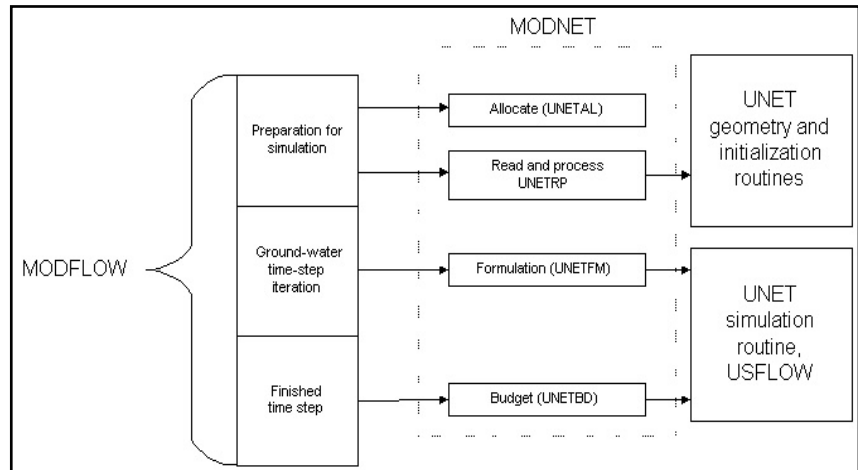




## MODNET Software Code Development and Testing

WEST combined the U.S. Geological Survey's modular groundwater model, MODFLOW, with the Corps of Engineers' unsteady channel flow model, UNET, to create MODNET, a coupled surfacewater-groundwater model. UNET was incorporated as a "new" package in MODFLOW, and linked to the underlying groundwater system through leakage. In addition, MODFLOW lakes and UNET storage areas are linked together. WEST conducted the coding in FORTRAN.

The combined model, MODNET, gives the South Florida Water Management District a tool to simulate coupled surfacewater-groundwater flow, and the ability to include a wide variety of hydraulic structures, such as weirs, gates and levees. The coupled model was tested against the semi-analytic solution of Pinder and Sauer, and compared to surfacewater and groundwater measurements in the L31N canal system in Dade County, Florida.



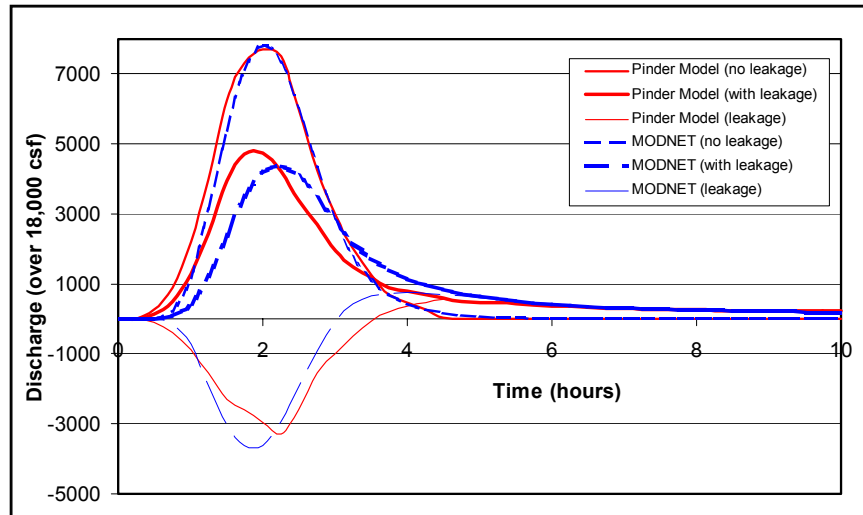
*Flow chart of MODNET connection between MODFLOW and UNET*

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*MODNET test results*