Create New Model

The V8 Model

A MicroStation V8 model is similar to a V7 version DGN file. A model can contain active elements, reference files, etc. In V8, an unlimited number of models can reside within a single MicroStation DGN file. This is similar to the Microsoft Excel concept of worksheets; separate sheets of information and workbooks, which are a collection of worksheets merged together to form one single Excel file. With MicroStation V8, one file can contain many separate drawings, each possibly saved in a separate model within the DGN file.

The "default" model, renamed "Project Overview"

An original MicroStation V8 file contains a single model called the "default" model. The "default" model has special properties that prevent it from being deleted or exported. Therefore, in most Design seed files, the "default" model will be renamed the "Project Overview" model and no design work will be done within the Project Overview model. As the name "Project Overview" implies, this model will provide an complete overview of the entire file, including a reference of every model within the file.

The Linework model

The first model that is usually created in a design file is the "Line-work" model, and is often considered to be the main model in the design file. The Line-work model contains all roadway centerline line-work elements and all other non-scale related elements, such as edge of slab, etc. The "line-work" model concept provides a horizontal alignment overview of the entire project within one single model. This one alignment "linework" model can then be referenced to each of the other models. This eliminates most of the need to copy any non-scale related elements from model to model.

> **NOTE:** Copying and scaling of survey text elements is an exception to the "non-copy" statement made above, and is explained below with the "Copy, Rotate, and Scale" command.

Alignment models

The individual "alignment and scale specific" models will contain scale related elements such as centerline stationing text, centerline station tic-marks, general text, north arrows, and many other cells. All of these items are placed at a size that is regulated by the scale of the sheet to be produced. There will be a separate model for each required "alignment / scale" combination. (Example: If there is a requirement for both 100 and 50 scale sheets for various sections of main-line, there will be a need for models "ML_0100" and "ML_0050".) Each model will only contain element information specific to that model's purpose (100 scale mainline, 50 scale mainline, 20 scale sideroad, etc.). If there is no need for a specific "roadway/scale combination" model, it should not be created.

Model naming

An example "Alignment" model name might be "SR_0050_OakSt_atMLSta105".

As in the above case, the model name will contain a prefix of 2 to 4 characters, followed by a number, and then additional text characters. The first 2 to 4 characters are part of a standard naming convention that describes the type of model, Main Line (ML), Side Road (SR), etc. Next, the number defines the plot scale of any plan sheets this model may be referenced to, and therefore the specific scale at which the scalable elements are placed within the model, (such as 0050 for 50 scale). The remaining text characters are user defined, and allow the assignment of a unique and meaningful description. If the model name does not contain a number for scale, this implies the model is unaffected by scale, (such as "Project Overview"). If the "scale" number is present in the model name, it will be accessed by element placement programs to determine the scale at which the elements are to be drawn.

Models, Levels, and Plan Sheets

Plan sheets are developed by referencing all necessary models, from various files, to produce the desired product. This method allows a single level name to contain the same type of item in several different models, at different scales, for different roadways, all at the same time, (such as a single level for stationing text). Each model has the capability of utilizing all existing levels, if necessary. When an element is place on level A in model B, it is entirely unique from an element utilizing the same level A in model C, and can be manipulated separately, as necessary to produce the desired results. Therefore, only one level name is required for any specific element type. (Example: The level named "dsnTextFinalPlan" can be used for Final Plan Text in the 100, 50, or 20 scale models for the main-line and side-roads, requiring only one level instead of six separate levels.)

Copy, Rotate, and Scale elements from model to model

When it is necessary to copy elements to produce a different sheet type at a different scale or rotation angle, (such as text elements), then a new model is created to contain the slightly manipulated but duplicate data. This duplicate data is placed using the same level name, but is separate and unique because it exists in a different model. A special "Copy, Rotate, and Scale" command exists to recreate the duplicate data in the new model on the same level, but at the necessary scale and rotation for the situation. For complete information on the Copy, Rotate, and Scale command, see section 21A_22.
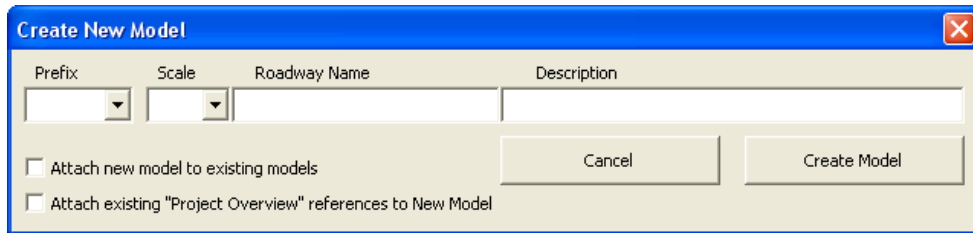
Create New Model tool

The Create New Model tool can be accessed from the Geopak D&C Manager, as shown at the right.
(If the item is not found as shown, use the *D&C > Edit > Find* tool to locate it.)
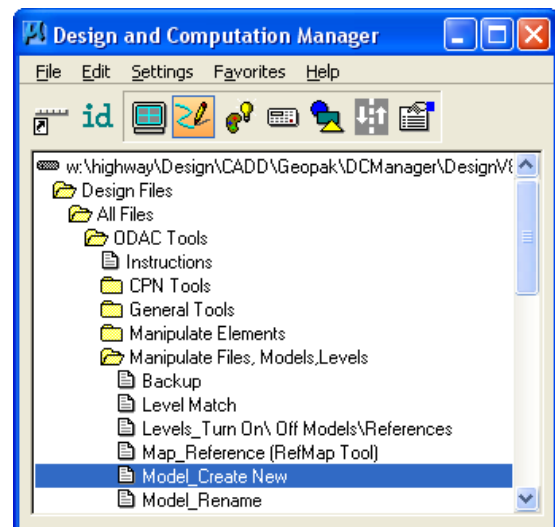
When the program for creating a new model is started, the **Create New Model** dialog is displayed with empty text entry fields, as shown below.


The model name **Prefix** and the model **Scale** are selected from drop-down lists of approved options. The options available for the **Prefix** and **Scale** are dependant on the extension of the file that is currently open. Some model names are allowed to be used only in the "dsn" design file, some in the "pho" file, etc.
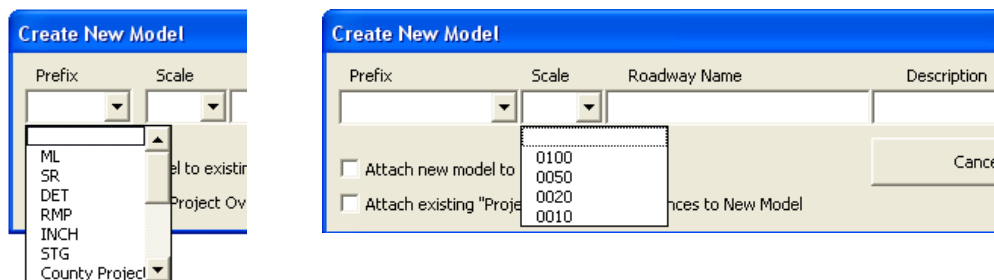

The **Roadway Name** and **Description** are optional but recommended for easy and accurate identification of the separate models. After the **Prefix** is selected, an automatic suggestion for the **Description** is displayed, but can be modified. A model name might resemble the following: "SR_0050_OakSt_atMLSta105".

A check-box, (☑), exists for the option to "**Attach new model to existing models",** (as shown below). If this box is not checked, (☐), the new model will only be referenced to the **Project Overview** model, (which should contain references of all models in the file). If the check-box is checked, (☑), a drop-down selection list, (of all the existing models in the active file), will display, as shown below. Check any models to which the new model is to be attached. (Since all models are to be referenced to the **Project Overview** model, the new model will be attached to the **Project Overview** model automatically, whether the check-box is checked, (☑), or not checked, (☐).
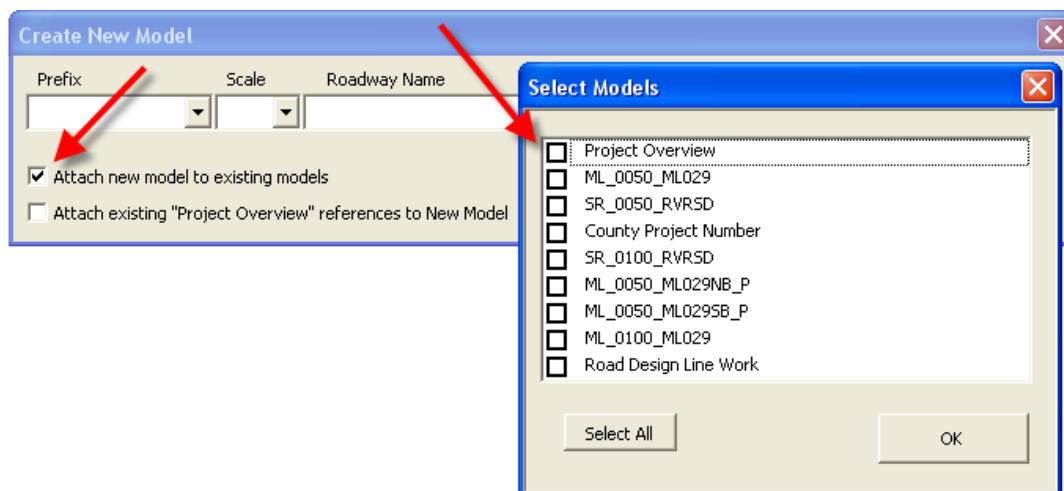
The new model is created, using the **Project Overview** model as the seed for the new model. When the check-box for **Attach existing "Project Overview" references to New Model** is checked, (☑), a list of all existing references to the **Project Overview** model will be displayed, as shown below.
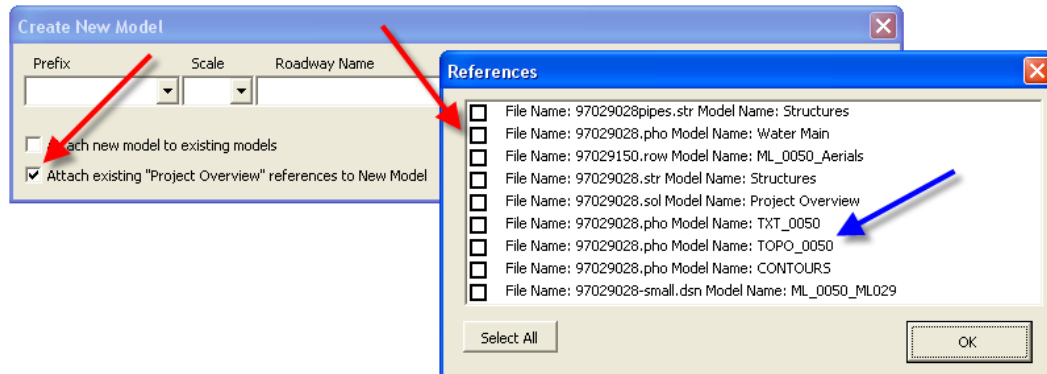
As shown above, by the blue arrow, making file/model selections from this list is an easy way to create attachments to the new model, particularly if the attachments are from various different files, such as the ROW, STR, PHO, or SUR, files. Therefore, these common references, (to other files), should be attached to the **Project Overview** model before any new models are created. This will cause these references to be in the "Project Overview" attachment list, and available as attachments for all new models.

> **NOTE:** The length of time required to create a new model is directly related to the number of reference attachments within that file. As the number of references to all models within the file increases, the time required to create a new model will also increase. When a file is large and many models are cross-referenced to each other, it could possibly take several minutes to create a new model. (Example: It could possibly take 5 minutes to create a new model in a file with 50 existing models containing a combined total of 250 references.)
>
> Therefore, **do not create unnecessary reference attachments.**
>
> Also, **unnecessary reference attachments should be detached** when possible.
>
> The **Select All** button may be clicked, which will make model attachment easy, but this could possibly produce several unnecessary attachments and, as stated above, this would slow down the model creation process. It is easy to detach unwanted reference attachments, but if it isn't done, a fully cross-referenced file with 50 models would have about 2500 reference attachments, (50 x 50), without even including other necessary attachments such as the "pho" and "row" files.

When the Reference selection is complete, click the **OK** button. The new model will be created with all selected cross referenced attachments.

Definitions:

Prefix:

Available "model name prefixes" will vary, based on the extension of the active file from which the program is initiated.

> (Example: If working with a **.dsn** or **.geo** file, the available prefixes for a new model will include **ML, SR, DET**, etc. If in a **.sht** file, no suggested prefixes will be available because the **Create Model** tool is not intended to be used in a "sheet file".)

To adhere to standards, the selection of some prefixes will disable the **Scale** option and possibly also the **Roadway Name** option.

> (Example: Neither the **County & Project Number** model, (**CPN**), nor the **Road Design Linework** model, (**RDL**), allow a **Scale** selection since they are only created at full size, which is 100-scale for English.)

For specific details on creating a new **County Project Number** model, (**CPN**), see the instruction file **CPN Data Instructions_21A-01.**

> **NOTE:** The prefixes available while working with a **.pho** file will include **BL, PTS**, and **Stereo**. These are specialty models and not the model names we normally see in a **.pho** file. Familiar model names like *"TOPO_0100", "TXT_0100"*, and others, come from a pre-built **.pho** seed-file and therefore do not exist in the available prefix list.

Scale:

The program determines if the file is English or Metric and will display the appropriate drop-down choices for **Scale**. In some instances this feature is disabled, as mentioned above.

Roadway Name:

A descriptive name should be entered for the **Roadway Name**, such as *US30, CoRdR77, OakSt, I-35*, etc. In some instances this feature is disabled.

Description:

The program will provide a suggested **Description**, based on the prefix selected. It is encouraged to modify the description to accurately describe the given model. In some instances this feature is disabled.

Cancel:

Ends the program.

Create Model:

The **Create Model** button creates the model, as described above.