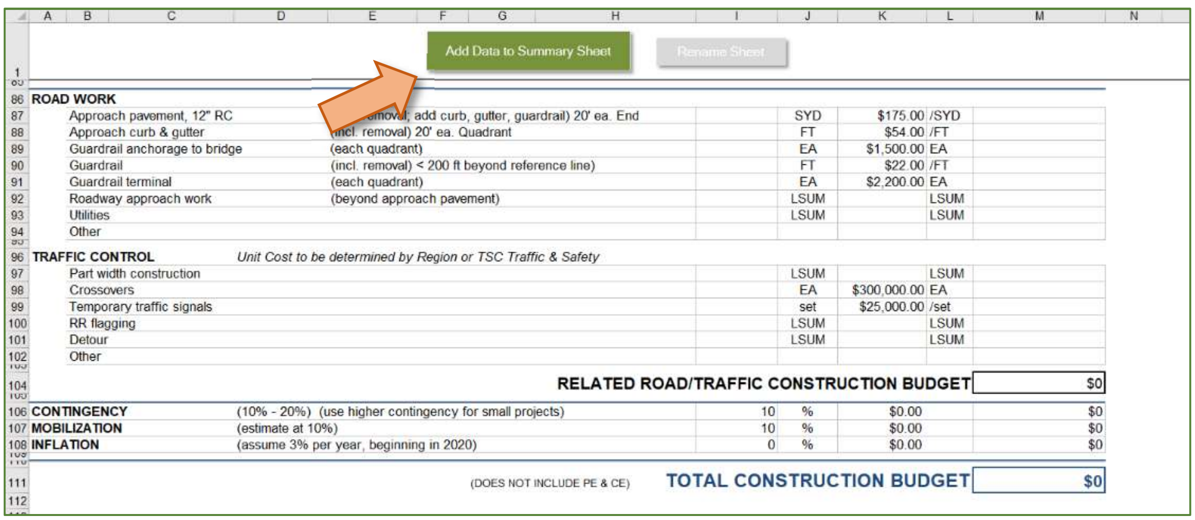
NOTE: Do not attempt to create new work items by adding or deleting rows from the worksheet. All cells need to maintain their exact cell references for the worksheet to function properly. If there is a need for additional other items, input line item information over an unused work item.



6. Adjust the percentage as necessary for *Contingency*, *Mobilization*, and *Inflation* sections (see figure below).

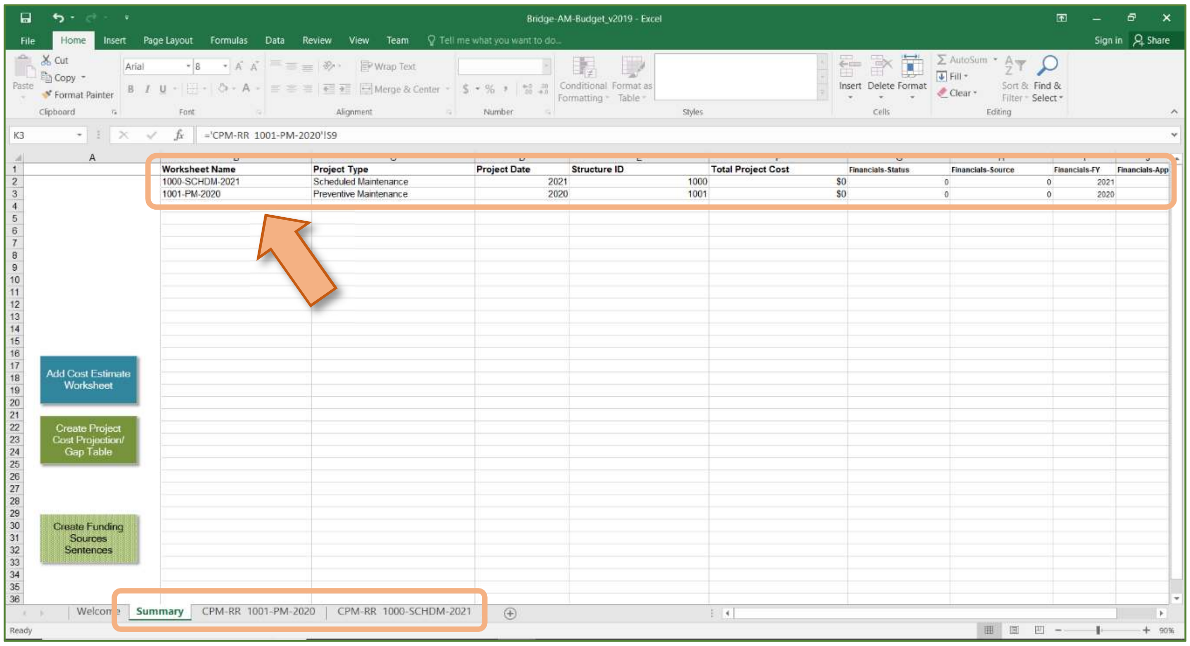


7. When satisfied with worksheet data inputs, select the **Add Data to Summary Sheet** button (see figure below).



⇨ The *Summary* worksheet will become the active worksheet; the project worksheet will be assigned its unique worksheet name (seen on the worksheets tab and listed in *Worksheet Name* column on the Summary worksheet); and the project summary for the completed worksheet will be added to the list on the *Summary* worksheet (see figure below). Select the worksheet tab (at the bottom of the Excel window) that corresponds to a specific project's *Worksheet Name* to re-access project details.

NOTE: Any changes to the budgetary information in an already-added project worksheet will automatically update the information in the Summary worksheet.



To rename a *Bridge Cost Estimate Worksheet* after it has been added to the *Summary* worksheet:

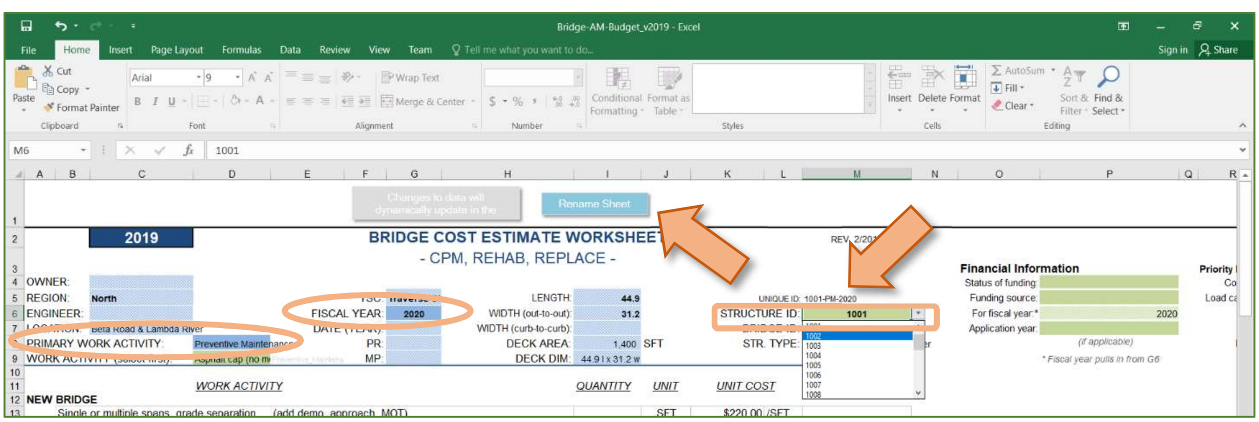
1. Select the worksheet tab (at the bottom of the Excel window) that corresponds to a specific project's *Worksheet Name* listed on the *Summary* worksheet in order to re-access project details.

⇨ The project's worksheet will become the active worksheet.

2. Adjust the *STRUCTURE ID*, *PRIMARY WORK ACTIVITY*, and/or *FISCAL YEAR* field(s) as necessary (see figure below).

   NOTE: Verify the revised name in the *UNIQUE ID* field (see figure below).

3. Select the **Rename Worksheet** button (see figure below).



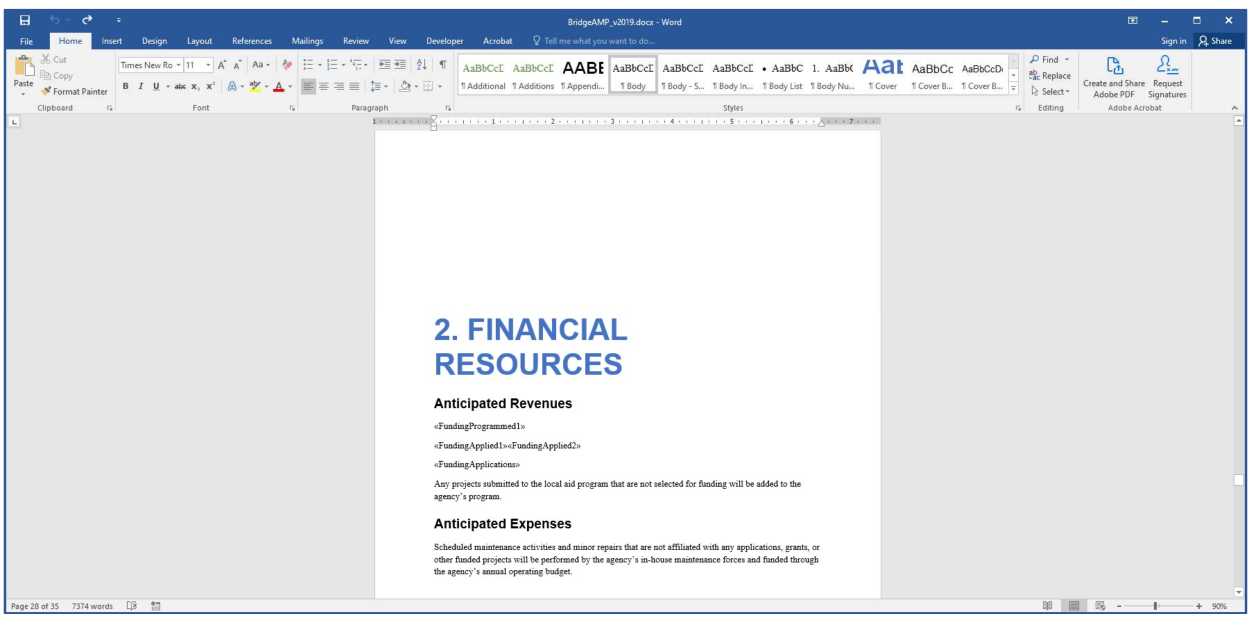
⇨ The new worksheet name (i.e., UNIQUE ID) will be applied to the worksheet's tab and will be updated in the *Summary* worksheet's *Worksheet Name* column.

4. Select the **Summary** worksheet tab at the bottom of the Excel window to return to the *Summary* worksheet.

Creating Financial Resources Content

NOTE: *This step is only performed if you generated a temporary template*; refer to this instruction guide's *Entering data into the BridgeAMP-Data.xlsm tool* section *2-Questionnaire Worksheet* subsection step 1 and *TOC Worksheet* subsection step 3 note. To perform this step, ensure that 1) the BridgeAMP-Data_v####.xlsm 2-Questionnaire worksheet's Identify Funding Sources section was left blank and 2) the BridgeAMP-Budget_v####.xlsm cost estimate worksheets' Financial Information section have been completed (refer to this instruction guide's *Generating financial resources content and cost projection/gap table from the budget tool* section *Adding Bridge Cost Estimates* subsection step 3.

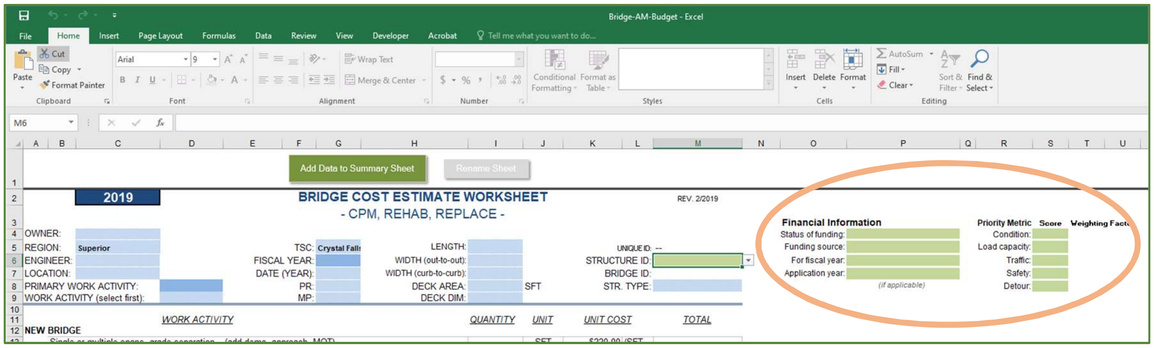
A bridge asset management plan should overview anticipated revenues and expenses that have the potential to affect the management of bridge assets. In the BridgeAMP.docx template, anticipated revenues and expenses are detailed in the 2. Financial Resources section (see figure below). This content can be generated in the BridgeAMP-Data.xlsm file, the BridgeAM-Budget.xlsm file, or in the BridgeAMP.docx file (by deleting the mail merge tags and free writing the content).



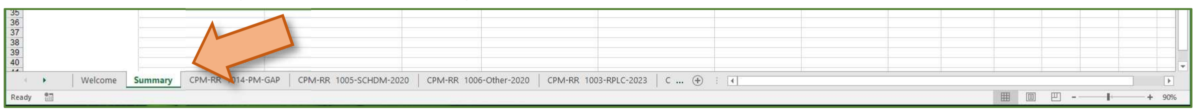
Developing Financial Resources Content in the Bridge AMP Budget Workbook

To develop the financial resources content in the BridgeAM-Budget.xlsm file:

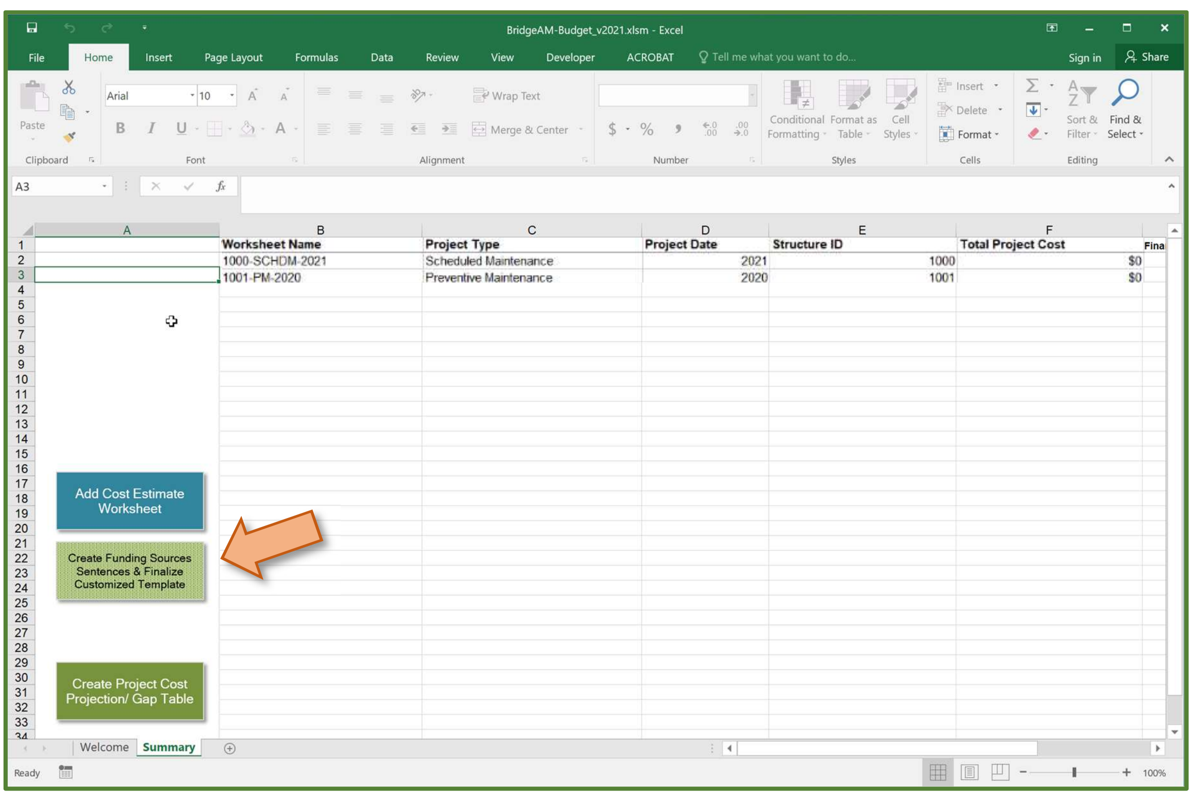
1. Fill in optional *Financial Information* fields on ***each*** *Bridge Cost Estimate Worksheet* (see figure below).



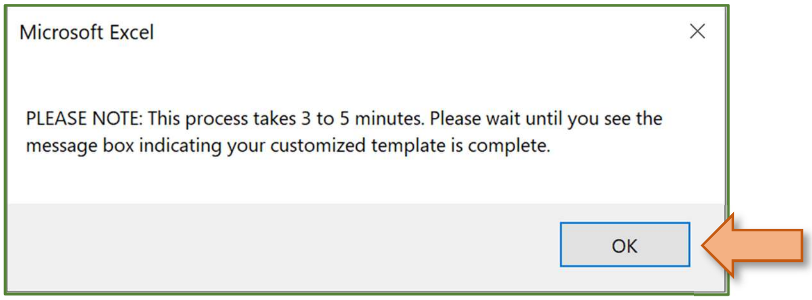
2. Select the **Summary** worksheet (see figure below).



3. Select **Create Funding Sources Sentences** on the *Summary* worksheet (see figure below).

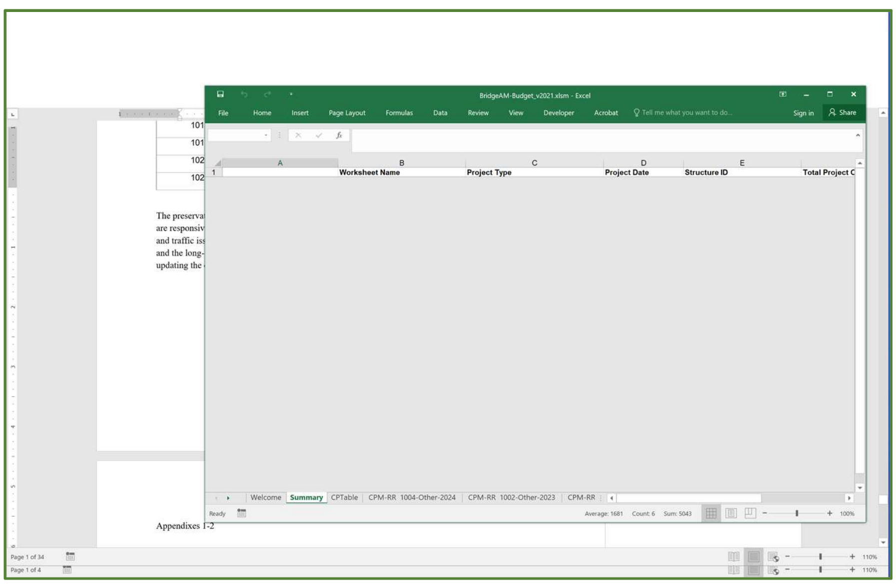


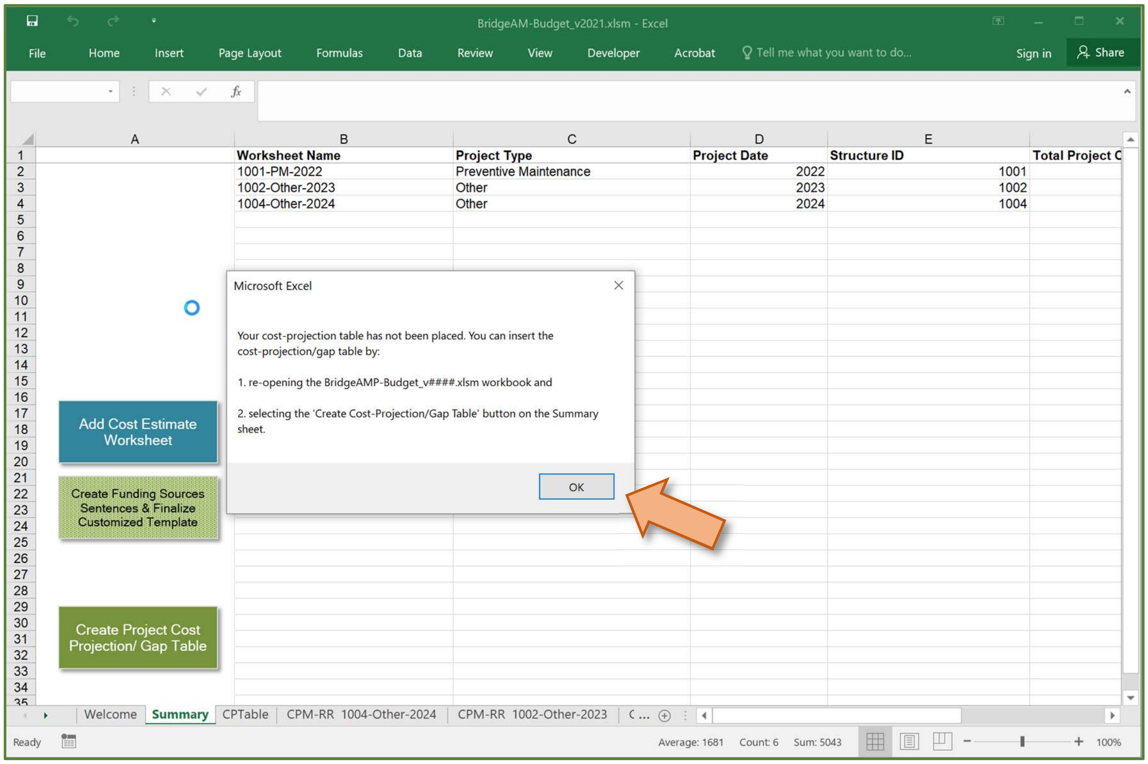
⇨ The *PLEASE NOTE: This process takes 3 to 5 minutes…* dialogue box will display (see figure below).



4. Select **OK** (see figure above).

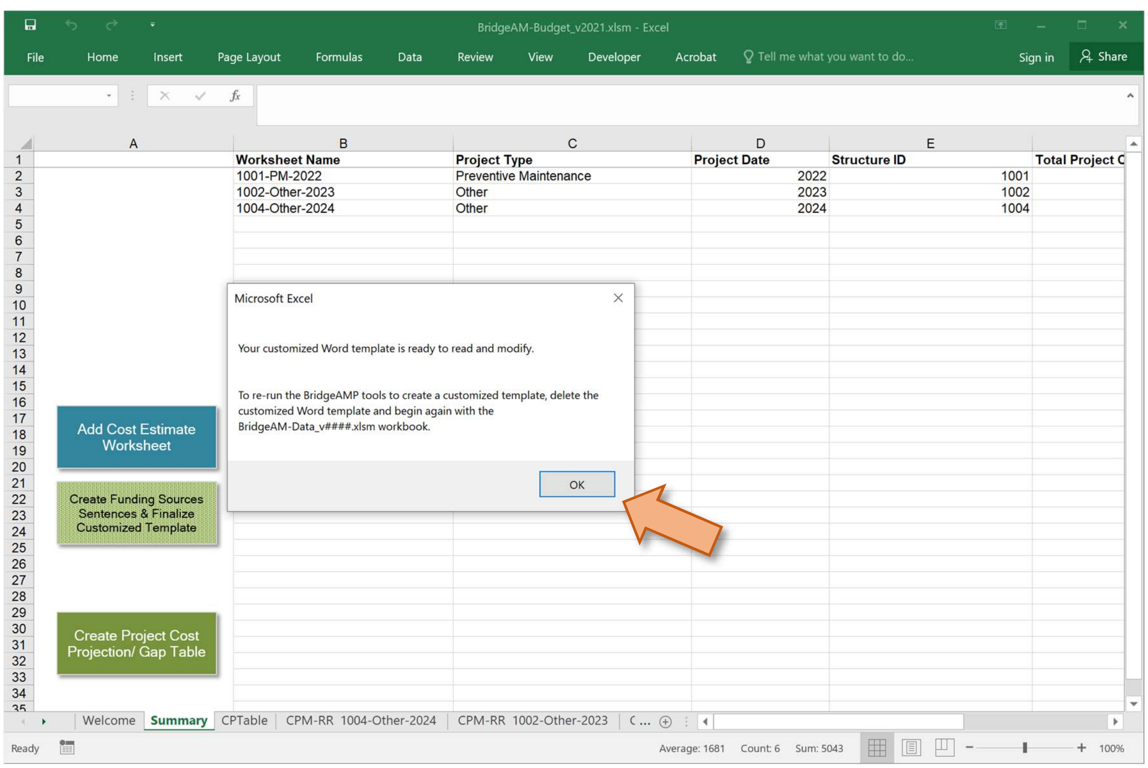
⇨ The Financial Resources sentences will be automatically generated and placed in the temporary .csv file that is linked to the temporary bridge asset management plan Word template. The Word template will then be formatted. During this time, a number of application windows will open and close (see figure below). If your cost projection table has not been created and/or placed, the *Your cost-projection table has not been placed…* dialogue box will display (see figure below); otherwise, proceed to Step 5 step result.





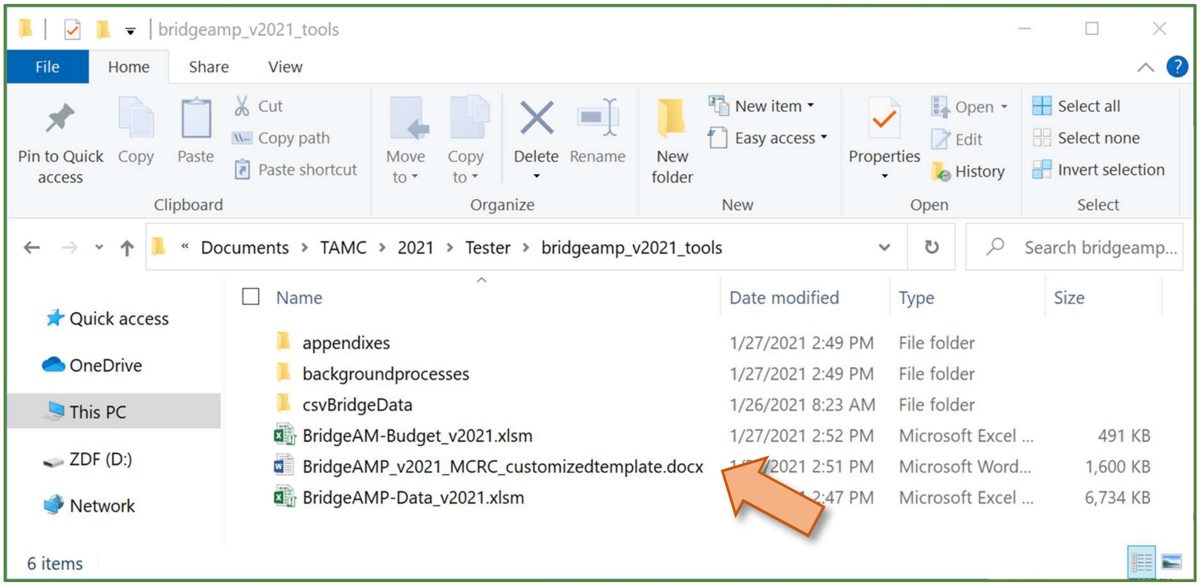
5. Select **OK** (see figure above).

⇨ The *Your customized Word template is ready to read and modify…* dialogue box will display (see figure below).



6. Select **OK** (see figure above).

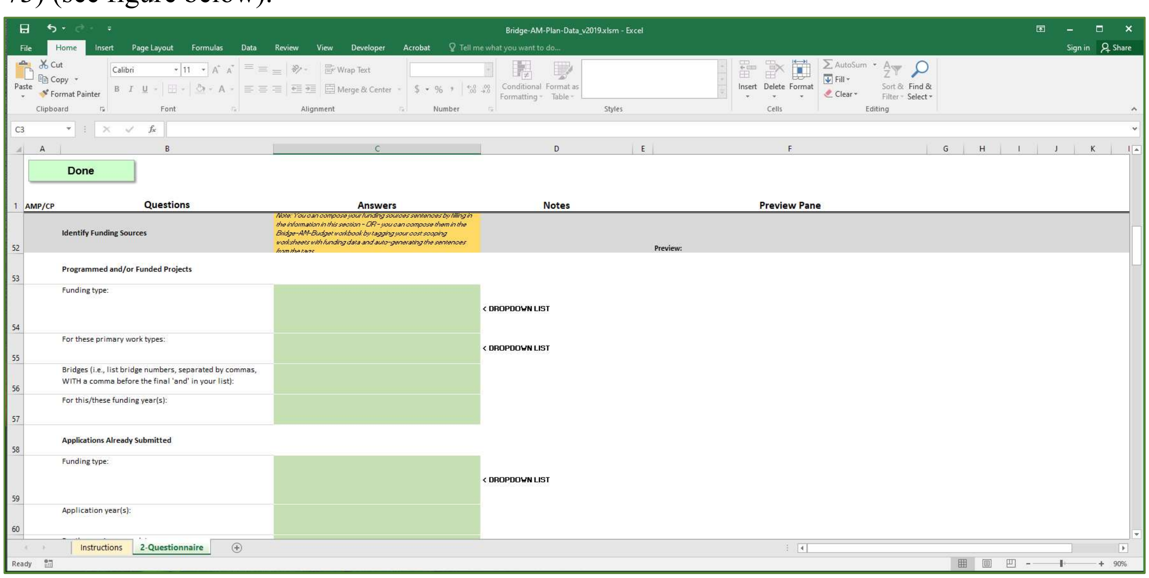
⇨ The custom Word template will be finalized. ***Your finalized custom Word template is ready to review and modify***; it can be found in the "bridgeamp_v####_tools" folder (see figure below). You may create and insert a cost projection/gap analysis table into this finalized custom Word template.



Alternate Method: Developing Financial Resources Content in the Bridge AMP Data Workbook

To develop the financial resources content in the BridgeAMP-Data.xlsm file:

1. Answer *2-Questionnaire* worksheet questions in the *Identify Funding Sources* section (rows 52 to 73) (see figure below).



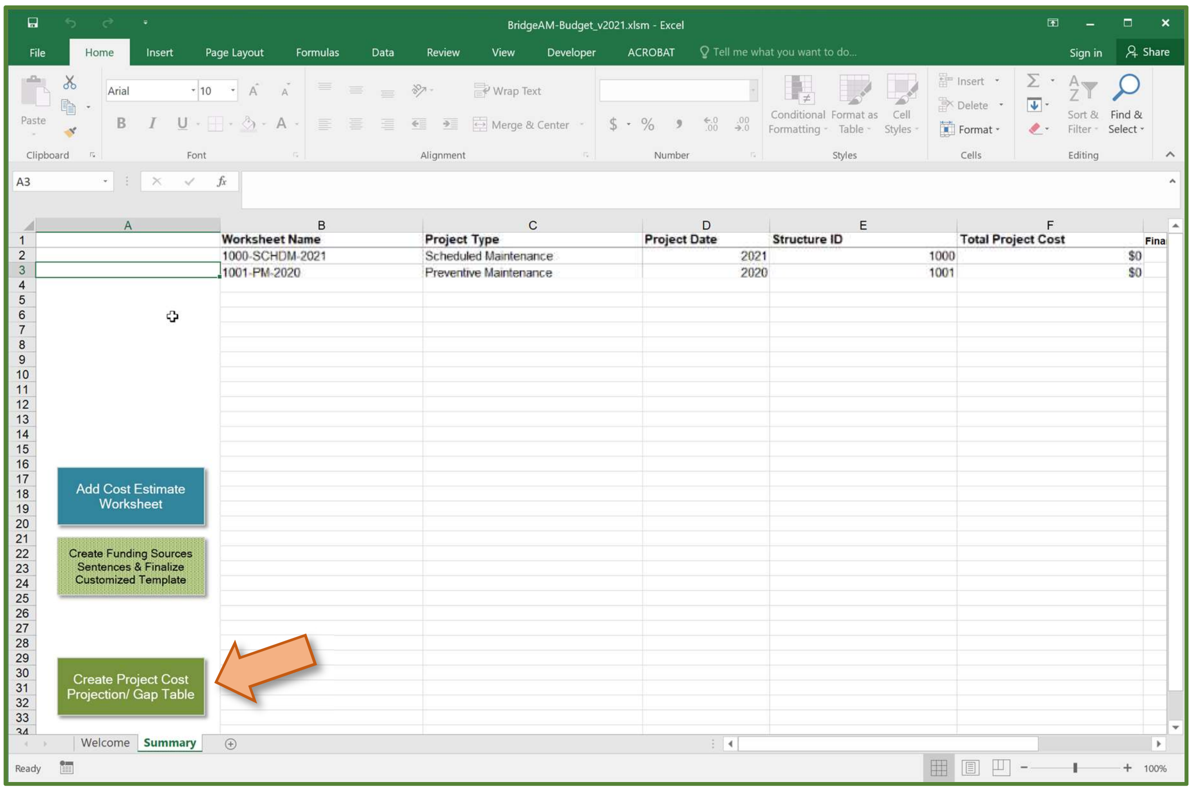
NOTE: The *2-Questionnaire* worksheet *Identify Funding Sources* section requires you to select funding sources and to list bridge structure numbers, funding years, and/or application years. This information can be tagged with each *Bridge Cost Estimate Worksheet* in the BridgeAM-Budget.xlsm workbook, and the sentences can be automatically generated from that tagging (see directions above). A highlighted yellow cell in row 52 of the BridgeAMP-Data.xlsm's *2-Questionnaire* worksheet will remind you of this option (see figure above).

Creating a Cost Projection/Gap Analysis Table

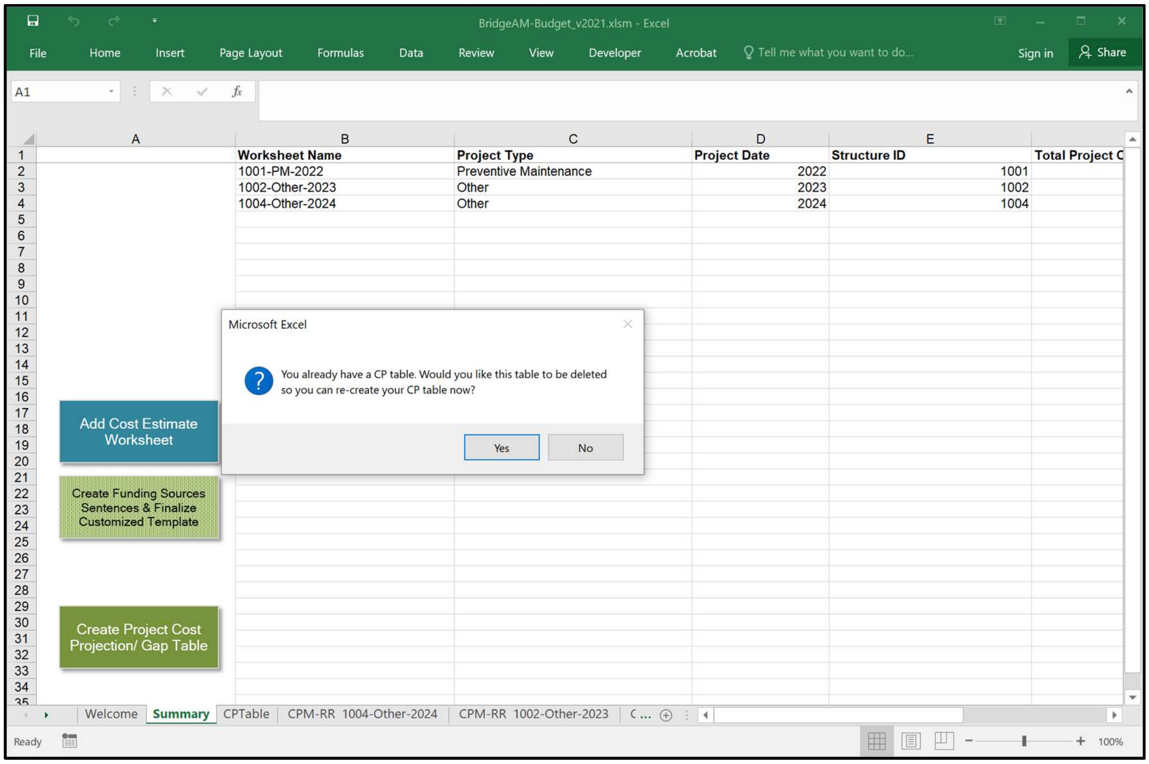
The cost projection/gap analysis table will present your data in a format that can be more easily transferred into the BridgeAMP.docx Word document's *Prioritization, Programmed/Funded Projects, and Planned Projects* section's *Planned Projects* subsection.

1. Ensure that the *Summary* worksheet is the active worksheet.

2. Select the **Create Project Cost Projection/Gap Table** button (see figure below).

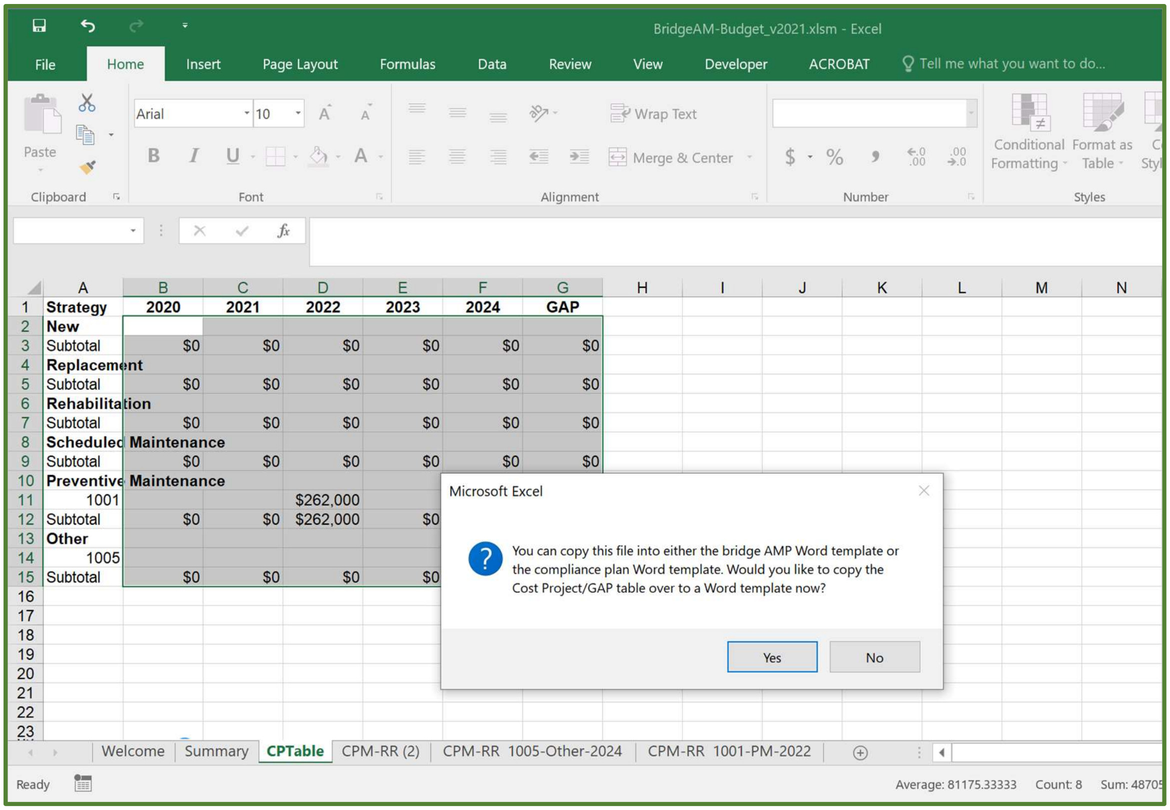


NOTE: If a cost projection table has already been created, the You already have a CP table… dialogue box will display. Select Yes to delete the current cost projection table and continue with creating a new one, OR select No to exit the process (see figure below).



⇨ The *CPTable* worksheet will automatically generate, and cells A1 through the last column and last row will automatically be selected and copied to the Windows clipboard; the *You can copy this table into either…* message box will display with directions for the next step (see figure below).

NOTE: The *CPTable* worksheet orders all projects, first, by project type (in this order: Reconstruction, Replacement, Rehabilitation, Capital Preventive Maintenance, Scheduled Maintenance, and Other) and, then, by date/gap.

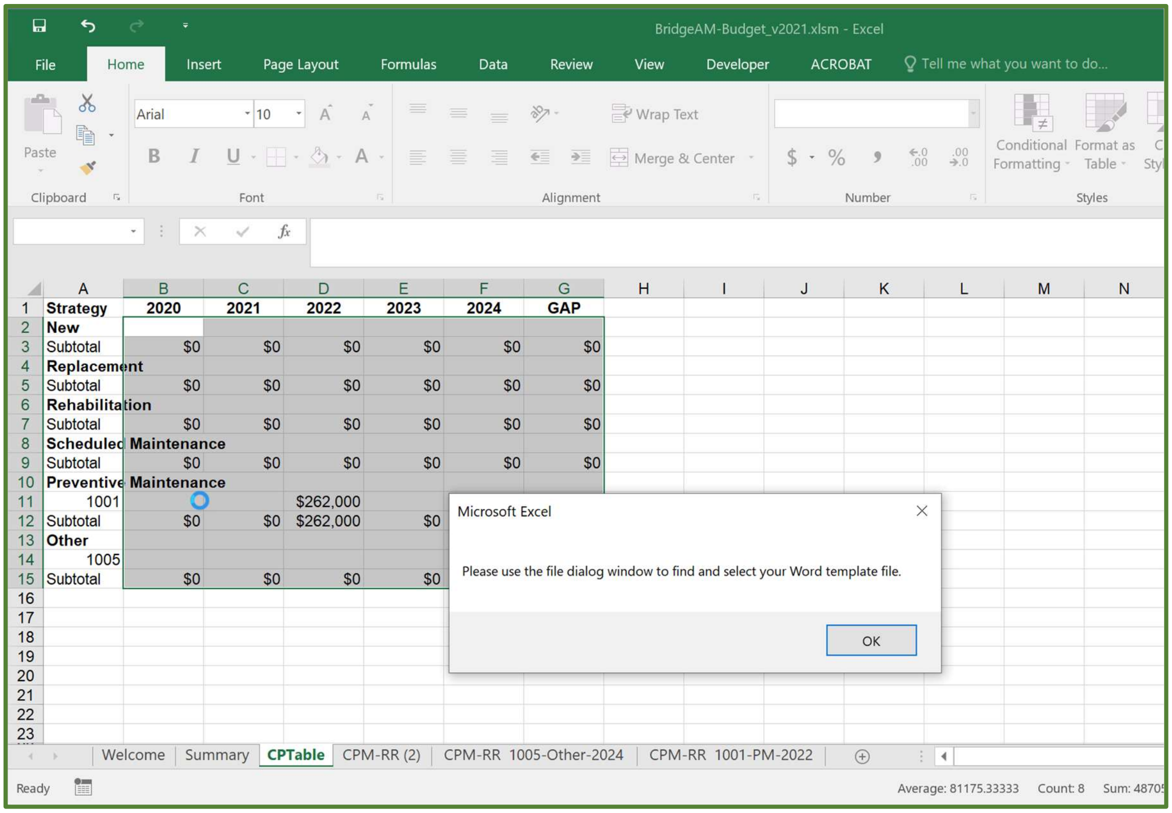


3. Select **Yes** to insert the cost-projection/gap table into your bridge asset management plan template (or your compliance plan template). Proceed to the step 3 step result.

   OR

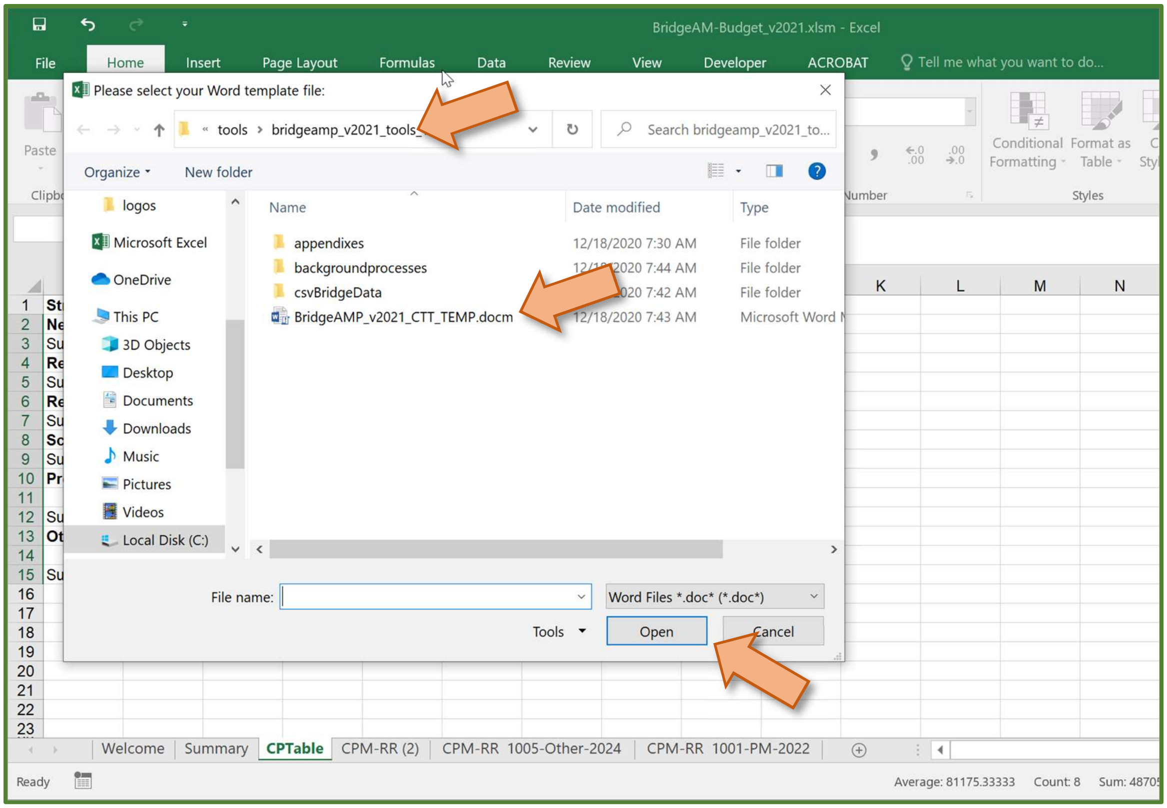
   Select **No** to skip inserting the cost-projection/gap table into your bridge asset management plan template (or your compliance plan template). Proceed to ***Creating Financial Resources Content*** section of this instruction guide or to ***Reviewing and modifying the customized Word template*** section of this guide.

⇨ The *Please use the file dialogue window…* message box will display.



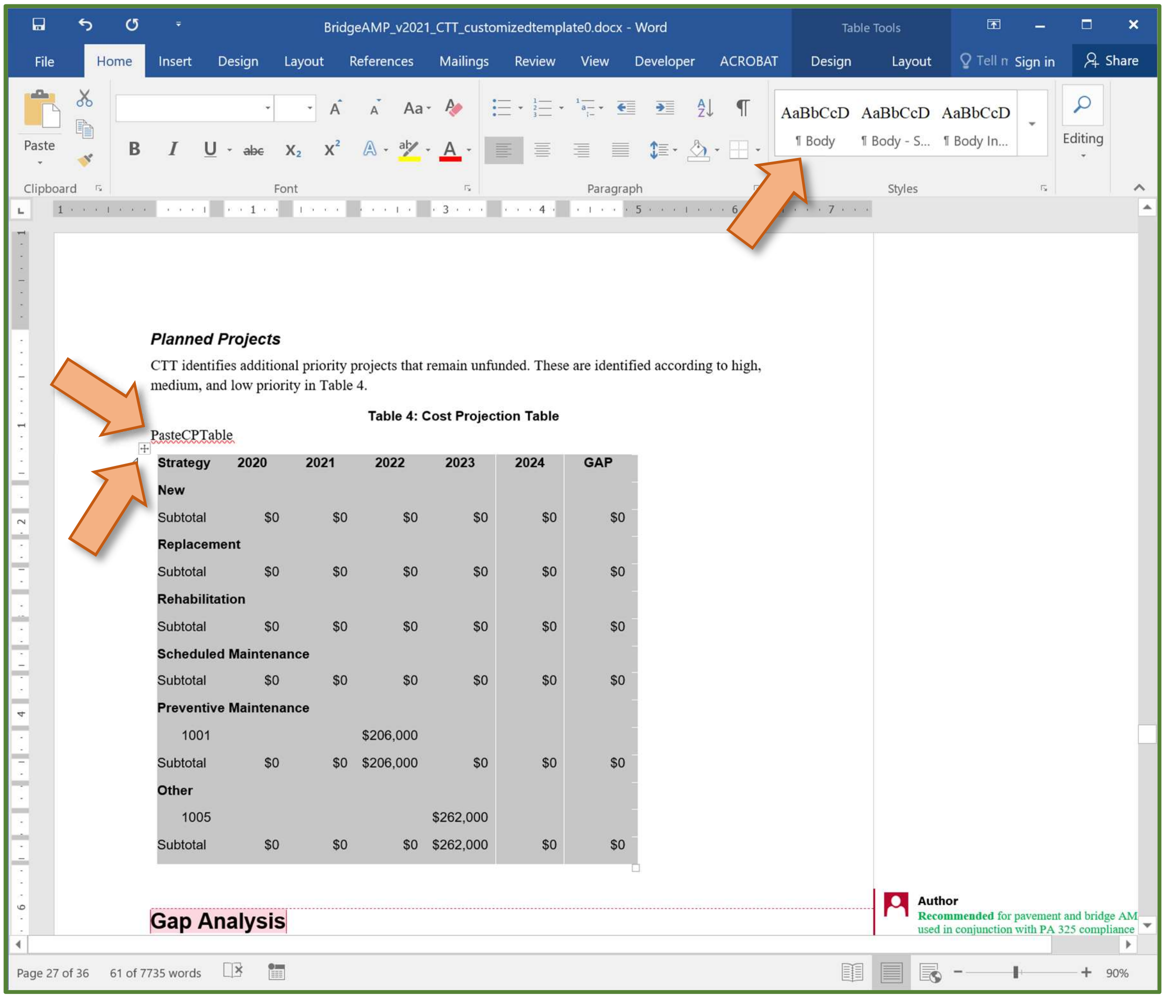
4. Select **OK**.

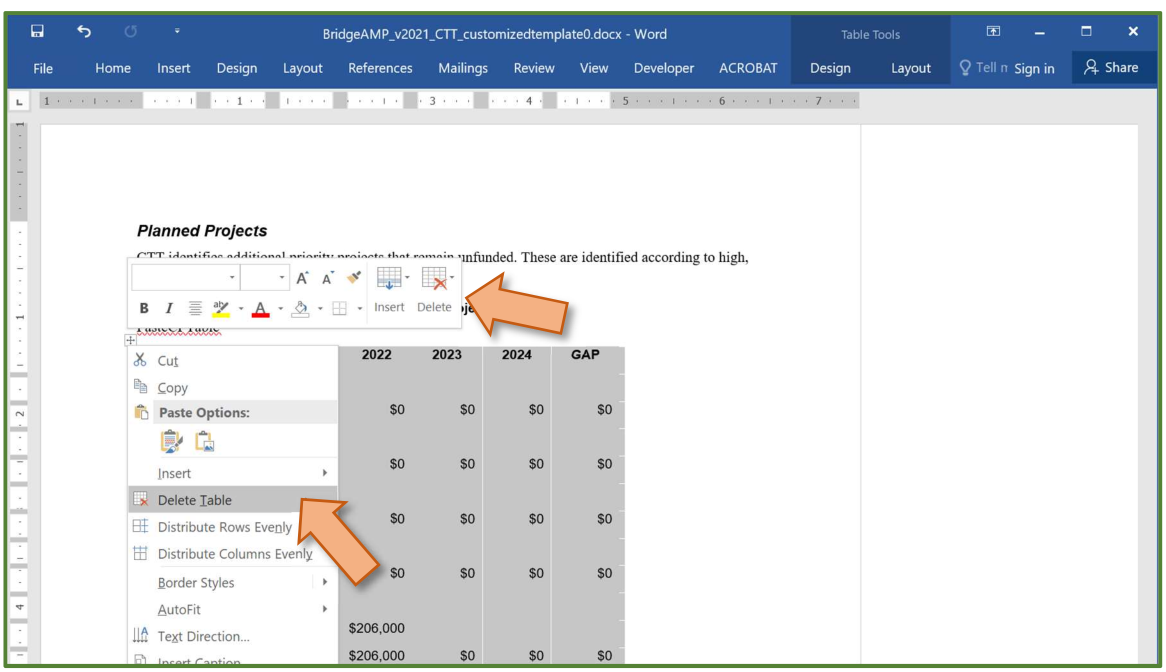
⇨ A file explorer dialogue box will display (see figure below).



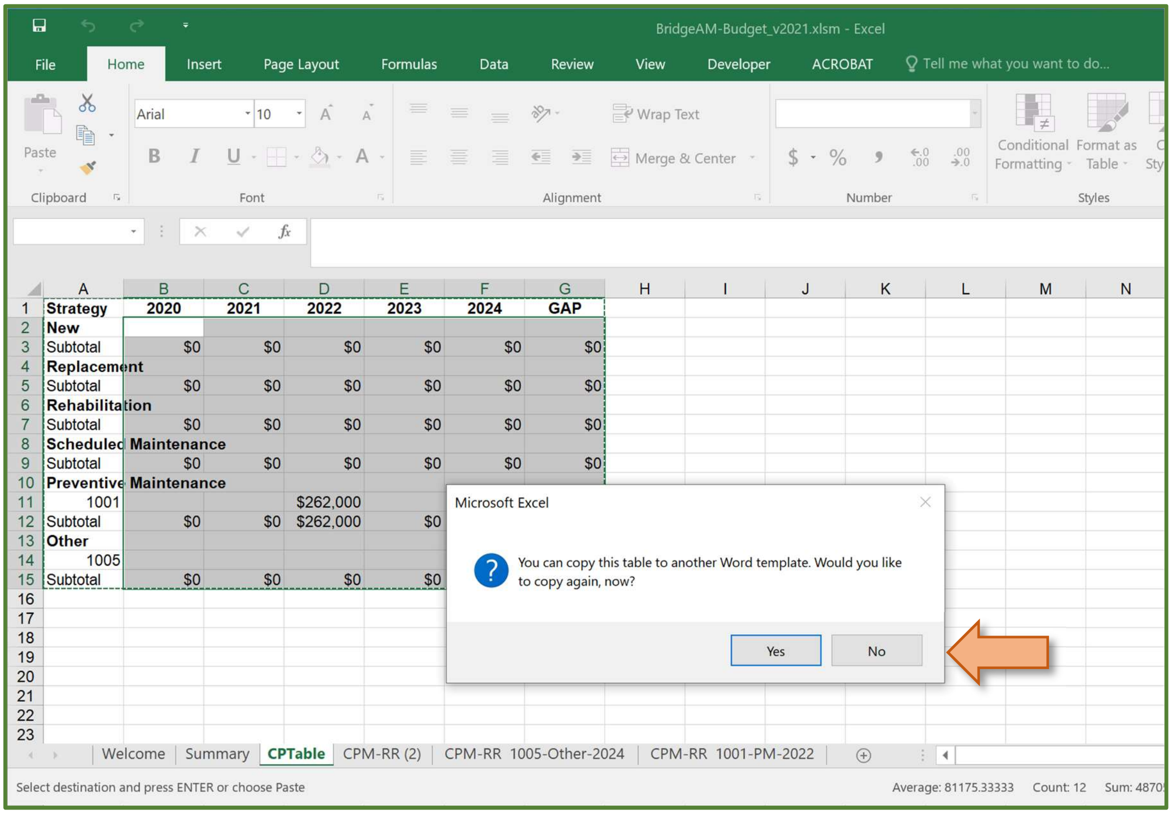
5. In the file explorer dialogue box, select the **BridgeAMP_v####_[youragencyabbr]_TEMP.docm** (or compliance plan template) file found in the tools parent folder, and select **Open** (see figure below).

   NOTE: If the table has been placed in the Word template previously, you will need to delete the table and replace the table with the following text: PasteCPTable. This text should be formatted with **Body** style in the *Styles* group (see figure below). To delete table, select the table and right-click on the box with the four-directional arrow that displays at the top left corner of the selected table; then, select **Delete Table** from the dropdown menu (see figures below).


BridgeAMP_v2021_CTT_customizedtemplate0.docx - Word
Table Tools
File
Home
Insert
Design
Layout
References
Mailings
Review
View
Developer
ACROBAT
Design
Layout
Sign in
Share
Paste
Clipboard
Font
Paragraph
AaBbCcD
¶ Body
¶ Body - S...
¶ Body In...
Styles
Editing
Planned Projects
CTT identifies additional priority projects that remain unfunded. These are identified according to high, medium, and low priority in Table 4.
Table 4: Cost Projection Table
PasteCPTable
Strategy 2020 2021 2022 2023 2024 GAP
New
Subtotal $0 $0 $0 $0 $0 $0
Replacement
Subtotal $0 $0 $0 $0 $0 $0
Rehabilitation
Subtotal $0 $0 $0 $0 $0 $0
Scheduled Maintenance
Subtotal $0 $0 $0 $0 $0 $0
Preventive Maintenance
1001 $206,000
Subtotal $0 $0 $206,000 $0 $0 $0
Other
1005 $262,000
Subtotal $0 $0 $0 $262,000 $0 $0
Gap Analysis
Author
Recommended for pavement and bridge AM used in conjunction with PA 325 compliance
Page 27 of 36
61 of 7735 words
90%


BridgeAMP_v2021_CTT_customizedtemplate0.docx - Word
Table Tools
File
Home
Insert
Design
Layout
References
Mailings
Review
View
Developer
ACROBAT
Design
Layout
Sign in
Share
Planned Projects
unfunded. These are identified according to high,
Insert
Delete
Cut
Copy
Paste Options:
Insert
Delete Table
Distribute Rows Evenly
Distribute Columns Evenly
Border Styles
AutoFit
Text Direction...
2022 2023 2024 GAP
$0 $0 $0 $0
$0 $0 $0 $0
$0 $0 $0 $0
$0 $0 $0 $0
$206,000
$206,000 $0 $0 $0

⇨ The cost projection/gap table will be placed in the selected Word template. The *You can copy this table to another Word template…* message box will display (see figure below).

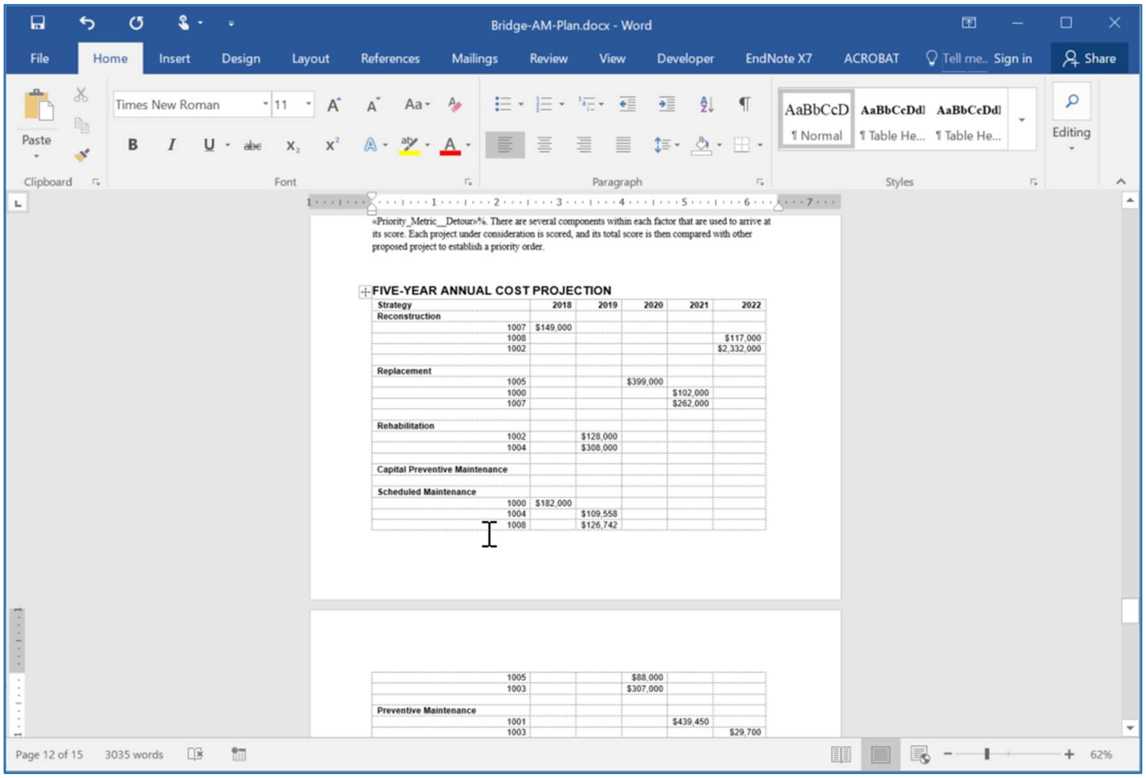


6. Select **Yes** to insert the cost-projection/gap table into your compliance plan template (or bridge asset management plan template). Repeat steps 3, 4, and 5; and proceed to step 7.

   OR

   Select **No** to skip inserting the cost-projection/gap table into your compliance plan template (or bridge asset management plan template). Proceed to ***Creating Financial Resources Content*** section of this instruction guide.

7. Open the Word template and format table as desired (see figure below).


Bridge-AM-Plan.docx - Word
File
Home
Insert
Design
Layout
References
Mailings
Review
View
Developer
EndNote X7
ACROBAT
Tell me..
Sign in
Share
Paste
Times New Roman
11
Clipboard
Font
Paragraph
AaBbCcD
¶ Normal
AaBbCcDd
¶ Table He...
AaBbCcDd
¶ Table He...
Styles
Editing
«Priority_Metric__Detour»%. There are several components within each factor that are used to arrive at its score. Each project under consideration is scored, and its total score is then compared with other proposed project to establish a priority order.
FIVE-YEAR ANNUAL COST PROJECTION
Strategy 2018 2019 2020 2021 2022
Reconstruction
1007 $149,000
1008 $117,000
1002 $2,332,000
Replacement
1005 $399,000
1000 $102,000
1007 $262,000
Rehabilitation
1002 $128,000
1004 $308,000
Capital Preventive Maintenance
Scheduled Maintenance
1000 $182,000
1004 $109,558
1008 $126,742
1005 $88,000
1003 $307,000
Preventive Maintenance
1001 $439,450
1003 $29,700
Page 12 of 15
3035 words
62%

Reviewing and modifying the customized Word template

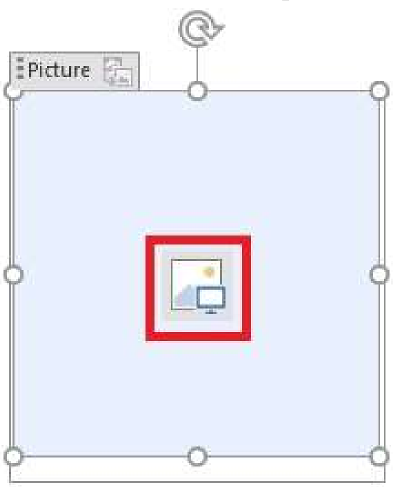
Inserting logos

The bridge asset management plan should incorporate your agency's logo on the title page. A picture placeholder indicates where the logo should be inserted.

To insert the logo into a Picture placeholder:

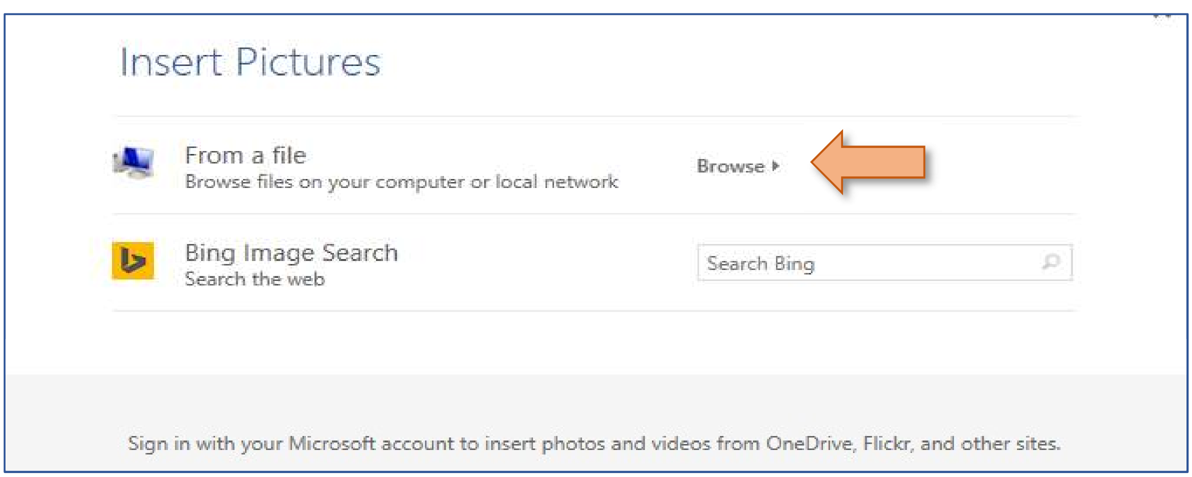
1. Select the *Picture* placeholder (see figure below) where you plan to insert a logo or graphic (not a chart).

2. Select the icon in the center of the placeholder.

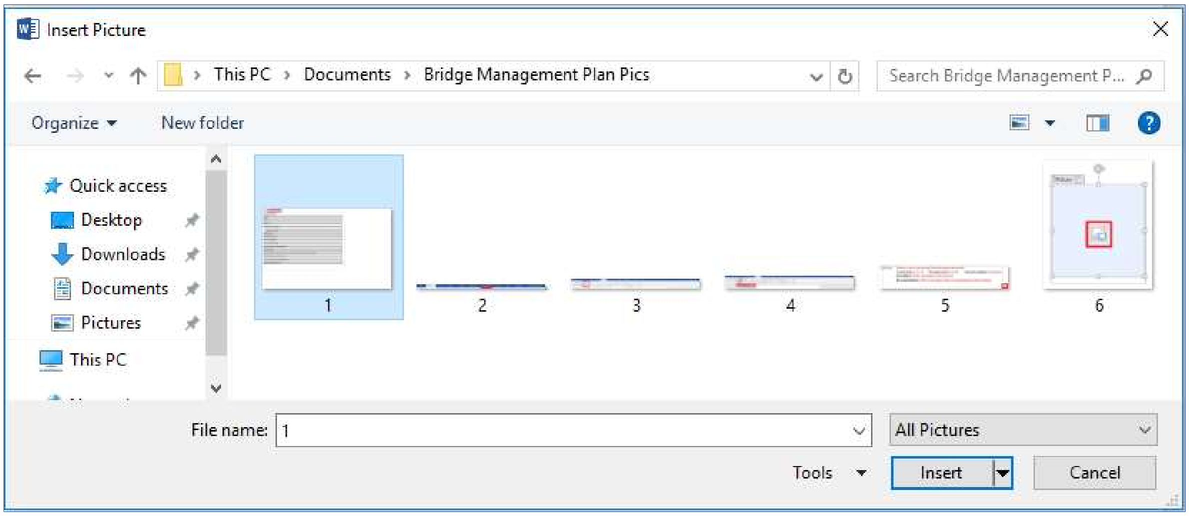


⇨ The *Insert Pictures* dialogue box will display (see figure below).

3. Select **Browse** > in the *From a file* option row in the *Insert Pictures* dialogue box (see figure below).



4. Navigate to your desired image using the *Insert Picture* window; select the image and then select **Insert** (see figure below).



⇨ The *Picture* placeholder will be replaced with the selected logo or graphic.

Working with list items

Some sections of the template and the appendix1-2.docx template enable you or require you to create lists:

- OBJECTIVES (Note: This section's list is not necessary to extend, but may be extended if desired.)

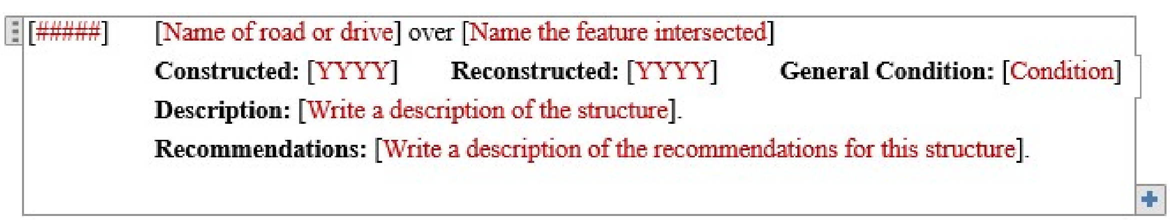
NOTE: As long as the list ***always has*** one placeholder list item (which appears boxed and, in the Bridge Inspection Report sections, contains the [red text field] placeholders) in it, selecting the + button will generate a new list item template. You will want to generate additional list items before replacing red text fields; see the ***Working with red text fields*** section below.

To generate additional items in a required list:

1. Find a list item.

2. Place cursor anywhere inside in the list item.

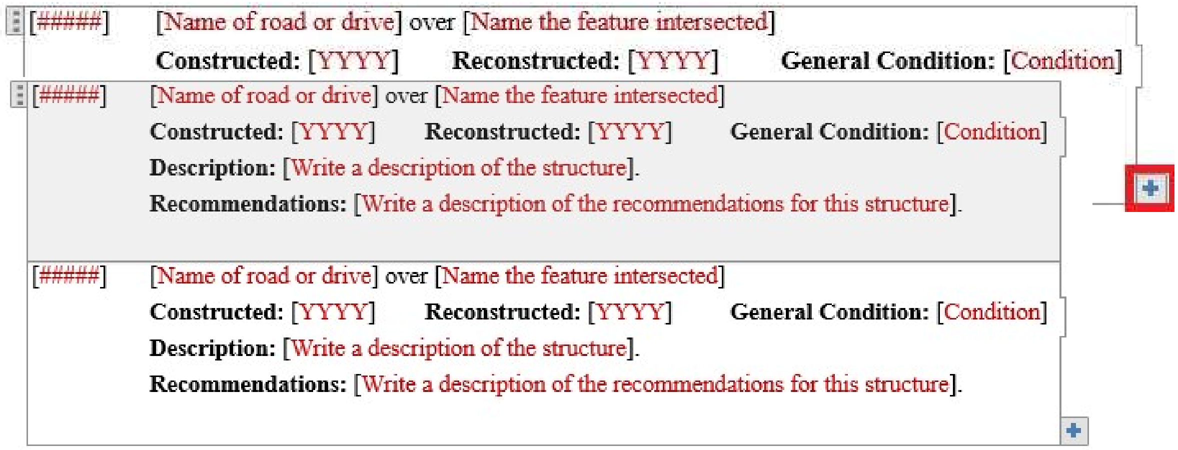
⇨ The list item will appear boxed when the cursor is placed inside it (see figure shown below).



3. Select the + button on the lower right corner of the list item *before* filling in any of the text fields.

⇨ A new, blank list item will be generated below the previous list item and will contain the text fields that need to be completed.

4. Repeat this process as necessary to obtain the appropriate number of list items.

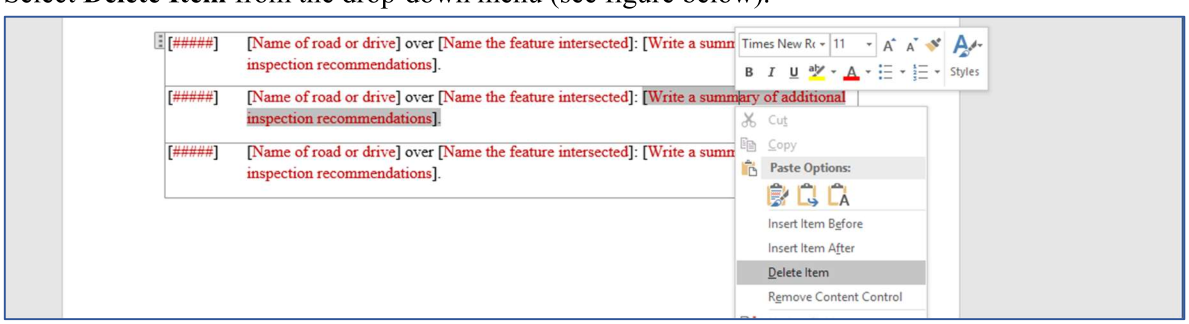


To delete items in a required list:

1. Select the list item with the right mouse button.

⇨ A drop-down menu will display (see figure below).

2. Select **Delete Item** from the drop-down menu (see figure below).



Working with red text fields

[Red text fields] are placeholders for user-entered data. They can be found in the following sections:

- FIVE-YEAR ANNUAL COST PROJECTION

- «AGENCY_FULL_NAME» [YYYY] BRIDGE INSPECTION REPORT SUMMARY OF ADDITIONAL INSPECTION RECOMMENDATIONS
- «AGENCY_FULL_NAME» [YYYY] BRIDGE INSPECTION REPORT EXECUTIVE SUMMARY

To replace red text field placeholders—Each of these placeholders has a different prompt depending on the type of information to be inputted.

1. Find and highlight a red text field by either:

   a. placing your cursor at the beginning of the Word document and then selecting **F11**.

   OR

   b. directly selecting an instance and highlighting the text field including the black brackets around it.

⇨ The red text field will be highlighted in a dark grey color.

[% of locally-owned bridges]

2. Replace the text field by typing the information for which the red text is prompting.

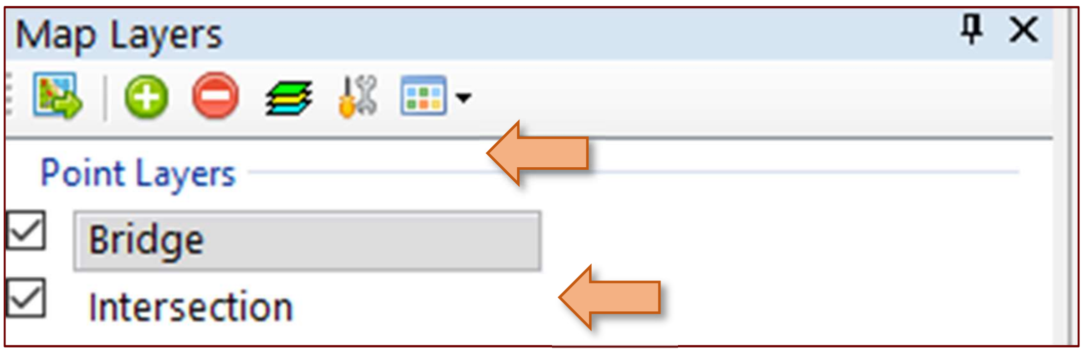
Creating A Map of Bridge Assets in Roadsoft

The bridge asset management plan should contain a map of your county's bridges and their condition assessments. In Roadsoft:

1. Select **Bridges** from the layer window on the left side of the screen (see figure below).

⇨ A prompt will display if the bridge data needs to be imported; the data will important. To re-import bridge data, right-click on the **Bridges** category and select **Re-Import Bridge Data**.

2. Select the **Legend Builder** icon.

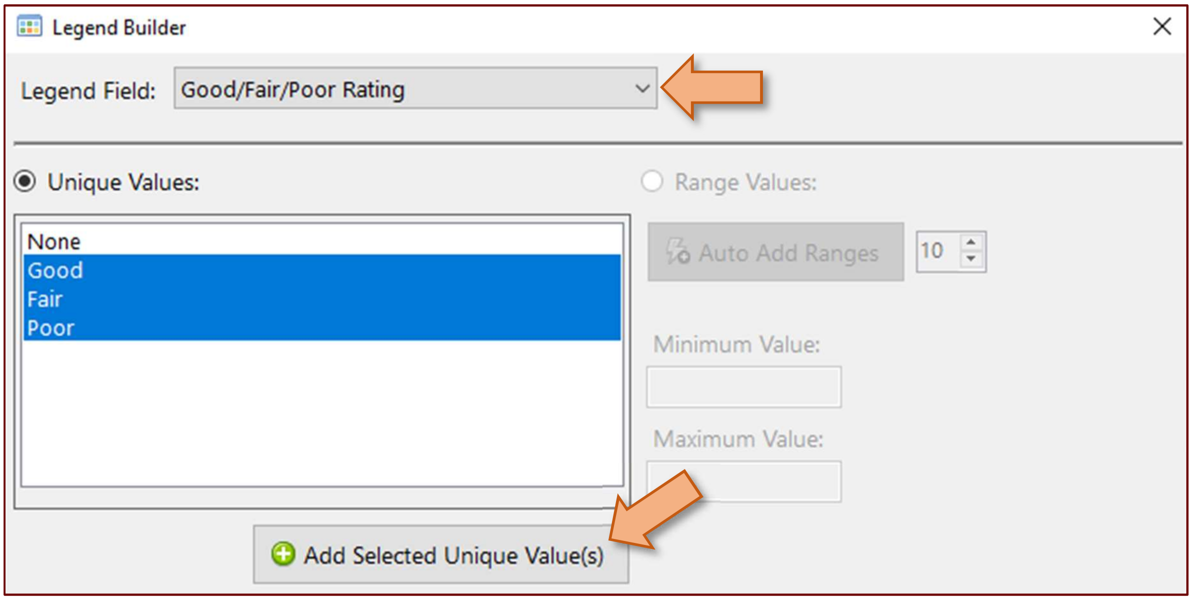


⇨ The *Legend Builder* window will display.

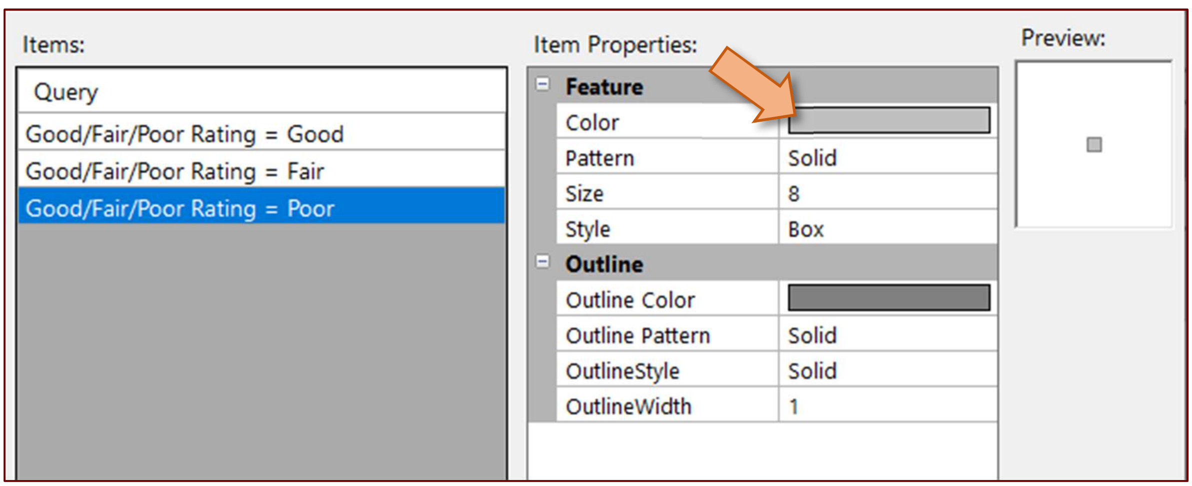
3. Select **Good/Fair/Poor Rating** from the dropdown list in the *Legend Builder* window (see figure below).

4. Select the **Good**, **Fair**, and **Poor** values so that they are highlighted blue (see figure below).

5. Select **Add Selected Unique Value(s)** (see figure below).

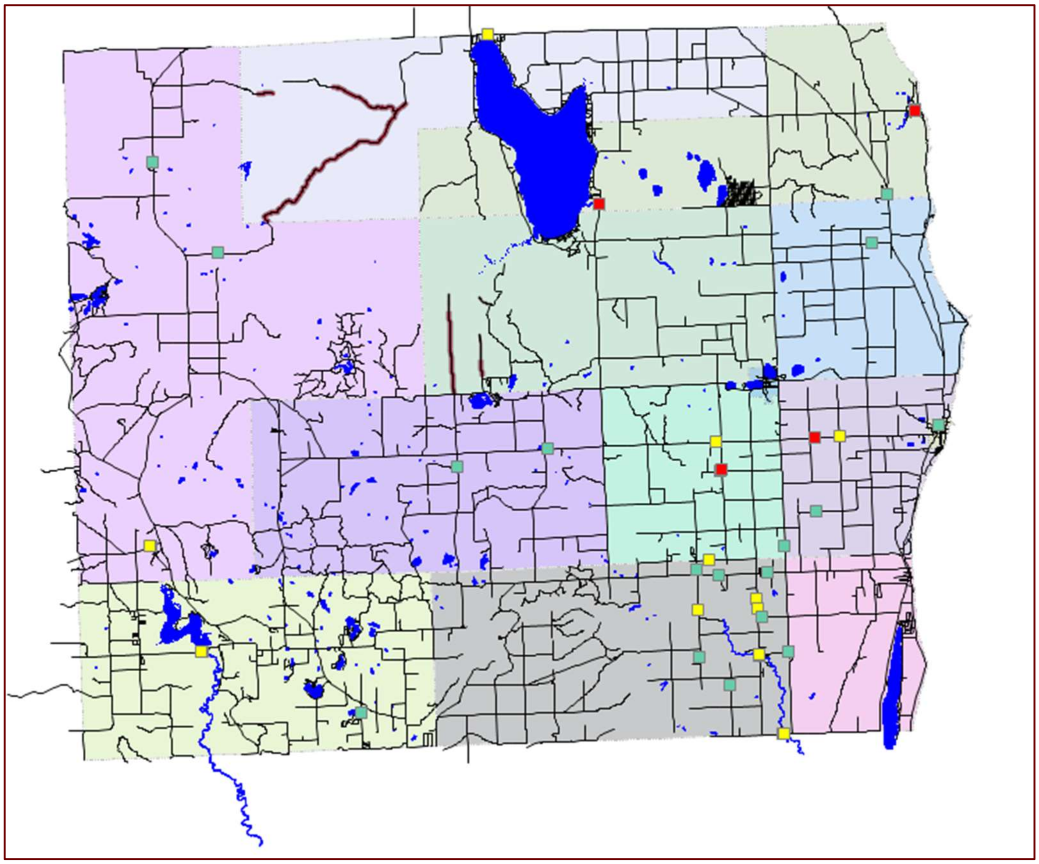


6. Change the color of the bridges based on their condition under *Item Properties:* (see figure below).



7. Select **Apply**.

⇨ The bridges on the map will turn colors according to their respective condition.

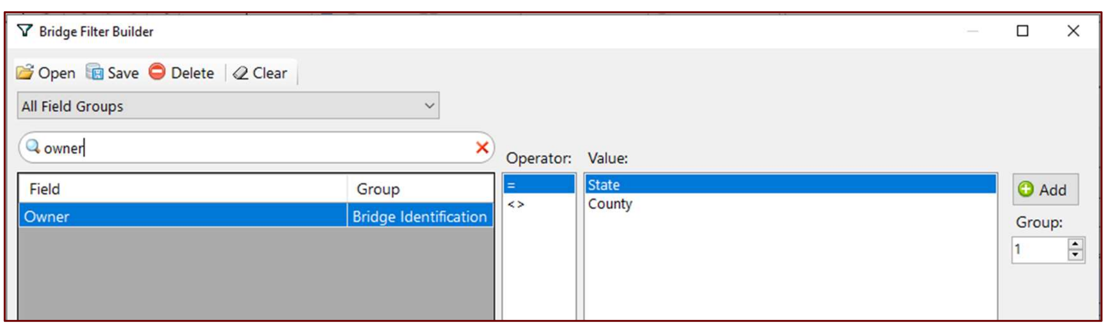


8. Add a filter to display bridges based on ownership.

    a. Select **Filter Builder** from the *Filter* tab located above the map.

    b. Search for "owner" in the search bar of the *Filter Builder* window (see figure below).

    c. Add the desired value option.



    d. Select **Apply as Filter**.

    e. Check to make sure only the bridges owned by the value chosen are displayed on the map.

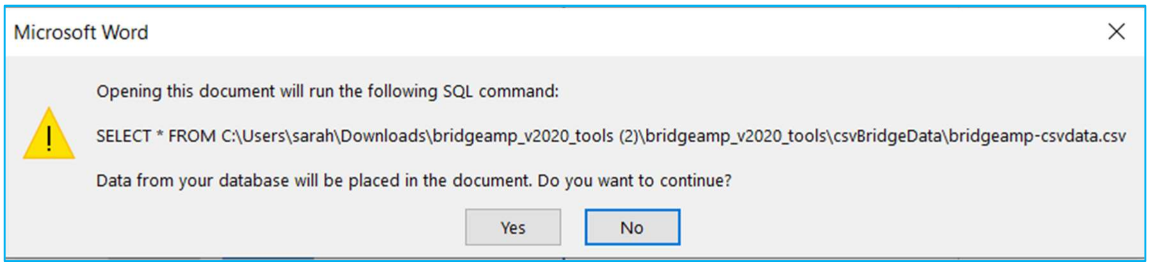
Appendix

Opening the uncustomized Word template

Opening the BridgeAMP.docx Word template will immediately cause Microsoft Word to confirm the mail-merge link between the Word template and the Excel spreadsheet data, which was established in the TOC Worksheet's Build a Bridge Asset Management Plan Step 8. To confirm this link:

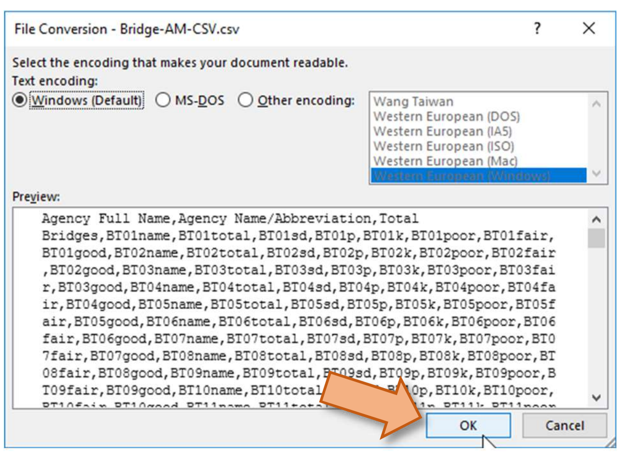
1. Open the BridgeAMP.docx Word template.

⇨ A Microsoft Word warning box will display.



2. Select **Yes**.

⇨ The *File Conversion* window will display (see figure below).



3. Select **Windows (Default)** in the *File Conversion – [yourcsv].csv* window, and select **OK** (see figure above).

⇨ The [yourcsv].csv file is now linked to the Word template and the data has been imported into the document.

4. In the *Mailings* ribbon, select **Preview Results** in the *Preview Results* group to preview the document with this auto-filled data (see figure below).

⇨ Scroll through the document: Text fields previously enclosed with double-right and double-left carets (e.g.: «Agency_NameAbbreviation») should now be replaced with the appropriate data from the Excel spreadsheet.

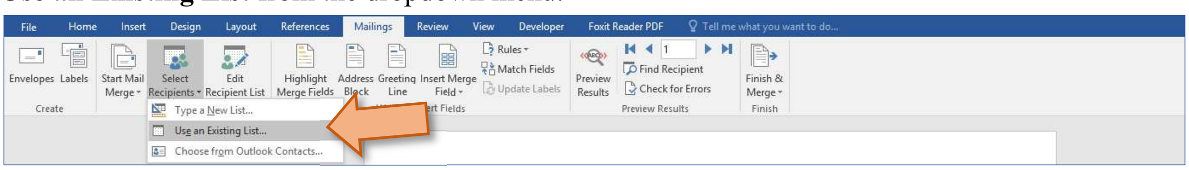
Manually linking the Excel spreadsheet data to the Word template

The Excel spreadsheet data can be linked manually to the Word template. To re-link the Excel spreadsheet data within the Word template and auto-fill corresponding text fields:

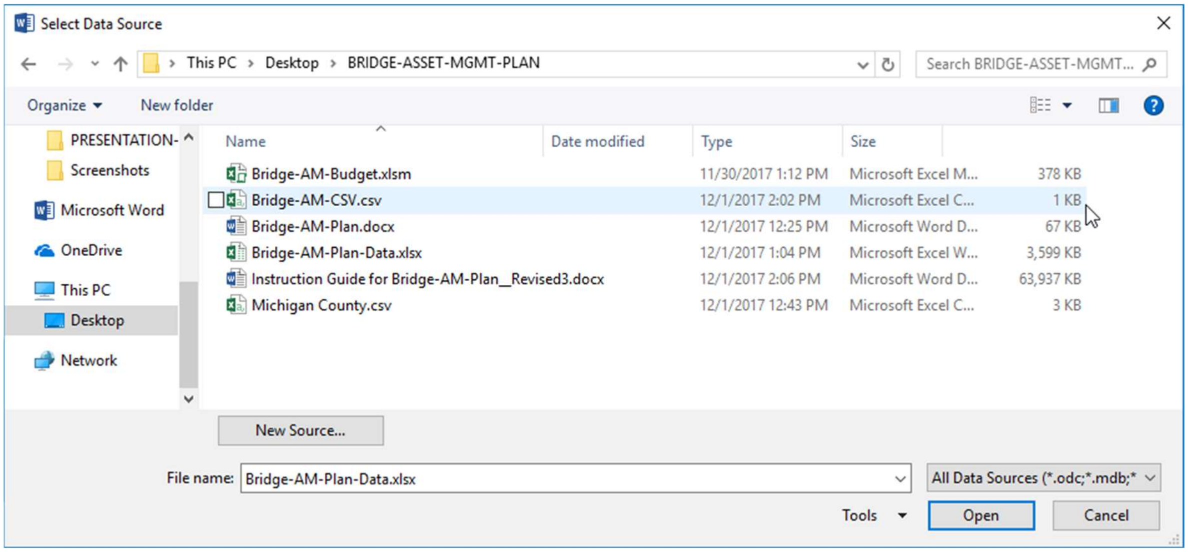
1. Open the BridgeAMP.docx Word template.

2. Select the **Mailings** ribbon.

3. In the *Mailings* ribbon, select the **Select Recipients** from the *Start Mail Merge* group; then, select **Use an Existing List** from the dropdown menu.

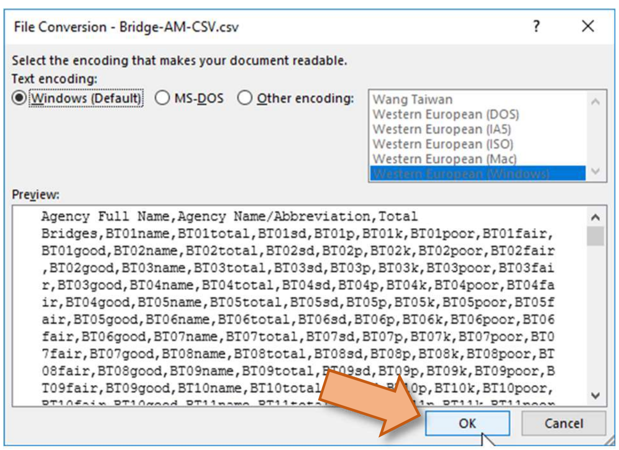


⇨ The *Select Data Source* dialogue box will display.



4. Navigate to the save location for your exported .csv file using the *Select Data Source* window; then, select the Excel file and select **Open**.

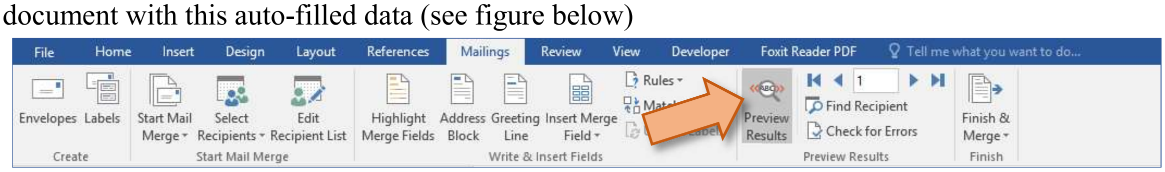
⇨ The *File Conversion* window will display (see figure below).



5. Select **Windows (Default)** in the *File Conversion – [yourcsv].csv* window, and select **OK** (see figure above).

⇨ The [yourcsv].csv file is now linked to the Word template and the data has been imported into the document.

6. In the *Mailings* ribbon, select **Preview Results** in the *Preview Results* group to preview the document with this auto-filled data (see figure below)

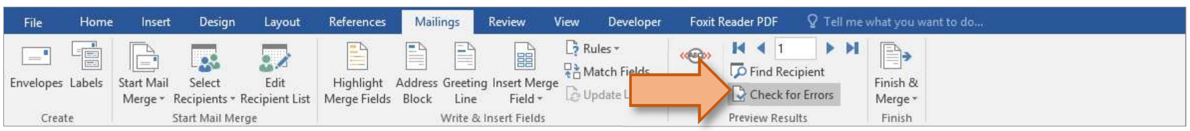


⇨ Scroll through the document: Text fields previously enclosed with double-right and double-left carets (e.g.: «Agency_NameAbbreviation») should now be replaced with the appropriate data from the Excel spreadsheet.

Manually reviewing the template for errors and finalizing

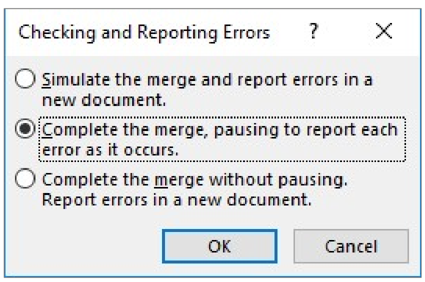
Once the bridge asset management plan .csv file has been created, it will be automatically linked to the BridgeAMP.docx template. The template should then be checked for unfilled text fields that should have been replaced with required information. This check should be done to ensure that no text field is overlooked and forgotten. To check the template:

1. In the *Mailings* ribbon, select **Check for Errors** in the *Preview Results* group.

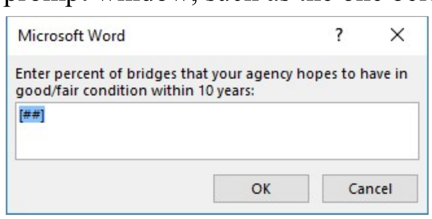


⇨ The *Checking and Reporting Errors* dialogue box will display.

2. Select **Complete the merge, pausing to report each error as it occurs**, and select **OK**.



⇨ Word will prompt you to complete any unfilled text fields using a *Microsoft Word* information prompt window, such as the one below.



3. Enter in the requested information in the *Microsoft Word* information prompt window, and select **OK**.

4. Repeat step 3 until there are no more *Microsoft Word* information prompt windows remaining.

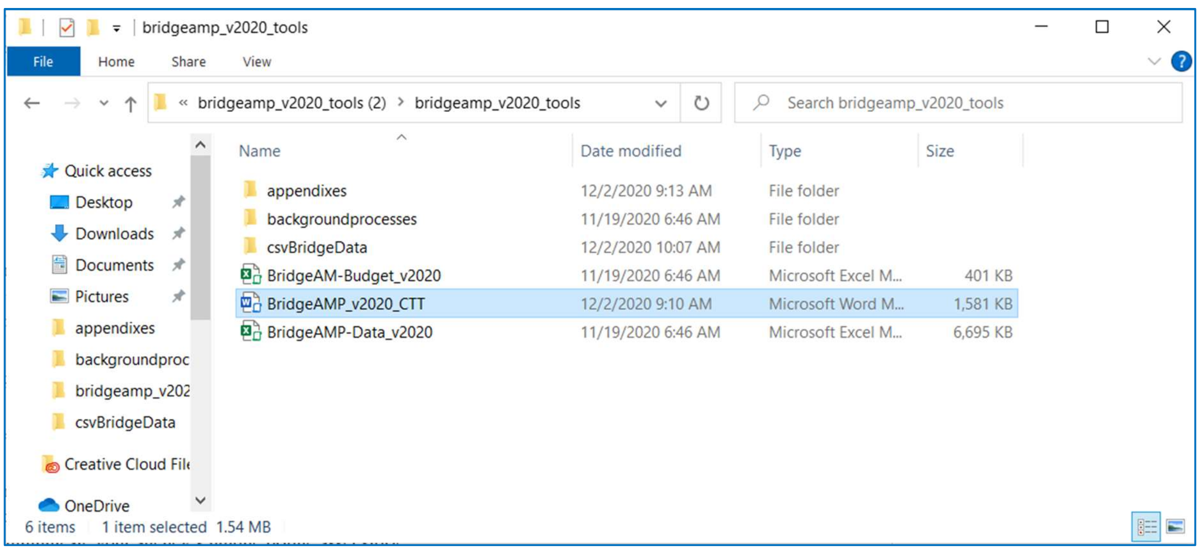
⇨ Microsoft Word will generate a new file, named ***Letters 01.docx***, of your final asset management plan.

5. Save Letters 01.docx with a unique name—such as BridgeAMP-2020.docx—in the desired location on your computer (see recommended save location information on page 1).

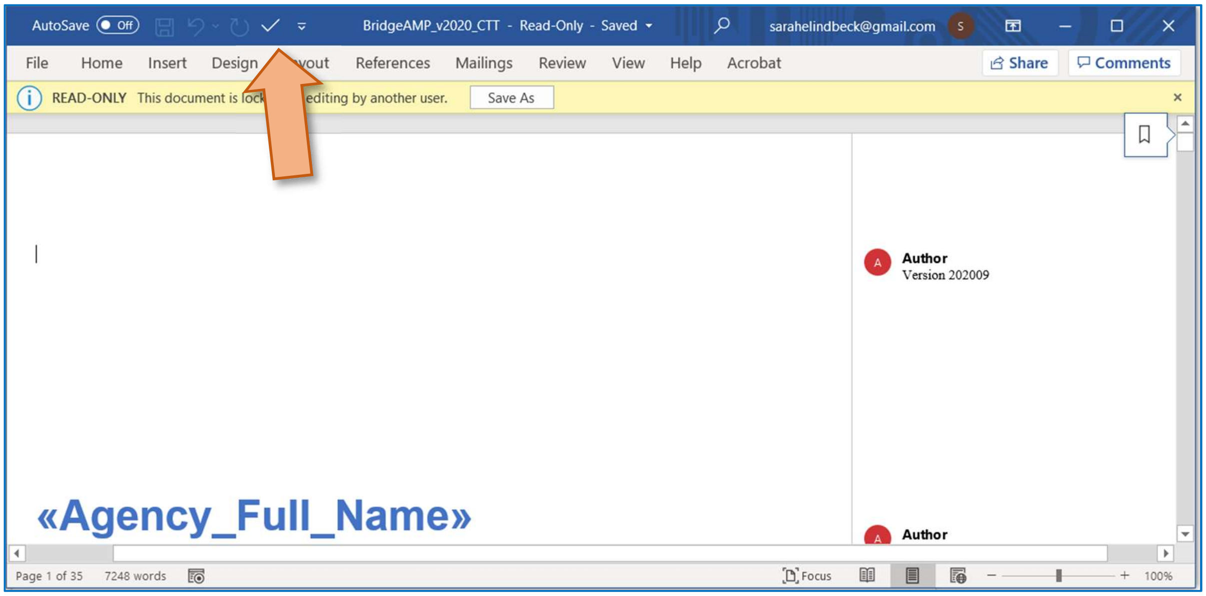
Finalizing the template

Once the BridgeAM-Data.xlsm and BridgeAM-Budget.xlsm processes are complete, you can access and finalize your customized bridge asset management plan Microsoft Word template. To finalize the template:

1. Open BridgeAMP_v####_[youragency].docm located in the tools parent folder (see figure below).



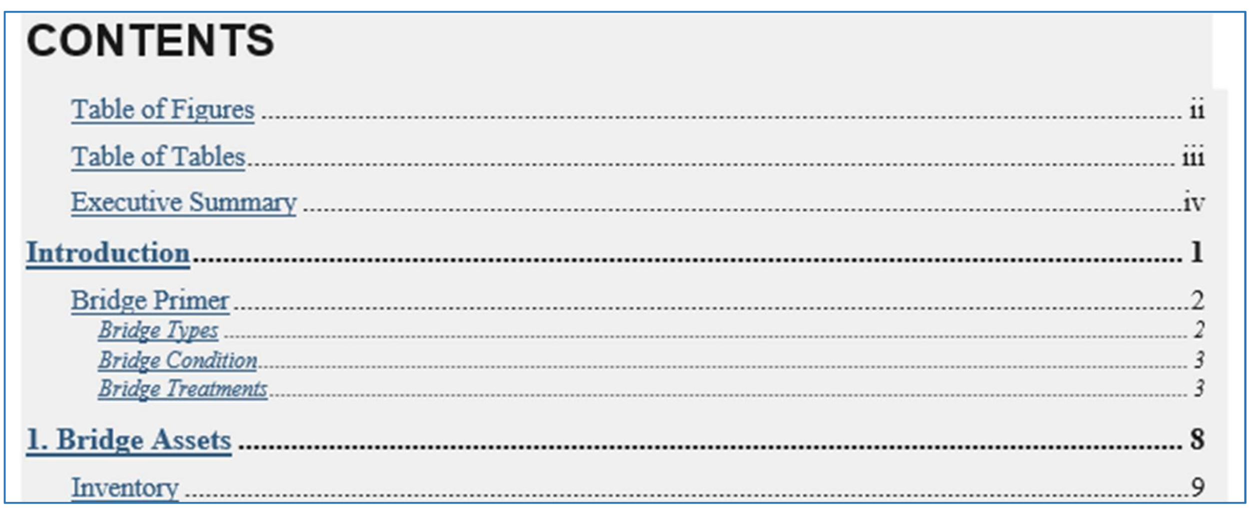
2. Select the checkmark button at the top of the Word document window to finalize the plan (see figure below).



⇨ The tool will produce a finalized Word document, BridgeAMP_v####_[youragency]_final.docx. You will need to customize this document to include the Roadsoft map of bridge assets and to communicate your agency's unique bridge asset story.

Manually updating Table of Contents

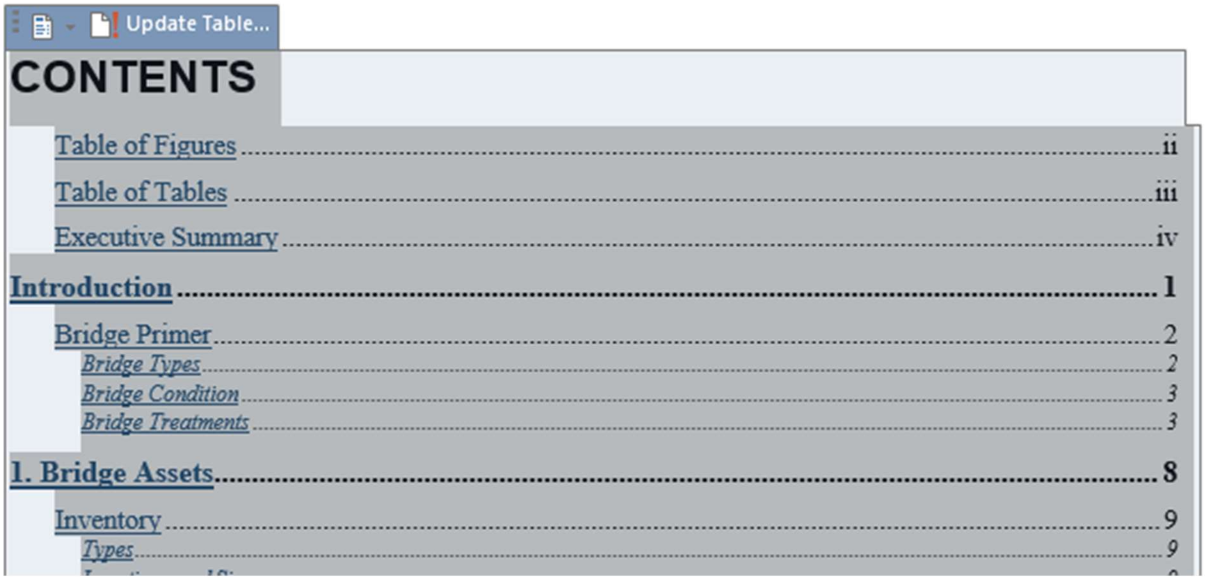
The Contents field will appear as a list of links after the mail merge (see figure below). To fix this, the table must be deleted and replaced.


CONTENTS

1. Go to the Contents section on the second page of the document.
2. Select the *Contents* field.

⇨ The Contents listing will appear boxed with buttons located in the upper left corner of the field.

3. Select the three dots.

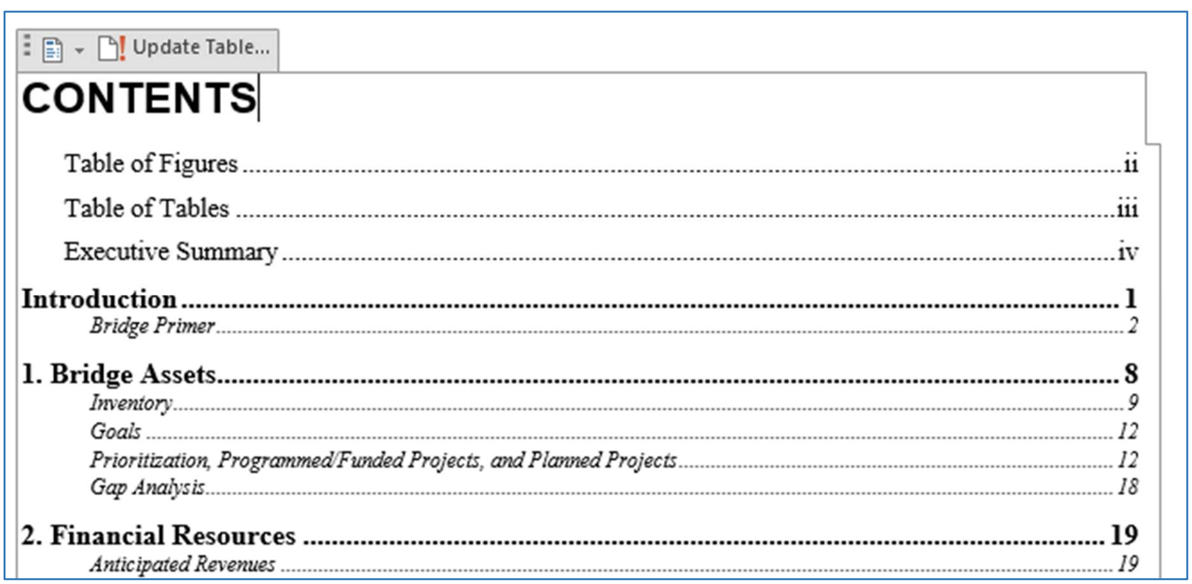


⇨ The entire table of contents will become highlighted.

4. Press the **backspace** or **delete** key on your keyboard to delete the entire table of contents.

5. From the *References* ribbon, select **Table of Contents,** and then select **Automatic Table 1** from the dropdown list.

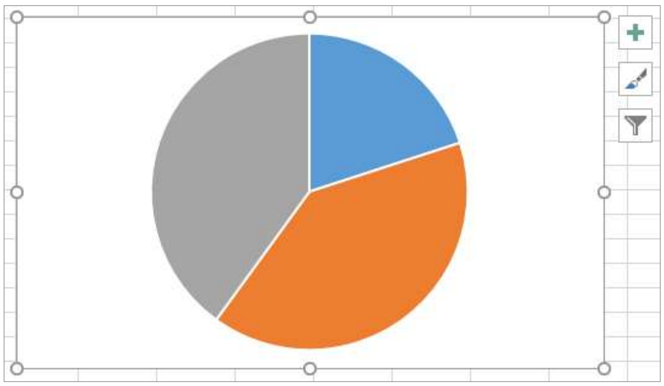
⇨ A new and updated Contents will replace the old one on page two of the Word document (see figure below).



6. Repeat these steps with the Table of Figures and the Table of Tables.

Manually inserting Microsoft Excel charts/graphs into Word

1. In an Excel spreadsheet, select a chart/graph (as shown below).

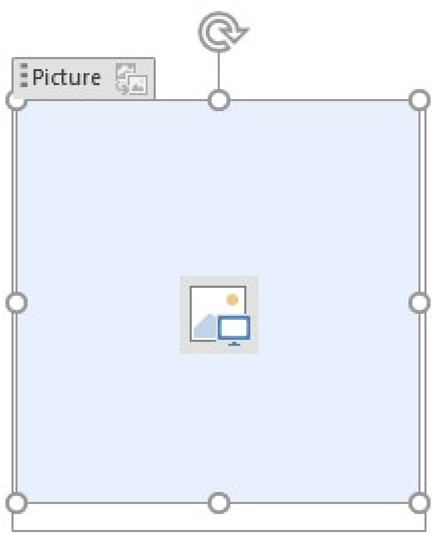


2. In the *Home* ribbon, select **Copy** from the *Clipboard* group to copy the chart/graph to the Windows clipboard.

   OR: Right-click on the chart/graph; select **Copy** from the dropdown menu.

   OR: Use the **Ctrl** + **C** keyboard shortcut.

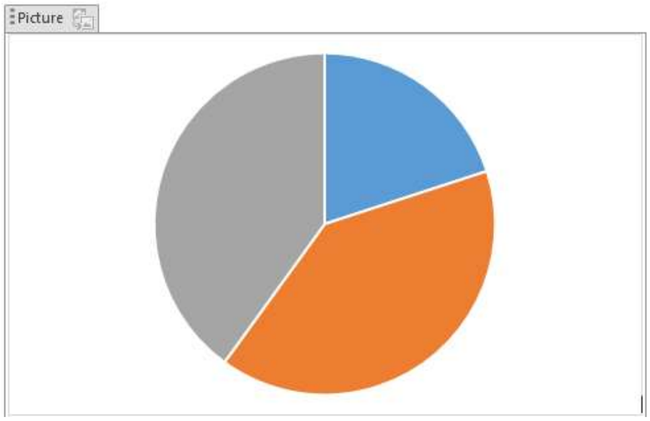
3. In the BridgeAMP.docx Word template, select the *Picture* placeholder (shown below) and press the **Delete** key on your keyboard.



4. In the *Home* ribbon, select **Paste** from the *Clipboard* group to paste the chart/graph that was copied to the Windows clipboard.

   OR: Right-click on the placeholder; select **Paste** from the dropdown menu.

OR: Use the **Ctrl** + **V** keyboard shortcut.



⇨ The copied chart/graph will display in the Picture placeholder.