Instructions to download and run models used in the article:
*A Hydrologic Landscapes Perspective on Groundwater Connectivity of Depressional Wetlands*
12/27/2019

A two-dimensional, groundwater flow model (VS2DI) was developed to examine groundwater flow in domains intended to replicate those presented in Winter [1]. Additional models were created to examine groundwater flow in these same domains with hypothetical wetlands inserted into the domains. Users are encouraged to review the accompanying article [2] to understand the purpose, construction, and limitations of this model.

We used VS2DI v1.3 in our simulations. This program has a graphical user interface (GUI), is available free of charge, and can be downloaded as a ~38 mb file from https://www.usgs.gov/software/vs2di-version-13. Newer versions of VS2DI should also work to run the models, including VS2DRTI which includes the ability to simulate reactive solute transport. The VS2Dx programs are supported by USGS and detailed user manuals are available.

All input and output files associated with these models are available as a supplement to Neff*, et al.* [2]. These files are replicated here to ensure a permanent record of the modeling associated with this study, complete with instructions to replicate the modeling results.

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System requirements
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The models contained in this data release were run using
64-bit Windows 7 (Service Pack 1) with VS2DI (v 1.3)
installed, provided in the bin directory as described
below. Other operating systems and versions of VS2DI may
be acceptable.

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Working with zip files
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All zip files should be unzipped into a directory with the
same name as the zip file name without the .zip extension.
Files in this supplement must be unzipped using the 7-zip
software, available free of charge at
https://www.7-zip.org/.

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Running the model
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The model(s) must be run from within the VS2DI software,
The models will not run by attempting to open them through
Windows Explorer, they must be opened through the
VS2DI program.

1) Download and install the VS2DI (v 1.3) software from
   https://www.usgs.gov/software/vs2di-version-13.
   This file is approximately 38 mb and is named
   vs2di_1_3_setup.exe
2) Install VS2DI (v 1.3) on your machine by double
   clicking the vs2di_1_3_setup.exe file and
   following the prompts in the installer.
3) Locate the VS2DI software or a shortcut to open
   the VS2DI software on your computer. You may
   see links installed to open VS2DTI, VS2DHI,
   ReadMe, Postprocessor, and Uninstall.
   Open VS2DTI.
4) When you open the VS2DI software, the VS2DI
   preprocessor GUI opens automatically.
5) Open a model of your choosing by selecting
   file->open->navigate to and select desired
   model file->open
   See 'Working with Zip Files,' above if
   necessary.
   Note: When you open the file in VS2DI,
   you will be presented with error messages
   about the site map not being loaded.
   This is a JPG of the domain used to
   create the model. These images are
   available in Winter [1], but are not included here.
   Ignore this and continue

6) All aspects of the model setup can be viewed in
   the pre-processor. See the VS2DI (v 1.3)
   documentation for details, URL provided
   below.
7) Run the model:
   - select show->postprocessor
   [this will open the post processor in a new

window and the model domain may appear in the
GUI]
- click on the 'play' button at the top-left of
the postprocessor window to run the model.

NOTE: When the model runs, it writes output files
to the directory where the model file is located.
If output files are already present the program will
overwrite these files when running the new simulation.
You may want to first relocate the model file to
a new, empty directory, and then run the model.

8) Model results may be viewed in the postprocessor GUI
or by viewing the output files generated by the
model. These will be located in the same directory
where the model file is located. Description of
these files is provided below. As long as the
model parameters are not changed, output files
should also be identical to the files provided in
this supplement.

Additional information on using the VS2DI (v 1.3) program
can be accessed at:
https://wwwbrr.cr.usgs.gov/projects/GW_Unsat/vs2di1.3/index.html.
It is strongly recommended users familiarize themselves
with using the VS2DI (v 1.3) program before attempting to
work with the model files provided in this data release.

Disclaimer
Any use of trade, firm, or product names is for descriptive purposes only and does not imply
endorsement by the U.S. Government.

References
1.      Winter, T.C. The Concept of Hydrologic Landscapes. *J Am Water Resour Assoc* **2001**, *37*, 335-349.
2.      Neff, B.P.; Rosenberry, D.O.; Leibowitz, S.G.; Mushet, D.M.; Golden, H.E.; Rains, M.C.; Brooks,
        J.R.; Lane, C.R. A Hydrologic Landscapes Perspective on Groundwater Connectivity of
        Depressional Wetlands. *Water* **2020**, *12*, 50.