Appendix 6-H

STELLA Model Version Summary

Appendix 6-H contains a summary of STELLA model descriptions and major adjustments made during calibration for each version, ending with the current version.

Stella Model Version Summary		
Run No.	Date	Comments
1-4	2010 – Dec. 2012	Various modifications between 2010 and 2012
5	Dec. 6, 2012	-Lake McConaughy minimum storage set to 80,000 AF -Johnson Lake minimum storage set to 37,235 AF (or EL. 2,616) -Operational modifications made to prepare for 40 year simulation run
6	Dec. 23, 2012	-Added scenario capabilities (i.e. varying inflows, irrigation demands, and runoff) -Finished operational modifications for 40 year simulation.
7	Jan. 11, 2013	-Updated J2 Return historic data (obtained from CNPPID) -Korty Canal Diversion -Modified diversion rule so that a minimum of 100 cfs bypasses the Korty Canal Diversion150 cfs rule. (see above) -Removed Keystone Canal losses from Sutherland Canal capacity check -Sutherland Reservoir Evaporation – set to maximum of 40 cfs -Anecdotal baseflow -Added knobs to vary the values -Added capability to have different anecdotal RGL during July (assumed 0 cfs baseflow in July for this run) -Adjusted irrigation demands -July --> 50% -August --> 35.9% -CNPPID Supply Canal losses - changed to vary by diversion amount
8	Feb. 4, 2013	-Set E67 seepage to zero after 2001 -Disconnected historic tributary gage data not included in historic RGL calcs (i.e. Grand Island to Duncan)
9	Feb. 5, 2013	-Set E67 evaporation/seepage to zero after 2001 -Changed E65 diversion capacity to 350 cfs -Elwood Reservoir outflow set to supplement E65 Irrigation Demands instead of target operating curve outflow -Disconnected spill in Run 9. (Run 8 model had E65 spilling into Phelps Canal)
10	Mar. 5, 2013	-Modified CNPPID Supply Canal Seepage/Evaporation based on March 5, 2013 email from Cory Steinke -Lake McConaughy “Dry” condition threshold changed from 956,000 AF to 1,056,000 AF.

Stella Model Version Summary		
11	Mar. 6, 2013	-Added toggle knob to interface tab for Sutherland Reservoir Heat Induced Evaporation -Added threshold for Sutherland Reservoir seepage capacity to reflect reservoir seepage going to: (1) S. Platte River, or (2) GW recharge. (Not active in current model) -Central Platte Canals spill increased for Gothenburg, Cozad, Thirty-mile and Dawson County Canals. Six-mile and Orchard-Alfalfa Canals remain unchanged.
12	April 17, 2013	-Modified rule for Elwood Reservoir fill to reflect the late season (fall) and early season (spring) reservoir fill from E65 canal.
13 (1950-2012)	April 9, 2014	Extended Julesburg & Lewellen gage data back to 1947.
14	April 13, 2015	Priority Accounting rule refinement. Platte River Recovery Implementation Program (PRRIP) elements added to the model to represent two proposed PRRIP projects: 1) J2 regulating reservoir; and 2) Phelps Canal recharge project. (See Appendix 6-I for a technical memorandum documenting modeling efforts and results for this effort.)
15	October 2015-September 2016	-Modified the Sutherland Operating Curve to represent recent/future planned operations -Lake McConaughy Seepage fully integrated with GW model (computing SW/GW interaction) -New Watershed Monthly inputs; improved representation of seasonal variability and operational patterns throughout the irrigation season -Improvements in priority accounting for tracking natural flow and storage water -Sutherland Reservoir Seepage –seepage to the South Platte River are now represented using drains in the GW model -Modified the Kearney Canal Operating Curve to represent recent/future planned operations -Canal Seepage Adjustments (CNPPID) to refine seepage (spatial variation and rates) to better simulate historic GW levels -Model node simplification for preparation for GUI run. Eliminated hardcoded lookup nodes and put in new logic to better handle ability to change the simulation time frame (for future use). Extended all historic data back to 1947 and forward to 2010.