

Using XP-12d as a pre- and post-processor for XP-SWMM will substantially reduce your modeling setup time for both open channel and urban pipe drainage systems and facilitate communication of complex engineering plans. Simply determine whether your model require the Open Channel Interface (for open conduits), or the Urban Pipe Drainage (for closed conduit) interface, then follow these few easy steps.

### For use on the Open Channel Interface:

#### 1. Create your ground surface.

Start with detailed survey data, raster images, LIDAR, cross section data, USGS DEM Data, or a combination of these to create a ground surface for your river.

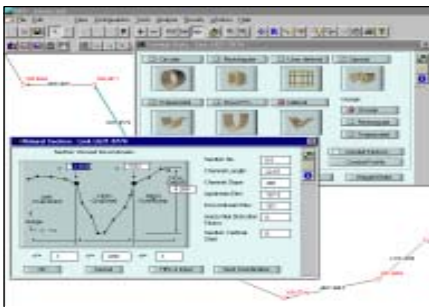
- Include buildings, roads and channel improvements/design.
- Natural and engineered water ways (design sections and volume calculations)
- Cross section filter can automatically remove unnecessary data points
- Automatically locate levee points
- straight line and bent cross sections



#### 2. You define the channel

Specify your river center line, overbanks and cross sections using existing or user defined 2D strings. Dendritic river systems are easily modeled.

#### 3. XP-12d creates your XP-SWMM/Storm or HEC RAS projects ready to run!



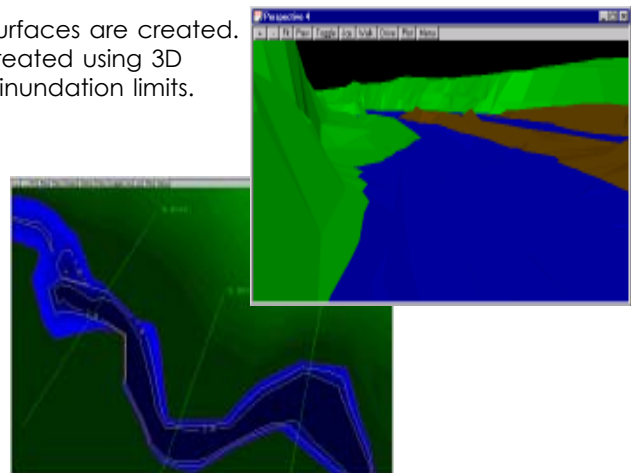
XP-12d will export data into XP-SWMM/Storm, or an alternative hydraulic and hydrological modeling application.

XP-12d translates information stored in the strings and cross sections as nodes and links and automatically opens XP-SWMM/Storm. XP-SWMM/Storm models the full hydrologic cycle within any delineated watershed; from stormwater and wastewater flow and pollutant generation to simulation of the hydraulic in any combined system of open and /or closed conduits. Upon completion of hydraulic and hydrological modeling, data is exported back into XP-12d for presentation of the results.

#### 4. Present your results

Water level results are read by XP-12d and detailed water surfaces are created. Presentations to your clients and to the public are quickly created using 3D images and movie files. "Fly down" the river in 3D to view inundation limits.

- Water level results can be used to create plan drawings that are colored by depth.
- Depth contours and colors are shown at user defined intervals.
- Flood limits are shown in plan/section or perspective views
- Engineering type drawings (river profiles and cross sections).
- Volume calculations for storage areas, excavations and embankments.
- Read and write AutoCAD dxf/dwg, Microstation dgn among MANY of our interfaces.



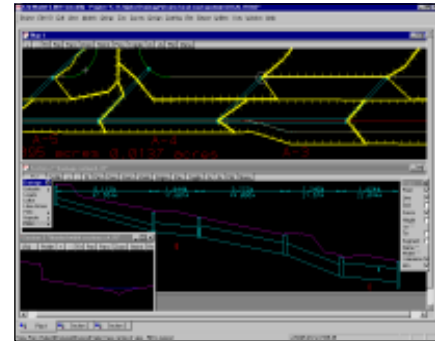
## For use on Urban Pipe Drainage Interface:

### 1. XP-12d creates your XP-SWMM model.

- Layout your drainage network in 3D or create from spreadsheet formats!
- Avoid service clashes
- Automatically set minimum pipe cover and grading

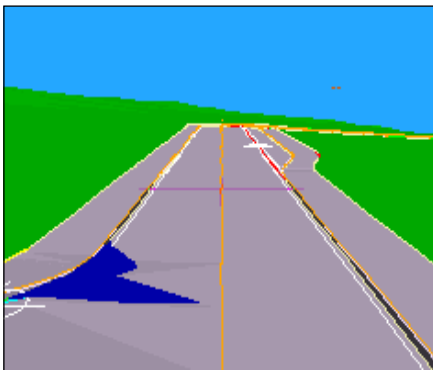
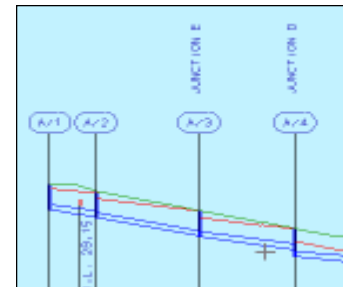
### 2. Results back into XP-12d!

- Hydraulic data goes directly onto your drainage profile (long section) plots.
- Drainage data imports/exports to spreadsheets



### 3. Produce the drawings

- Drainage profile (long section) drawings complete with hydraulic grade line, pipe flows, velocity and construction data. You select the data to include!
- Plan drawings with pipes to scale or stylized using line types for pipe sizes.
- Automatically generate "intelligent" title blocks to plot directly to your plotter. Complete with your logos and auto incremented drawing numbers.
- Construction setout tables can automatically be printed, data exported to spreadsheets or you can use the powerful macro language to create your own reports!



#### Volumes and quantities!

- Custom templates for trench shapes that vary with depth and pipe size.
- Pipe schedules categorized by pipe types, sizes and/or depths.

#### Roadway depths and flooded widths

XP-12d calculates the width of flow and HEC RAS projects are created with discharges from your XP-SWMM/Storm results.



## Optional Modules

The power and capabilities of XP-12d can be further enhanced with these optional modules:

#### XP-12d design options:

- Volumes module
- Road design module
- Visualization module

#### Options to RIVERS analysis packages:

- XP-SWMM Rivers Input/Output
- HEC-RAS Input/Output

#### Options to Urban Drainage analysis packages:

- XP-SWMM/Storm Drainage Input/Output and drainage string

#### CAD and Database I/O options:

- DXF/DWG Input/Output
- DGN Input/Output
- ARC View Input/Output
- MAPInfo Input/Output

## System Requirements

For IBM-PC and 100% compatibles. Requires Microsoft Windows 95/98/Me/NT/2000/XP with 200 Mb of available disk space and 128Mb of RAM.