SDSFIE Migration Workflow - Gathering Sheet Guidance and FAQs

**Introduction:** The Gathering Spreadsheet provides mappings between the Source Model and the Source Parent Model. The Migration process works because the crosswalk between the Source Parent Model and the Target Parent Model is known. To enable the migration of data in a Source Model to the Target Model, the mappings from Source Model to the Source Parent Model are necessary (see Figure 1). The automatic importer process is able to detect 'Model Name' specifications in the metadata and also uses name matching to detect further matches, but it cannot catch them all. Therefore, the Gathering Spreadsheet is used to manually establish any undetected mappings from the Source Model to the Source Parent Model. The Gathering Spreadsheet is also used to collect definitions for elements that were not defined in the metadata. This is important because the Target Model will be populated with the definitions and thus the Target Schema will carry them back into the ArcGIS environment where they can be used for future migrations and for in-place documentation of the elements in ArcGIS.

**Figure 1:** Gathering Sheet Design and Purpose

Step 5 of the Migration Workflow generates the Gathering Spreadsheet while Step 6 adjudicates any outstanding errors or missing information. Steps 5 and 6 form an iterative process by which all issues with the Gathering Spreadsheet are solved, allowing users to move on to the rest of the Migration process (Figure 2).
Figure 2: Generate, Edit, Import Gathering Spreadsheet Cycle

Gathering Spreadsheet Layout Overview:

Manual edits will only occur in the Definition (Column D) and Source Parent Model (Columns F and G). The columns of the Gathering Spreadsheet are as follows:

- **Element Type (Column A)** (see Figures 4 & 5, Item #1)
  - Values include:
    - Entity (PDM Term: Feature Class or Object Table)
    - Attribute (PDM Term: Field)
    - Enumeration (PDM Term: Domain)
    - Enumerant (PDM Term: Domain Value)
    - Association (PDM Term: Relationship Class)
  
  **NOTE:** Cells in Column A should not be edited.

- **Source Model (Columns B & C, Item #2)** – Element names in the Source Schema that was imported. This heading exists over two columns:
  - **Feature (Object) Class / Domain / Relationship Class Name (Column B)** –
    - If the Element Type is Entity, Enumeration, or Association, then only the first column under the Source Model heading should be populated (Figure 3).
  - **Field / Domain Value Name (Column C)** –
    - If the Element Type is Attribute or Enumerant, then both columns under the Source Model heading should be populated (Figure 4).
  
  **NOTE:** Cells in Column B and Column C should not be edited.
### Figure 3: Column A (Element Type) and Column B (Entity/Enumeration/Association) in Gathering Sheet

<table>
<thead>
<tr>
<th>#1</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Element Type</td>
<td>Source Model</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entity</td>
<td>RoadCenterline_FireBreaks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entity</td>
<td>RoadCenterline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entity</td>
<td>PoliceResponsibilityArea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entity</td>
<td>PavementSection_Sidewalks_A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entity</td>
<td>PavementSection_Road_A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entity</td>
<td>FireDeptmentResponsibilityArea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entity</td>
<td>Fence</td>
<td></td>
</tr>
</tbody>
</table>

### Figure 4: Column A (Element Type) and Column C (Attribute/Enumerant) in Gathering Sheet

<table>
<thead>
<tr>
<th>#1</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Element Type</td>
<td>Source Model</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attribute</td>
<td>RoadCenterline</td>
<td>baseRoadname</td>
</tr>
<tr>
<td></td>
<td>Attribute</td>
<td>RoadCenterline</td>
<td>baseSufffix</td>
</tr>
<tr>
<td></td>
<td>Attribute</td>
<td>RoadCenterline</td>
<td>bridgeIndicator</td>
</tr>
<tr>
<td></td>
<td>Attribute</td>
<td>RoadCenterline</td>
<td>condition</td>
</tr>
<tr>
<td></td>
<td>Attribute</td>
<td>RoadCenterline</td>
<td>coordinateX</td>
</tr>
<tr>
<td></td>
<td>Attribute</td>
<td>RoadCenterline</td>
<td>coordinateY</td>
</tr>
<tr>
<td></td>
<td>Attribute</td>
<td>RoadCenterline</td>
<td>designUse</td>
</tr>
</tbody>
</table>
• Definition (Column D, Item #3 in Figure 5 below)
  • If the Source Schema element was automatically matched to the Source Parent Model, then the definition will be populated.
  • If the Source Schema element was not automatically matched to the Source Parent Model, the importer inserts "*****MISSING DEFINITION*****". (Item #4)

**NOTE:** This column may be edited but only as described in the following instructions.

• **Source Parent Model** – Model Names that exist in the Source Parent Model that match the element in the Source Schema. This heading exists over two columns:
  • **Entity / Enumeration / Association Model Name (Column F)** –
    • If the Element Type is Entity, Enumeration, or Association, then only the first column under Source Parent Model heading should be populated.
  • **Attribute / Enumerant Model Name (Column G)** –
    • If the Element Type is Attribute or Enumerant, then both columns under the Source Parent Model heading should be populated.

**NOTE:** Columns F and G may be edited but only as described in the following instructions. If there is no match to the element (the element is non-compliant), it should remain blank.

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**Figure 5: Example Gathering Sheet**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Source Model</th>
<th>Source Parent Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Element Type</td>
<td>Feature (Object) Class</td>
<td>Domain / Relationship Class Name</td>
<td>Yield / Domain Value Name</td>
<td>Source Parent Model</td>
</tr>
<tr>
<td>2</td>
<td>Entity</td>
<td>ThermalUtilityNode</td>
<td>Junction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Entity</td>
<td>ThermalUtilityNode</td>
<td>Valve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Entity</td>
<td>ThermalUtilityNode</td>
<td>Segment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Entity</td>
<td>Pol UtilitySegment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Entity</td>
<td>WaterFeature</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Entity</td>
<td>Wetland</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Entity</td>
<td>Forest</td>
<td>Site_P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Entity</td>
<td>SoilMapUnit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Entity</td>
<td>Vegetation</td>
<td>Classification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Entity</td>
<td>WaterFeature</td>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Entity</td>
<td>Archaeological</td>
<td>Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Entity</td>
<td>HistoricalProperty</td>
<td>Interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Entity</td>
<td>PollutionArea</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Entity</td>
<td>Well</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Entity</td>
<td>HazardousStorageLocation</td>
<td>Tank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>coordinateX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>coordinateY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>dateActivated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>facilityNumber</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>featureDepth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>featureHeight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>flowrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>horsepower</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Attribute</td>
<td>ThermalUtilityNode</td>
<td>installationID</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Editing the Gathering Spreadsheet:**

Editing the Gathering Spreadsheet passes users through the following checkpoints:

- Understanding the layout
- Matching Entities, Enumerations, and Associations (Columns B and F)
- Matching Attributes and Enumerants (Columns C and G)
- Add Missing Definitions (Column D)

The Generate, Edit, Import cycle will most likely occur only once or twice, but may be repeated as many times as necessary to correct all the definition and mapping requirements. Each time a new Gathering Spreadsheet is
imported, the changes that were made will show up in the next iteration, enabling the user to carry out these steps until everything is as required.

**Editing the Gathering Spreadsheet Instructions:**

1. **Review the Source Parent Model (Columns F and G) and identify blank cells** *(Figure 6)*:
   a. If Column A is an Entity, Enumeration, or Association,
      - Column F should be populated, if matched automatically.
      - Column G should be blank (as seen in green boxes in *Figure 6*).
   b. If Column A is an Attribute or Enumerant,
      - Column F should be populated, if matched automatically.
      - Column G should be populated, if matched automatically.

   ![Figure 6: Identify Blank Cells](image)

2. **Identify if the blank cells discovered are supposed to be blank (as defined in the previous step), or if a match was not found by SDSFIE Online**:
   a. If there was no matching Entity, Enumeration, or Association found in the Source Parent Model, then both Column F and G will be blank.
   b. If there was a matching Entity, Enumeration, or Association found in the Source Parent Model, but no matching Attribute or Enumerant, then Column F will be populated but Column G will be blank.

3. **Manually enter the match in the blank cells that SDSFIE Online did not find a match for where Column A is an Entity, Enumeration, or Association only.**

   **Gathering Spreadsheet Edits**

   If needed, the first edit and import should only include **Entity, Enumeration, or Association** edits. After the first import, SDSFIE Online will automatically match all applicable lower level elements (attributes and enumerants).

   If all Entities, Enumerations, and Associations are properly matched already, the user may proceed to the end of the step **without re-importing and generating the Gathering Sheet.**

4. **If the cell is supposed to be populated but the match is unknown, leave blank for this iteration.**

5. **Save the Gathering Spreadsheet.**

6. **Import the Gathering Spreadsheet:**
   a. In the SDSFIE Online Session, navigate to [STEP 5 & 6) Gathering Spreadsheet Operations],
b. Click [Import Gathering Spreadsheet],
c. Click [Choose File],
d. Browse to and select the saved Gathering_[BATCHNAME]_Original.xls,
e. Click [Import],

**NOTE:** A status will show in the Progress dialog box; do not close the window until complete.
f. Review the Errors/Warnings dialog box,
g. Record Errors/Warnings, if applicable, for further adjudication in the next iteration,

**NOTE:** There is no function to export Errors/Warnings. Any Errors/Warnings **must be manually recorded** (e.g. copy and paste text into notepad or screenshot the dialog box).
h. After the Progress dialog box notes complete, and the user has recorded any Errors/Warnings, click [Close].

8. Save the next generation of the Gathering Spreadsheet as Gathering_[BATCHNAME]_v2.xlsx.
10. Click [Enable Editing] on the yellow bar that appears under the Excel Ribbon.
11. Save Gathering_[BATCHNAME]_v2.xlsx.
12. Review the changes to the Gathering Spreadsheet:
   a. If the manually entered matches for Entities, Enumerations, or Associations are correct, then all compliant lower-level (attributes or enumerants) cells will be automatically matched by SDSFIE Online.
   b. Review the lower-level matches to verify the automatic matching was performed correctly. If all lower-level matches were performed correctly, the user may proceed to the end of the step without re-importing the Gathering Sheet.
   c. If any lower-level cells were not matched, or matched incorrectly, manually enter matches (using Component guidance, SME input, or user knowledge) and reimport the Gathering Spreadsheet into SDSFIE Online.¹

### Gathering Spreadsheet Edits

The two (or three) fields added by the SDSFIE Pre-Migration Tools (SDSFIE_PRE_MIG_OBJECTID, SDSFIE_PRE_MIG_FCName, and sdsMigFeatureType [if applicable]) should not be matched in the Source Parent Model. Column F and G are correctly blank for these attributes.

13. For any unknown matches (or non-compliant entities), leave the applicable Source Parent Model columns blank. These elements will be carried through the migration

1 A common reason lower-level matching does not occur is spelling mistakes. Always check spelling when manually entering matches.
14. Review Definitions (Column D); replace any instance of *****MISSING DEFINITION***** with a succinct definition in accordance with SME input and local knowledge of the element.

**NOTE:** Only add definitions for components that do not have a match to the Source Parent Model. If there is a match, SDSFIE Online will automatically provide the missing definition after the next import.

<table>
<thead>
<tr>
<th>Gathering Spreadsheet Edits</th>
</tr>
</thead>
</table>

Things to consider when providing missing definitions:

- There cannot be two of the exact same definitions at the entity/enumeration level.
  - E.g. Building and Structure FeatureTypes cannot have the exact same definition.
- There cannot be two of the exact same definitions at the attribute/enumerator level within an entity or enumeration.
  - E.g. within Building, the attributes of featureHeight and featureHeightUom cannot have the exact same definition.
- Identical attributes across entities may have the same definition.
  - E.g. the attribute featureName can have the exact same definition in different FeatureTypes.

If the Component allows the business practice of including editor tracking attributes; place the following definitions in those applicable cells:

- created_user - The name of the user who created it.
- created_date - The date and time it was created.
- last_edited_user - The name of the user who edited it.
- last_edited_date - The date and time it was last edited.

15. Save the Gathering Spreadsheet.

**NOTE:** If no edits are needed, the user can move directly to the end of the step; there is no reason to re-import if no changes were made.

16. Re-import the Gathering Spreadsheet.
   a. Record Errors/Warnings, if applicable.
   b. Re-generate the Gathering Spreadsheet if further adjudication is required.

**NOTE:** Most users have reported only one or two cycles were needed to properly match all Gathering Spreadsheet elements. Further adjudication is rare, review the FAQ and Troubleshooting Section if errors or other reasons have created a need for further iterations.

17. When there are no further Errors/Warnings, and all definitions are populated, click [Finalize Source Model] under [STEP 5 & 6] Gathering Spreadsheet Operations.

**NOTE:** If any elements are missing a definition, SDSFIE Online will warn the user of these elements. This warning will not prohibit moving forward, but it may create documentation problems in the future. It is a best practice to provide a definition for every element. If any elements are missing a definition, another iteration of the Gathering Spreadsheet Operations will be necessary to include the identified missing definitions. Then the user will need to re-click the [Finalize Source Model] button.
The Gathering Spreadsheet has been finalized when all mappings are complete and there are no missing definitions. The [STEP 7] Generate Crosswalk Spreadsheet functions should activate. This verifies the user can continue to the next step.

**FAQs and Troubleshooting:**

FAQ 1. During STEP 5, the Generate Gathering Spreadsheet dialog box notes completion, but the Gathering Spreadsheet did not download to the browser?

OR

FAQ 2. During STEP 7 the Generate Crosswalk Spreadsheet dialog box notes completion, but the Crosswalk Spreadsheet did not download to the browser?

The browser’s pop-up blocker was not disabled. Disable the browser’s pop-up blocker and re-click [Generate Gathering Spreadsheet] or [Generate Crosswalk Spreadsheet].

If the workstation’s security settings do not allow for pop-up blockers to be disabled, there is still a way to receive the download. Depending on the browser type, there will be a message/icon that notes a pop-up was blocked. Click on the message/icon that appears, and there will be an option to download the file anyways. An example in Chrome is **Figure 7**: when the popup blocker icon appears in the search bar, click it, and a menu will appear to allow you to download the file. **Figure 8** shows how Internet Explorer provides a status bar; click on the status bar for options on how to download the file. Firefox also provides a status bar that you can select for more options, see **Figure 9**.

![Figure 7: Chrome Blocking Popups](image)

![Figure 8: Internet Explorer Blocking Popups](image)
FAQ 3. During STEP 6, my Gathering Spreadsheet import was not accepted.

Verify that the [Enable Editing] yellow bar was deactivated within the Gathering Spreadsheet, save the spreadsheet, close the spreadsheet, and retry. If the import is still not accepted save the file as a .xls (Excel 1997-2003 Workbook) file type and retry.

**WARNING:**

Changing the file type to .xls cuts off rows if the spreadsheet is larger than 65,000 rows. If any of the Excel sheets have more than 65,000 rows, a smaller Migration Batch will need to be created, and the process will need to be restarted (from STEP 2) with smaller Migration Batches.

FAQ 4. During STEP 6, my Gathering Spreadsheet was not imported due to the following error:

This error is caused when the user provides a matching element in the Source Parent Model columns (Columns F and G) that is incorrect. Either the matching element is spelled wrong in the Gathering Spreadsheet or it does not exist in the applicable Source Parent Model (for example, if the Source Parent Model is SDSFIE 3.1 Gold or an approved Component Adaptation, then all the entries in Columns F and G must be in the approved SDSFIE 3.1 Gold Model or
Component Adaptation that is on SDSFIE Online).

Figure 10’s error notes that in row 403 and 404 of the applicable Gathering Spreadsheet the user tried to insert an attribute (in this case: featureLength and featureLengthUOM) in their Source Parent Model (Columns F and G) as a match to their Source Model attribute (Columns B and C), but for the feature type in question, featureLength and featureLengthUOM are not allowed because the line geometry is not allowed in the Source Parent Model. The corrective action is to delete the text in the applicable cells and leave them blank. These attributes will then be treated as non-compliant attributes and carried through the process with no changes made to them unless they were specifically removed (profiling) from the Target Parent Model.

FAQ 5. During STEP 5 & 6, my Gathering Spreadsheet was generated and imported numerous times and I have lost track of which Gathering Spreadsheet is the most recent.

OR

FAQ 6. The [Import Gathering Spreadsheet] dialog box will not accept my most recent import.

If the Generate-Edit-Import cycle is interrupted (during a download or an import), it becomes an unstable environment and error messages may occur. Always maintain consistent file structure and naming conventions in order to maintain what Gathering Spreadsheet is the most recent.

If the most recent import is not accepted, archive all the previous Gathering Spreadsheets, and generate a new Gathering Spreadsheet from SDSFIE Online. SDSFIE Online will download the most recent Gathering Spreadsheet that was imported to the Session. Begin making edits to that newly generated Gathering Spreadsheet and import that version when finished.

You can always close out of the current SDSFIE Online Session and re-enter the SDSFIE Online Session by usingLaunch A Saved Session. This may stabilize the Generate-Edit-Import cycle. If there are still issues, you may need to restart at STEP 2 with a new SDSFIE Online Session.

FAQ 7. There was no match found in my Gathering Spreadsheet.

There are three main reasons why an element was not matched in the Gathering Spreadsheet:

1. There is an error with the Source Model element name (spelling mistake, wrong geometry suffix, etc.).
2. There was no matching information found in the Source Model’s metadata.
3. The element is custom-named (non-standard, installation-specific) and does not match a Source Parent element.

For example, an element is named “Lake_Webster,” and other than the name, the entity matches the WaterFeature Source Parent entity, but SDSFIE Online could not find this match due to the name and/or metadata not providing this information. Therefore, the user may insert “WaterFeature” in Column F to
teach SDSFIE Online that “Lake_Webster” is a “WaterFeature” element.
Manually enter matches for these instances; review Component Crosswalks or other guidance if matching assistance is needed.