PLTS Symbology and QA & PLTS Dangle and Pseudo Renderer Toolbars User Guide FEMA DFIRM Production Tools

Version 4.0

Table of Contents

What are the PLTS Symbology and QA Toolbar and the PLTS Dangle and Pseudo Renderer Toolbars?

The **PLTS Symbology and QA** toolbar enables visual display and assessment of feature classes. The primary function for this toolbar though is to render the DFIRM feature classes with predefined symbols. The **Render using VVT Symbology** button is the only DFIRM-configured function on this toolbar. This toolbar is available within ArcMap, and it will be automatically loaded at each executable step when appropriate. Otherwise, it can be manually added in ArcMap by clicking *View menu > Toolbars >* **PLTS Symbology and QA**.

The **PLTS Dangle and Pseudo Renderer** toolbar contains a single tool of the same name which displays different types of nodes for visual assessment of feature classes. The *PLTS Dangle and Pseudo Renderer* tool is standard PLTS functionality. In ArcMap 8.3, the *PLTS Dangle and Pseudo Renderer* tool was available on the **PLTS Symbology and QA** toolbar. In ArcMap 9.2, the tool is available on the **PLTS Dangle and Pseudo Renderer** toolbar. You must manually load it when appropriate by clicking *View menu > Toolbars >* **PLTS Dangle and Pseudo Renderer**.

Quick Reference Guide

The following is a quick reference guide to all of the components of **PLTS Symbology and QA** toolbar and the **PLTS Dangle and Pseudo Renderer** toolbar.

PLTS Symbology and QA Toolbar

	Render using VVT Symbology	Symbolizes the spatial feature according to its attribute values.
	Default Renderer	Symbolizes the spatial feature according to its default values.
	Set Polygon Transparency Percentage	Makes polygons transparent according to the specified percentage.

PLTS Dangle and Pseudo Renderer Toolbar

	PLTS Dangle and Pseudo Renderer	Renders line layers to display dangle, pseudo, and regular nodes.

Tool Controls

This section describes the functionality of each of the tools available on the **PLTS Symbology and QA** and the **PLTS Dangle and Pseudo Renderer** toolbars and provides instructions for their use.

Render using VVT Symbology

The **Render using VVT Symbology** tool renders the spatial layers in the ArcMap Table of Contents according to the spatial feature's attribute field values. Each valid combination of attribute field values is associated with a symbol in a style sheet; these specifications are stored in a Valid Value Table (VVT).

Note: The participating attribute fields and related symbols were configured for DFIRM production by FEMA; individual users may not change the combination of attribute fields or the specified symbol in the VVTs. If you feel that the symbol or participating fields are incorrect, please contact MIPHelp at MIPHelp@mapmodteam.com.

To accommodate the different types of DFIRMs and steps in the DFIRM production process, there are several styles that you may select from:

- VECTORFIRM – symbol set for vector-based DFIRMs
- RASTERFIRM – symbol set for raster-based DFIRMs
- WORKMAP – symbol set for work maps
- DFIRMINDEX – symbol set for the DFIRM INDEX

The features are rendered according to the specifications defined in FEMA's *Guidelines and Specifications for Flood Hazard Mapping Partners, Appendix K: Format and Specifications for Flood Insurance Rate Maps* (hereby referred to as *Appendix K*). To determine which attribute fields participate in a particular layer's VVT, please refer to Appendix A of this document.

Note: The **Render using VVT Symbology** tool requires that the *FC_SUBTYPE* field be used in the VVT. In the DFIRM Tools environment, this field value should always be "0". If this field is the only one listed as participating in the VVT, it means that all of the features in the layer will be rendered with the same symbol.

The general usage of the tool is as follows:

1. Click the **Render using VVT Symbology** tool.

2. Select a style from the **Select Symbology** dialog.
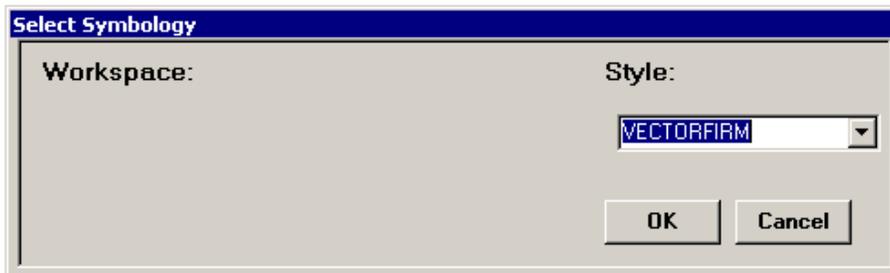
An example of the **Select Symbology** dialog when the **Render using VVT Symbology** tool is clicked.

An example of a selected style in the **Select Symbology** dialog.

3. Click *OK*.

4. Layer by layer, the features are rendered.
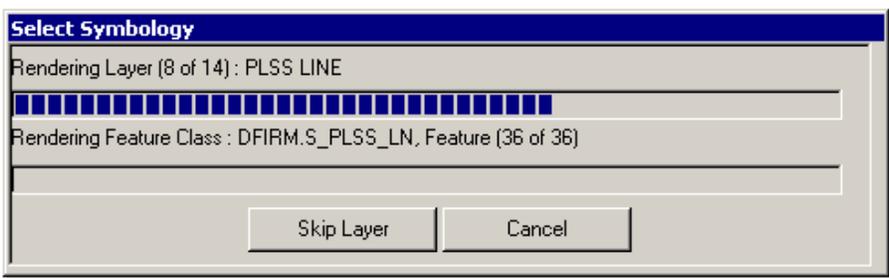
An example of a layer being rendered.

Note: Click the *Skip Layer* button to stop the rendering of the current layer. When the layer is skipped, the tool will automatically begin to symbolize the next layer in the Table of Contents.

5. All features in all spatial layers in the Table of Contents are rendered.
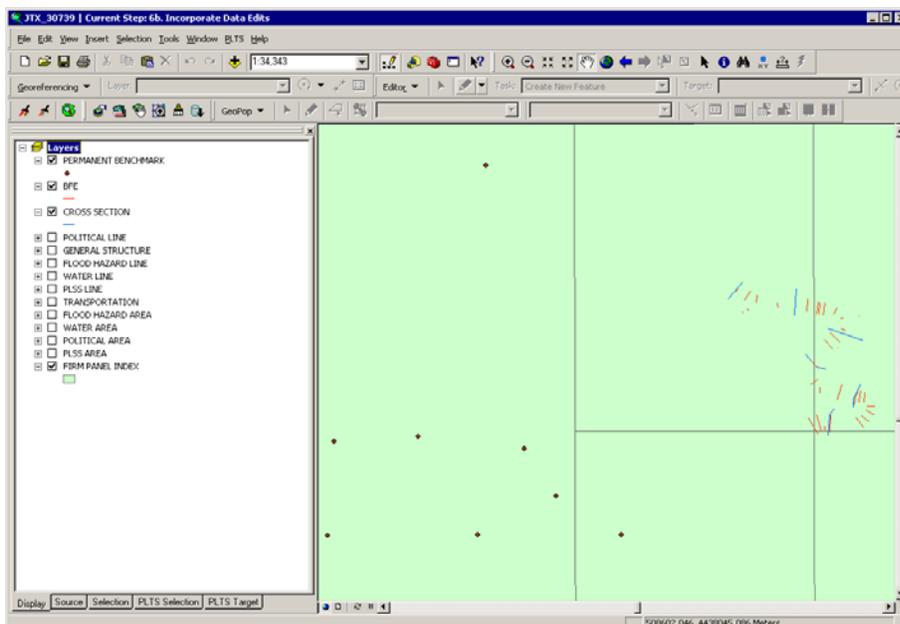
An example of layers before they are rendered.

FEMA DFIRM Production Tools – PLTS Symbology and QA & PLTS Dangle and Pseudo Renderer Toolbars
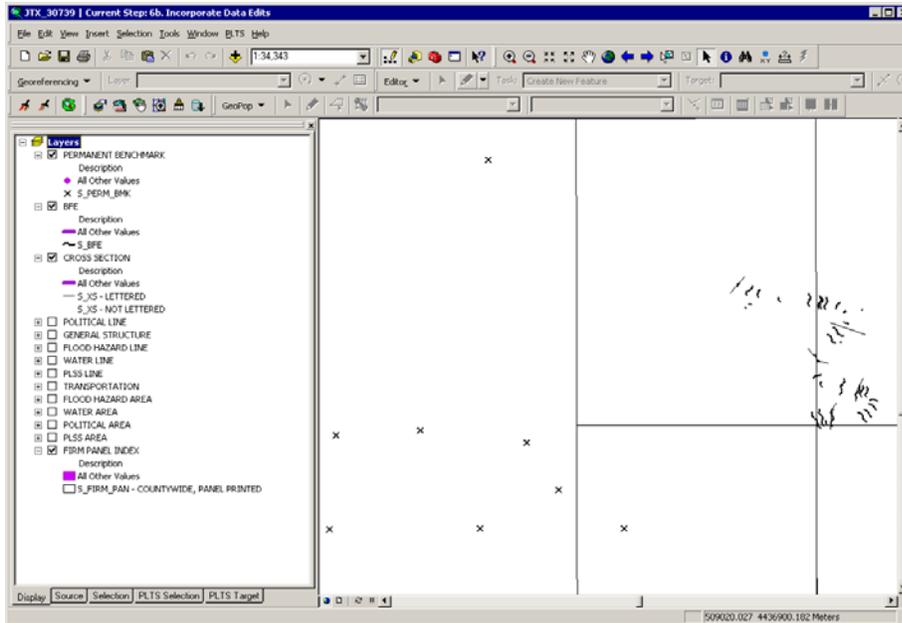
An example of layers after they are rendered.

The **Render using VVT Symbology** tool will automatically attempt to render each layer in the Table of Contents. If you prefer to render a single layer, you may do so via the layer's **Layer Properties** dialog. Perform the following steps:

1. Highlight the desired layer in the Table of Contents.

2. Right-click and select *Properties*.

3. Within the **Layer Properties** dialog, click the *Symbology* tab.

4. Select *PLTS Renderer* on the left side of the dialog.

FEMA DFIRM Production Tools – PLTS Symbology and QA & PLTS Dangle and Pseudo Renderer Toolbars
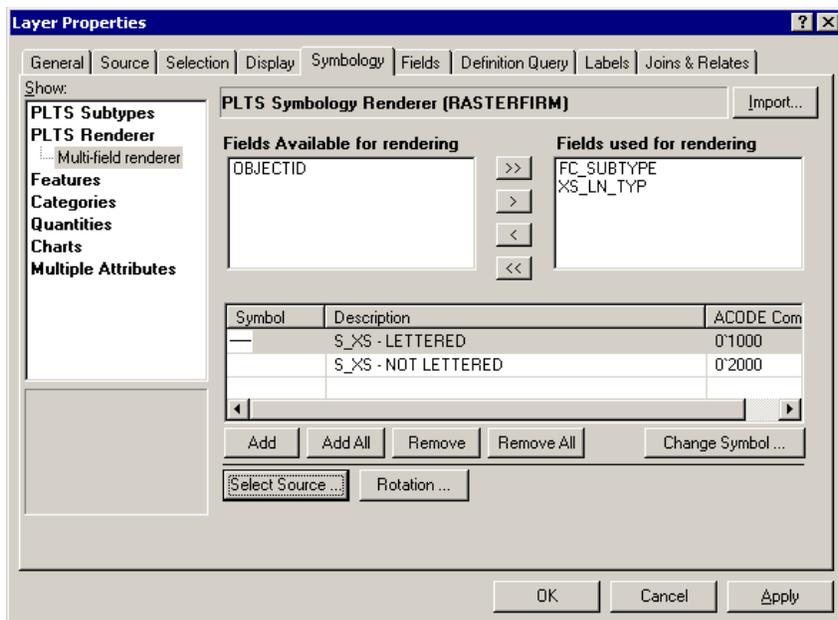
An example of *Symbology* tab in the **Layer Properties** dialog for the Cross Section
(S_XS) layer before the symbol source is selected.

Note: In the right side of the dialog under the "Fields used for rendering" section, the attribute
fields that participate in the VVT are listed.

5. Click the *Select Source* button to open the **Select Style** dialog.

An example of the **Select Style** dialog.

6. Select the appropriate style and click *OK*.

An example of the WORKMAP style selected in the
Select Style dialog.

Note: If you encounter an error message titled "Unexpected Program Error" after clicking *OK*, close
the error and continue. The error is a known ESRI bug; it does not appear to affect the render.

FEMA DFIRM Production Tools – PLTS Symbology and QA & PLTS Dangle and Pseudo Renderer Toolbars

7. Once the *Symbology* tab refreshes, the Symbol and Description section reflect the selected style.

An example of *Symbology* tab in the **Layer Properties** dialog for the Cross Section (S_XS) layer after the symbol source is selected.
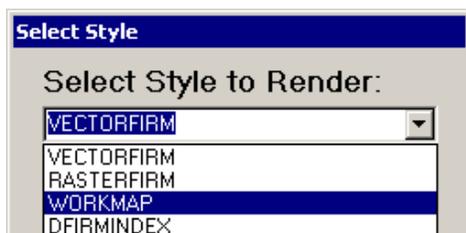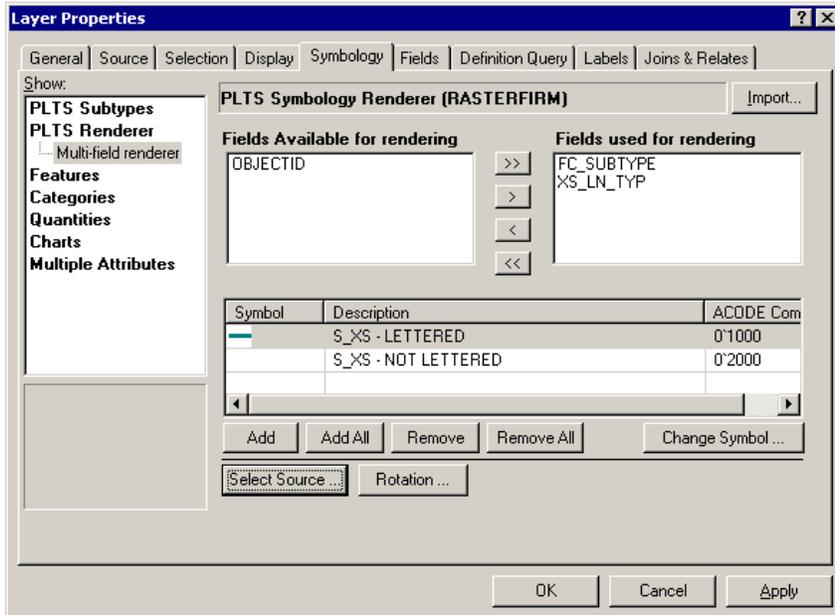
8. Click *OK* to apply the changes to the data and to close the **Layer Properties** dialog.

9. Verify that the data appears as you expect it.

Note: Rendering the individual layer does not seem to consistently render the layer correctly; make sure the data appears as you expect. Symbolizing the layers via the **Render using VVT Symbology** tool does not seem to have this inconsistency.

Features that are displayed as bright pink indicate that the necessary attribute fields do not have a valid combination of values required for symbology. Essentially, the feature has been attributed incorrectly (e.g., NULL versus NSPNULL). Resolve the attribute error(s), and rerun the **Render using VVT Symbology** tool to verify that all bright pink symbology has disappeared.

You should always try to render your features when zoomed into the spatial extents of the panel you are working with. The **Render using VVT Symbology** tool only renders those attribute combinations that fall within the visible extents. When you render at a larger scale, you are eliminating all of the combinations that do not fall on the panel of interest. Since you are not concerned with combinations on other panels, this only works to your advantage as it requires less processing and draw time. When you move to the next panel, if a new combination resides on the panel, the features will be displayed as bright purple. At that point, you'll need to re-render the layer either via the **Render using VVT Symbology** tool or the **Layer Properties** dialog. The layers that could take the most advantage of this type of rendering are the Water Area (S_Wtr_Ar), Water Line (S_Wtr_Ln), Transportation (S_Trnsport_Ln), Flood Hazard Line (S_Fld_Haz_Ln), and Flood Hazard Area (S_Fld_Haz_Ar) data layers.

You may notice that in the layer's legend in the Table of Contents, there is a stated combination or pink VVT error that does not exist in your study's data. The **Render using VVT Symbology** tool takes into account all data in the data view extents, including neighboring data that is filtered out by the layer's definition query. In this situation you should not attempt to locate or correct

combinations outside of your study area. For more information on the definition query on the layer, please refer to the "Show DFIRM Adjacent Area" section in the *DFIRM Layer Loader User Guide*.

In addition to visually locating errors (i.e., features with the pink symbology) in the data set, you may verify the VVTs by running the *Valid Value Table (VVT) Check* via the **Select Data Check** and **Run Data Check** tools on the **PLTS GIS Data ReViewer** toolbar. Refer to *DFIRM QC Toolbars: PLTS GIS Data ReViewer and DFIRM QC Assistance User Guide* for further details as to how to run these VVT checks.

Default Renderer

The **Default Renderer** tool symbolizes the spatial layers in the Table of Contents according to the default values set on the Symbology tab. This tool removes the style set by the Render using VVT Symbology tool. This tool has no DFIRM customizations.

Set Polygon Transparency Percentage

The **Set Polygon Transparency Percentage** tool enables you to set the same transparency on all polygon features. This tool will not let you differentiate between polygon feature classes, rather assignment of individual transparency values must be done through each layer's properties. This tool has no DFIRM customizations.

Note: If you manually change any feature's symbology through the **Layer Properties** dialog, you will have to rerun the **Render using VVT Symbology** tool to reset the symbology to be *Appendix K-* compliant.
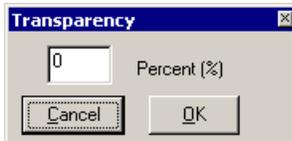
Transparency dialog.

PLTS Dangle and Pseudo Renderer

The **PLTS Dangle and Pseudo Renderer** tool renders line feature classes to show dangle, pseudo, and regular nodes. You will be able to select which layers and which node types you want to render. The tool will create a group layer named 'NODES'. New feature layers that identify the dangles, pseudo nodes, and/or nodes will be placed in that group layer. This tool has no DFIRM customizations.

Feature Class Name:	Dangles	Pseudos	Nodes
All Layers	☐	☐	☐
DFIRM.S_FLD_HAZ_L	☑	☐	☐
DFIRM.S_XS	☐	☑	☐
DFIRM.S_BFE	☐	☑	☐
DFIRM.S_TRNSPORT.	☑	☐	☐
DFIRM.S_POL_LN	☑	☐	☐

PLTS Dangle and Pseudo Node Renderer dialog.

Appendix A – Fields Required for Rendering

The following fields in the specified feature classes must be populated in order to successfully symbolize the individual features via the <u>Render using VVT Symbology</u> tool on the **PLTS Symbology and QA** toolbar. The combination of attribute values in the specified fields will dictate the symbology for each feature. The value for the field *Feature Class Subtype* (FC_SUBTYPE) is computer-generated and must always be populated with 0 for all feature classes; there are no subtypes used within the DFIRM Tools database.

Raster Base Map Tile Index (S_Base_Index)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Base Flood Elevation (S_BFE)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Coastal Barrier Resource System (S_CBRS)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
CBRS Type (CBRS_TYP) – domain value; can be NSPNULL
CBRS True/False (CBRS_TF) – domain value

Coastal Gage (S_Cst_Gage)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Coastal Transect Line (S_Cst_Tsct_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Shown on FIRM (SHOWN_FIRM) – NSP-created field; domain value

FIRM Panel Index (S_FIRM_Pan)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Panel Type (PANEL_TYP) – domain value

Flood Hazard Area (S_Fld_Haz_Ar)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Flood Zone (FLD_ZONE) – domain value
Floodway Type (FLOODWAY) – domain value; can be NSPNULL
AR Revert Zone (AR_REVERT) – domain value; can be NSPNULL

Flood Hazard Line (S_Fld_Haz_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Line Type (LN_TYP) – domain value
Is Gutter (GUTTER) – NSP-created field; domain value

General Structures (S_Gen_Struct)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Structure Type (STRUCT_TYP)

LOMR Areas (S_LOMR)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

LOMR Boundary Lines (S_LOMR_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Shown on LOMR (SHOWN_LOMR) – NSP-created field; domain value

Overbank Flow Lines (S_Ovrbnkln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Permanent Benchmarks (S_Perm_Bmk)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Primary Frontal Dunes (S_PFD_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

PLSS Areas (S_PLSS_Ar)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

PLSS Lines (S_PLSS_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Shown on FIRM (SHOWN_FIRM) – NSP-created field; domain value

Political Areas (S_Pol_Ar)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Political Lines (S_Pol_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Line Type (LN_TYP) – domain value

Precipitation Gages (S_Precip_Gage)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Profile Baselines (S_Profil_Basln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Shown on FIRM (SHOWN_FIRM) – NSP-created field; domain value

USGS Quadrangles (S_Quad_Index)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

River Distance Marks (S_Riv_Mrk)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Shorelines (S_Shore_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Transportation Lines (S_Trnsport_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Transportation Type (TRANS_TYP) – domain value
Shown on FIRM (SHOWN_FIRM) – NSP-created field; domain value
Shown on INDEX (SHOWN_INDX) – NSP-created field; domain value

Water Gages (S_Water_Gage)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Surface Water Areas (S_Wtr_Ar)
Feature Class Subtype (FC_SUBTYPE) – must equal 0

Surface Water Lines (S_Wtr_Ln)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Water Type (WATER_TYP) – domain value
Shown on INDEX (SHOWN_INDX) – NSP-created field; domain value

Cross Sections (S_XS)
Feature Class Subtype (FC_SUBTYPE) – must equal 0
Cross Section Line Type (XS_LN_TYP) – domain value