



INPcom

USER'S MANUAL

Version 2.0

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1. INTRODUCTION

1.1 License

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1.2 About INPcom project

INPcom project is a Tecnicosassociats enterprise project with the goal of moving from acquired knowledge to shared knowledge in the areas of water supply, sewerage and urban drainage management.

Our vision was to develop an open source communication tool, to enable the communication of EPANET and EPA SWMM software with all kinds of interesting software such as geospatial database, GIS and many more.

INPcom tool enables EPANET and EPASWMM to communicate with any geospatial database. It lays the foundation for achieving operability with any Geographic Information System (GIS), Web Map Services (WMS), System Control and Data Acquisition (SCADA) or Customer Relationship Management Systems (CRMS).

The tool, which began as an extension of gvSIG, exporting data to EPANET and EPASWMM, has evolved to the database ecosystem giving it much more versatility, efficiency and power.

The versions of the code are released under GNU GENERAL PUBLIC LICENSE.

For further information you can visit: <<http://www.tecnicsassociats.com/web/en/inpcom>> .

1.3 Communication capabilities

INPcom v.2.0 allows the following communication framework:

EPA SWMM Spanish version (5.0.018)

DBF to INP full capabilities

EPA SWMM latest version (5.0.022)

DBF to INP full capabilities

DB (PostGIS) to INP full capabilities

RPT to DB (PostGIS) full capabilities

EPANET Spanish version (2.0010)

DBF to INP partial (only data from PIPE, JUNCTION & VERTICE)

1.4 Installing INPcom

INPcom version 2 is designed to run under the Windows XP and Windows 7. To install:

1. Select Run from the windows start menu
2. Enter the full path and name of *inpcom2_setup.jar* file
3. Click the **accept** button to accept the terms of use and begin the setup process
4. Click configuration menu, adding the EPA PROGRAMS path on your compute

Warning: Be careful with the folder write permissions,

Hint: You may search an other folder or configure the windows user account control

1.5 Team

Coordinator:

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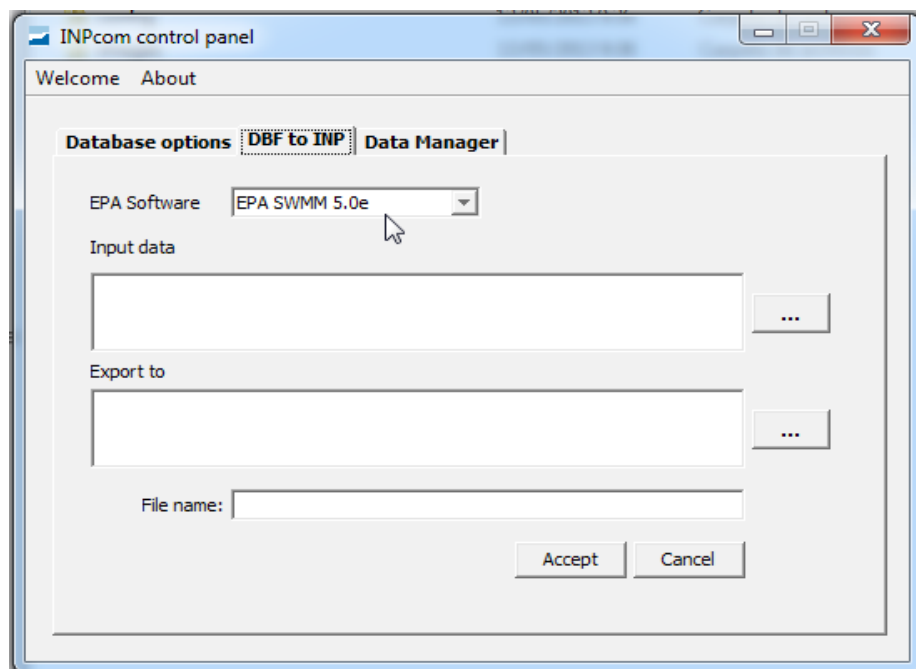
Yousseff Nashashibi Redondo <yusef81@hotmail.com>

2. QUICK START TUTORIAL

2.1 DBF to INP

You must complete the following steps in order to export DBF data to the INP file

1. Choose DBF to INP option in the INPcom control panel
2. Choose the EPA SOFTWARE
3. Click the input data browse button to locate it on your computer
4. Click the export data browser button to locate the new INP file on your computer
5. Write the new INP file name
6. Click the Ok button to begin the export data process



You must prepare the input data according to the EPA SWMM & EPANET DATA MODELS as you can see in APPENDIX A or APPENDIX B of the user's manual

You must build the GIS network with an arc-node topology. This topology has four basic components:

- Endpoints of the arc are called Nodes. (Node1 and Node2)
- Arcs join only at the Nodes.
- Points along an arc that define its shape are called Vertices.
- Every arc has a direction (same as hydraulic direction)

After that, you will generate the DBF's file in order to export your information. There are five different kinds of DBF file as you can see in the appendix data models.

DBF from node shape file

JUNCTION and different types of OUTFALL, DIVIDER and STORAGE

DBF from arc shape file

PUMP, WEIR, ORIFICE and different types of CONDUIT and OUTLET

DBF from additional geometries (subcatchment & vertice)

SUBCATCH, INFILTRATION, VERTICE

DBF with a special record order

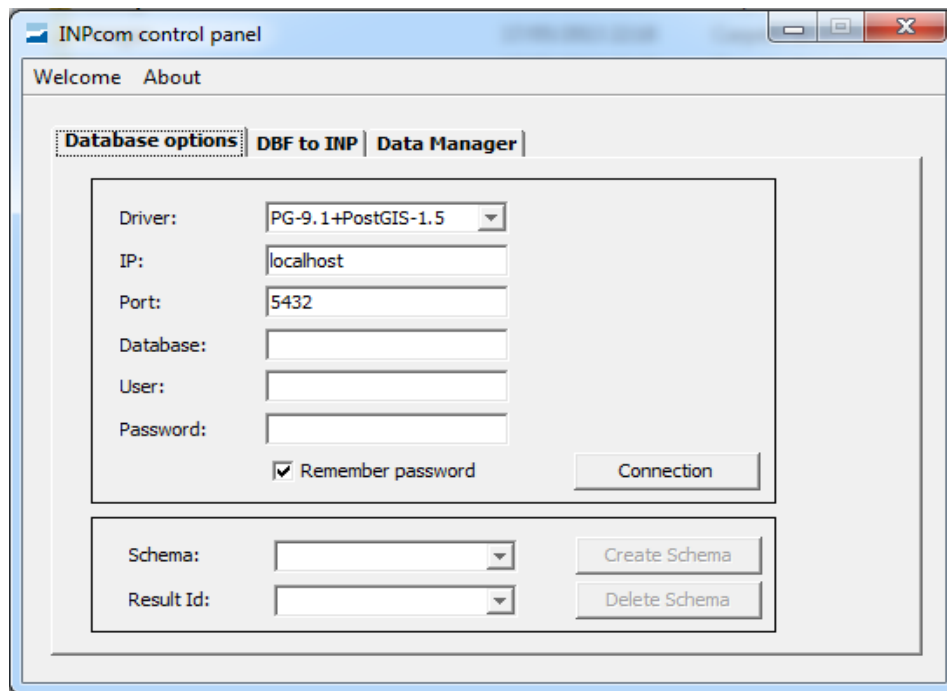
CONTROLS, TRANSECTS, CURVE, TIMESERIES, HYDROGRAPH, LID_CONTROL, VERTICE.

Other DBF, such as OPTIONS and RGAGE, must be created before running the INPcom process.

2.2 Database (PostGIS) manager

First of all, you must connect to database

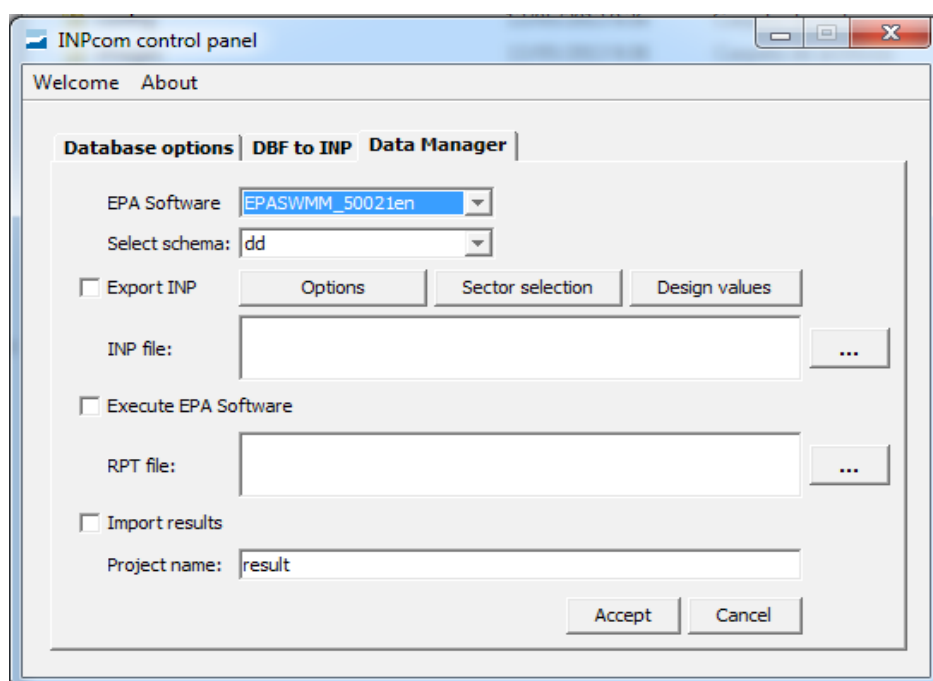
Please, choose the driver and fill in the fields:



The screenshot shows the 'INPcom control panel' window with the 'Database options' tab selected. The window has a title bar with standard Windows controls and two menu items: 'Welcome' and 'About'. The 'Database options' tab is active, showing fields for 'Driver' (set to 'PG-9.1+PostGIS-1.5'), 'IP' (set to 'localhost'), 'Port' (set to '5432'), 'Database', 'User', and 'Password'. There is a 'Remember password' checkbox which is checked, and a 'Connection' button. Below these fields are 'Schema' and 'Result Id' dropdown menus, with 'Create Schema' and 'Delete Schema' buttons next to them.

Then, press the Connection button

If the connection has been successful, you can then choose the data manager form and select what you would like to do



The screenshot shows the 'INPcom control panel' window with the 'Data Manager' tab selected. The window has the same title bar and menu items as the previous screenshot. The 'Data Manager' tab is active, showing fields for 'EPA Software' (set to 'EPASWMM_50021en') and 'Select schema' (set to 'dd'). There are three buttons: 'Options', 'Sector selection', and 'Design values'. Below these are checkboxes for 'Export INP', 'Execute EPA Software', and 'Import results'. The 'Export INP' checkbox is checked, and there is an 'INP file' field with a browse button ('...'). The 'Execute EPA Software' checkbox is checked, and there is an 'RPT file' field with a browse button ('...'). The 'Import results' checkbox is checked, and there is a 'Project name' field set to 'result'. At the bottom are 'Accept' and 'Cancel' buttons.

APPENDIX A - EPASWMM DATA MODELS

DBF TO EPASWMM 5.0018

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
PROJECT_ID			
ID	INTEGER	2	ID number (1, 2, 3 ...)
TITULO	STRING	254	Project title
AUTOR	STRING	50	Name of project's author
FECHA	STRING	12	Date
OPTIONS			
ID	INTEGER	2	ID number (1, 2, 3 ...)
PARAMETRO	STRING	20	Options parameters of SWMM project
VALOR	STRING	20	Options value parameters of SWMM project
BACKDROP			
ID	INTEGER	2	ID number (1, 2, 3 ...)
COLUMN_1	STRING	10	Values in column 1. See the SWMM's Manual
COLUMN_2	STRING	254	Values in column 2. See the SWMM's Manual
COLUMN_3	STRING	12	Values in column 3. See the SWMM's Manual
COLUMN_4	STRING	12	Values in column 4. See the SWMM's Manual
COLUMN_5	STRING	12	Values in column 5. See the SWMM's Manual
LABELS			
ID	INTEGER	2	ID number (1, 2, 3 ...)
ID_LABEL	STRING	16	Text of label surrounded by double quotes
XCOORD	DOUBLE		Horizontal coordinate relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate relative to origin in lower left of map
ANCLAJE	STRING	16	Name of node or subcatchment that anchors the label on zoom-ins (use an empty pair of double quotes if there is no anchor)
FUENTE	STRING	50	Name of label's font (surround by double quotes if the font name includes spaces)
TAM_FUENTE	DOUBLE		Font size in points
NEGRITA	STRING	3	YES for bold font, NO otherwise
CURSIVA	STRING	3	YES for italic font, NO otherwise
REPORT			
ID	STRING	2	ID number (1, 2, 3 ...)
PARAMETRO	STRING	20	Report parameters of SWMM project
VALOR	STRING	20	Report value parameters of SWMM project
FILES			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ACCION	STRING	10	USE / SAVE
PARAMETRO	STRING	10	RAINFALL, RUNOFF, HOTSTART, RDII or ROUTING
FICHERO	STRING	254	Name of file
EVAP_CO			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TIPO_EVAP	STRING	12	Evaporation type (see the SWMM's Manual)
VALOR	DOUBLE		Evaporation value parameters of SWMM project
EVAP_MO			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TIPO_EVAP	STRING	12	Evaporation type (see the SWMM's Manual)
VALOR_1	DOUBLE		Evaporation value parameters of SWMM project
VALOR_2	DOUBLE		Evaporation value parameters of SWMM project
VALOR_3	DOUBLE		Evaporation value parameters of SWMM project
VALOR_4	DOUBLE		Evaporation value parameters of SWMM project
VALOR_5	DOUBLE		Evaporation value parameters of SWMM project
VALOR_6	DOUBLE		Evaporation value parameters of SWMM project
VALOR_7	DOUBLE		Evaporation value parameters of SWMM project
VALOR_8	DOUBLE		Evaporation value parameters of SWMM project
VALOR_9	DOUBLE		Evaporation value parameters of SWMM project
VALOR_10	DOUBLE		Evaporation value parameters of SWMM project
VALOR_11	DOUBLE		Evaporation value parameters of SWMM project
VALOR_12	DOUBLE		Evaporation value parameters of SWMM project

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
EVAP_TS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TIPO_EVAP	STRING	12	Evaporation type (see the SWMM's Manual)
ID_TIMESER	STRING	16	Specifies that evaporation data will come from a time series located in the [TIMESERIES] section of the input file.
EVAP_FL			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TIPO_EVAP	STRING	12	Evaporation type (see the SWMM's Manual)
FICHERO	STRING	254	Name of file
ID_EST	STRING	16	Precipitation station number
FECHA_INI	STRING	12	Date to begin reading from the file in Month-Day-Year format
FECHA_FIN	STRING	12	Date to end reading from the file in Month-Day-Year format
EVAP_PA			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TIPO_EVAP	STRING	12	Evaporation type (see the SWMM's Manual)
VALOR_1	DOUBLE		Evaporation value parameters of SWMM project
VALOR_2	DOUBLE		Evaporation value parameters of SWMM project
VALOR_3	DOUBLE		Evaporation value parameters of SWMM project
VALOR_4	DOUBLE		Evaporation value parameters of SWMM project
VALOR_5	DOUBLE		Evaporation value parameters of SWMM project
VALOR_6	DOUBLE		Evaporation value parameters of SWMM project
VALOR_7	DOUBLE		Evaporation value parameters of SWMM project
VALOR_8	DOUBLE		Evaporation value parameters of SWMM project
VALOR_9	DOUBLE		Evaporation value parameters of SWMM project
VALOR_10	DOUBLE		Evaporation value parameters of SWMM project
VALOR_11	DOUBLE		Evaporation value parameters of SWMM project
VALOR_12	DOUBLE		Evaporation value parameters of SWMM project
RGAGE_FL			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_PLUV	STRING	16	Name assigned to rain gage
TIPO_PLUV	STRING	12	FILE or TIMESERIES
FICHERO	STRING	50	Name of external file
ID_EST	STRING	16	Precipitation station number
FORMATO	STRING	10	INTENSITY, VOLUME or CUMULATIVE
INTERVALO	STRING	12	Time interval between gage readings (in decimal hours or hours:minutes format)
F_NIEVE	DOUBLE		SNOW FACTOR
UNIDADES	STRING	10	MM or IN
FECHA_INI	STRING	12	Date to begin reading from the file in Month-Day-Year format
FECHA_FIN	STRING	12	Date to end reading from the file in Month-Day-Year format
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
RGAGE_TS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_PLUV	STRING	16	Name assigned to rain gage
TIPO_PLUV	STRING	12	FILE or TIMESERIES
ID_TIMESER	STRING	16	Name of time series
FORMATO	STRING	10	INTENSITY, VOLUME or CUMULATIVE
INTERVALO	STRING	12	Time interval between gage readings (in decimal hours or hours:minutes format)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TEMP_MO			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TIPO_TEMP	STRING	12	Evaporation type (see the SWMM's Manual)
VALOR_1	DOUBLE		Temperature value parameters of SWMM project
VALOR_2	DOUBLE		Temperature value parameters of SWMM project
VALOR_3	DOUBLE		Temperature value parameters of SWMM project

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
VALOR_4	DOUBLE		Temperature value parameters of SWMM project
VALOR_5	DOUBLE		Temperature value parameters of SWMM project
VALOR_6	DOUBLE		Temperature value parameters of SWMM project
VALOR_7	DOUBLE		Temperature value parameters of SWMM project
VALOR_8	DOUBLE		Temperature value parameters of SWMM project
VALOR_9	DOUBLE		Temperature value parameters of SWMM project
VALOR_10	DOUBLE		Temperature value parameters of SWMM project
VALOR_11	DOUBLE		Temperature value parameters of SWMM project
VALOR_12	DOUBLE		Temperature value parameters of SWMM project
TEMP_TS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TIPO_TEMP	STRING	12	Evaporation type (see the SWMM's Manual)
ID_TIMESER	STRING	16	Specifies that temperature data will come from a time series located in the [TIMESERIES] section of the input file.
TEMP_FL			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TIPO_TEMP	STRING	12	Evaporation type (see the SWMM's Manual)
FICHERO	STRING	254	Name of file
ID_EST	STRING	16	8-digit NWS station number
MAX_MIN	DOUBLE		MAX for daily maximum values or MIN for minimum values
FECHA_INI	STRING	12	Date to begin reading from the file in Month-Day-Year format
FECHA_FIN	STRING	12	Date to end reading from the file in Month-Day-Year format
SUBCATCH			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name of node assigned to subcatchment
ID_SUBC	STRING	16	Name assigned to subcatchment
ID_PLUV	STRING	16	Name of rain gage assigned to subcatchment
AREA_HA	DOUBLE		Area of subcatchment (acres or hectares)
IMPER	DOUBLE		Percent imperviousness of subcatchment
ANCHO	DOUBLE		Characteristic width of subcatchment (ft or meters)
PENDIENTE	DOUBLE		Subcatchment slope (percent)
N_IMP	DOUBLE		Manning's N for overland flow over the impervious sub-area
N_PER	DOUBLE		Manning's N for overland flow over the pervious sub-area
AL_IMP	DOUBLE		Depression storage for impervious sub-area (inches or mm)
AL_PER	DOUBLE		Depression storage for pervious sub-area (inches or mm)
A_IMP_DEP	DOUBLE		Percent of impervious area with no depression storage
FLUJO	STRING	10	Use IMPERV if pervious area runoff runs onto impervious area, PERV if impervious runoff runs onto impervious area, or OUTLET if both areas drain to the subcatchment's outlet.
CLONGITUD	DOUBLE		Total curb length (any length units)
INFILTRATION_HO			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_SUBC	STRING	16	Name assigned to subcatchment
MAX_TASA	DOUBLE		Maximum infiltration rate on Horton curve (in/hr or mm/hr)
MIN_TASA	DOUBLE		Minimum infiltration rate on Horton curve (in/hr or mm/hr)
C_DISMIN	DOUBLE		Decay rate of Horton curve (1/sec)
T_SEC	DOUBLE		Dry weather regeneration factor for Horton curve (fraction)
V_MAX	DOUBLE		Maximum infiltration volume possible (0 if not applicable) (in or mm)
INFILTRATION_GR			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_SUBC	STRING	16	Name assigned to subcatchment
ALT_SUCC	DOUBLE		Soil capillary suction (in or mm)
CONDUCT	DOUBLE		Soil saturated hydraulic conductivity (in/hr or mm/hr)
DEF_INI	DOUBLE		Initial soil moisture deficit (fraction)
INFILTRATION_NC			

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_SUBC	STRING	16	Name assigned to subcatchment
NC	DOUBLE		Runoff Curve Number
CONDUCT	DOUBLE		Soil saturated hydraulic conductivity (in/hr or mm/hr)
T_SEC	DOUBLE		Dry weather regeneration constant (1/hr)

AQUIFERS

ES_ID	TIPO	LONGITUD	EN DESCRIPCIÓN
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_AQUIF	STRING	16	Aquifer name
POR	DOUBLE		Soil porosity (fraction)
WP	DOUBLE		Soil wilting point (fraction)
FC	DOUBLE		Soil field capacity (fraction)
K	DOUBLE		Saturated hydraulic conductivity (in/hr or mm/hr)
KPEND	DOUBLE		Slope of hydraulic conductivity versus moisture content curve
HPEND	DOUBLE		Slope of soil tension versus moisture content curve
UEF	DOUBLE		Fraction of total evaporation available for evapotranspiration in the upper unsaturated zone
LED	DOUBLE		Maximum depth into the lower saturated zone over which evapotranspiration can occur (ft or m)
GWM	DOUBLE		Rate of percolation from saturated zone to deep groundwater when water table is at ground surface (in/hr or mm/hr)
BE	DOUBLE		Elevation of the bottom of the aquifer (ft or m)
WTE	DOUBLE		Water table elevation at start of simulation (ft or m)
UMC	DOUBLE		Unsaturated zone moisture content at start of simulation (fraction)

GROUNDWATER

ES_ID	TIPO	LONGITUD	EN DESCRIPCIÓN
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_SUBC	STRING	16	Subcatchment name
ID_AQUIF	STRING	16	Name of groundwater aquifer underneath the subcatchment
ID_NODO	STRING	16	Name of node in conveyance system exchanging groundwater with aquifer
ELEV_SUP	DOUBLE		Surface elevation of subcatchment (ft or m)
A1	DOUBLE		Groundwater flow coefficient (see the SWMM's Manual)
B1	DOUBLE		Groundwater flow exponent (see the SWMM's Manual)
A2	DOUBLE		Surface water flow coefficient (see the SWMM's Manual)
B2	DOUBLE		Surface water flow exponent (see the SWMM's Manual)
A3	DOUBLE		Surface water – groundwater interaction coefficient (see the SWMM's Manual)
TW	DOUBLE		Fixed depth of surface water at receiving node (ft or m) (set to zero if surface water depth will vary as computed by flow routing)

SNOWMELT

JUNCTION

ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to junction node
COTA_INF	DOUBLE		Elevation of junction invert (ft or m)
PROF	DOUBLE		Depth from ground to invert elevation (ft or m)
PROF_INI	DOUBLE		Water depth at start of simulation (ft or m)
PRES_REG	DOUBLE		Maximum additional head above ground elevation that manhole junction can sustain under surcharge conditions (ft or m)
AREA_INUND	DOUBLE		Area subjected to surface ponding once water depth exceeds SurDepth (ft2 or m2)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map

OUTFALL_FR

ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to outfall node
COTA_INF	DOUBLE		Invert elevation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_OTF	STRING	12	FREE
COMPUERTA	STRING	3	YES or NO depending on whether a flap gate is present or not.

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
OUTFALL_NM			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to outfall node
COTA_INF	DOUBLE		Invert elevation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_OTF	STRING	12	NORMAL
COMPUERTA	STRING	3	YES or NO depending on whether a flap gate is present or not.
OUTFALL_FI			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to outfall node
COTA_INF	DOUBLE		Invert elevation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_OTF	STRING	12	FIXED
COTA_FIJA	DOUBLE		Elevation of fixed stage outfall (ft or m)
COMPUERTA	STRING	3	YES or NO depending on whether a flap gate is present or not.
OUTFALL_TI			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to outfall node
COTA_INF	DOUBLE		Invert elevation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_OTF	STRING	12	TIDAL
ID_CURBA	STRING	16	Name of curve in [CURVES] section containing tidal height (i.e., outfall stage) v. hour of day over a complete tidal cycle
COMPUERTA	STRING	3	YES or NO depending on whether a flap gate is present or not.
OUTFALL_TS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to outfall node
COTA_INF	DOUBLE		Invert elevation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_OTF	STRING	12	TIMESERIES
ID_TIMESER	STRING	16	Name of time series in [TIMESERIES] section that describes how outfall stage varies with time
COMPUERTA	STRING	3	YES or NO depending on whether a flap gate is present or not.
DIVIDER_CU			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to divider node
COTA_INF	DOUBLE		Invert elevation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_DIV	STRING	12	CUTOFF
ID_ARCO	STRING	16	Name of arc to which flow is diverted
CAUDAL_NOM	DOUBLE		Flow for CUTOFF divider at which diversion begins (flow units)
DIVIDER_TB			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to divider node
COTA_INF	DOUBLE		Invert elevation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_DIV	STRING	12	TABULAR
ID_ARCO	STRING	16	Name of arc to which flow is diverted
ID_CURBA	STRING	16	Name of curve in [CURVES] that relates diverted flow to total flow
DIVIDER_WR			
ID	INTEGER	8	ID number (1, 2, 3 ...)

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
ID_NODO	STRING	16	Name assigned to divider node
COTA_INF	DOUBLE		Invert elevation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_DIV	STRING	12	WEIR
ID_ARCO	STRING	16	Name of arc to which flow is diverted
MIN_CAUDAL	DOUBLE		Minimum flow for WEIR divider (flow units)
MAX_CAUDAL	DOUBLE		Maximum flow for WEIR divider (flow units)
MAX_ALT	DOUBLE		Maximum head difference over WEIR divider (ft or m)
CD	DOUBLE		Discharge coefficient for WEIR divider
STORAGE_TB			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to storage node
COTA_INF	DOUBLE		Invert elevation (ft or m)
PROF	DOUBLE		Maximum water depth possible (ft or m)
PROF_INI	DOUBLE		Water depth at start of simulation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_DEP	STRING	12	TABULAR
ID_ARCO	STRING	16	Name of arc to which flow is diverted
ID_CURBA	STRING	16	Name of curve in [CURVES] with surface area (ft2 or m2) as a function of depth (ft or m) for TABULAR geometry
STORAGE_FC			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name assigned to storage node
COTA_INF	DOUBLE		Invert elevation (ft or m)
PROF	DOUBLE		Maximum water depth possible (ft or m)
PROF_INI	DOUBLE		Water depth at start of simulation (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
TIPO_DEP	STRING	12	FUNCTIONAL
ID_ARCO	STRING	16	Name of arc to which flow is diverted
ACOEFF	DOUBLE		Coefficient of power function that relates surface area A (ft2 or m2) to depth D (ft or m) for FUNCTIONAL geometry (i.e., $A = A_{coeff}(D)^{Aexp}$)
AEXP	DOUBLE		Exponent of power function that relates surface area A (ft2 or m2) to depth D (ft or m) for FUNCTIONAL geometry (i.e., $A = A_{coeff}(D)^{Aexp}$)
CONDUIT_NO			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
NODO_INI	STRING	16	Name of upstream node
NODO_FIN	STRING	16	Name of downstream node
LONGITUD	DOUBLE		Conduit length (ft or m)
MAINING	DOUBLE		Value of N (i.e., roughness parameter) in Manning's equation
SALTO_INI	DOUBLE		Offset height of upstream end of conduit invert above the invert elevation of its upstream node (ft or m)
SALTO_FIN	DOUBLE		Offset height of downstream end of conduit invert above the invert elevation of its downstream node (ft or m)
CAUDAL_INI	DOUBLE		Flow in conduit at start of simulation (flow units)
FORMA_TUB	STRING	16	Cross-section shape (see Table 2 below for available shapes of SWMM's Manual)
GEOM1	DOUBLE		Maximum depth (ft or m)
GEOM2	DOUBLE		Width parameter (ft or m)
GEOM3	DOUBLE		Auxiliary parameters (e.g., side slopes) (See Table 2 for details of SWMM's Manual)
GEOM4	DOUBLE		Auxiliary parameters (e.g., side slopes) (See Table 2 for details of SWMM's Manual)
UNIDADES	DOUBLE		Number of barrels (i.e., number of parallel pipes of equal size, slope, and roughness) associated with a conduit (default is 1)
CONDUIT_CU			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
NODO_INI	STRING	16	Name of upstream node
NODO_FIN	STRING	16	Name of downstream node
LONGITUD	DOUBLE		Conduit length (ft or m)
MAINING	DOUBLE		Value of N (i.e., roughness parameter) in Manning's equation

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
SALTO_INI	DOUBLE		Offset height of upstream end of conduit invert above the invert elevation of its upstream node (ft or m)
SALTO_FIN	DOUBLE		Offset height of downstream end of conduit invert above the invert elevation of its downstream node (ft or m)
CAUDAL_INI	DOUBLE		Flow in conduit at start of simulation (flow units)
FORMA_TUB	STRING	16	Cross-section shape (see Table 2 below for available shapes of SWMM's Manual)
GEOM1	DOUBLE		Maximum depth (ft or m)
ID_CURBA	STRING	16	Name of a Shape Curve in the [CURVES] section that defines how width varies with depth
GEOM2	DOUBLE		Width parameter (no geom2 for custom)
GEOM3	DOUBLE		Auxiliary parameters (e.g., side slopes, no geom3 for custom)
UNIDADES	DOUBLE		Number of barrels (i.e., number of parallel pipes of equal size, slope, and roughness) associated with a conduit (default is 1)
CONDUIT_TS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
NODO_INI	STRING	16	Name of upstream node
NODO_FIN	STRING	16	Name of downstream node
LONGITUD	DOUBLE		Conduit length (ft or m)
MAINING	DOUBLE		Value of N (i.e., roughness parameter) in Manning's equation
SALTO_INI	DOUBLE		Offset height of upstream end of conduit invert above the invert elevation of its upstream node (ft or m)
SALTO_FIN	DOUBLE		Offset height of downstream end of conduit invert above the invert elevation of its downstream node (ft or m)
CAUDAL_INI	DOUBLE		Flow in conduit at start of simulation (flow units)
FORMA_TUB	STRING	16	Cross-section shape (see Table 2 below for available shapes of SWMM's Manual)
ID_TSECT	STRING	16	Name of an entry in the [TRANSECTS] section that describes the crossection geometry of an irregular channel
PUMP			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
NODO_INI	STRING	16	Name of upstream node
NODO_FIN	STRING	16	Name of downstream node
TIPO_BOM	STRING	12	TYPE1, TYPE2, TYPE3, or TYPE4
ID_CURBA	STRING	16	Name of pump curve listed in the [TABLES] section of the input
EST_INI	STRING	3	Either ON or OFF
ORIFICE			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
NODO_INI	STRING	16	Name of upstream node
NODO_FIN	STRING	16	Name of downstream node
TIPO_ORI	STRING	12	SIDE or BOTTOM
ALTURA	DOUBLE		Height of a side orifice's bottom from invert of upstream node (ft or m)
FORMA	STRING	16	The only allowable shapes are CIRCULAR and RECT_CLOSED (closed rectangular)
GEOM1	DOUBLE		Maximum depth (ft or m)
GEOM2	DOUBLE		Width parameter (ft or m)
CD	DOUBLE		Discharge coefficient (unitless)
COMPUERTA	STRING	3	YES if flap gate present, NO if not
WEIR			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
NODO_INI	STRING	16	Name of upstream node
NODO_FIN	STRING	16	Name of downstream node
TIPO_ALIV	STRING	12	TRANSVERSE, SIDEFLOW, V-NOTCH, or TRAPEZOIDAL
ALTURA	DOUBLE		Height of weir crest above invert of upstream node (ft or m)
FORMA	STRING	16	See Table of page number 250 of SWMM's Manual
GEOM1	DOUBLE		Maximum depth (ft or m)
GEOM2	DOUBLE		Width parameter (ft or m)
CD	DOUBLE		Weir discharge coefficient (for CFS if using US flow units or CMS if using metric flow units)
EC	DOUBLE		Number of end contractions for TRANSVERSE or TRAPEZOIDAL weir
CD2	DOUBLE		Discharge coefficient for triangular ends of a TRAPEZOIDAL weir (for CFS if using US flow units or CMS if using metric flow units)
OUTLET_TB			

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
OUTLET			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
NODO_INI	STRING	16	Name of upstream node
NODO_FIN	STRING	16	Name of downstream node
TIPO_OTL	STRING	12	TABULAR/HEAD o TABULAR/DEPTH
ALTURA	DOUBLE		Minimum water depth at upstream node for outflow to occur (ft or m)
ID_CURBA	STRING	16	Name of rating curve with outflow rate (flow units) as a function of head (ft or m) across the outlet for a TABULAR outlet
COMPUERTA	STRING	3	YES if flap gate present, NO if not
OUTLET_FC			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
NODO_INI	STRING	16	Name of upstream node
NODO_FIN	STRING	16	Name of downstream node
TIPO_OTL	STRING	12	FUNCTIONAL/HEAD o FUNCTIONA/DEPTH
ALTURA	DOUBLE		Minimum water depth at upstream node for outflow to occur (ft or m)
QCOEFF	DOUBLE		Coefficient of power function that relates outflow (Q) to head across the outlet (H) for a FUNCTIONAL outlet (i.e., $Q = Q_{coeff}(H)Q_{exp}$)
QEXPON	DOUBLE		Exponent of power function that relates outflow (Q) to head across the outlet (H) for a FUNCTIONAL outlet (i.e., $Q = Q_{coeff}(H)Q_{exp}$)
COMPUERTA	STRING	3	YES if flap gate present, NO if not
TRANSECTS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TEXTO	STRING	254	See SWMM manual
LOSSES			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name of conduit
PERD_INI	DOUBLE		Entrance minor loss coefficient
PERD_FIN	DOUBLE		Exit minor loss coefficient
POR_PERD	DOUBLE		Average minor loss coefficient across length of conduit
COMPUERTA	STRING	3	YES if conduit has a flap gate that prevents back flow, NO otherwise
CONTROLS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
TEXTO	STRING	254	Controls rules
POLLUTANTS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_CONT	STRING	16	Name assigned to pollutant
UNIDADES	STRING	4	Concentration units (MG/L for milligrams per liter, UG/L for micrograms per liter, or #/L for direct count per liter)
CON_LLUV	DOUBLE		Concentration of pollutant in rainfall (concentration units)
CON_SUB	DOUBLE		Concentration of pollutant in groundwater (concentration units)
KDECA	DOUBLE		First-order decay coefficient (1/days)
ID_COCONT	STRING	16	Name of co-pollutant
POR_COCON	DOUBLE		Fraction of co-pollutant concentration
LANDUSES			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_USO	STRING	16	Land use name
DIAS_INT	INTEGER	4	Days between street sweeping
POR_CONT	DOUBLE		Fraction of pollutant buildup available for removal by street sweeping
DIAS_PREV	INTEGER	4	Days since last sweeping at start of the simulation
COVERAGES			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_SUBC	STRING	16	Subcatchment name
ID_USO	STRING	16	Land use name
PORCENT	DOUBLE		Percent of subcatchment area

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
BUILDUP			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_USO	STRING	16	Land use name
ID_CONT	STRING	16	Pollutant name
TIPO_FUN	STRING	12	Buildup function type: (POWER / EXPONENTIAL / SATURATION)
C1	DOUBLE		Buildup function parameters (see Table 3 of SWMM's Manual)
C2	DOUBLE		Buildup function parameters (see Table 3 of SWMM's Manual)
C3	DOUBLE		Buildup function parameters (see Table 3 of SWMM's Manual)
NORMALIT	STRING	10	AREA if buildup is per unit area, CURBLENGTH if per length of curb.
WASHOFF			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_USO	STRING	16	Land use name
ID_CONT	STRING	16	Pollutant name
TIPO_FUN	STRING	12	Buildup function type: (POWER / EXPONENTIAL / SATURATION)
COEFF	DOUBLE		Washoff model coefficient
EXPON	DOUBLE		Washoff model exponent
LIMP_EFI	DOUBLE		Street sweeping removal efficiency (percent)
BMP_EFI	DOUBLE		BMP removal efficiency (percent)
TREATMENT			
LOADINGS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_SUBC	STRING	16	Name of a subcatchment
ID_CONT	STRING	16	Name of a pollutant
INICIAL	DOUBLE		Initial buildup of pollutant (same units as used in [BUILDUP] section)
DWF			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name of node where dry weather flow enters
ITEM	STRING	16	Keyword FLOW for flow or pollutant name for quality constituent
VALOR	DOUBLE		Average baseline value for corresponding Item (flow or concentration units)
ID_PATMO	STRING	16	Optional name of time pattern appearing in the [PATTERNS] section
ID_PATDL	STRING	16	Optional name of time pattern appearing in the [PATTERNS] section
ID_PATAM	STRING	16	Optional name of time pattern appearing in the [PATTERNS] section
ID_PATPM	STRING	16	Optional name of time pattern appearing in the [PATTERNS] section
ID_PATAW	STRING	16	Optional name of time pattern appearing in the [PATTERNS] section
ID_PATPW	STRING	16	Optional name of time pattern appearing in the [PATTERNS] section
PATTERNS_MO			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_PATMO	STRING	16	Name used to identify the pattern
TIPO_PAT	STRING	12	MONTHLY
FACTOR_1	DOUBLE		Multiplier values
FACTOR_2	DOUBLE		Multiplier values
FACTOR_3	DOUBLE		Multiplier values
FACTOR_4	DOUBLE		Multiplier values
FACTOR_5	DOUBLE		Multiplier values
FACTOR_6	DOUBLE		Multiplier values
FACTOR_7	DOUBLE		Multiplier values
FACTOR_8	DOUBLE		Multiplier values
FACTOR_9	DOUBLE		Multiplier values
FACTOR_10	DOUBLE		Multiplier values
FACTOR_11	DOUBLE		Multiplier values
FACTOR_12	DOUBLE		Multiplier values
PATTERNS_DL			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_PATDL	STRING	16	Name used to identify the pattern
TIPO_PAT	STRING	12	DAILY
FACTOR_1	DOUBLE		Multiplier values
FACTOR_2	DOUBLE		Multiplier values

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
FACTOR_3	DOUBLE		Multiplier values
FACTOR_4	DOUBLE		Multiplier values
FACTOR_5	DOUBLE		Multiplier values
FACTOR_6	DOUBLE		Multiplier values
FACTOR_7	DOUBLE		Multiplier values
PATTERNS_AM			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_PATAM	STRING	16	Name used to identify the pattern
TIPO_PAT	STRING	12	AM
FACTOR_1	DOUBLE		Multiplier values
FACTOR_2	DOUBLE		Multiplier values
FACTOR_3	DOUBLE		Multiplier values
FACTOR_4	DOUBLE		Multiplier values
FACTOR_5	DOUBLE		Multiplier values
FACTOR_6	DOUBLE		Multiplier values
FACTOR_7	DOUBLE		Multiplier values
FACTOR_8	DOUBLE		Multiplier values
FACTOR_9	DOUBLE		Multiplier values
FACTOR_10	DOUBLE		Multiplier values
FACTOR_11	DOUBLE		Multiplier values
FACTOR_12	DOUBLE		Multiplier values
PATTERNS_PM			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_PATPM	STRING	16	Name used to identify the pattern
TIPO_PAT	STRING	12	PM
FACTOR_1	DOUBLE		Multiplier values
FACTOR_2	DOUBLE		Multiplier values
FACTOR_3	DOUBLE		Multiplier values
FACTOR_4	DOUBLE		Multiplier values
FACTOR_5	DOUBLE		Multiplier values
FACTOR_6	DOUBLE		Multiplier values
FACTOR_7	DOUBLE		Multiplier values
FACTOR_8	DOUBLE		Multiplier values
FACTOR_9	DOUBLE		Multiplier values
FACTOR_10	DOUBLE		Multiplier values
FACTOR_11	DOUBLE		Multiplier values
FACTOR_12	DOUBLE		Multiplier values
PATTERNS_AMWE			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_PATAW	STRING	16	Name used to identify the pattern
TIPO_PAT	STRING	12	AM_WEEKEND
FACTOR_1	DOUBLE		Multiplier values
FACTOR_2	DOUBLE		Multiplier values
FACTOR_3	DOUBLE		Multiplier values
FACTOR_4	DOUBLE		Multiplier values
FACTOR_5	DOUBLE		Multiplier values
FACTOR_6	DOUBLE		Multiplier values
FACTOR_7	DOUBLE		Multiplier values
FACTOR_8	DOUBLE		Multiplier values
FACTOR_9	DOUBLE		Multiplier values
FACTOR_10	DOUBLE		Multiplier values
FACTOR_11	DOUBLE		Multiplier values
FACTOR_12	DOUBLE		Multiplier values
PATTERNS_PMWE			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_PATPW	STRING	16	Name used to identify the pattern
TIPO_PAT	STRING	12	PM_WEEKEND
FACTOR_1	DOUBLE		Multiplier values

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
FACTOR_2	DOUBLE		Multiplier values
FACTOR_3	DOUBLE		Multiplier values
FACTOR_4	DOUBLE		Multiplier values
FACTOR_5	DOUBLE		Multiplier values
FACTOR_6	DOUBLE		Multiplier values
FACTOR_7	DOUBLE		Multiplier values
FACTOR_8	DOUBLE		Multiplier values
FACTOR_9	DOUBLE		Multiplier values
FACTOR_10	DOUBLE		Multiplier values
FACTOR_11	DOUBLE		Multiplier values
FACTOR_12	DOUBLE		Multiplier values
INFLOWS_FLOW			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name of node where external inflow enters
TIPO_INF	STRING	12	FLOW
ID_TIMESER	STRING	16	Name of time series describing how external inflows vary with time
INFLOWS_POLLUT			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name of node where external inflow enters
TIPO_INF	STRING	12	POLLUT
ID_TIMESER	STRING	16	Name of time series describing how external inflows vary with time
FORMATO	STRING	10	CONCEN if pollutant inflow is described as a concentration, MASS if it is described as a mass flow rate.
CONVERSION	DOUBLE		If pollutant inflow is a mass flow rate, the factor that converts this value into (concentration units) times (flow units), where concentration units are those specified for the pollutant in the [POLLUTANTS] section and flow units are those specified in the [OPTIONS] section
RDII			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_NODO	STRING	16	Name of a node
ID_HIDROG	STRING	16	Name of an RDII unit hydrograph group specified in the [HYDROGRAPHS] section
AREA	DOUBLE		Area of the sewershed which contributes RDII to the node (acres or hectares)
HYDROGRAPHS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_HIDROG	STRING	16	Name assigned to a unit hydrograph (UH) group
COLUMN_2	STRING	16	Values in column 2
R1	DOUBLE		Response ratios for the short-term, intermediate-term, and long-term UH responses, respectively
T1	DOUBLE		Time to peak (hours) for the short-term, intermediate-term, and long-term UH responses, respectively
K1	DOUBLE		Recession limb ratios for short-term, intermediate-term, and long-term UH responses, respectively
R2	DOUBLE		Response ratios for the short-term, intermediate-term, and long-term UH responses, respectively
T2	DOUBLE		Time to peak (hours) for the short-term, intermediate-term, and long-term UH responses, respectively
K2	DOUBLE		Recession limb ratios for short-term, intermediate-term, and long-term UH responses, respectively
R3	DOUBLE		Response ratios for the short-term, intermediate-term, and long-term UH responses, respectively
T3	DOUBLE		Time to peak (hours) for the short-term, intermediate-term, and long-term UH responses, respectively
K3	DOUBLE		Recession limb ratios for short-term, intermediate-term, and long-term UH responses, respectively
CURVE			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_CURBA	STRING	16	Name assigned to table
TIPO_CURBA	STRING	12	STORAGE / DIVERSION / TIDAL / PUMP1 / PUMP2 / PUMP3 / PUMP4 / RATING
XVAL	DOUBLE		An x (independent variable) value
YVAL	DOUBLE		The y (dependent variable) value corresponding to x
TIMESERIES_ABS			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_TIMESER	STRING	16	Name assigned to time series
FECHA	STRING	12	Date in Month-Day-Year format (e.g., June 15, 2001 would be 6-15-2001)
HORA_ABS	STRING	10	24-hour military time (e.g., 8:40 pm would be 20:40) relative to the last date specified (or to midnight of the starting date of the simulation if no previous date was specified)
VALOR	DOUBLE		Value corresponding to given date and time

DATA MODEL DBF TO EPASWMM 5.0018 (SP)

V2.0	TYPE	LEGTH	DESCRIPTION
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TIMESERIES_REL

ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_TIMESER	STRING	16	Name assigned to time series
HORA_REL	STRING	10	hours since the start of the simulation, expressed as a decimal number or as Hours:Minutes
VALOR	DOUBLE		Value corresponding to given date and time

VERTICE

ID	INTEGER	8	ID number (1, 2, 3 ...)
ID_ARCO	STRING	16	Name assigned to conduit link
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map

APPENDIX A - EPASWMM DATA MODELS

DBF TO EPASWMM 5.0022

DATA MODEL DBF TO EPASWMM 5.0022 (EN & PT)

V2.0		TYPE	LEGTH	DESCRIPTION
project_id				
title	5	STRING	254	Project title
author	6	STRING	50	The author of the project
date	4	STRING	12	Date
options				
parameter	9	STRING	20	Options parameters of SWMM project
value	5	STRING	20	Options value parameters of SWMM project
backdrop				
id	2	INTEGER	4	ID number (1, 2, 3 ...)
text	4	STRING	254	backdrop text (see SWMM user's manual for more details)
labels				
label	5	STRING	16	Text of label surrounded by double quotes
xcoord	6	DOUBLE	18,6	Horizontal coordinate relative to origin in lower left of map
ycoord	6	DOUBLE	18,6	Vertical coordinate relative to origin in lower left of map
anchor	6	STRING	16	Name of node or subcatchment that anchors the label on zoom-ins (use an empty pair of double quotes if there is no anchor)
font	4	STRING	50	Name of label's font (surround by double quotes if the font name includes spaces)
size	4	DOUBLE	12,4	Font size in points
bold	4	STRING	3	YES for bold font, NO otherwise
italic	6	STRING	3	YES for italic font, NO otherwise
map_dim				
type_dim	8	STRING	18	
x1	2	DOUBLE	18,6	Lower-left X coordinate of full map extent
y1	2	DOUBLE	18,6	Lower-left Y coordinate of full map extent
x2	2	DOUBLE	18,6	Upper-left X coordinate of full map extent
y2	2	DOUBLE	18,6	Upper-left Y coordinate of full map extent
mapunits				
type_units	10	STRING	18	mapunits text (see SWMM user's manual for more details)
map_type	8	STRING	18	mapunits text (see SWMM user's manual for more details)
report				
parameter	9	STRING	20	Options parameters of SWMM project
value	5	STRING	20	Options value parameters of SWMM project
files				
ID	2	INTEGER	4	ID number (1, 2, 3 ...)
actio_type	10	STRING	18	USE / SAVE
file_type	9	STRING	18	RAINFALL, RUNOFF, HOTSTART, RDII or ROUTING
fname	5	STRING	254	Name of file
aquifer				
aquif	5	INTEGER	4	Aquifer name
por	3	DOUBLE	12,4	Soil porosity (fraction)
wp	2	DOUBLE	12,4	Soil wilting point (fraction)
fc	2	DOUBLE	12,4	Soil field capacity (fraction)
k	1	DOUBLE	12,4	Saturated hydraulic conductivity (in/hr or mm/hr)
ks	2	DOUBLE	12,4	Slope of hydraulic conductivity versus moisture content curve
ps	2	DOUBLE	12,4	Slope of soil tension versus moisture content curve
uef	3	DOUBLE	12,4	Fraction of total evaporation available for evapotranspiration in the upper unsaturated zone
led	3	DOUBLE	12,4	Maximum depth into the lower saturated zone over which evapotranspiration can occur (ft or m)
gwr	3	DOUBLE	12,4	Rate of percolation from saturated zone to deep groundwater when water table is at ground surface (in/hr or mm/hr)
be	2	DOUBLE	12,4	Elevation of the bottom of the aquifer (ft or m)
wte	3	DOUBLE	12,4	Water table elevation at start of simulation (ft or m)
umc	3	DOUBLE	12,4	Unsaturated zone moisture content at start of simulation (fraction)
pollutant				
poll_id	7	STRING	16	Name assigned to pollutant

DATA MODEL DBF TO EPASWMM 5.0022 (EN & PT)

V2.0		TYPE	LEGTH	DESCRIPTION
units_type	10	STRING	18	Concentration units (MG/L for milligrams per liter, UG/L for micrograms per liter, or #/L for direct count per liter)
crain	5	DOUBLE	12,4	Concentration of pollutant in rainfall (concentration units)
cgw	3	DOUBLE	12,4	Concentration of pollutant in groundwater (concentration units)
cii	3	DOUBLE	12,4	Concentration of pollutant in inflow/infiltration (concentration units)
kd	2	DOUBLE	12,4	First-order decay coefficient (1/days)
sflag	5	STRING	3	YES if pollutant buildup occurs only when there is snow cover, NO otherwise (default is NO)
copoll_id	9	STRING	16	Name of co-pollutant (default is no co-pollutant)
cofract	7	DOUBLE	12,4	Fraction of co-pollutant concentration (default is 0)
cdwf	4	DOUBLE	12,4	Concentration of pollutant in dry weather flow (concentration units)
curve				
id	2	INTEGER	4	ID number (1, 2, 3 ...)
curve_id	8	STRING	16	Name assigned to table
curve_type	10	STRING	16	STORAGE / DIVERSION / TIDAL / PUMP1 / PUMP2 / PUMP3 / PUMP4 / RATING
x_value	7	DOUBLE	18,6	An x (independent variable) value
y_value	7	DOUBLE	18,6	The y (dependent variable) value corresponding to x
lid_control				
id	2	INTEGER	4	ID number (1, 2, 3 ...)
lidco_id	8	STRING	16	Name assigned to table
lidco_type	10	STRING	10	BC for bio-retention cell; PP for porous pavement; IT for infiltration trench; RB for rain barrel; VS for vegetative swale
value_2	7	DOUBLE	12,4	LID value parameters of SWMM project
value_3	7	DOUBLE	12,4	LID value parameters of SWMM project
value_4	7	DOUBLE	12,4	LID value parameters of SWMM project
value_5	7	DOUBLE	12,4	LID value parameters of SWMM project
value_6	7	DOUBLE	12,4	LID value parameters of SWMM project
value_7	7	DOUBLE	12,4	LID value parameters of SWMM project
value_8	7	DOUBLE	12,4	LID value parameters of SWMM project
buildup				
landus_id	9	STRING	16	Land use name
poll_id	7	STRING	16	Pollutant name
funcb_type	10	STRING	18	Buildup function type: (POWER / EXPONENTIAL / SATURATION)
c1	2	DOUBLE	12,4	Buildup function parameters (see Table D-2 of SWMM's Manual)
c2	2	DOUBLE	12,4	Buildup function parameters (see Table D-2 of SWMM's Manual)
c3	2	DOUBLE	12,4	Buildup function parameters (see Table D-2 of SWMM's Manual)
perunit	7	STRING	10	AREA if buildup is per unit area, CURBLENGTH if per length of curb.
conduit_cu				
arc_id	6	INTEGER	4	Name assigned to conduit link
node_1	6	INTEGER	4	Name of upstream node
node_2	6	INTEGER	4	Name of downstream node
length	6	DOUBLE	12,4	Conduit length (ft or m)
z1	2	DOUBLE	12,4	Offset of upstream end of conduit invert above the invert elevation of its upstream node (ft or m)
z2	2	DOUBLE	12,4	Offset of downstream end of conduit invert above the invert elevation of its downstream node (ft or m)
shape	5	STRING	16	Cross-section shape (see Table 2 below or 3-1 for available shapes of SWMM's Manual)
curve_id	8	STRING	16	Name of a Shape Curve in the [CURVES] section that defines how width varies with depth
geom1	5	DOUBLE	12,4	Full height of the cross-section (ft or m)
geom3	5	DOUBLE	12,4	Auxiliary parameters (e.g., side slopes) (See Table D-1 for details of SWMM's Manual)
geom4	5	DOUBLE	12,4	Auxiliary parameters (e.g., side slopes) (See Table D-1 for details of SWMM's Manual)
n	1	DOUBLE	12,4	Value of N (i.e., roughness parameter) in Manning's equation
q0	2	DOUBLE	12,4	Flow in conduit at start of simulation (flow units) (default is 0)
qmax	4	DOUBLE	12,4	Maximum flow
barrels	7	INTEGER	2	Number of barrels (i.e., number of parallel pipes of equal size, slope, and roughness) associated with a conduit (default is 1)
culvert	7	STRING	10	Code number from Table A.10 for the conduit's inlet geometry if it is a culvert subject to possible inlet flow control (leave blank otherwise)
conduit_no				
arc_id	6	INTEGER	4	Name assigned to conduit link
node_1	6	INTEGER	4	Name of upstream node
node_2	6	INTEGER	4	Name of downstream node
length	6	DOUBLE	12,4	Conduit length (ft or m)

DATA MODEL DBF TO EPASWMM 5.0022 (EN & PT)

V2.0		TYPE	LEGTH	DESCRIPTION
z1	2	DOUBLE	12,4	Offset of upstream end of conduit invert above the invert elevation of its upstream node (ft or m)
z2	2	DOUBLE	12,4	Offset of downstream end of conduit invert above the invert elevation of its downstream node (ft or m)
shape	5	STRING	16	Cross-section shape (see Table 2 below or 3-1 for available shapes of SWMM's Manual)
geom1	5	STRING	16	Maximum depth (ft or m)
geom2	5	DOUBLE	12,4	Width parameter (ft or m)
geom3	5	DOUBLE	12,4	Auxiliary parameters (e.g., side slopes) (See Table 2 for details of SWMM's Manual)
geom4	5	DOUBLE	12,4	Auxiliary parameters (e.g., side slopes) (See Table 2 for details of SWMM's Manual)
n	1	DOUBLE	12,4	Value of N (i.e., roughness parameter) in Manning's equation
q0	2	DOUBLE	12,4	Flow in conduit at start of simulation (flow units) (default is 0)
qmax	4	DOUBLE	12,4	Maximum flow
barrels	7	INTEGER	2	Number of barrels (i.e., number of parallel pipes of equal size, slope, and roughness) associated with a conduit (default is 1)
culvert	7	STRING	10	Code number from Table A.10 for the conduit's inlet geometry if it is a culvert subject to possible inlet flow control (leave blank otherwise)
conduit_xs				
arc_id	6	INTEGER	4	Name assigned to conduit link
node_1	6	INTEGER	4	Name of upstream node
node_2	6	INTEGER	4	Name of downstream node
length	6	DOUBLE	12,4	Conduit length (ft or m)
z1	2	DOUBLE	12,4	Offset of upstream end of conduit invert above the invert elevation of its upstream node (ft or m)
z2	2	DOUBLE	12,4	Offset of downstream end of conduit invert above the invert elevation of its downstream node (ft or m)
shape	5	STRING	16	Cross-section shape (see Table 2 below or 3-1 for available shapes of SWMM's Manual)
tsect_id	8	STRING	16	Name of an entry in the transects section that describes the cross-section geometry of an irregular channel
geom2	5	DOUBLE	12,4	Maximum depth (ft or m)
geom3	5	DOUBLE	12,4	Auxiliary parameters (e.g., side slopes) (See Table 2 for details of SWMM's Manual)
geom4	5	DOUBLE	12,4	Auxiliary parameters (e.g., side slopes) (See Table 2 for details of SWMM's Manual)
n	1	DOUBLE	12,4	Value of N (i.e., roughness parameter) in Manning's equation
q0	2	DOUBLE	12,4	Flow in conduit at start of simulation (flow units) (default is 0)
qmax	4	DOUBLE	12,4	Maximum flow
barrels	7	INTEGER	2	Number of barrels (i.e., number of parallel pipes of equal size, slope, and roughness) associated with a conduit (default is 1)
culvert	7	STRING	10	Code number from Table A.10 for the conduit's inlet geometry if it is a culvert subject to possible inlet flow control (leave blank otherwise)
losses				
arc_id	6	INTEGER	4	Name of conduit
culvert	7	STRING	10	Code number from Table A.10 for the conduit's inlet geometry if it is a culvert subject to possible inlet flow control (leave blank otherwise)
kentry	6	DOUBLE	12,4	Entrance minor head loss coefficient
kexit	5	DOUBLE	12,4	Exit minor head loss coefficient
kavg	4	DOUBLE	12,4	Average minor head loss coefficient across length of conduit
flap	4	STRING	3	YES if conduit has a flap gate that prevents back flow, NO otherwise (default is NO)
controls				
id	2	INTEGER	4	ID number (1, 2, 3 ...)
text	4	STRING	254	mapunits text (see SWMM user's manual for more details)
coverages				
subc_id	7	INTEGER	4	Subcatchment name
landus_id	9	STRING	16	Land use name
percent	7	DOUBLE	12,4	Percent of subcatchment area
divider_cu				
node_id	7	INTEGER	4	Name assigned to divider node
elev	4	DOUBLE	12,4	Invert elevation (ft or m)
arc_id	6	INTEGER	4	Name assigned to conduit link
type_dicu	9	STRING	18	Type of divider
qmin	4	DOUBLE	16,6	Flow at which diversion begins for either a CUTOFF or WEIR divider (flow units)
ymax	4	DOUBLE	12,4	Depth from ground to invert elevation (ft or m) (default is 0)
y0	2	DOUBLE	12,4	Water depth at start of simulation (ft or m) (default is 0)
ysur	4	DOUBLE	12,4	Maximum additional head above ground elevation that node can sustain under surcharge conditions (ft or m) (default is 0)
apond	5	DOUBLE	16,6	Area subjected to surface ponding once water depth exceeds Ymax (ft2 or m2) (default is 0)
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map

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V2.0		TYPE	LEGTH	DESCRIPTION
divider_ov				
node_id	7	INTEGER	4	Name assigned to divider node
elev	4	DOUBLE	12,4	Invert elevation (ft or m)
arc_id	6	INTEGER	4	Name assigned to conduit link
type_diov	9	STRING	18	Type of divider
y _{max}	4	DOUBLE	12,4	Depth from ground to invert elevation (ft or m) (default is 0)
y ₀	2	DOUBLE	12,4	Water depth at start of simulation (ft or m) (default is 0)
ysur	4	DOUBLE	12,4	Maximum additional head above ground elevation that node can sustain under surcharge conditions (ft or m) (default is 0)
apond	5	DOUBLE	16,6	Area subjected to surface ponding once water depth exceeds Y _{max} (ft2 or m2) (default is 0)
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
divider_tb				
node_id	7	INTEGER	4	Name assigned to divider node
elev	4	DOUBLE	12,4	Invert elevation (ft or m)
arc_id	6	INTEGER	4	Name assigned to conduit link
type_ditb	9	STRING	18	Type of divider
curve_id	8	STRING	16	Name of curve for divider
y _{max}	4	DOUBLE	12,4	Depth from ground to invert elevation (ft or m) (default is 0)
y ₀	2	DOUBLE	12,4	Water depth at start of simulation (ft or m) (default is 0)
ysur	4	DOUBLE	12,4	Maximum additional head above ground elevation that node can sustain under surcharge conditions (ft or m) (default is 0)
apond	5	DOUBLE	16,6	Area subjected to surface ponding once water depth exceeds Y _{max} (ft2 or m2) (default is 0)
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
divider_wr				
node_id	7	INTEGER	4	Name assigned to divider node
elev	4	DOUBLE	12,4	Invert elevation (ft or m)
arc_id	6	INTEGER	4	Name assigned to conduit link
type_diwr	9	STRING	18	Type of divider
q _{min}	4	DOUBLE	16,6	Flow at which diversion begins for either a CUTOFF or WEIR divider (flow units)
ht	2	DOUBLE	12,4	Height of WEIR divider (ft or m)
cd	2	DOUBLE	12,4	Discharge coefficient coefficient for WEIR divider
y _{max}	4	DOUBLE	12,4	Depth from ground to invert elevation (ft or m) (default is 0)
y ₀	2	DOUBLE	12,4	Water depth at start of simulation (ft or m) (default is 0)
ysur	4	DOUBLE	12,4	Maximum additional head above ground elevation that node can sustain under surcharge conditions (ft or m) (default is 0)
apond	5	DOUBLE	16,6	Area subjected to surface ponding once water depth exceeds Y _{max} (ft2 or m2) (default is 0)
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
dwf_flow				
node_id	7	INTEGER	4	Name of node where dry weather flow enters
type_dwf	8	STRING	16	Type of dwr
value	5	DOUBLE	12,4	Average baseline value for corresponding Item (flow or concentration units)
pat1	4	STRING	16	Name of up to four time patterns appearing in the PATTERNS section
pat2	4	STRING	16	Name of up to four time patterns appearing in the PATTERNS section
pat3	4	STRING	16	Name of up to four time patterns appearing in the PATTERNS section
pat4	4	STRING	16	Name of up to four time patterns appearing in the PATTERNS section
dwf_load				
poll_id	7	STRING	16	Name assigned to pollutant
node_id	7	INTEGER	4	Name of node where dry weather flow enters
value	5	DOUBLE	12,4	Average baseline value for corresponding Item (flow or concentration units)
pat1	4	STRING	16	Name of up to four time patterns appearing in the PATTERNS section
pat2	4	STRING	16	Name of up to four time patterns appearing in the PATTERNS section
pat3	4	STRING	16	Name of up to four time patterns appearing in the PATTERNS section
pat4	4	STRING	16	Name of up to four time patterns appearing in the PATTERNS section
evap_co				
type_evco	9	STRING	16	Evaporation type (see the SWMM's Manual)

DATA MODEL DBF TO EPASWMM 5.0022 (EN & PT)

V2.0		TYPE	LEGTH	DESCRIPTION
evap	4	DOUBLE	12,4	Constant evaporation rate (in/day or mm/day)
evap_do				
type_evdo	9	STRING	16	Evaporation type (see the SWMM's Manual)
dry_only	8	STRING	3	Determines if evaporation only occurs during periods with no precipitation. The default is NO
evap_fl				
type_evfl	9	STRING	16	Evaporation type (see the SWMM's Manual)
pan_1	5	DOUBLE	12,4	Pan coefficient for January
pan_2	5	DOUBLE	12,4	Pan coefficient for February
pan_3	5	DOUBLE	12,4	Pan coefficient for March
pan_4	5	DOUBLE	12,4	Pan coefficient for April
pan_5	5	DOUBLE	12,4	Pan coefficient for May
pan_6	5	DOUBLE	12,4	Pan coefficient for June
pan_7	5	DOUBLE	12,4	Pan coefficient for July
pan_8	5	DOUBLE	12,4	Pan coefficient for August
pan_9	5	DOUBLE	12,4	Pan coefficient for September
pan_10	6	DOUBLE	12,4	Pan coefficient for October
pan_11	6	DOUBLE	12,4	Pan coefficient for November
pan_12	6	DOUBLE	12,4	Pan coefficient for December
evap_mo				
type_evmo	9	STRING	16	Evaporation type (see the SWMM's Manual)
value_1	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_2	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_3	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_4	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_5	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_6	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_7	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_8	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_9	7	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_10	8	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_11	8	DOUBLE	12,4	Evaporation value parameters of SWMM project
value_12	8	DOUBLE	12,4	Evaporation value parameters of SWMM project
evap_pa				
type_evpa	9	STRING	16	Evaporation type (see the SWMM's Manual)
recovery	8	STRING	16	Identifies an optional monthly time pattern of multipliers used to modify infiltration recovery rates during dry periods. For example, if the normal infiltration recovery rate was 1% during a specific time period and a pattern factor of 0,8 applied to this period, then the actual recovery rate would be 0,8%
evap_te				
type_evte	9	STRING	16	Evaporation type (see the SWMM's Manual)
evap_ts				
type_evts	9	STRING	16	Evaporation type (see the SWMM's Manual)
timser_id	9	STRING	16	Name of TIMESERIES section with temperature data
groundwater				
subc_id	7	INTEGER	4	Subcatchment name
aquif_id	8	INTEGER	4	Name of groundwater aquifer underneath the subcatchment
node_id	7	INTEGER	4	Name of node in conveyance system exchanging groundwater with aquifer
surfel	6	DOUBLE	10,4	Surface elevation of subcatchment (ft or m)
a1	2	DOUBLE	10,4	Groundwater flow coefficient (see the SWMM's Manual)
b1	2	DOUBLE	10,4	Groundwater flow exponent (see the SWMM's Manual)
a2	2	DOUBLE	10,4	Surface water flow coefficient (see the SWMM's Manual)
b2	2	DOUBLE	10,4	Surface water flow exponent (see the SWMM's Manual)
a3	2	DOUBLE	10,4	Surface water – groundwater interaction coefficient (see the SWMM's Manual)
tw	2	DOUBLE	10,4	Fixed depth of surface water at receiving node (ft or m) (set to zero if surface water depth will vary as computed by flow routing)
h	1	DOUBLE	10,4	Groundwater table height which must be reached before any flows occurs (ft or m). Leave blank to use the height of the receiving node's invert above the aquifer bottom

hydrographs

DATA MODEL DBF TO EPASWMM 5.0022 (EN & PT)

V2.0		TYPE	LEGTH	DESCRIPTION
id	2	INTEGER	4	ID number (1, 2, 3 ...)
text	4	STRING	254	Hydrographs text (see SWMM user's manual for more details)
infiltration_cu				
subc_id	7	INTEGER	4	Subcatchment name
curveno	7	DOUBLE	12,4	SCS Curve Number
conduct_2	9	DOUBLE	12,4	Soil saturated hydraulic conductivity (in/hr or mm/hr) (This property has been deprecated and is no longer used)
drytime_2	9	DOUBLE	12,4	Time it takes for fully saturated soil to dry (days)
infiltration_gr				
subc_id	7	INTEGER	4	Subcatchment name
suction	7	DOUBLE	12,4	Soil capillary suction (in or mm)
conduct	7	DOUBLE	12,4	Soil saturated hydraulic conductivity (in/hr or mm/hr)
initdef	7	DOUBLE	12,4	Initial soil moisture deficit (volume of voids / total volume)
infiltration_ho				
subc_id	7	INTEGER	4	Subcatchment name
maxrate	7	DOUBLE	12,4	Maximum infiltration rate on Horton curve (in/hr or mm/hr)
minrate	7	DOUBLE	12,4	Minimum infiltration rate on Horton curve (in/hr or mm/hr)
decay	5	DOUBLE	12,4	Decay rate constant of Horton curve (l/hr)
drytime	7	DOUBLE	12,4	Time it takes for fully saturated soil to dry (days)
maxinfil	8	DOUBLE	12,4	Maximum infiltration volume possible (0 if not applicable) (in or mm)
inflows_flow				
node_id	7	INTEGER	4	Name of node where external inflow enters
type_inf_1	10	STRING	18	Infiltration type (see the SWMM's Manual)
timser_id	9	STRING	16	Name of time series describing how external inflows vary with time
type_inf_2	10	STRING	18	Infiltration type (see the SWMM's Manual)
n1	2	DOUBLE	12,4	Write 1.0 (see the SWMM's Manual)
sfactor	7	DOUBLE	12,4	Scaling factor that multiplies the recorded time series values (default is 1.0)
base	4	DOUBLE	12,4	Constant baseline value added to the time series value (default is 0.0)
patter_id	9	STRING	16	Name of optional time pattern in PATTERNS section used to adjust the baseline value on a periodic basis
inflows_load				
poll_id	7	STRING	16	Name assigned to pollutant
node_id	7	INTEGER	4	Name of node where external inflow enters
timser_id	9	STRING	16	Name of time series describing how external inflows vary with time
form_type	9	STRING	18	CONCEN if pollutant inflow is described as a concentration, MASS if it is described as a mass flow rate (default is CONCEN)
mfactor	7	DOUBLE	12,4	The factor that converts the inflow's mass flow rate units into the project's mass units per second, where the project's mass units are those specified for the pollutant in the POLLUTANTS section (default is 1.0)
sfactor	7	DOUBLE	12,4	Scaling factor that multiplies the recorded time series values (default is 1.0)
base	4	DOUBLE	12,4	Constant baseline value added to the time series value (default is 0.0)
patter_id	9	STRING	16	Name of optional time pattern in PATTERNS section used to adjust the baseline value on a periodic basis
junction				
node_id	7	INTEGER	4	Name assigned to junction node
elev	4	DOUBLE	12,4	Elevation of junction invert (ft or m)
ymax	4	DOUBLE	12,4	Depth from ground to invert elevation (ft or m) (default is 0)
y0	2	DOUBLE	12,4	Water depth at start of simulation (ft or m) (default is 0)
ysur	4	DOUBLE	12,4	Maximum additional head above ground elevation that manhole junction can sustain under surcharge conditions (ft or m) (default is 0)
apond	5	DOUBLE	16,6	Area subjected to surface ponding once water depth exceeds Ymax (ft2 or m2)
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
landuses				
landus_id	9	STRING	16	Land use name
sweepint	8	DOUBLE	12,4	Days between street sweeping
availab	7	DOUBLE	12,4	Fraction of pollutant buildup available for removal by street sweeping
lastsweep	9	DOUBLE	12,4	Days since last sweeping at start of the simulation
lidusage				
subc_id	7	INTEGER	4	The name of the subcatchment using the LID process

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V2.0		TYPE	LEGTH	DESCRIPTION	
	lidco_id	8	STRING	16	The name of an LID process defined in the LID_CONTROLS section
	number	6	DOUBLE	12,4	The number of replicate LID units deployed
	area	4	DOUBLE	16,6	The area of each replicate unit (ft2 or m2)
	width	5	DOUBLE	12,4	The width of the outflow face of each identical LID unit (in ft or m). This parameter only applies to LID processes such as porous pavement and vegetative swales that use overland flow to convey surface runoff of the unit. (The other LID processes, such as bio-retention cells and infiltration trenches simply spill any excess captured runoff over their berms)
	initsat	7	DOUBLE	12,4	The percent to which the unit's soil layer or storage layer is initially filled with water
	fromimp	7	DOUBLE	12,4	The percent of the impervious portion of the subcatchment's non-LID area whose runoff is treated by the LID units. If the LID unit treats only direct rainfall, such as with a green roof, then this value should be 0. If the LID takes up the entire subcatchment then this field is ignored
	toperv	6	DOUBLE	12,4	1 if the outflow from the LID is returned onto the subcatchment's pervious area rather than going to the subcatchmebt's outlet; 0 otherwise. An example of where this might apply is a rain barrel whose contents are used to irrigate a lawn area. This field is ignored if the LID takes up the entire subcatchment
	rptfile	7	STRING	10	Optional name of a file to which detailed time series results for the LID will be written. Enclose the name in double quotes if it contains spaces and include the full path if it is different than the SWMM input file path.
loadings					
	poll_id	7	STRING		Name of a pollutant
	subc_id	7	INTEGER		Name of a subcatchment
	ib	2	DOUBLE		Initial buildup of pollutant (lbs/acre or kg/hectare)
losses					
	arc_id	6	INTEGER	4	Name of a conduit
	kentry	6	DOUBLE	12,4	Entrance minor head loss coefficient
	kexit	5	DOUBLE	12,4	Exit minor head loss coefficient
	kavg	4	DOUBLE	12,4	Average minor head loss coefficient across length of conduit
	flap	4	STRING	3	YES if conduit has a flap gate that prevents back flow, NO otherwise (default is NO)
orifice					
	arc_id	6	INTEGER	18	Name assigned to conduit orifice
	node_1	6	INTEGER	4	Name of a node on inlet end of orifice
	node_2	6	INTEGER	4	Name of a node on outlet end of orifice
	ori_type	8	STRING	18	Orientation of orifice: either SIDE or BOTTOM
	offset	6	DOUBLE	12,4	amount that a Side Orifice's bottom or the position of a Bottom Orifice is offset above the invert of inlet node (ft or m, expressed as either a depth or as an elevation, depending on the LINK_OFFSETS option setting)
	cd	2	DOUBLE	12,4	Discharge coefficient (unitless)
	orate	5	DOUBLE	12,4	Time in decimal hours to open a fully closed orifice (or close a fully open one). Use 0 if the orifice can open/close instantaneously
	flap	4	STRING	3	YES if flap gate present to prevent reverse flow, NO if not (default is NO)
	shape	5	STRING	18	The only allowable shapes are CIRCULAR and RECT_CLOSED (closed rectangular)
	geom1	5	DOUBLE	12,4	Maximum depth (ft or m)
	geom2	5	DOUBLE	12,4	Width parameter (ft or m)
	geom3	5	DOUBLE	12,4	Write 0
	geom4	5	DOUBLE	12,4	Write 0
outfall_fi					
	node_id	7	INTEGER	4	Name assigned to outfall node
	elev	4	DOUBLE	12,4	Invert elevation (ft or m)
	type_otlfi	10	STRING	16	FIXED
	gate	4	STRING	3	YES or NO depending on whether a flap gate is present that prevents reverse flow
	xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
	ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
outfall_fr					
	node_id	7	INTEGER	4	Name assigned to outfall node
	elev	4	DOUBLE	12,4	Invert elevation (ft or m)
	type_otlfr	10	STRING	16	FREE
	gate	4	STRING	3	YES or NO depending on whether a flap gate is present that prevents reverse flow
	xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
	ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
outfall_nm					
	node_id	7	INTEGER	4	Name assigned to outfall node
	elev	4	DOUBLE	12,4	Invert elevation (ft or m)
	type_otlnm	10	STRING	16	NORMAL
	gate	4	STRING	3	YES or NO depending on whether a flap gate is present that prevents reverse flow

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V2.0		TYPE	LEGTH	DESCRIPTION
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
outfall_ti				
node_id	7	INTEGER	4	Name assigned to outfall node
elev	4	DOUBLE	12,4	Invert elevation (ft or m)
type_otlti	10	STRING	16	TIDAL
curve_id	8	STRING	16	Name of curve in CURVES section containing tidal height (i.e., otufall stage) v. hour of a day over a complete tidal cycle
gate	4	STRING	3	YES or NO depending on whether a flap gate is present that prevents reverse flow
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
outfall_ts				
node_id	7	INTEGER	4	Name assigned to outfall node
elev	4	DOUBLE	12,4	Invert elevation (ft or m)
type_otlts	10	STRING	16	TIMESERIES
timser_id	9	STRING	16	Name of time series in TIMESERIES section that describes how outfall stage varies with time
gate	4	STRING	3	YES or NO depending on whether a flap gate is present that prevents reverse flow
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
outlet_fcd				
arc_id	6	INTEGER	4	Name of the conduit
node_1	6	INTEGER	4	Name of node on inlet end of link
node_2	6	INTEGER	4	Name of node on outflow end of link
type_oufcd	10	STRING	16	FUNCTIONAL/HEAD o FUNCTIONA/DEPTH
offset	6	DOUBLE	12,4	Amount that the outlet is offset above the invert of inlet node (ft or m, expressed as either a depth or as an elevation, depending on the LINK_OFFSETS option setting)
cd1	3	DOUBLE	12,4	Coefficient and exponent, respectively, of a power function that relates outflow to: - water depth (ft or m) above the offset elevation at the inlet node for a FUNCTIONAL/DEPTH outlet. - Head difference (ft or m) between the inlet and outflow nodes for a FUNCTIONAL/HEAD outlet.
cd2	3	DOUBLE	12,4	Coefficient and exponent, respectively, of a power function that relates outflow to: - water depth (ft or m) above the offset elevation at the inlet node for a FUNCTIONAL/DEPTH outlet. - Head difference (ft or m) between the inlet and outflow nodes for a FUNCTIONAL/HEAD outlet.
flap	4	STRING	3	YES if flap gate present to prevent reverse flow, NO if not (default is NO)
outlet_fch				
arc_id	6	INTEGER	4	Name of the conduit
node_1	6	INTEGER	4	Name of node on inlet end of link
node_2	6	INTEGER	4	Name of node on outflow end of link
type_oufch	10	STRING	16	FUNCTIONAL/HEAD o FUNCTIONA/DEPTH
offset	6	DOUBLE	12,4	Amount that the outlet is offset above the invert of inlet node (ft or m, expressed as either a depth or as an elevation, depending on the LINK_OFFSETS option setting)
cd1	3	DOUBLE	12,4	Coefficient and exponent, respectively, of a power function that relates outflow to: - water depth (ft or m) above the offset elevation at the inlet node for a FUNCTIONAL/DEPTH outlet. - Head difference (ft or m) between the inlet and outflow nodes for a FUNCTIONAL/HEAD outlet.
cd2	3	DOUBLE	12,4	Coefficient and exponent, respectively, of a power function that relates outflow to: - water depth (ft or m) above the offset elevation at the inlet node for a FUNCTIONAL/DEPTH outlet. - Head difference (ft or m) between the inlet and outflow nodes for a FUNCTIONAL/HEAD outlet.
flap	4	STRING	3	YES if flap gate present to prevent reverse flow, NO if not (default is NO)
outlet_tbd				
arc_id	6	INTEGER	4	Name of the conduit
node_1	6	INTEGER	4	Name of node on inlet end of link
node_2	6	INTEGER	4	Name of node on outflow end of link
type_outbd	10	STRING	16	TABULAR/HEAD o TABULAR/DEPTH
offset	6	DOUBLE	12,4	Amount that the outlet is offset above the invert of inlet node (ft or m, expressed as either a depth or as an elevation, depending on the LINK_OFFSETS option setting)
curve_id	8	DOUBLE	12,4	Name of rating curve with outflow rate (flow units) as a function of head (ft or m) across the outlet for a TABULAR outlet
flap	4	STRING	3	YES if flap gate present to prevent reverse flow, NO if not (default is NO)
outlet_tbh				
arc_id	6	INTEGER	4	Name of the conduit
node_1	6	INTEGER	4	Name of node on inlet end of link
node_2	6	INTEGER	4	Name of node on outflow end of link
type_outbh	10	STRING	16	TABULAR/HEAD o TABULAR/DEPTH
offset	6	DOUBLE	12,4	Amount that the outlet is offset above the invert of inlet node (ft or m, expressed as either a depth or as an elevation, depending on the LINK_OFFSETS option setting)

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V2.0		TYPE	LEGTH	DESCRIPTION
curve_id	8	DOUBLE	12,4	Name of rating curve with outflow rate (flow units) as a function of head (ft or m) across the outlet for a TABULAR outlet
flap	4	STRING	3	YES if flap gate present to prevent reverse flow, NO if not (default is NO)
pattern_dl				
patter_id	9	STRING	16	Name used to identify the pattern
type_padl	9	STRING	16	DAILY
factor_1	8	DOUBLE	12,4	Multiplier values
factor_2	8	DOUBLE	12,4	Multiplier values
factor_3	8	DOUBLE	12,4	Multiplier values
factor_4	8	DOUBLE	12,4	Multiplier values
factor_5	8	DOUBLE	12,4	Multiplier values
factor_6	8	DOUBLE	12,4	Multiplier values
factor_7	8	DOUBLE	12,4	Multiplier values
pattern_ho				
patter_id	9	STRING	16	Name used to identify the pattern
type_paho	9	STRING	16	HOURLY
factor_1	8	DOUBLE	12,4	Multiplier values
factor_2	8	DOUBLE	12,4	Multiplier values
factor_3	8	DOUBLE	12,4	Multiplier values
factor_4	8	DOUBLE	12,4	Multiplier values
factor_5	8	DOUBLE	12,4	Multiplier values
factor_6	8	DOUBLE	12,4	Multiplier values
factor_7	8	DOUBLE	12,4	Multiplier values
factor_8	8	DOUBLE	12,4	Multiplier values
factor_9	8	DOUBLE	12,4	Multiplier values
factor_10	9	DOUBLE	12,4	Multiplier values
factor_11	9	DOUBLE	12,4	Multiplier values
factor_12	9	DOUBLE	12,4	Multiplier values
factor_13	9	DOUBLE	12,4	Multiplier values
factor_14	9	DOUBLE	12,4	Multiplier values
factor_15	9	DOUBLE	12,4	Multiplier values
factor_16	9	DOUBLE	12,4	Multiplier values
factor_17	9	DOUBLE	12,4	Multiplier values
factor_18	9	DOUBLE	12,4	Multiplier values
factor_19	9	DOUBLE	12,4	Multiplier values
factor_20	9	DOUBLE	12,4	Multiplier values
factor_21	9	DOUBLE	12,4	Multiplier values
factor_22	9	DOUBLE	12,4	Multiplier values
factor_23	9	DOUBLE	12,4	Multiplier values
factor_24	9	DOUBLE	12,4	Multiplier values
pattern_mo				
patter_id	9	STRING	16	Name used to identify the pattern
type_pamo	9	STRING	16	MONTHLY
factor_1	8	DOUBLE	12,4	Multiplier values
factor_2	8	DOUBLE	12,4	Multiplier values
factor_3	8	DOUBLE	13,4	Multiplier values
factor_4	8	DOUBLE	14,4	Multiplier values
factor_5	8	DOUBLE	15,4	Multiplier values
factor_6	8	DOUBLE	16,4	Multiplier values
factor_7	8	DOUBLE	17,4	Multiplier values
factor_8	8	DOUBLE	18,4	Multiplier values
factor_9	8	DOUBLE	19,4	Multiplier values
factor_10	9	DOUBLE	20,4	Multiplier values
factor_11	9	DOUBLE	21,4	Multiplier values
factor_12	9	DOUBLE	22,4	Multiplier values
pattern_we				
patter_id	9	STRING	16	Name used to identify the pattern
type_pawe	9	STRING	16	WEEKEND
factor_1	8	DOUBLE	12,4	Multiplier values

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V2.0		TYPE	LEGTH	DESCRIPTION
factor_2	8	DOUBLE	12,4	Multiplier values
factor_3	8	DOUBLE	12,4	Multiplier values
factor_4	8	DOUBLE	12,4	Multiplier values
factor_5	8	DOUBLE	12,4	Multiplier values
factor_6	8	DOUBLE	12,4	Multiplier values
factor_7	8	DOUBLE	12,4	Multiplier values
factor_8	8	DOUBLE	12,4	Multiplier values
factor_9	8	DOUBLE	12,4	Multiplier values
factor_10	9	DOUBLE	12,4	Multiplier values
factor_11	9	DOUBLE	12,4	Multiplier values
factor_12	9	DOUBLE	12,4	Multiplier values
factor_13	9	DOUBLE	12,4	Multiplier values
factor_14	9	DOUBLE	12,4	Multiplier values
factor_15	9	DOUBLE	12,4	Multiplier values
factor_16	9	DOUBLE	12,4	Multiplier values
factor_17	9	DOUBLE	12,4	Multiplier values
factor_18	9	DOUBLE	12,4	Multiplier values
factor_19	9	DOUBLE	12,4	Multiplier values
factor_20	9	DOUBLE	12,4	Multiplier values
factor_21	9	DOUBLE	12,4	Multiplier values
factor_22	9	DOUBLE	12,4	Multiplier values
factor_23	9	DOUBLE	12,4	Multiplier values
factor_24	9	DOUBLE	12,4	Multiplier values
pump				
arc_id	6	INTEGER	4	Name of the conduit
node_1	6	INTEGER	4	Name of node on inlet end of orifice
node_2	6	INTEGER	4	Name of node on outlet end of orifice
curve_id	8	STRING	16	Name of pump curve listed in the CURVES section of the input
status	6	STRING	3	Status at start of simulation (either ON or OFF; default is ON)
startup	7	DOUBLE	12,4	Depth at inlet node when pump turns on (ft or m) (default is 0)
shutoff	7	DOUBLE	12,4	Depth at inlet node when pump shuts off (ft or m) (default is 0)
rdii				
node_id	7	INTEGER	4	Name of a node
hydro_id	8	STRING	16	Name of an RDII unit hydrograph group specified in the HYDROGRAPHS section
sewerarea	9	DOUBLE	16,6	Area of the sewershed which contributes RDII to the node (acres or hectares).
rgage_fl				
rg_id	5	INTEGER	4	Name assigned to rain gage
form_type	9	STRING	12	Form to recorded rainfall, either INTENSITY, VOLUME or CUMULATIVE
intvl	5	STRING	10	Time interval between gage readings (in decimal hours or hours:minutes format)
scf	3	DOUBLE	12,4	Snow catch deficiency correction factor (use 1.0 for no adjustment)
type_rgfl	9	STRING	18	FILE or TIMESERIES
fname	5	STRING	254	Name of external file with rainfall data. Rainfall files are discussed in Section 11.3
startup	7	STRING	12	Name of recording station used in the rain file
units	5	STRING	3	Rain depth units used in the rain file, either IN (inches) or MM (millimeters)
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
rgage_ts				
rg_id	5	INTEGER	4	Name assigned to rain gage
form_type	9	STRING	12	Form to recorded rainfall, either INTENSITY, VOLUME or CUMULATIVE
intvl	5	STRING	10	Time interval between gage readings (in decimal hours or hours:minutes format)
scf	3	DOUBLE	12,4	Snow catch deficiency correction factor (use 1.0 for no adjustment)
type_rgts	9	STRING	18	FILE or TIMESERIES
timser_id	9	STRING	16	Name of time series
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
snowpack				
snow_id	7	STRING	16	Name assigned to snowpack parameter set
type_snpk1	10	STRING	16	Type of snowpack (PLOWABLE, IMPERVIOUS, PERVIOUS, REMOVAL)

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V2.0		TYPE	LEGTH	DESCRIPTION
cmin_1	6	DOUBLE	12,4	Minimum melt coefficient (in/hr-deg F or mm/hr-deg C)
cmax_1	6	DOUBLE	12,4	Maximum melt coefficient (in/hr-deg F or mm/hr-deg C)
tbase_1	7	DOUBLE	12,4	Snow melt base temperature (deg F or deg C)
fwf_1	5	DOUBLE	12,4	Ratio of free water holding capacity to snow depth (fraction)
sd0_1	5	DOUBLE	12,4	Initial snow depth (in or mm water equivalent)
fw0_1	5	DOUBLE	12,4	Initial free water in pack (in or mm)
smn0_1	6	DOUBLE	12,4	Fraction of impervious area that can be plowed
type_snpk2	10	STRING	16	Type of snowpack (PLOWABLE, IMPERVIOUS, PERVIOUS, REMOVAL)
cmin_2	6	DOUBLE	12,4	Minimum melt coefficient (in/hr-deg F or mm/hr-deg C)
cmax_2	6	DOUBLE	12,4	Maximum melt coefficient (in/hr-deg F or mm/hr-deg C)
tbase_2	7	DOUBLE	12,4	Snow melt base temperature (deg F or deg C)
fwf_2	5	DOUBLE	12,4	Ratio of free water holding capacity to snow depth (fraction)
sd0_2	5	DOUBLE	12,4	Initial snow depth (in or mm water equivalent)
fw0_2	5	DOUBLE	12,4	Initial free water in pack (in or mm)
sd100_1	7	DOUBLE	12,4	Snow depth above which there is 100% cover (in or mm water equivalent)
type_snpk3	10	STRING	16	Type of snowpack (PLOWABLE, IMPERVIOUS, PERVIOUS, REMOVAL)
cmin_3	6	DOUBLE	12,4	Minimum melt coefficient (in/hr-deg F or mm/hr-deg C)
cmax_3	6	DOUBLE	12,4	Maximum melt coefficient (in/hr-deg F or mm/hr-deg C)
tbase_3	7	DOUBLE	12,4	Snow melt base temperature (deg F or deg C)
fwf_3	5	DOUBLE	12,4	Ratio of free water holding capacity to snow depth (fraction)
sd0_3	5	DOUBLE	12,4	Initial snow depth (in or mm water equivalent)
fw0_3	5	DOUBLE	12,4	Initial free water in pack (in or mm)
sd100_2	7	DOUBLE	12,4	Snow depth above which there is 100% cover (in or mm water equivalent)
type_snpk4	10	STRING	16	Type of snowpack (PLOWABLE, IMPERVIOUS, PERVIOUS, REMOVAL)
dplow	5	DOUBLE	12,4	Depth of snow on plowable areas at which snow removal begins (in or mm)
fout	4	DOUBLE	12,4	Fraction of snow on plowable area transferred out of watershed
fimp	4	DOUBLE	12,4	Fraction of snow on plowable area transferred to impervious area by plowing
fperv	5	DOUBLE	12,4	Fraction of snow on plowable area transferred to pervious area by plowing
fimelt	6	DOUBLE	12,4	Fraction of snow on plowable area converted into immediate melt
fsub	4	DOUBLE	12,4	Fraction of snow on plowable area transferred to pervious area in another subcatchment
subc_id	7	INTEGER	4	Name of subcatchment receiving the Fsubcatch fraction of transferred snow

storage_fc

node_id	7	INTEGER	4	Name assigned to storage node
elev	4	DOUBLE	12,4	Invert elevation (ft or m)
ymax	4	DOUBLE	12,4	Maximum water depth possible (ft or m)
y0	2	DOUBLE	12,4	Water depth at start of simulation (ft or m)
type_stfc	9	STRING	18	Type of storage
a1	2	DOUBLE	12,4	Coefficient of FUNCTIONAL relation between surface area and depth
a2	2	DOUBLE	12,4	Exponent of FUNCTIONAL relation between surface area and depth
a0	2	DOUBLE	12,4	Constant of FUNCTIONAL relation between surface area and depth
apond	5	DOUBLE	16,6	Surface area subjected to ponding once water depth exceeds Ymax (ft2 or m2) (default is 0)
fevap	5	DOUBLE	12,4	Fraction of potential evaporation from surface realized (default is 0)
sh	2	DOUBLE	12,4	Soil capillary suction head (in or mm)
hc	2	DOUBLE	12,4	Soil saturated hydraulic conductivity (in/hr or mm/hr)
imd	3	DOUBLE	12,4	Initial soil moisture deficit (volume of voids / total volume)
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map

storage_tb

node_id	7	INTEGER	4	Name assigned to storage node
elev	4	DOUBLE	12,4	Invert elevation (ft or m)
ymax	4	DOUBLE	12,4	Maximum water depth possible (ft or m)
y0	2	DOUBLE	12,4	Water depth at start of simulation (ft or m)
type_sttb	9	STRING	18	Type of storage
curve_id	8	STRING	16	Name of curve in CURVES section with surface area (ft2 or mm2) as a function of depth (ft or mm) for TABULAR geometry
apond	5	DOUBLE	16,6	Surface area subjected to ponding once water depth exceeds Ymax (ft2 or m2) (default is 0)
fevap	5	DOUBLE	12,4	Fraction of potential evaporation from surface realized (default is 0)
sh	2	DOUBLE	12,4	Soil capillary suction head (in or mm)
hc	2	DOUBLE	12,4	Soil saturated hydraulic conductivity (in/hr or mm/hr)
imd	3	DOUBLE	12,4	Initial soil moisture deficit (volume of voids / total volume)
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map

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V2.0		TYPE	LEGTH	DESCRIPTION
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
subcatch				
subc_id	7	INTEGER	4	Name assigned to subcatchment
node_id	7	INTEGER	4	Name of a node that receives runoff from subcatchment
rg_id	5	INTEGER	4	Name of rain gage in RAINGAGES section assigned to subcatchment
area	4	DOUBLE	16,6	Area of subcatchment (acres or hectares)
imperv	6	DOUBLE	12,4	Percent imperviousness of subcatchment
width	5	DOUBLE	12,4	Characteristic width of subcatchment (ft or meters)
slope	5	DOUBLE	12,4	Subcatchment slope (percent)
clength	7	DOUBLE	12,4	Total curb length (any length units)
snow_id	7	STRING	16	Name of snow pack object (from SNOWPACKS section) that characterizes snow accumulation and melting over the subcatchment
nimp	4	DOUBLE	12,4	Manning's N for overland flow over the impervious sub-area
nperv	5	DOUBLE	12,4	Manning's N for overland flow over the pervious sub-area
simp	4	DOUBLE	12,4	Depression storage for impervious sub-area (inches or mm)
sperv	5	DOUBLE	12,4	Depression storage for pervious sub-area (inches or mm)
zero	4	DOUBLE	12,4	Percent of impervious area with no depression storage
roureto	7	STRING	20	Use IMPERV if pervious area runoff runs onto impervious area, PERV if impervious runoff runs onto impervious area, or OUTLET if both areas drain to the subcatchment's outlet. (default is OUTLET)
rtd	4	DOUBLE	12,4	Percent of runoff routed from one type of area to another (default = 100)
temp_fl				
type_tefl	9	STRING	16	Temperature type (see the SWMM's Manual)
fname	5	STRING	254	Name of external Climate file with temperature data.
start	5	STRING	12	Date to begin reading from the file in Month-Day-Year format (default is the beginning of the file)
temp_sn				
type_tesn	9	STRING	16	Temperature type (see the SWMM's Manual)
stemp	5	DOUBLE	12,4	Air temperature at which precipitation falls as snow (deg F or C)
atiwt	5	DOUBLE	12,4	Antecedent temperature index weight (default is 0.5)
rnm	3	DOUBLE	12,4	Negative melt ratio (default is 0.6)
elev	4	DOUBLE	12,4	Average elevation of study area above mean sea level (ft or mm) (default is 0)
lat	3	DOUBLE	12,4	Latitude of the study area in degrees North (default is 50)
dtlong	6	DOUBLE	12,4	Correction, in minutes of time, between true solar time and the standard clock time (default is 0)
type_teai	9	STRING	16	Temperature type (see the SWMM's Manual)
i_f0	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.0
i_f1	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.1
i_f2	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.2
i_f3	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.3
i_f4	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.4
i_f5	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.5
i_f6	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.6
i_f7	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.7
i_f8	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.8
i_f9	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.9
type_teap	9	STRING	16	Temperature type (see the SWMM's Manual)
p_f0	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.0
p_f1	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.1
p_f2	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.2
p_f3	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.3
p_f4	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.4
p_f5	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.5
p_f6	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.6
p_f7	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.7
p_f8	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.8
p_f9	4	DOUBLE	12,4	Fraction of area covered by snow when ratio of snow depth to depth at 100% cover is 0.9
temp_ts				
type_tets	9	STRING	16	Temperature type (see the SWMM's Manual)
timser_id	9	STRING	16	Name of time series in TIMESERIES section with temperature data
temp_wf				
type_tews	9	STRING	16	Temperature type (see the SWMM's Manual)

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V2.0		TYPE	LEGTH	DESCRIPTION
type_tefl	9	STRING	16	Temperature type (see the SWMM's Manual)
fname	5	STRING	254	Name of external Climate file with temperature data.
temp_wm				
type_tews	9	STRING	16	Temperature type (see the SWMM's Manual)
type_temo	9	STRING	16	Temperature type (see the SWMM's Manual)
value_1	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_2	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_3	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_4	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_5	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_6	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_7	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_8	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_9	7	DOUBLE	12,4	Temperature value parameters of SWMM project
value_10	8	DOUBLE	12,4	Temperature value parameters of SWMM project
value_11	8	DOUBLE	12,4	Temperature value parameters of SWMM project
value_12	8	DOUBLE	12,4	Temperature value parameters of SWMM project
timser_abs				
id	2	INTEGER	4	ID number (1, 2, 3 ...)
timser_id	9	STRING	16	Name assigned to time series
date	4	STRING	12	Date in Month/Day/Year format (e.g., June 15, 2001 would be 6/15/2001)
hour	4	STRING	10	24-hour military time (e.g., 8:40 pm would be 20:40) relative to the last date specified (or to midnight of the starting date of the simulation if no previous date was specified)
time	4	STRING	10	Hours since the start of the simulation, expressed as a decimal number or as hours:minutes
value	5	DOUBLE	12,4	Value corresponding to given date and time
fname	5	STRING	254	Name of a file in which the time series data are stored
timser_fl				
timser_id	9	STRING	16	Name assigned to time series
type_times	10	STRING	16	Time series type (see the SWMM's Manual)
fname	5	STRING	254	Name of a file in which the time series data are stored
timser_rel				
id	2	INTEGER	4	ID number (1, 2, 3 ...)
timser_id	9	STRING	16	Name assigned to time series
date	4	STRING	12	Date in Month/Day/Year format (e.g., June 15, 2001 would be 6/15/2001)
hour	4	STRING	10	24-hour military time (e.g., 8:40 pm would be 20:40) relative to the last date specified (or to midnight of the starting date of the simulation if no previous date was specified)
time	4	STRING	10	Hours since the start of the simulation, expressed as a decimal number or as hours:minutes
value	5	DOUBLE	12,4	Value corresponding to given date and time
fname	5	STRING	254	Name of a file in which the time series data are stored
transects				
id	2	INTEGER	4	ID number (1, 2, 3 ...)
text	4	STRING	254	transects text (see SWMM user's manual for more details)
treatment				
node_id	7	INTEGER	4	Name of a node where treatment occurs
poll_id	7	STRING	16	Name of pollutant receiving
function	8	STRING	100	Mathematical function expressing treatments result in terms of pollutant concentrations, pollutant removals, and other standard variables (see below)
vertice				
vertice_id	10	INTEGER	4	Name of vertice
arc_id	6	INTEGER	4	Name of conduit
xcoord	6	DOUBLE	16,6	Horizontal coordinate of vertex relative to origin in lower left of map
ycoord	6	DOUBLE	16,6	Vertical coordinate of vertex relative to origin in lower left of map
washoff				
landus_id	9	STRING	16	Land use name
poll_id	7	STRING	16	Pollutant name
funcw_type	10	STRING	18	Washoff function type: EXP/RC/EMC
c1	2	DOUBLE	12,4	Washoff function coefficients (see Table D-3)

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V2.0		TYPE	LEGTH	DESCRIPTION
c2	2	DOUBLE	12,4	Washoff function coefficients (see Table D-3)
sweepeffic	10	DOUBLE	12,4	Street sweeping removal efficiency (percent)
bmpeffic	8	DOUBLE	12,4	BMP removal efficiency (percent)
weir				
arc_id	6	INTEGER	4	Name of conduit
node_1	6	INTEGER	4	Name of node on inlet side of weir
node_2	6	INTEGER	4	Name of node on outlet side of weir
weir_type	9	STRING	18	TRANSVERSE, SIDEFLOW, V-NOTCH, or TRAPEZOIDAL (see the SWMM's Manual)
offset	6	DOUBLE	12,4	Amount that wier's crest is offset above the invert of inlet node (ft or m, expressed as either a depth or as an elevation, depending on the LINK_OFFSETS option setting)
cd	2	DOUBLE	12,4	Weir discharge coefficient (for CFS if using US flow units or CMS if using metric flow units)
ec	2	DOUBLE	12,4	Number of end contractions for TRANSVERSE or TRAPEZOIDAL weir (default is 0)
cd2	3	DOUBLE	12,4	Discharge coefficient for triangular ends of a TRAPEZOIDAL weir (for CFS if using US flow units or CMS if using metric flow units) (default is value of Cd)
flap	4	STRING	3	YES if flap gate present to prevent reverse flow, NO if not (default is NO)
shape	5	STRING	18	Cross-section shape (see Tables D-1 below or 3-1 for available shapes)
geom1	5	DOUBLE	12,4	Full height of the cross-section (ft or m)
geom2	5	DOUBLE	12,4	Auxiliary parameters (width,side,slopes, etc.) as listed in Table D-1)
geom3	5	DOUBLE	12,4	Auxiliary parameters (width,side,slopes, etc.) as listed in Table D-1)
geom4	5	DOUBLE	12,4	Auxiliary parameters (width,side,slopes, etc.) as listed in Table D-1)

APPENDIX A - EPASWMM DATA MODELS

PostgreSQL TO EPASWMM 5.0022

Table/view name	Class	Description	action to do	Field Values from target command line SWMM
arc	Shape	Arc features data	Put records and fill the fields	CONDUITS, PUMPS, ORIFICES, WEIRS, OUTLETS
node	Shape	Node features data	Put records and fill the fields	JUNCTIONS, OUTFALLS, DIVIDERS, STORAGE
subcatchment	Shape	Subcatchment features data	Put records and fill the fields	SUBCATCHMENTS, SUBAREAS, INFILTRATION
raingage	Shape	Raingage features data	Put records and fill the fields	RAINGAGES
vertec	Shape	Vertice features (Intermediate points from arc features) data	Put records and fill the fields	VERTICES
connec	Shape	Connection features data	Put records and fill the fields	
gully	Shape	Gully features data	Put records and fill the fields	
catchment	Shape	Catchment features (otherwise sector features) data	Put records and fill the fields	
result_selection	Selection	Selection table from result_id	Select one result_id to restrict information in rpt views	
catch_selection	Selection	Selection table from catch_id	Select one or more catch_id to export data to SWMM	
cat_arc	Catalog	Arc features catalog	You must to put records (one minimum) to activate SWMM mode	XSECTIONS, TRANSECTS
cat_connec	Catalog	Connection features catalog	Put records and fill the fields	
cat_cover	Catalog	Cover catalog	Put records and fill the fields	
cat_gully	Catalog	Gully features catalog	Put records and fill the fields	
cat_mat	Catalog	Materials catalog	You must to put records (one minimum) to activate SWMM mode	CONDUITS
cat_mihole	Catalog	Manhole catalog	Put records and fill the fields	
inp_map_dim	SWMM data	Provides dimensions and distance units for the map.	Fill the fields	MAP
inp_mapunits	SWMM data	Provides dimensions and distance units for the map.	Fill the fields	MAP
inp_options	SWMM data	analysis options	Fill the fields	OPTIONS
inp_project_id	SWMM data	project identification (title, author and date)	Fill the fields	TITLE
inp_snowmelt	SWMM data	air snow melt data	Fill the fields	TEMPERATURE
inp_temperature	SWMM data	air temperature data	Fill the fields	TEMPERATURE
inp_windspeed	SWMM data	air wind speed data	Fill the fields	TEMPERATURE
inp_aquifer	SWMM data	groundwater aquifer parameters	Put records and fill the fields	AQUIFER
inp_buidup_land_x_pol	SWMM data	buildup functions for pollutants and land uses	Put records and fill the fields	BUILDUP
inp_backdrop	SWMM data	Specifies file name and coordinates of map's backdrop image.	Put records and fill the fields	BACKDROP
inp_conduit	SWMM data	conduit arc information	Put records and fill the fields	CONDUIT, LOSSES
inp_controls	SWMM data	rules that control pump and regulator operation	Put records and fill the fields	CONTROLS
inp_coverage_land_x_subc	SWMM data	assignment of land uses to subcatchments	Put records and fill the fields	COVERAGE
inp_curve_id	SWMM data	x-y tabular data catalog	Put records and fill the fields	CURVE
inp_curve	SWMM data	x-y tabular data referenced in other sections	Put records and fill the fields (curve_id from inp_curve_id)	CURVE
inp_divider	SWMM data	divider node information	Put records and fill the fields	DIVIDER
inp_dwf	SWMM data	baseline dry weather sanitary inflow at nodes	Put records and fill the fields	DWF
inp_dwf_pol_x_node	SWMM data	baseline dry weather sanitary pollutants at nodes	Put records and fill the fields	DWF
inp_evaporation	SWMM data	evaporation data	Put records and fill the fields	EVAPORATION
inp_files	SWMM data	interface file options	Put records and fill the fields	FILES
inp_groundwater	SWMM data	subcatchment groundwater parameters	Put records and fill the fields	GROUNDWATER

Table/view name	Class	Description	action to do	Field Values from target command line SWMM
inp_hydrograph	SWMM data	unit hydrograph data used to construct RDII inflows	Put records and fill the fields	HYDROGRAPH
inp_inflows	SWMM data	external hydrograph inflow at nodes	Put records and fill the fields	INFLOWS
inp_inflows_pol_x_node	SWMM data	external pollutograph inflow at nodes	Put records and fill the fields	INFLOWS
inp_junction	SWMM data	junction node information	Put records and fill the fields	JUNCTION
inp_label	SWMM data	Assigns X,Y coordinates to user-defined map labels.	Put records and fill the fields	LABEL
inp_landuses	SWMM data	land use categories	Put records and fill the fields	LANDUSES
inp_lid_control	SWMM data	low impact development control information	Put records and fill the fields	LID_CONTROLS
inp_lidusage_subc_x_lidco	SWMM data	assignment of LID controls to subcatchments	Put records and fill the fields	LID_USAGE
inp_loadings_pol_x_subc	SWMM data	initial pollutant loads on subcatchments	Put records and fill the fields	LOADINGS
inp_orifice	SWMM data	orifice arc information	Put records and fill the fields	ORIFICE
inp_outfall	SWMM data	outfall node information	Put records and fill the fields	OUTFALL, XSECTIONS
inp_outlet	SWMM data	outlet arc information	Put records and fill the fields	OUTLET
inp_pattern	SWMM data	periodic variation in dry weather inflow	Put records and fill the fields	PATTERN
inp_pollutant	SWMM data	pollutant information	Put records and fill the fields	POLLUTANTS
inp_pump	SWMM data	pump link information	Put records and fill the fields	PUMPS
inp_rdi	SWMM data	rainfall-dependent I/I information at nodes	Put records and fill the fields	RDII
inp_report	SWMM data	output reporting instructions	Put records and fill the fields	REPORT
inp_snowpack	SWMM data	subcatchment snow pack parameters	Put records and fill the fields	SNOWPACKS
inp_storage	SWMM data	storage node information	Put records and fill the fields	STORAGE
inp_timser_id	SWMM data	time series data catalog	Put records and fill the fields	TIMESERIES
inp_timeseries	SWMM data	time series data referenced in other sections	Put records and fill the fields (timser_id from inp_timser_id)	TIMESERIES
inp_transects	SWMM data	transect geometry for conduits with irregular cross-sections	Put records and fill the fields	TRANSECTS
inp_treatment_node_x_pol	SWMM data	pollutant removal functions at conveyance system nodes	Put records and fill the fields	TREATMENT
inp_washoff_land_x_pol	SWMM data	washoff functions for pollutants and land uses	Put records and fill the fields	WASHOFF
inp_weir	SWMM data	weir arc information	Put records and fill the fields	WEIR, XSECTIONS
inp_type_arc	SWMM values	Arc SWMM types	Nothing, enjoy it	
inp_type_node	SWMM values	Node SWMM types	Nothing, enjoy it	
inp_typevalue_divider	SWMM values	SWMM divider types from divider table	Nothing, enjoy it	
inp_typevalue_evap	SWMM values	SWMM evaporation types from evaporation table	Nothing, enjoy it	
inp_typevalue_outfall	SWMM values	SWMM outfall types from outfall table	Nothing, enjoy it	
inp_typevalue_outlet	SWMM values	SWMM outlet types from outlet table	Nothing, enjoy it	
inp_typevalue_pattern	SWMM values	SWMM pattern types from pattern table	Nothing, enjoy it	
inp_typevalue_rainrage	SWMM values	SWMM rainrage types from rainrage table	Nothing, enjoy it	
inp_typevalue_storage	SWMM values	SWMM storage types from storage table	Nothing, enjoy it	
inp_typevalue_temp	SWMM values	SWMM temperature types from temperature table	Nothing, enjoy it	
inp_typevalue_timeseries	SWMM values	SWMM timeseries types from timeseries & timser_id tables	Nothing, enjoy it	
inp_typevalue_windsp	SWMM values	SWMM windspeed types from windspeed table	Nothing, enjoy it	

Table/view name	Class	Description	action to do	Field Values from target command line SWMM
inp_value_allnone	SWMM values	ALL / NONE values	Nothing, enjoy it	
inp_value_buildup	SWMM values	SWMM buildup values	Nothing, enjoy it	
inp_value_curve	SWMM values	SWMM curve values	Nothing, enjoy it	
inp_value_files_actio	SWMM values	SWMM action files values	Nothing, enjoy it	
inp_value_files_type	SWMM values	SWMM type files values	Nothing, enjoy it	
inp_value_hydrograph	SWMM values	SWMM hydrograph values	Nothing, enjoy it	
inp_value_lidcontrol	SWMM values	SWMM lidcontrol values	Nothing, enjoy it	
inp_value_mapunits	SWMM values	SWMM mapunits values	Nothing, enjoy it	
inp_value_options_fme	SWMM values	SWMM values from options table	Nothing, enjoy it	
inp_value_options_fr	SWMM values	SWMM values from options table	Nothing, enjoy it	
inp_value_options_fu	SWMM values	SWMM values from options table	Nothing, enjoy it	
inp_value_options_id	SWMM values	SWMM values from options table	Nothing, enjoy it	
inp_value_options_in	SWMM values	SWMM values from options table	Nothing, enjoy it	
inp_value_options_lo	SWMM values	SWMM values from options table	Nothing, enjoy it	
inp_value_options_nfl	SWMM values	SWMM values from options table	Nothing, enjoy it	
inp_value_orifice	SWMM values	SWMM orifice values	Nothing, enjoy it	
inp_value_raingage	SWMM values	SWMM raingage values	Nothing, enjoy it	
inp_value_timestep	SWMM values	SWMM timeseries values	Nothing, enjoy it	
inp_value_washhoff	SWMM values	SWMM washhoff values	Nothing, enjoy it	
inp_value_weirs	SWMM values	SWMM weirs values	Nothing, enjoy it	
inp_value_yesno	SWMM values	YES / NO values	Nothing, enjoy it	
man_arcdat	Manag. data	arc management data	Put records and fill the fields	
man_element	Manag. data	element management data	Put records and fill the fields	
man_event	Manag. data	event management data	Put records and fill the fields	
man_event_x_arc	Manag. data	assignment of event data to arc feature	Put records and fill the fields	
man_event_x_connec	Manag. data	assignment of event data to connec feature	Put records and fill the fields	
man_event_x_gully	Manag. data	assignment of event data to gully feature	Put records and fill the fields	
man_event_x_node	Manag. data	assignment of event data to node feature	Put records and fill the fields	
man_manhole	Manag. data	manhole management data	Put records and fill the fields	
man_type_event	Manag. Value	management event types	Put records and fill the fields	
man_type_node	Manag. Value	management node types	Put records and fill the fields	
man_value_elentype	Manag. Value	management element types	Put records and fill the fields	
man_value_sedsta	Manag. Value	management sediment state values	Put records and fill the fields	
man_value_arccategory	Manag. Value	management arc category values	Put records and fill the fields	
man_value_arclloc	Manag. Value	management arc location values	Put records and fill the fields	
man_value_consstia	Manag. Value	management construction state values	Put records and fill the fields	
man_value_coversta	Manag. Value	management cover state values	Put records and fill the fields	

Table/view name	Class	Description	action to do	Field Values from target command line SWMM
man_value_direction	Manag. Value	management arc direction values	Put records and fill the fields	
man_value_gratesta	Manag. Value	management grate state values	Put records and fill the fields	
man_value_roadloc	Manag. Value	management road location values	Put records and fill the fields	
man_value_soildata	Manag. Value	management soil data values	Put records and fill the fields	
man_value_systemtype	Manag. Value	management system type values	Put records and fill the fields	
rpt_result_cat	SWMM result	SWMM results catalog	You can delete records with cascade option (if you don't like it)	
rpt_arcflo_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_condsurcharge_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_continuity_errors	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_critical_elements	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_flowclass_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_flowrouting_cont	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_groundwater_cont	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_high_conterrors	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_high_flowinest_ind	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_instability_index	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_ldperformance_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_nodedepth_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_nodeflooding_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_nodeinflow_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_nodesurcharge_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_outfallflow_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_outfallload_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_pumping_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_qualrouting_cont	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_rainfall_dep	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_routing_timestep	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_runoff_qual	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_runoff_quant	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_storagevol_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_subcatchwashoff_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_subcathrunoff_sum	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
rpt_timestep_critelem	SWMM result	SWMM table results from rpt file	Nothing, enjoy it	
geography_columns	PostGIS view	PostGIS geography data view	Nothing, enjoy it	
v_inp_conduit_cu	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_conduit_no	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_conduit_xs	SWMM view	Export conduit data view	Nothing, enjoy it	

Table/view name	Class	Description	action to do	Field Values from target command line SWMM
v_inp_controls	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_coverages	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_divider_cu	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_divider_ov	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_divider_tb	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_divider_wr	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_dwf_flow	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_dwf_load	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_evap_co	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_evap_fl	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_evap_mo	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_evap_pa	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_evap_te	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_evap_ts	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_inp_groudwater	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_hydrograph	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_infiltration_cu	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_infiltration_gr	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_infiltration_ho	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_inflows_flow	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_inflows_load	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_junction	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_landuses	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_loadings	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_losses	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_orifice	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outfall_fi	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outfall_fr	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outfall_nm	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outfall_ti	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outfall_ts	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outlet_fcd	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outlet_fch	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outlet_tbd	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_outlet_tbh	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_pattern_dl	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_pattern_ho	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_pattern_mo	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_pattern_we	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_pump	SWMM view	Export conduit data view	Nothing, enjoy it	

Table/View name	Class	Description	action to do	Field Values from target command line SWMM
v_inp_rdtli	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_rgage_fl	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_rgage_ts	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_snowpack	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_storage_fc	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_storage_tb	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_subcatch	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_temp_fl	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_temp_sn	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_temp_ts	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_temp_wf	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_temp_wm	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_timser_abs	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_timser_fl	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_timser_rel	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_transects	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_treatment	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_vertice	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_washoff	SWMM view	Export conduit data view	Nothing, enjoy it	
v_inp_weir	SWMM view	Export conduit data view	Nothing, enjoy it	
v_man_arc	Manag. view	Arc management view	Capture from GIS desktop and enjoy it	
v_man_node	Manag. view	Node management view	Capture from GIS desktop and enjoy it	
v_rpt_arcflow_sum	Result view	Single result arc flow summary view	Capture from GIS desktop and enjoy it	
v_rpt_nodefood_sum	Result view	Single result node flooding summary view	Capture from GIS desktop and enjoy it	

arc			
	Field	Type	Extra
P	arc_id	int4	
	node_1	int4	Allow Null
	node_2	int4	Allow Null
	length	numeric(12,4)	Allow Null
	z1	numeric(12,4)	Allow Null
	z2	numeric(12,4)	Allow Null
	arccat_id	varchar(16)	Allow Null
	matcat_id	varchar(16)	Allow Null
	swmm_type	varchar(18)	Allow Null
	categ_type	varchar(18)	Allow Null
	systm_type	varchar(18)	Allow Null
	catch_id	int4	Allow Null
	label	varchar(20)	Allow Null
	arc_slope	numeric(12,4)	Allow Null
	str_slope	numeric(12,4)	Allow Null
	pfc	numeric(12,4)	Allow Null
	t	numeric(12,4)	Allow Null
	y1	numeric(12,4)	Allow Null
	y2	numeric(12,4)	Allow Null
	direction	varchar(3)	Allow Null
	link	varchar(254)	Allow Null
	the_geom	"public"."geometry"	Allow Null

cat_arc			
	Field	Type	Extra
P	id	varchar(16)	
	shape	varchar(16)	Allow Null
	tsect_id	varchar(16)	Allow Null
	curve_id	varchar(16)	Allow Null
	geom1	numeric(12,4)	Allow Null
	geom2	numeric(12,4)	Allow Null
	geom3	numeric(12,4)	Allow Null
	geom4	numeric(12,4)	Allow Null
	geom_r	varchar(20)	Allow Null
	ts	numeric(12,4)	Allow Null
	thr	numeric(12,4)	Allow Null
	short_des	varchar(16)	Allow Null
	descript	varchar(100)	Allow Null

cat_connec			
	Field	Type	Extra
P	id	varchar(16)	
	short_des	varchar(16)	Allow Null
	descript	varchar(100)	Allow Null

cat_cover			
	Field	Type	Extra
P	id	varchar(16)	
	short_des	varchar(16)	Allow Null
	descript	varchar(100)	Allow Null
	material	varchar(16)	Allow Null

cat_gully			
	Field	Type	Extra
P	id	varchar(16)	
	short_des	varchar(16)	Allow Null
	descr	varchar(100)	Allow Null

cat_mat			
	Field	Type	Extra
P	id	varchar(16)	
	descript	varchar(100)	Allow Null
	n	numeric(12,4)	Allow Null

cat_mhole			
	Field	Type	Extra
P	id	varchar(16)	
	short_des	varchar(16)	Allow Null
	descript	varchar(100)	Allow Null

catch_selection			
	Field	Type	Extra
P	catch_id	int4	

catchment			
	Field	Type	Extra
P	catch_id	int4	
	descript	varchar(100)	Allow Null
	the_geom	"public"."geometry"	Allow Null

connec			
	Field	Type	Extra
P	connec_id	int4	
	adress_id	varchar(16)	Allow Null
	owner	varchar(50)	Allow Null
	operator	varchar(50)	Allow Null
	mainten	varchar(50)	Allow Null
	conn_type	varchar(16)	Allow Null
	arccat_id	varchar(16)	Allow Null
	geom1	numeric(12,4)	Allow Null
	geom2	numeric(12,4)	Allow Null
	geom3	numeric(12,4)	Allow Null
	matcat_id	varchar(16)	Allow Null
	builddate	varchar(12)	Allow Null
	catch_id	int4	Allow Null
	link	varchar(254)	Allow Null
	tmp_inf	varchar(254)	Allow Null
	com_inf	varchar(254)	Allow Null
	wstage_id	varchar(16)	Allow Null
	the_geom	"public"."geometry"	Allow Null

gully			
	Field	Type	Extra
P	gully_id	int4	
	adress_id	varchar(16)	Allow Null
	arc_id	int4	Allow Null
	owner	varchar(50)	Allow Null
	operator	varchar(50)	Allow Null
	mainten	varchar(50)	Allow Null
	gullcat_id	varchar(16)	Allow Null
	geometry	varchar(50)	Allow Null
	grate	varchar(50)	Allow Null
	recip	varchar(50)	Allow Null
	sandbox	varchar(50)	Allow Null
	builddate	varchar(12)	Allow Null
	catch_id	int4	Allow Null
	link	varchar(254)	Allow Null
	tmp_inf	varchar(254)	Allow Null
	com_inf	varchar(254)	Allow Null
	wstage_id	varchar(16)	Allow Null
	the_geom	"public"."geometry"	Allow Null

inp_aquifer			
	Field	Type	Extra
P	aquif_id	int4	
	por	numeric(12,4)	Allow Null
	wp	numeric(12,4)	Allow Null
	fc	numeric(12,4)	Allow Null
	k	numeric(12,4)	Allow Null
	ks	numeric(12,4)	Allow Null
	ps	numeric(12,4)	Allow Null
	uef	numeric(12,4)	Allow Null
	led	numeric(12,4)	Allow Null
	gwr	numeric(12,4)	Allow Null
	be	numeric(12,4)	Allow Null
	wte	numeric(12,4)	Allow Null
	umc	numeric(12,4)	Allow Null

inp_backdrop			
	Field	Type	Extra
P	id	int4	
	text	varchar(254)	Allow Null

inp_buildup_land_x_pol			
	Field	Type	Extra
P	landuses_id	varchar(16)	
P	poll_id	varchar(16)	
	funcb_type	varchar(18)	Allow Null
	c1	numeric(12,4)	Allow Null
	c2	numeric(12,4)	Allow Null
	c3	numeric(12,4)	Allow Null
	perunit	varchar(10)	Allow Null

inp_catch_selection			
	Field	Type	Extra
P	catch_id	varchar(18)	

inp_conduit			
	Field	Type	Extra
P	arc_id	int4	
	barrels	int2	Allow Null
	culvert	varchar(10)	Allow Null
	kentry	numeric(12,4)	Allow Null
	kexit	numeric(12,4)	Allow Null
	kavg	numeric(12,4)	Allow Null
	flap	varchar(3)	Allow Null
	q0	numeric(12,4)	Allow Null
	qmax	numeric(12,4)	Allow Null

inp_controls			
	Field	Type	Extra
P	id	int4	
	text	varchar(254)	Allow Null

inp_coverage_land_x_subc			
	Field	Type	Extra
P	subc_id	int4	
P	landuses_id	varchar(16)	
	percent	numeric(12,4)	Allow Null

inp_curve		
	Field	Type Extra
P	id	int4
	curve_id	varchar(16) Allow Null
	curve_type	varchar(16) Allow Null
	x_value	numeric(18,6) Allow Null
	y_value	numeric(18,6) Allow Null

inp_curve_id		
	Field	Type Extra
P	id	varchar(16)
	curve_type	varchar(20) Allow Null

inp_divider		
	Field	Type Extra
P	node_id	int4
	divider_type	varchar(18) Allow Null
	arc_id	int4 Allow Null
	curve_id	varchar(16) Allow Null
	qmin	numeric(16,6) Allow Null
	ht	numeric(12,4) Allow Null
	cd	numeric(12,4) Allow Null

inp_dwf		
	Field	Type Extra
P	id	int4
	node_id	int4 Allow Null
	value	numeric(12,4) Allow Null
	pat1	varchar(16) Allow Null
	pat2	varchar(16) Allow Null
	pat3	varchar(16) Allow Null
	pat4	varchar(16) Allow Null
	area	numeric Allow Null
	inhabitants	int4 Allow Null

inp_dwf_pol_x_node		
	Field	Type Extra
P	poll_id	varchar(16)
P	node_id	int4
	value	numeric(12,4) Allow Null
	pat1	varchar(16) Allow Null
	pat2	varchar(16) Allow Null
	pat3	varchar(16) Allow Null
	pat4	varchar(16) Allow Null

inp_evaporation

	Field	Type	Extra
P	evap_type	varchar(16)	
	evap	numeric(12,4)	Allow Null
	timser_id	varchar(16)	Allow Null
	value_1	numeric(12,4)	Allow Null
	value_2	numeric(12,4)	Allow Null
	value_3	numeric(12,4)	Allow Null
	value_4	numeric(12,4)	Allow Null
	value_5	numeric(12,4)	Allow Null
	value_6	numeric(12,4)	Allow Null
	value_7	numeric(12,4)	Allow Null
	value_8	numeric(12,4)	Allow Null
	value_9	numeric(12,4)	Allow Null
	value_10	numeric(12,4)	Allow Null
	value_11	numeric(12,4)	Allow Null
	value_12	numeric(12,4)	Allow Null
	pan_1	numeric(12,4)	Allow Null
	pan_2	numeric(12,4)	Allow Null
	pan_3	numeric(12,4)	Allow Null
	pan_4	numeric(12,4)	Allow Null
	pan_5	numeric(12,4)	Allow Null
	pan_6	numeric(12,4)	Allow Null
	pan_7	numeric(12,4)	Allow Null
	pan_8	numeric(12,4)	Allow Null
	pan_9	numeric(12,4)	Allow Null
	pan_10	numeric(12,4)	Allow Null
	pan_11	numeric(12,4)	Allow Null
	pan_12	numeric(12,4)	Allow Null
	recovery	varchar(16)	Allow Null
	dry_only	varchar(3)	Allow Null

inp_files

	Field	Type	Extra
P	id	int4	
	actio_type	varchar(18)	Allow Null
	file_type	varchar(18)	Allow Null
	fname	varchar(254)	Allow Null

inp_groundwater

	Field	Type	Extra
P	subc_id	int4	
P	aquif_id	int4	
	node_id	int4	Allow Null
	surfel	numeric(10,4)	Allow Null
	a1	numeric(10,4)	Allow Null
	b1	numeric(10,4)	Allow Null
	a2	numeric(10,4)	Allow Null
	b2	numeric(10,4)	Allow Null
	a3	numeric(10,4)	Allow Null
	tw	numeric(10,4)	Allow Null
	h	numeric(10,4)	Allow Null

inp_hydrograph

	Field	Type	Extra
P	id	int4	
	text	varchar(254)	Allow Null

inp_inflows		
Field	Type	Extra
P id	int4	
node_id	int4	Allow Null
timser_id	varchar(16)	Allow Null
type_inf_1	varchar(18)	Allow Null
n1	numeric(12,4)	Allow Null
sfactor	numeric(12,4)	Allow Null
base	numeric(12,4)	Allow Null
patter_id	varchar(16)	Allow Null

inp_inflows_pol_x_node		
Field	Type	Extra
P poll_id	varchar(16)	
P node_id	int4	
timser_id	varchar(16)	Allow Null
form_type	varchar(18)	Allow Null
mfactor	numeric(12,4)	Allow Null
sfactor	numeric(12,4)	Allow Null
base	numeric(12,4)	Allow Null
patter_id	varchar(16)	Allow Null

inp_junction		
Field	Type	Extra
P node_id	int4	
y0	numeric(12,4)	Allow Null
ysur	numeric(12,4)	Allow Null
apond	numeric(12,4)	Allow Null

inp_label		
Field	Type	Extra
P id_label	varchar(16)	
xcoord	numeric(18,6)	Allow Null
ycoord	numeric(18,6)	Allow Null
anchor	varchar(16)	Allow Null
font	varchar(50)	Allow Null
size	numeric(12,4)	Allow Null
bold	varchar(3)	Allow Null
italic	varchar(3)	Allow Null

inp_landuses		
Field	Type	Extra
P landuses_id	varchar(16)	
sweepint	numeric(12,4)	Allow Null
availab	numeric(12,4)	Allow Null
lastsweep	numeric(12,4)	Allow Null

inp_lid_control		
Field	Type	Extra
P id	int4	
lidco_id	varchar(16)	Allow Null
lidco_type	varchar(10)	Allow Null
value_2	numeric(12,4)	Allow Null
value_3	numeric(12,4)	Allow Null
value_4	numeric(12,4)	Allow Null
value_5	numeric(12,4)	Allow Null
value_6	numeric(12,4)	Allow Null
value_7	numeric(12,4)	Allow Null
value_8	numeric(12,4)	Allow Null

inp_lidusage_subc_x_lidco

	Field	Type	Extra
P	subc_id	int4	
P	lidco_id	varchar(16)	
	number	numeric(12,4)	Allow Null
	area	numeric(16,6)	Allow Null
	width	numeric(12,4)	Allow Null
	initsat	numeric(12,4)	Allow Null
	fromimp	numeric(12,4)	Allow Null
	toperv	numeric(12,4)	Allow Null
	rptfile	varchar(10)	Allow Null

inp_loadings_pol_x_subc

	Field	Type	Extra
P	poll_id	varchar(16)	
P	subc_id	int4	
	ibuilddup	numeric(12,4)	Allow Null

inp_map_dim

	Field	Type	Extra
P	id	int4	
	type_dim	varchar(18)	Allow Null
	x1	numeric(18,6)	Allow Null
	y1	numeric(18,6)	Allow Null
	x2	numeric(18,6)	Allow Null
	y2	numeric(18,6)	Allow Null

inp_mapunits

	Field	Type	Extra
P	id	int4	
	type_units	varchar(18)	Allow Null
	map_type	varchar(18)	Allow Null

inp_options

	Field	Type	Extra
P	flow_units	varchar(20)	
	infiltration	varchar(20)	Allow Null
	flow_routing	varchar(12)	Allow Null
	link_offsets	varchar(12)	Allow Null
	force_main_equation	varchar(3)	Allow Null
	ignore_rainfall	varchar(3)	Allow Null
	ignore_snowmelt	varchar(3)	Allow Null
	ignore_groundwater	varchar(3)	Allow Null
	ignore_routing	varchar(3)	Allow Null
	ignore_quality	varchar(3)	Allow Null
	skip_steady_state	varchar(3)	Allow Null
	start_date	varchar(12)	Allow Null
	start_time	varchar(12)	Allow Null
	end_date	varchar(12)	Allow Null
	end_time	varchar(12)	Allow Null
	report_start_date	varchar(12)	Allow Null
	report_start_time	varchar(12)	Allow Null
	sweep_start	varchar(12)	Allow Null
	sweep_end	varchar(12)	Allow Null
	dry_days	numeric(12)	Allow Null
	report_step	varchar(12)	Allow Null
	wet_step	varchar(12)	Allow Null
	dry_step	varchar(12)	Allow Null
	routing_step	varchar(12)	Allow Null
	lengthening_step	numeric	Allow Null
	variable_step	numeric	Allow Null
	inertial_damping	varchar(12)	Allow Null
	normal_flow_limited	varchar(12)	Allow Null
	min_surfarea	numeric	Allow Null
	min_slope	numeric	Allow Null
	allow_ponding	varchar(3)	Allow Null
	tempdir	varchar(254)	Allow Null

inp_orifice

	Field	Type	Extra
P	arc_id	int4	
	ori_type	varchar(18)	Allow Null
	offset	numeric(12,4)	Allow Null
	cd	numeric(12,4)	Allow Null
	orate	numeric(12,4)	Allow Null
	flap	varchar(3)	Allow Null
	shape	varchar(18)	Allow Null
	geom1	numeric(12,4)	Allow Null
	geom2	numeric(12,4)	Allow Null
	geom3	numeric	Allow Null
	geom4	numeric	Allow Null

inp_outfall

	Field	Type	Extra
P	node_id	int4	
	outfall_type	varchar(16)	Allow Null
	stage	numeric(6,4)	Allow Null
	curve_id	varchar(16)	Allow Null
	timser_id	varchar(16)	Allow Null
	gate	varchar(3)	Allow Null

inp_outlet		
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	Field	Type	Extra
P	arc_id	int4	
	outlet_type	varchar(16)	Allow Null
	offset	numeric(12,4)	Allow Null
	curve_id	varchar(16)	Allow Null
	cd1	numeric(12,4)	Allow Null
	cd2	numeric(12,4)	Allow Null
	flap	varchar(3)	Allow Null

inp_pattern		
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	Field	Type	Extra
P	patter_id	varchar(16)	
	patter_type	varchar(16)	Allow Null
	factor_1	numeric(12,4)	Allow Null
	factor_2	numeric(12,4)	Allow Null
	factor_3	numeric(12,4)	Allow Null
	factor_4	numeric(12,4)	Allow Null
	factor_5	numeric(12,4)	Allow Null
	factor_6	numeric(12,4)	Allow Null
	factor_7	numeric(12,4)	Allow Null
	factor_8	numeric(12,4)	Allow Null
	factor_9	numeric(12,4)	Allow Null
	factor_10	numeric(12,4)	Allow Null
	factor_11	numeric(12,4)	Allow Null
	factor_12	numeric(12,4)	Allow Null
	factor_13	numeric(12,4)	Allow Null
	factor_14	numeric(12,4)	Allow Null
	factor_15	numeric(12,4)	Allow Null
	factor_16	numeric(12,4)	Allow Null
	factor_17	numeric(12,4)	Allow Null
	factor_18	numeric(12,4)	Allow Null
	factor_19	numeric(12,4)	Allow Null
	factor_20	numeric(12,4)	Allow Null
	factor_21	numeric(12,4)	Allow Null
	factor_22	numeric(12,4)	Allow Null
	factor_23	numeric(12,4)	Allow Null
	factor_24	numeric(12,4)	Allow Null

inp_pollutant		
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	Field	Type	Extra
P	poll_id	varchar(16)	
	units_type	varchar(18)	Allow Null
	crain	numeric(12,4)	Allow Null
	cgw	numeric(12,4)	Allow Null
	cii	numeric(12,4)	Allow Null
	kd	numeric(12,4)	Allow Null
	sflag	varchar(3)	Allow Null
	copoll_id	varchar(16)	Allow Null
	cofract	numeric(12,4)	Allow Null
	cdwf	numeric(12,4)	Allow Null

inp_project_id		
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	Field	Type	Extra
P	id	int4	
	title	varchar(254)	Allow Null
	autor	varchar(50)	Allow Null
	date	varchar(12)	Allow Null

inp_pump

	Field	Type	Extra
P	arc_id	int4	
	curve_id	varchar(16)	Allow Null
	status	varchar(3)	Allow Null
	startup	numeric(12,4)	Allow Null
	shutoff	numeric(12,4)	Allow Null

inp_rdii

	Field	Type	Extra
P	node_id	int4	
	hydro_id	varchar(16)	Allow Null
	sewerarea	numeric(16,6)	Allow Null

inp_report

	Field	Type	Extra
P	input	varchar(18)	
	continuity	varchar(20)	Allow Null
	flowstats	varchar(3)	Allow Null
	controls	varchar(3)	Allow Null
	subcatchments	varchar(4)	Allow Null
	nodes	varchar(4)	Allow Null
	links	varchar(4)	Allow Null

inp_snowmelt

	Field	Type	Extra
P	stemp	numeric(12,4)	
	atiwt	numeric(12,4)	Allow Null
	rnm	numeric(12,4)	Allow Null
	elev	numeric(12,4)	Allow Null
	lat	numeric(12,4)	Allow Null
	dtlong	numeric(12,4)	Allow Null
	i_f0	numeric(12,4)	Allow Null
	i_f1	numeric(12,4)	Allow Null
	i_f2	numeric(12,4)	Allow Null
	i_f3	numeric(12,4)	Allow Null
	i_f4	numeric(12,4)	Allow Null
	i_f5	numeric(12,4)	Allow Null
	i_f6	numeric(12,4)	Allow Null
	i_f7	numeric(12,4)	Allow Null
	i_f8	numeric(12,4)	Allow Null
	i_f9	numeric(12,4)	Allow Null
	p_f0	numeric(12,4)	Allow Null
	p_f1	numeric(12,4)	Allow Null
	p_f2	numeric(12,4)	Allow Null
	p_f3	numeric(12,4)	Allow Null
	p_f4	numeric(12,4)	Allow Null
	p_f5	numeric(12,4)	Allow Null
	p_f6	numeric(12,4)	Allow Null
	p_f7	numeric(12,4)	Allow Null
	p_f8	numeric(12,4)	Allow Null
	p_f9	numeric(12,4)	Allow Null

inp_snowpack

	Field	Type	Extra
P	snow_id	varchar(16)	
	cmin_1	numeric(12,4)	Allow Null
	cmax_1	numeric(12,4)	Allow Null
	tbase_1	numeric(12,4)	Allow Null
	fwf_1	numeric(12,4)	Allow Null
	sd0_1	numeric(12,4)	Allow Null
	fw0_1	numeric(12,4)	Allow Null
	smn0_1	numeric(12,4)	Allow Null
	cmin_2	numeric(12,4)	Allow Null
	cmax_2	numeric(12,4)	Allow Null
	tbase_2	numeric(12,4)	Allow Null
	fwf_2	numeric(12,4)	Allow Null
	sd0_2	numeric(12,4)	Allow Null
	fw0_2	numeric(12,4)	Allow Null
	sd100_1	numeric(12,4)	Allow Null
	cmin_3	numeric(12,4)	Allow Null
	cmax_3	numeric(12,4)	Allow Null
	tbase_3	numeric(12,4)	Allow Null
	fwf_3	numeric(12,4)	Allow Null
	sd0_3	numeric(12,4)	Allow Null
	fw0_3	numeric(12,4)	Allow Null
	sd100_2	numeric(12,4)	Allow Null
	dplow	numeric(12,4)	Allow Null
	fout	numeric(12,4)	Allow Null
	fimp	numeric(12,4)	Allow Null
	fperv	numeric(12,4)	Allow Null
	fimelt	numeric(12,4)	Allow Null
	fsub	numeric(12,4)	Allow Null
	subc_id	int4	Allow Null

inp_storage

	Field	Type	Extra
P	node_id	int4	
	storage_type	varchar(18)	Allow Null
	curve_id	varchar(16)	Allow Null
	a1	numeric(12,4)	Allow Null
	a2	numeric(12,4)	Allow Null
	a0	numeric(12,4)	Allow Null
	fevap	numeric(12,4)	Allow Null
	sh	numeric(12,4)	Allow Null
	hc	numeric(12,4)	Allow Null
	imd	numeric(12,4)	Allow Null

inp_temperature

	Field	Type	Extra
P	temp_type	varchar(16)	
	timser_id	varchar(16)	Allow Null
	fname	varchar(254)	Allow Null
	start	varchar(12)	Allow Null

inp_timeseries

	Field	Type	Extra
P	id	int4	
	timser_id	varchar(16)	Allow Null
	times_type	varchar(18)	Allow Null
	date	varchar(12)	Allow Null
	hour	varchar(10)	Allow Null
	time	varchar(10)	Allow Null
	value	numeric(12,4)	Allow Null
	fname	varchar(254)	Allow Null

inp_timser_id			
Field	Type	Extra	
P id	varchar(16)		
times_type	varchar(20)	Allow Null	

inp_transects			
Field	Type	Extra	
P id	int4		
text	varchar(254)	Allow Null	

inp_treatment_node_x_pol			
Field	Type	Extra	
P node_id	int4		
P poll_id	varchar(16)		
function	varchar(100)	Allow Null	

inp_type_arc			
Field	Type	Extra	
P id	varchar(18)		
table	varchar(30)	Allow Null	
descript	varchar(100)	Allow Null	

inp_type_node			
Field	Type	Extra	
P id	varchar(18)		
table	varchar(30)	Allow Null	
descript	varchar(100)	Allow Null	

inp_typevalue_divider			
Field	Type	Extra	
P id	varchar(16)		
descript	varchar(100)	Allow Null	

inp_typevalue_evap			
Field	Type	Extra	
P id	varchar(18)		
descript	varchar(100)	Allow Null	

inp_typevalue_outfall			
Field	Type	Extra	
P id	varchar(16)		
descript	varchar(100)	Allow Null	

inp_typevalue_outlet			
Field	Type	Extra	
P id	varchar(16)		
descript	varchar(100)	Allow Null	

inp_typevalue_pattern			
Field	Type	Extra	
P id	varchar(18)		
descript	varchar(100)	Allow Null	

inp_typevalue_raingage			
Field	Type	Extra	
P id	varchar(18)		
descript	varchar(100)	Allow Null	

inp_typevalue_storage			
	Field	Type	Extra
P	id	varchar(16)	
	descript	varchar(100)	Allow Null

inp_typevalue_temp			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

inp_typevalue_timeseries			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

inp_typevalue_windsp			
	Field	Type	Extra
P	id	varchar(16)	
	descript	varchar(100)	Allow Null

inp_value_allnone			
	Field	Type	Extra
P	id	varchar(18)	

inp_value_buildup			
	Field	Type	Extra
P	id	varchar(18)	

inp_value_curve			
	Field	Type	Extra
P	id	varchar(18)	

inp_value_files_actio			
	Field	Type	Extra
P	id	varchar(18)	

inp_value_files_type			
	Field	Type	Extra
P	id	varchar(18)	

inp_value_hydrograph			
	Field	Type	Extra
P	id	varchar(18)	

inp_value_lidcontrol			
	Field	Type	Extra
P	id	varchar(18)	

inp_value_mapunits			
	Field	Type	Extra
P	id	varchar(18)	

inp_value_options_fme			
	Field	Type	Extra
P	id	varchar(16)	

inp_value_options_fr			
Field	Type	Extra	
P id	varchar(16)		

inp_value_options_fu			
Field	Type	Extra	
P id	varchar(16)		

inp_value_options_id			
Field	Type	Extra	
P id	varchar(16)		

inp_value_options_in			
Field	Type	Extra	
P id	varchar(16)		

inp_value_options_lo			
Field	Type	Extra	
P id	varchar(16)		

inp_value_options_nfl			
Field	Type	Extra	
P id	varchar(16)		

inp_value_orifice			
Field	Type	Extra	
P id	varchar(18)		

inp_value_raingage			
Field	Type	Extra	
P id	varchar(18)		

inp_value_timserid			
Field	Type	Extra	
P id	varchar(20)		
descript	varchar(100)	Allow Null	

inp_value_washoff			
Field	Type	Extra	
P id	varchar(18)		

inp_value_weirs			
Field	Type	Extra	
P id	varchar(18)		
shape	varchar(18)	Allow Null	

inp_value_yesno			
Field	Type	Extra	
P id	varchar(3)		

inp_washoff_land_x_pol

	Field	Type	Extra
P	landuses_id	varchar(16)	
P	poll_id	varchar(16)	
	funcw_type	varchar(18)	Allow Null
	c1	numeric(12,4)	Allow Null
	c2	numeric(12,4)	Allow Null
	swepeffic	numeric(12,4)	Allow Null
	bmpeffic	numeric(12,4)	Allow Null

inp_weir

	Field	Type	Extra
P	arc_id	int4	
	weir_type	varchar(18)	Allow Null
	offset	numeric(12,4)	Allow Null
	cd	numeric(12,4)	Allow Null
	ec	numeric(12,4)	Allow Null
	cd2	numeric(12,4)	Allow Null
	flap	varchar(3)	Allow Null
	geom1	numeric(12,4)	Allow Null
	geom2	numeric(12,4)	Allow Null
	geom3	numeric(12,4)	Allow Null
	geom4	numeric(12,4)	Allow Null

inp_windspeed

	Field	Type	Extra
P	wind_type	varchar(16)	
	value_1	numeric(12,4)	Allow Null
	value_2	numeric(12,4)	Allow Null
	value_3	numeric(12,4)	Allow Null
	value_4	numeric(12,4)	Allow Null
	value_5	numeric(12,4)	Allow Null
	value_6	numeric(12,4)	Allow Null
	value_7	numeric(12,4)	Allow Null
	value_8	numeric(12,4)	Allow Null
	value_9	numeric(12,4)	Allow Null
	value_10	numeric(12,4)	Allow Null
	value_11	numeric(12,4)	Allow Null
	value_12	numeric(12,4)	Allow Null
	fname	varchar(254)	Allow Null

man_arcdat

	Field	Type	Extra
P	arc_id	int4	
	owner	varchar(50)	Allow Null
	operator	varchar(50)	Allow Null
	mainten	varchar(50)	Allow Null
	visitable	varchar(3)	Allow Null
	soildat_id	varchar(16)	Allow Null
	bulddate	varchar(12)	Allow Null
	net_tram	varchar(3)	Allow Null
	tmp_inf	varchar(254)	Allow Null
	com_inf	varchar(254)	Allow Null

man_element

	Field	Type	Extra
P	node_id	int4	
	adress_id	varchar(16)	Allow Null
	owner	varchar(50)	Allow Null
	operator	varchar(50)	Allow Null
	mainten	varchar(50)	Allow Null
	elem_type	varchar(18)	Allow Null
	builddate	varchar(12)	Allow Null
	tmp_inf	varchar(254)	Allow Null
	com_inf	varchar(254)	Allow Null

man_event

	Field	Type	Extra
P	id	int4	
	event_type	varchar(18)	Allow Null
	date	date	Allow Null
	field_op	varchar(50)	Allow Null
	office_op	varchar(50)	Allow Null
	tmp_inf	varchar(254)	Allow Null
	com_inf	varchar(254)	Allow Null

man_event_x_arc

	Field	Type	Extra
P	id	int4	
	arc_id	int4	Allow Null
	event_id	int4	Allow Null
	sedsta_id	varchar(16)	Allow Null
	sed_lev	numeric(12,4)	Allow Null
	bott_sta	varchar(16)	Allow Null
	mid_sta	varchar(16)	Allow Null
	top_sta	varchar(16)	Allow Null
	tmp_inf	varchar(254)	Allow Null
	com_inf	varchar(254)	Allow Null

man_event_x_connec

	Field	Type	Extra
P	id	int4	
	connec_id	int4	Allow Null
	event_id	int4	Allow Null
	sedsta_id	varchar(16)	Allow Null
	sed_lev	numeric(12,4)	Allow Null
	bott_sta	varchar(16)	Allow Null
	mid_sta	varchar(16)	Allow Null
	top_sta	varchar(16)	Allow Null
	tmp_inf	varchar(254)	Allow Null
	com_inf	varchar(254)	Allow Null

man_event_x_gully

	Field	Type	Extra
P	id	int4	
	gully_id	int4	Allow Null
	event_id	int4	Allow Null
	sedsta_id	varchar(16)	Allow Null
	sed_lev	numeric(12,4)	Allow Null
	consta_id	varchar(16)	Allow Null
	gratsta_id	varchar(16)	Allow Null
	tmp_inf	varchar(254)	Allow Null
	com_inf	varchar(254)	Allow Null

man_event_x_node		
Field	Type	Extra
P id	int4	
node_id	int4	Allow Null
event_id	int4	Allow Null
sedsta_id	varchar(18)	Allow Null
sed_lev	numeric(12,4)	Allow Null
bott_sta	varchar(16)	Allow Null
wall_sta	varchar(16)	Allow Null
top_sta	varchar(16)	Allow Null
covesta_id	varchar(16)	Allow Null
step_num	int4	Allow Null
tmp_inf	varchar(254)	Allow Null
com_inf	varchar(254)	Allow Null

man_manhole		
Field	Type	Extra
P node_id	int4	
adress_id	varchar(16)	Allow Null
owner	varchar(50)	Allow Null
operator	varchar(50)	Allow Null
mainten	varchar(50)	Allow Null
mhcat_id	varchar(30)	Allow Null
covcat_id	varchar(30)	Allow Null
matcat_id	varchar(30)	Allow Null
geom1	numeric(12,4)	Allow Null
geom2	numeric(12,4)	Allow Null
geom3	numeric(12,4)	Allow Null
bottom_dep	numeric(12,4)	Allow Null
iron_step	int4	Allow Null
plast_step	int4	Allow Null
roadloc_id	varchar(16)	Allow Null
arcloc_id	varchar(16)	Allow Null
soildat_id	varchar(16)	Allow Null
tmp_inf	varchar(254)	Allow Null
com_inf	varchar(254)	Allow Null
build_date	varchar(12)	Allow Null

man_type_event		
Field	Type	Extra
P id	varchar(18)	
descript	varchar(100)	Allow Null

man_type_node		
Field	Type	Extra
P id	varchar(18)	
descript	varchar(100)	Allow Null

man_value_arccategory		
Field	Type	Extra
P id	varchar(18)	
descript	varchar(100)	Allow Null

man_value_arcloc		
Field	Type	Extra
P id	varchar(18)	
descript	varchar(100)	Allow Null

man_value_conssta		
Field	Type	Extra
P id	varchar(18)	
descript	varchar(100)	Allow Null

man_value_coversta			
	Field	Type	Extra
P	id	varchar(16)	
	descript	varchar(100)	Allow Null

man_value_direction			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

man_value_elemtree			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

man_value_gratesta			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

man_value_roadloc			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

man_value_sedsta			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

man_value_soildata			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

man_value_systemtype			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

man_workstage			
	Field	Type	Extra
P	id	varchar(18)	
	descript	varchar(100)	Allow Null

node			
	Field	Type	Extra
P	node_id	int4	
	top_elev	numeric(12,4)	Allow Null
	elev	numeric(12,4)	Allow Null
	ymax	numeric(12,4)	Allow Null
	y0	numeric(12,4)	Allow Null
	ysur	numeric(12,4)	Allow Null
	apond	numeric(16,6)	Allow Null
	node_type	varchar(18)	Allow Null
	swmm_type	varchar(18)	Allow Null
	catch_id	int4	Allow Null
	link	varchar(254)	Allow Null
	the_geom	"public"."geometry"	Allow Null

raingage		
	Field	Type Extra
P	rg_id	int4
	form_type	varchar(12) Allow Null
	intvl	varchar(10) Allow Null
	scf	numeric(12,4) Allow Null
	rgage_type	varchar(18) Allow Null
	timser_id	varchar(16) Allow Null
	fname	varchar(254) Allow Null
	sta	varchar(12) Allow Null
	units	varchar(3) Allow Null
	link	varchar(254) Allow Null
	the_geom	"public"."geometry" Allow Null

result_selection		
	Field	Type Extra
P	result_id	varchar(16)

rpt_arcflow_sum		
	Field	Type Extra
P	result_id	varchar(16)
P	arc_id	int4
	arc_type	varchar(18) Allow Null
	max_flow	numeric(12,4) Allow Null
	time_days	varchar(10) Allow Null
	time_hour	varchar(10) Allow Null
	max_veloc	numeric(12,4) Allow Null
	mfull_flow	numeric(12,4) Allow Null
	mfull_dept	numeric(12,4) Allow Null

rpt_condsurcharge_sum		
	Field	Type Extra
P	result_id	varchar(16)
P	arc_id	int4
	both_ends	numeric(12,4) Allow Null
	upstream	numeric(12,4) Allow Null
	dnstream	numeric(12,4) Allow Null
	hour_nflow	numeric(12,4) Allow Null
	hour_limit	numeric(12,4) Allow Null

rpt_continuity_errors		
	Field	Type Extra
P	result_id	varchar(16)
P	text	varchar(255)

rpt_critical_elements		
	Field	Type Extra
P	result_id	varchar(254)
P	text	varchar(255)

rpt_flowclass_sum			
	Field	Type	Extra
P	result_id	varchar(16)	
P	arc_id	int4	
	length	numeric(12,4)	Allow Null
	dry	numeric(12,4)	Allow Null
	up_dry	numeric(12,4)	Allow Null
	down_dry	numeric(12,4)	Allow Null
	sub_crit	numeric(12,4)	Allow Null
	sub_crit_1	numeric(12,4)	Allow Null
	up_crit	numeric(12,4)	Allow Null
	down_crit	numeric(12,4)	Allow Null
	froud_numb	numeric(12,4)	Allow Null
	flow_chang	numeric(12,4)	Allow Null

rpt_flowrouting_cont			
	Field	Type	Extra
P	result_id	varchar(16)	
	dryw_inf	numeric(12,4)	Allow Null
	wetw_inf	numeric(12,4)	Allow Null
	ground_inf	numeric(12,4)	Allow Null
	rdii_inf	numeric(12,4)	Allow Null
	ext_inf	numeric(12,4)	Allow Null
	ext_out	numeric(12,4)	Allow Null
	int_out	numeric(12,4)	Allow Null
	stor_loss	numeric(12,4)	Allow Null
	initst_vol	numeric(12,4)	Allow Null
	finst_vol	numeric(12,4)	Allow Null
	cont_error	numeric(12,4)	Allow Null

rpt_groundwater_cont			
	Field	Type	Extra
P	result_id	varchar(16)	
	init_stor	numeric(12,4)	Allow Null
	infil	numeric(12,4)	Allow Null
	upzone_et	numeric(12,4)	Allow Null
	lowzone_et	numeric(12,4)	Allow Null
	deep_perc	numeric(12,4)	Allow Null
	groundw_fl	numeric(12,4)	Allow Null
	final_stor	numeric(12,4)	Allow Null
	cont_error	numeric(12,4)	Allow Null

rpt_high_conterrors			
	Field	Type	Extra
P	result_id	varchar(254)	
P	text	varchar(255)	

rpt_high_flowinest_ind			
	Field	Type	Extra
P	result_id	varchar(254)	
P	text	varchar(255)	

rpt_instability_index			
	Field	Type	Extra
P	result_id	varchar(254)	
P	text	varchar(255)	

rpt_lidperformance_sum			
	Field	Type	Extra
P	result_id	varchar(16)	
P	subc_id	int4	
P	lidco_id	varchar(16)	
	tot_inflow	numeric(12,4)	Allow Null
	evap_loss	numeric(12,4)	Allow Null
	infil_loss	numeric(12,4)	Allow Null
	surf_outf	numeric(12,4)	Allow Null
	drain_outf	numeric(12,4)	Allow Null
	init_stor	numeric(12,4)	Allow Null
	final_stor	numeric(12,4)	Allow Null
	per_error	numeric(12,4)	Allow Null

rpt_nodedepth_sum			
	Field	Type	Extra
P	result_id	varchar(16)	
P	node_id	int4	
	swnod_type	varchar(18)	Allow Null
	aver_depth	numeric(12,4)	Allow Null
	max_depth	numeric(12,4)	Allow Null
	max_hgl	numeric(12,4)	Allow Null
	time_days	varchar(10)	Allow Null
	time_hour	varchar(10)	Allow Null

rpt_nodeflooding_sum			
	Field	Type	Extra
P	result_id	varchar(16)	
P	node_id	int4	
	hour_flood	numeric(12,4)	Allow Null
	max_rate	numeric(12,4)	Allow Null
	time_days	varchar(10)	Allow Null
	time_hour	varchar(10)	Allow Null
	tot_flood	numeric(12,4)	Allow Null
	max_ponded	numeric(12,4)	Allow Null

rpt_nodeinflow_sum			
	Field	Type	Extra
P	result_id	varchar(16)	
P	node_id	int4	
	swnod_type	varchar(18)	Allow Null
	max_latinf	numeric(12,4)	Allow Null
	max_totinf	numeric(12,4)	Allow Null
	time_days	varchar(10)	Allow Null
	time_hour	varchar(10)	Allow Null
	latinf_vol	numeric(12,4)	Allow Null
	totinf_vol	numeric(12,4)	Allow Null

rpt_nodesurcharge_sum			
	Field	Type	Extra
P	result_id	varchar(16)	
P	node_id	int4	
	swnod_type	varchar(18)	Allow Null
	hour_surch	numeric(12,4)	Allow Null
	max_height	numeric(12,4)	Allow Null
	min_depth	numeric(12,4)	Allow Null

rpt_outfallflow_sum		
Field	Type	Extra
P result_id	varchar(16)	
P node_id	int4	
flow_freq	numeric(12,4)	Allow Null
avg_flow	numeric(12,4)	Allow Null
max_flow	numeric(12,4)	Allow Null
total_vol	numeric(12,4)	Allow Null

rpt_outfallload_sum		
Field	Type	Extra
P result_id	varchar(16)	
P poll_id	varchar(16)	
P node_id	int4	
value	numeric(12,4)	Allow Null

rpt_pumping_sum		
Field	Type	Extra
P result_id	varchar(16)	
P pump_id	varchar(16)	
percent	numeric(12,4)	Allow Null
max_flow	numeric(12,4)	Allow Null
avg_flow	numeric(12,4)	Allow Null
vol_ltr	numeric(12,4)	Allow Null
powus_kwh	numeric(12,4)	Allow Null
timoff_cur	numeric(12,4)	Allow Null

rpt_qualrouting_cont		
Field	Type	Extra
P result_id	varchar(16)	
P poll_id	varchar(16)	
dryw_inf	numeric(12,4)	Allow Null
wetw_inf	numeric(12,4)	Allow Null
ground_inf	numeric(12,4)	Allow Null
rdii_inf	numeric(12,4)	Allow Null
ext_inf	numeric(12,4)	Allow Null
int_inf	numeric(12,4)	Allow Null
ext_out	numeric(12,4)	Allow Null
mass_reac	numeric(12,4)	Allow Null
initst_mas	numeric(12,4)	Allow Null
finst_mas	numeric(12,4)	Allow Null
cont_error	numeric(12,4)	Allow Null

rpt_rainfall_dep		
Field	Type	Extra
P result_id	varchar(16)	
sewer_rain	numeric(12,4)	Allow Null
rdiip_prod	numeric(12,4)	Allow Null
rdiir_rat	numeric(12,4)	Allow Null

rpt_result_cat			
	Field	Type	Extra
P	result_id	varchar(16)	
	flow_units	varchar(3)	Allow Null
	rain_runof	varchar(3)	Allow Null
	snowmelt	varchar(3)	Allow Null
	groundw	varchar(3)	Allow Null
	flow_rout	varchar(3)	Allow Null
	pond_all	varchar(3)	Allow Null
	water_q	varchar(3)	Allow Null
	infil_m	varchar(18)	Allow Null
	flowrout_m	varchar(18)	Allow Null
	start_date	varchar(25)	Allow Null
	end_date	varchar(25)	Allow Null
	dry_days	numeric(12,4)	Allow Null
	rep_tstep	varchar(10)	Allow Null
	wet_tstep	varchar(10)	Allow Null
	dry_tstep	varchar(10)	Allow Null
	rout_tstep	varchar(10)	Allow Null
	exec_date	timestamp(6)	Allow Null

rpt_routing_timestep			
	Field	Type	Extra
P	result_id	varchar(254)	
P	text	varchar(255)	

rpt_runoff_qual			
	Field	Type	Extra
P	result_id	varchar(16)	
P	poll_id	varchar(16)	
	init_buil	numeric(12,4)	Allow Null
	surf_buil	numeric(12,4)	Allow Null
	wet_dep	numeric(12,4)	Allow Null
	sweep_re	numeric(12,4)	Allow Null
	infil_loss	numeric(12,4)	Allow Null
	bmp_re	numeric(12,4)	Allow Null
	surf_runof	numeric(12,4)	Allow Null
	rem_buil	numeric(12,4)	Allow Null
	cont_error	numeric(12,4)	Allow Null

rpt_runoff_quant			
	Field	Type	Extra
P	result_id	varchar(16)	
	initsw_co	numeric(12,4)	Allow Null
	total_prec	numeric(12,4)	Allow Null
	evap_loss	numeric(12,4)	Allow Null
	infil_loss	numeric(12,4)	Allow Null
	surf_runof	numeric(12,4)	Allow Null
	snow_re	numeric(12,4)	Allow Null
	finalsw_co	numeric(12,4)	Allow Null
	finals_sto	numeric(12,4)	Allow Null
	cont_error	numeric(16,4)	Allow Null

rpt_storageevol_sum

	Field	Type	Extra
P	result_id	varchar(16)	
P	stor_id	varchar(16)	
	aver_vol	numeric(12,4)	Allow Null
	avg_full	numeric(12,4)	Allow Null
	ei_loss	numeric(12,4)	Allow Null
	max_vol	numeric(12,4)	Allow Null
	max_full	numeric(12,4)	Allow Null
	time_days	varchar(10)	Allow Null
	time_hour	varchar(10)	Allow Null
	max_out	numeric(12,4)	Allow Null

rpt_subcatchwashoff_sum

	Field	Type	Extra
P	result_id	varchar(16)	
P	subc_id	int4	
P	poll_id	varchar(16)	
	value	numeric	Allow Null

rpt_subcathrunoff_sum

	Field	Type	Extra
P	result_id	varchar(16)	
P	subc_id	int4	
	tot_precip	numeric(12,4)	Allow Null
	tot_runon	numeric(12,4)	Allow Null
	tot_evap	numeric(12,4)	Allow Null
	tot_infil	numeric(12,4)	Allow Null
	tot_runoff	numeric(12,4)	Allow Null
	tot_runofl	numeric(12,4)	Allow Null
	peak_runof	numeric(12,4)	Allow Null
	runoff_coe	numeric(12,4)	Allow Null

rpt_timestep_critelem

	Field	Type	Extra
P	result_id	varchar(16)	
P	text	varchar(255)	

subcatchment		
	Field	Type Extra
P	subc_id	int4
	node_id	int4 Allow Null
	rg_id	int4 Allow Null
	area	numeric(16,6) Allow Null
	imperv	numeric(12,4) Allow Null
	width	numeric(12,4) Allow Null
	slope	numeric(12,4) Allow Null
	clength	numeric(12,4) Allow Null
	snow_id	varchar(16) Allow Null
	nimp	numeric(12,4) Allow Null
	nperv	numeric(12,4) Allow Null
	simp	numeric(12,4) Allow Null
	sperv	numeric(12,4) Allow Null
	zero	numeric(12,4) Allow Null
	routeto	varchar(20) Allow Null
	rtd	numeric(12,4) Allow Null
	maxrate	numeric(12,4) Allow Null
	minrate	numeric(12,4) Allow Null
	decay	numeric(12,4) Allow Null
	drytime	numeric(12,4) Allow Null
	maxinfil	numeric(12,4) Allow Null
	suction	numeric(12,4) Allow Null
	conduct	numeric(12,4) Allow Null
	initdef	numeric(12,4) Allow Null
	curveno	numeric(12,4) Allow Null
	conduct_2	numeric(12,4) Allow Null
	drytime_2	numeric(12,4) Allow Null
	catch_id	int4 Allow Null
	link	varchar(254) Allow Null
	the_geom	"public"."geometry" Allow Null

vertice		
	Field	Type Extra
P	vertice_id	int4
	arc_id	int4 Allow Null
	the_geom	"public"."geometry" Allow Null

APPENDIX B- EPANET DATA MODELS

DBF TO EPANET 2.0010

DATA MODEL DBF TO EPANET 2.00.10 (SP) PARTIAL

	TYPE	LENGTH	DESCRIPTION
JUNCTION			
ID	INTEGER	8	ID number (1, 2, 3 ...)
NODE_ID	STRING	16	Name assigned to junction node
INVERTEL	DOUBLE		Elevation of junction invert (ft or m)
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map
PIPE			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ARC_ID	STRING	16	Name assigned to conduit link
NODE1	STRING	16	Name of first node
NODE2	STRING	16	Name of second node
LENGTH	DOUBLE		Conduit length (ft or m)
GEOM1	DOUBLE		Maximum depth (ft or m)
NVALUE	DOUBLE		Roughness parameter)
VERTICE			
ID	INTEGER	8	ID number (1, 2, 3 ...)
ARC_ID	STRING	16	Name assigned to conduit link
XCOORD	DOUBLE		Horizontal coordinate of vertex relative to origin in lower left of map
YCOORD	DOUBLE		Vertical coordinate of vertex relative to origin in lower left of map

APPENDIX C - DOWNLOAD WEBSITES

Download web sites

EPA SWMM 5.0.018es	www.instagua.upv.es/swmm/
EPA SWMM 5.0.022pt	www.lenhs.ct.ufpb.br/?page_id=1019
EPA SWMM 5.0.022en	www.epa.gov/nrmrl/wswrd/wq/models/swmm/
EPANET 2.00.10es	www.instagua.upv.es/epanet/
EPANET 2.00.12pt	www.lenhs.ct.ufpb.br/?page_id=34
EPANET 2.00.12en	www.epa.gov/nrmrl/wswrd/dw/epanet.html
POSTGRES	http://www.postgresql.org/
POSTGIS	http://postgis.net/

The INPcom program runs in a Java runtime environment (JRE). If you do not already have this installed then we recommend that you download JRE 1.7, which is compatible with the application, from here:

<http://www.oracle.com/technetwork/java/javase/downloads/java-se-jre-7-download-432155>.