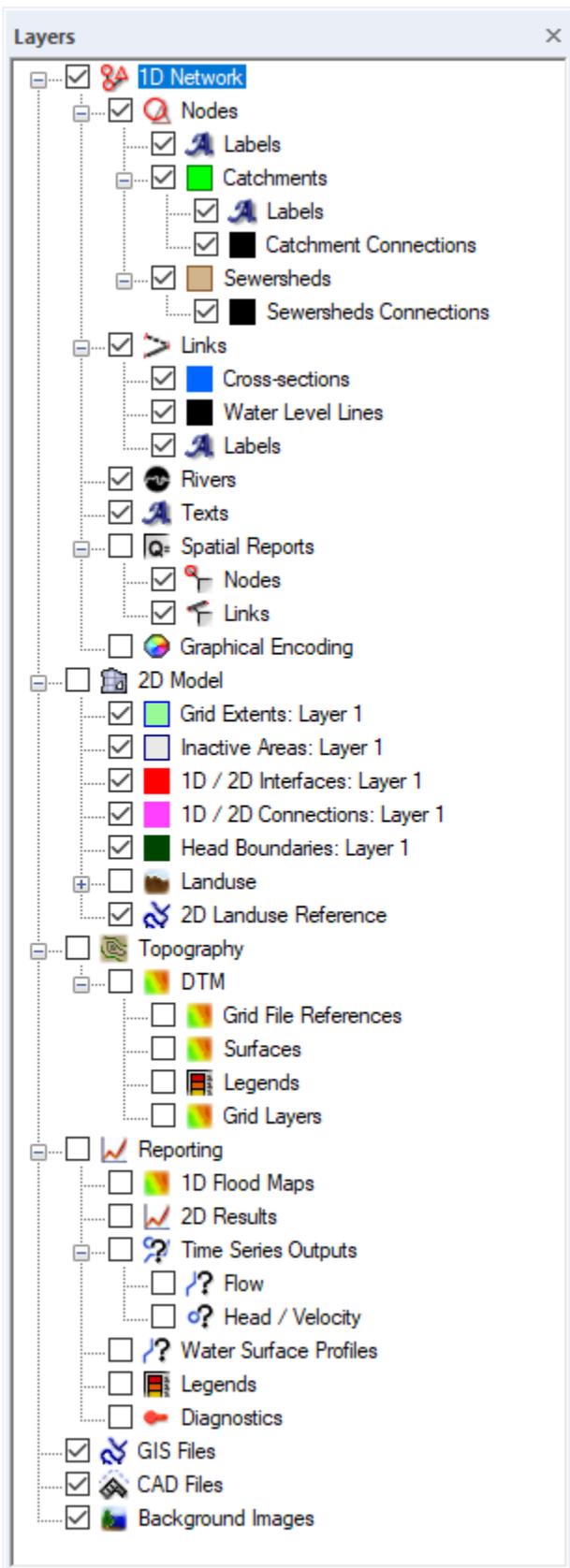


# Layer Control Panel

**In the default setting**, the application opens with the Layer Control Panel docked to the left side of the viewing area. This panel is used to manage settings for layers in both 1D and 2D models. The layers are organized in expandable/collapsible groups in a Windows Explorer style fashion. If your version does not have all of the modules, some of the layers will be disabled.

The status of the Layer Control Panel tree is saved to the \*.xp database. Thus, all layer expansion is remembered the next time the model is opened.



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## Viewing the Layer Control Panel

Clicking on the Layer tool on the [Job, Layer and Mode Control](#) tool strip toggles the (show/hide) attribute of the Layer Control Panel.

When the Layer Control Panel is showing, clicking on the (x) on the right corner of the header will hide the panel.

## Layer Control Panel Layout

The Layer Control Panel has two layout modes: **docked** and **undocked**. The default layout is docked to the left border of the main XPSWMM window.

The panel may be undocked by double clicking on the header or dragging it to a new location. It may be docked to the left or right border of the main window. When it is undocked, the panel may be resized by moving the mouse over an edge or corner. When the pointer changes to a double headed arrow, depress the left button and drag the edge or side. When the panel is docked, its width may be adjusted by selecting the right edge, holding the left button down and dragging to the desired position.

The layers are grouped. Group headers are indicated by a +/- check. The groups may be expanded/collapsed by clicking on the check box or double clicking on the layer name.

## Managing Layers

Each layer name is preceded by two graphics. The check box toggles the display of the layer off/on. The second is either an icon for the layer or a locked symbol. When the icon is a filled square, it indicates the current display properties of the layer.

A layer is locked by highlighting the layer name, right clicking and selecting Lock Layer from the pop-up menu. When a layer is locked, it cannot be edited in the graphical interface. Data associated with objects in the layer may be edited. Other tasks are accessed by right clicking on the name of the layer. The menu varies according to the function of the layer.

The boxes preceding the names of the layers indicate their display color. The absence of a color box indicates that the layer's display properties have not been selected.

## Layer Properties

The display properties of any layer may be adjusted by moving the mouse over the name of the layer, right clicking, and selecting **Properties** . Note that this dialog is different for layers that are polylines, polygons or vectors.

## Descriptions of layers

| 1D Network Layers            |  |
|------------------------------|--|
| <b>Nodes</b>                 | Represent manholes, catch basins, inlets, wet wells, junctions, ponds or outfalls      |
| <b>Node Labels</b>           | Text strings representing the name of nodes  |
| <b>Catchments</b>            | Polygons of areas draining to specific runoff nodes (inlets)                           |
| <b>Catchment connections</b> | Line from centroid of a catchment to a runoff node (inlet)                             |
| <b>Links</b>                 | Represent open channels, closed conduits, pumps weirs, orifices and special structures |
| <b>Cross-sections</b>        | Polylines showing layout for a cross section (requires a DTM)                          |
| <b>Link Labels</b>           | Text strings representing the name of links  |
| <b>Water Level Lines</b>     | Polylines use to display 1D and 2D results map simultaneously                          |
| <b>Texts</b>                 | User defined annotation  |
| <b>Spatial Reports</b>       | Boxes, brackets or drop shadows of object data and results                             |

|                           |   |
|---------------------------|---|
| <b>Graphical encoding</b> | Thematic mapping or changing the display properties of objects according to user defined criteria |
|---------------------------|---|

| <b>2D Domains</b>             |  |
|-------------------------------|--|
| <b>2D Grid</b>                | Polygon boundary of the 2D model, cell location and orientation  |
| <b>Active 2D Areas</b>        | Polygon boundaries of the active cells in the 2D model or 2D floodplain  |
| <b>Inactive 2D Areas</b>      | Polygon boundaries of the cells excluded for 2D analysis or polygons for the 1D floodplain   |
| <b>Initial Water Levels</b>   | Polylines within the 2D Grid which set initial water surface elevation for the given polygon areas   |
| <b>1D/2D Interfaces</b>       | Polylines along active 2D area polygons that share water level with 1D nodes   |
| <b>1D/2D Connection</b>       | Polylines from nodes to the 1D/2D interface vertices   |
| <b>2D/2D Interfaces</b>       | Polylines along the boundary between two grid domains which hydraulically connects these domains   |
| <b>2D Head boundary</b>       | Polylines where constant or time series head boundaries are specified  |
| <b>2D Flow boundary</b>       | Polylines where constant or time series flow boundary conditions are specified   |
| <b>2D Rainfall/Flow Areas</b> | Polygons used to define areas of a rainfall, runoff hydrograph or user defined hydrograph  |
| <b>Landuses</b>               | Polygons of defined landuses   |
| <b>2D Landuse Reference</b>   | Polygons of defined landuses that is externally referenced during analysis. This option is recommended when your model contains more than 50,000 vertices. |

| <b>Topography</b>               |  |
|---------------------------------|--|
| <b>DTM Layers</b>               | Digital terrain models (TIN)   |
| <b>Breaklines</b>               | Polylines indicating topographic boundaries  |
| <b>Gully</b>                    | Polylines indicating locations of gullies  |
| <b>Ridges</b>                   | Polylines indicating location of ridges or topographic divides                     |
| <b>Fill Areas</b>               | Polygons indicating areas above the DTM filled to a constant elevation             |
| <b>Dynamic Elevation Shapes</b> | Polygons or Polylines which can modify cell levels based on time or Trigger Points |
| <b>Trigger Points</b>           | Points which can be linked to Dynamic Elevation Shapes                             |
| <b>Elevation Shapes</b>         | Polygons or Polylines which can modify cell levels                                 |

| <b>Diagnostics</b>         |   |
|----------------------------|---|
| <b>Listed individually</b> | MapInfo Interchange Files showing 2D georeferenced error messages |

| <b>Reporting</b>     |   |
|----------------------|---|
| <b>1D Flood Maps</b> | Interpolates an inundation depth map based on an *.xptin surface and 1D open channel link results. Displays peak inundation depth results as well as the inundation extents at each time step |
| <b>2D Flows</b>      | Arrows (vectors) showing flow direction and magnitude for the 2D grid cells   |
| <b>2D Velocity</b>   | Arrows (vectors) showing velocity direction and magnitude for the 2D grid cells   |

|                           |   |
|---------------------------|---|
| <b>2D Water Depth</b>     | Color coded water depth map of the 2D cells                       |
| <b>2D Water Elevation</b> | Color coded water surface elevation map of the 2D cells           |
| <b>2D Hazard</b>          | Color coded hazard (water depth x velocity) map of the 2D cells   |
| <b>2D Times</b>           | Color coded time indication map of the 2D cells                   |
| <b>Plot Output Lines</b>  | Lines where 2D time series plots are referenced                   |
| <b>Plot Output Point</b>  | Locations where 2D time series plots are referenced               |
| <b>Legends</b>            | Legends for the 2D vectors and maps                               |
| <b>Fly through paths</b>  | User defined polylines used to describe path for 3D viewer        |
| <b>Diagnostics</b>        | MapInfo Interchange Files showing 2D georeferenced error messages |

|                            |                       |
|----------------------------|-----------------------|
| <b>GIS Files</b>           |                       |
| <b>Listed individually</b> | ESRI or MapInfo files |

|                            |                    |
|----------------------------|--------------------|
| <b>CAD Files</b>           |                    |
| <b>Listed individually</b> | .dxf or .dwg files |

|                            |  |
|----------------------------|--|
| <b>Background Images</b>   |  |
| <b>Listed individually</b> | GIS, CAD, orthophotos, and other georeferenced image files |

## Velocity

When the visible radio button is checked, flows (m/s or ft/s) are displayed as vectors. Right click on the layer name to access the properties dialog. Options are:

- [Fill Colors](#)
- [Arrow](#)
- [Labels](#)

## Flows

When the visible radio button is checked, flows (m<sup>3</sup>/s or ft<sup>3</sup>/s) are displayed as vectors. Right click on the layer name to access the properties dialog. Options are:

- [Fill Colors](#)
- [Arrow](#)
- [Labels](#)

## Water Depth

When the visible radio button is checked, water depth (m or ft) is displayed as a vector. Right click on the layer name to access the properties dialog. Options are:

- [Fill Colours](#)
- [Contours](#)
- [Labels](#)

## Hazard

When the 2D maps visible and the Hazard radio button is enabled, hazard level (**Hazard** = velocity x depth in units of m<sup>2</sup>/s or ft<sup>2</sup>/s) will be displayed. Right click on the layer name to access the properties dialog.

Hazard maps are useful for identifying potential locations of severe erosion, inertial forces and locations where humans and other mammals would be swept away by the force of overland flow.

Options are:

- **Fill Colours**
- **Contours**
- **Labels**