

C. MODEL FILES

The following is a description of the Groundwater Vistas model files supplied online at:

<http://www.metrocouncil.org/environment/WaterSupply/metrogroundwatermodeldatasets.htm>.

File Name	File Type and Use
Groundwater Vistas Project File	
MM2v2_1.gvw	Groundwater Vistas project file
Model Input Files	
MM2v2_1.bas	MODFLOW BASIC package containing starting heads, constant heads, stress period definition, and some options
MM2v2_1.bcf	MODFLOW Block-Centered Flow package containing aquifer property data and grid spacing
MM2v2_1.oc	MODFLOW Output Control package determining what model results to print and save to files during the simulation
MM2v2_1.pcg	MODFLOW Preconditioned Conjugate Gradient 2 (PCG2) solver package used to solve the partial differential equations in MODFLOW
MM2v2_1.wel	MODFLOW Well package containing well boundary conditions
MM2v2_1.riv	MODFLOW River package containing river boundary conditions
MM2v2_1.rch	MODFLOW Recharge package containing recharge boundary conditions
Metro_v2_1_Quat_By_Zone.hds	MODFLOW unformatted head-save file from calibrated regional model, for use as initial heads
Model Output Files	
MM2v2_1.out	MODFLOW output file
MM2v2_1.hds	MODFLOW unformatted head-save file
MM2v2_1.ddn	MODFLOW unformatted drawdown file
MM2v2_1.cbb	MODFLOW cell-by-cell output data, for block-centered-flow (BCF) package
MM2v2_1.cbw	MODFLOW cell-by-cell output data, for Wells package
MM2v2_1.crc	MODFLOW cell-by-cell output data, for Recharge package
MM2v2_1.wmod96	
MM2v2_1.nam	MODFLOW name file containing the name, unit, and file type of each file to be used. MODFLOW-96 opens all the files listed.
MM2v2_1._kx	Groundwater Vistas array for horizontal hydraulic conductivity
MM2v2_1._kz	Groundwater Vistas array for vertical hydraulic conductivity
MM2v2_1._s1	Groundwater Vistas unconfined storage array
MM2v2_1._s2	Groundwater Vistas confined storage array
MM2v2_1.kzi	Groundwater Vistas vertical hydraulic conductivity anisotropy array

mf96.nam
 modflow.err
 modflow.in
 tal.dat
 discret.dat

MODFLOW96 naming file
 MODFLOW error log for Groundwater Vistas
 MODFLOW instruction file
 Groundwater Vistas tal file
 MODFLOW file for use in providing discretization data to other programs

Model Reference Map Files

MetroCommunities.map
 MetroCounties.map
 MetroLakes.map
 MetroStreams.map

Groundwater Vistas map file
 Groundwater Vistas map file
 Groundwater Vistas map file
 Groundwater Vistas map file

The following is a description of ESRI GIS files that support the Metro Model 2. Metadata is included. Files are available online at:

<http://www.metrocouncil.org/environment/WaterSupply/metrogroundwatermodeldatasets.htm>.

File Name	File Type and Use
<i>Calibration Targets</i>	
MM2_CalTarLK.shp	ESRI shapefile containing lake flux calibration target information
MM2_CalTarLK.xml	Metadata describing the ESRI shapefile containing lake flux calibration target information
MM2_CalTarPmp.shp	ESRI shapefile containing pumping test calibration target information
MM2_CalTarPmp.xml	Metadata describing the ESRI shapefile containing pumping test calibration target information
MM2_CalTarPmp.htm	Metadata describing the ESRI shapefile containing pumping test calibration target information
MM2_CalTarPmp#.lyr	ESRI layer files illustrating pumping test calibration targets for model layers 1-9
MM2_CalTarStm.shp	ESRI shapefile containing stream flow calibration target information
MM2_CalTarStm.xml	Metadata describing the ESRI shapefile containing stream flow calibration target information
MM2_CalTarStm.htm	Metadata describing the ESRI shapefile containing stream flow calibration target information
MM2_CalTarStm#.lyr	ESRI layer files illustrating stream calibration targets for model layers 1-6
MM2_CalTarWL.shp	ESRI shapefile containing water level calibration target information

MM2_CaITarWL.xml

MM2_CaITarWL.htm

MM2_CaITarWL#.lyr

Geology Grids

cecr.aux (and associated files)

Eau Claire Formation.lyr

cfrn.aux (and associated files)

Franconia Formation.lyr

cigl.aux (and associated files)

Ironton and Galesville Sandstones.lyr

cjdn.aux (and associated files)

Jordan Sandstone.lyr

cmsh.aux (and associated files)

Mt Simon and Hinckley Sandstones

cstl.aux (and associated files)

St. Lawrence Formation.lyr

opdc.aux (and associated files)

Prairie du Chien Group.lyr

stpeter.aux (and associated files)

St Peter Sandstone.lyr

GeologyDEMs.xml

Metadata describing the ESRI shapefile containing
water level calibration target informationMetadata describing the ESRI shapefile containing
water level calibration target informationESRI layer files illustrating the water level calibration
targets for model layers 1-9ERSI raster containing bedrock elevation data for the
Eau Claire FormationESRI layer files illustrating bedrock elevation of the Eau
Claire FormationERSI raster containing bedrock elevation data for the
Franconia FormationESRI layer files illustrating bedrock elevation of the
Franconia FormationERSI raster containing bedrock elevation data for the
Ironton and Galesville SandstonesESRI layer files illustrating bedrock elevation of the
Ironton and Galesville SandstonesERSI raster containing bedrock elevation data for the
Jordan SandstoneESRI layer files illustrating bedrock elevation of the
Jordan SandstoneERSI raster containing bedrock elevation data for the
Mt. Simon SandstoneESRI layer files illustrating bedrock elevation of the Mt.
Simon and Hinckley SandstonesERSI raster containing bedrock elevation data for the
St. Lawrence FormationESRI layer files illustrating bedrock elevation of the St.
Lawrence FormationERSI raster containing bedrock elevation data for the
Prairie du Chien GroupESRI layer files illustrating bedrock elevation of the
Prairie du Chien GroupERSI raster containing bedrock elevation data for the
St. Peter SandstoneESRI layer files illustrating bedrock elevation of the St.
Peter SandstoneMetadata describing the ESRI rasters containing
bedrock elevation data

GeologyDEMs.htm

Calibrated Model Aquifer Head Contours

MM2_CalHdL#.shp

MM2_CalHdContour#.lyr

MM2_CalHdContour.xml

MM2_CalHdContour.htm

Calibrated Model Aquifer Head DEMs

MM2_CalHdL#dm.aux (and associated files)

MM2_HdDEM.lyr

MM2_CalHdDEM.xml

MM2_CalHdDEM.htm

Calibrated Model Hydraulic Conductivity Values

MM2_CalibK.shp

MM2_CalibK.lyr

MM2_CalibK.xml

MM2_CalibK.htm

Calibrated Model Hydraulic Conductivity Zones

MM2_ECRzones.shp

MM2_FRNzones.shp

MM2_IRNzones.shp

MM2_JDNzones.shp

MM2_MTSzones.shp

MM2_PctSand.aux

Metadata describing the ESRI rasters containing bedrock elevation data

ESRI shapefiles containing aquifer head contours (elevation above mean sea level) for model layers 1-9
ESRI layer files illustrating aquifer head contour elevations for model layers 1-9

Metadata describing the ESRI shapefiles containing aquifer head contour data

Metadata describing the ESRI shapefiles containing aquifer head contour data

ESRI rasters containing aquifer head data (elevation above mean sea level) for model layers 1-9

ESRI layer file illustrating aquifer head elevation for model layers 1-9

Metadata describing the ESRI rasters containing aquifer head data

Metadata describing the ESRI rasters containing aquifer head data

ESRI shapefile containing hydraulic conductivity value distribution for all model layers

ESRI layer file illustrating hydraulic conductivity value distribution

Metadata describing the ESRI shapefile containing hydraulic conductivity value distribution

Metadata describing the ESRI shapefile containing hydraulic conductivity value distribution

ESRI shapefile containing the hydraulic conductivity zones of the Eau Claire Formation

ESRI shapefile containing the hydraulic conductivity zones of the Franconia Formation

ESRI shapefile containing the hydraulic conductivity zones of the Ironton and Galesville Sandstones

ESRI shapefile containing the hydraulic conductivity zones of the Jordan Sandstone

ESRI shapefile containing the hydraulic conductivity zones of the Mt. Simon Sandstone

ESRI raster containing the average sand content of

MM2_PDCzones.shp	Quaternary sediments ESRI shapefile containing the hydraulic conductivity zones of the Prairie du Chien Group
MM2_QUATzones.shp	ESRI shapefile containing the hydraulic conductivity zones of the Quaternary deposits
MM2_STLzones.shp	ESRI shapefile containing the hydraulic conductivity zones of the St. Lawrence Formation
MM2_STPzones.shp	ESRI shapefile containing the hydraulic conductivity zones of the St. Peter Sandstone
MM2_Kzones.lyr	ESRI layer file illustrating the hydraulic conductivity zones of geologic formations
MM2_PctSand.lyr	ESRI layer file illustrating the distribution of sand content in Quaternary deposits
MM2_Kzones.xml	Metadata describing the ESRI shapefiles containing hydraulic conductivity zone information
MM2_PctSand.xml	Metadata describing the ESRI raster containing percent sand distribution data

Calibrated Model River Boundaries (Lakes & Rivers)

MM2_LakeCond.shp	ESRI shapefile containing the MODFLOW River boundary conditions assigned to lakes
MM2_LakeCond.lyr	ESRI layer file illustrating the lake bed conductance groups
MM2_LakeCond.xml	Metadata describing the ESRI shapefile containing MODFLOW River boundary conditions assigned to lakes
MM2_LakeCond.htm	Metadata describing the ESRI shapefile containing MODFLOW River boundary conditions assigned to lakes
MM2_RiverCond.shp	ESRI shapefile containing the MODFLOW River boundary conditions assigned to rivers and streams
MM2_RiverCond.lyr	ESRI layer file illustrating the river bed conductance groups
MM2_RiverCond.xml	Metadata describing the ESRI shapefile containing MODFLOW River boundary conditions assigned to rivers
MM2_RiverCond.htm	Metadata describing the ESRI shapefile containing MODFLOW River boundary conditions assigned to rivers

Calibrated Model Leakage Rates

MM2_CalLeak#_#.aux (and associated files)	ESRI rasters containing leakage rates between model layers 1 & 2, 2 & 3, 3 & 4, 4 & 5, 5 & 6, 6 & 7, 7 & 8, and 8 & 9 for each model cell
MM2_CalLeak.lyr	ESRI layer file illustrating leakage rates between model layers

MM2_CalLeak.xml

Metadata describing the ESRI rasters containing leakage rates between model layers

MM2_CalLeak.htm

Metadata describing the ESRI rasters containing leakage rates between model layers

Calibrated Model Active Area

MM2_ActiveArea.shp

ESRI shapefile containing the boundary of the model active area

MM2_Active.lyr

ESRI layer file illustrating the boundary of the model active area

MM2_ActiveArea.xml

Metadata describing the ESRI shapefile containing the boundary of the model active area

MM2_ActiveArea.htm

Metadata describing the ESRI shapefile containing the boundary of the model active area

Calibrated Model Grid

MM2_Grid.shp

ESRI shapefile containing the dimensions of the model grid

MM2_Grid.lyr

ESRI layer file illustrating the dimensions of the model grid

MM2_Grid.xml

Metadata describing the ESRI shapefile containing the dimensions of the model grid

MM2_Grid.htm

Metadata describing the ESRI shapefile containing the dimensions of the model grid

Recharge Rates

Recharge_MM2.aux (and associated files)

ESRI raster containing long-term average annual recharge estimated using the SWB model

Recharge_MM2.lyr

ESRI layer file illustrating long-term average annual recharge estimated using the SWB model

Recharge_MM2.xml

Metadata describing the ESRI raster containing long-term average annual recharge estimated using the SWB model

Recharge_MM2.htm

Metadata describing the ESRI raster containing long-term average annual recharge estimated using the SWB model

MM2_CalRech.shp

ESRI shapefile containing the model-calibrated long-term average annual recharge

MM2_CalRech.lyr

ESRI layer file illustrating the model-calibrated long-term average annual recharge

MM2_CalRech.xml

Metadata describing the ESRI shapefile containing the model-calibrated long-term average annual recharge

MM2_CalRech.htm

Metadata describing the ESRI shapefile containing the model-calibrated long-term average annual recharge

Calibrated Model Withdrawals
MM2_Wells95_05.shp

ESRI shapefile containing average the 1995-2005
pumping rate for high-capacity wells within the model
domain