# URGWOM Executive Committee Meeting
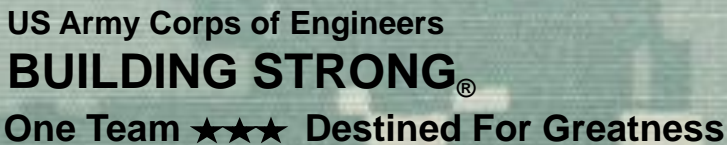
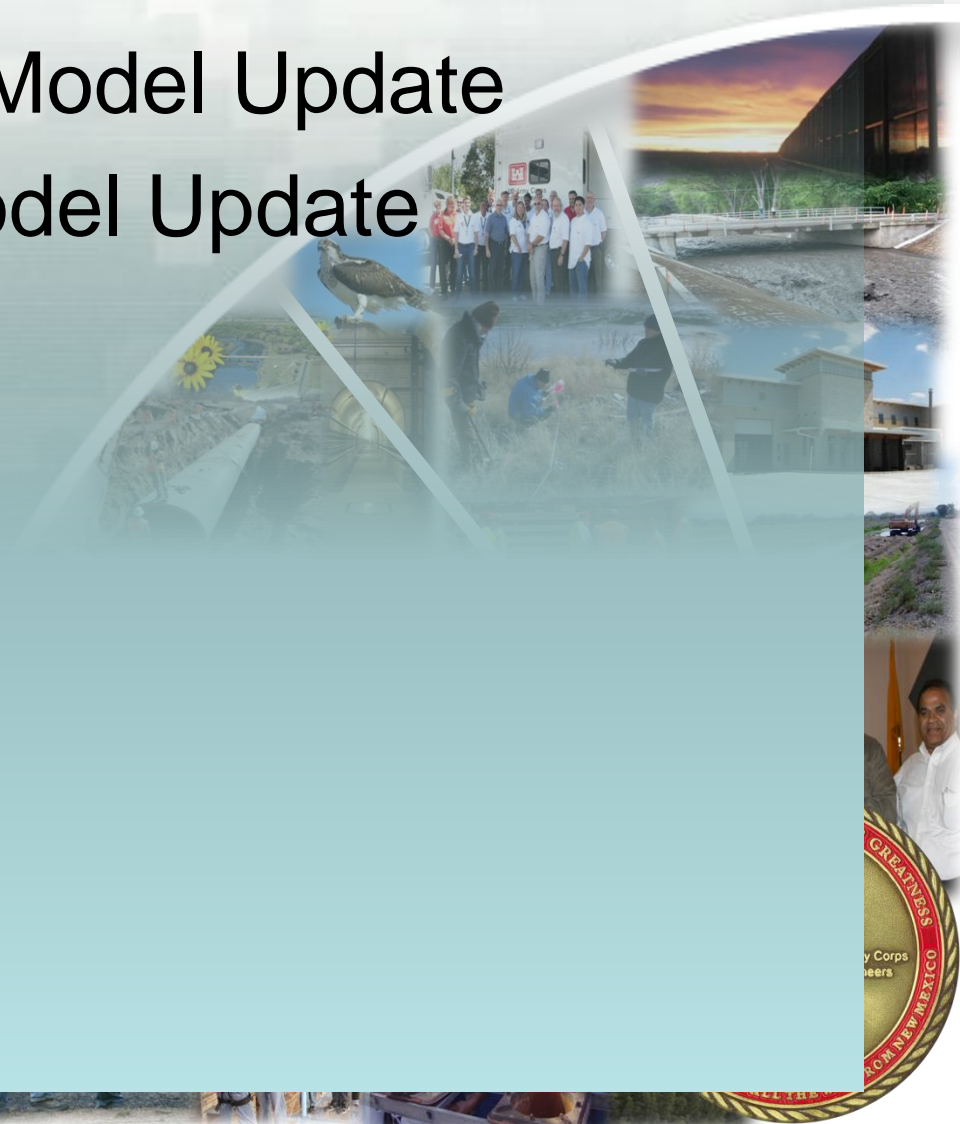## September 16, 2014

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# Outline

- Monthly RiverWare Model Update
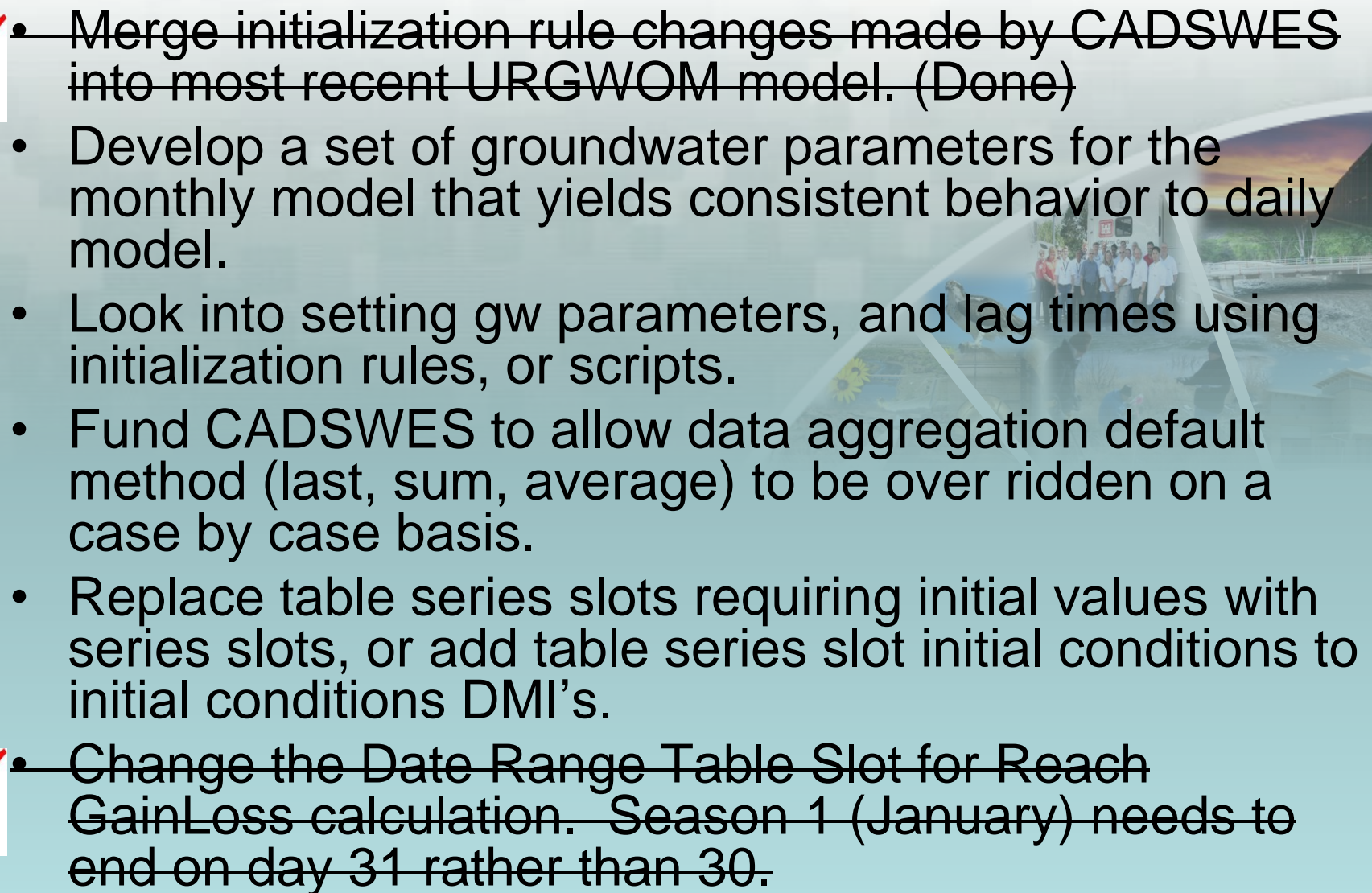- Colorado Portion Model Update

# Steps towards a monthly URGWOM

| Who | What | Status |
|---|---|---|
| CADSWES | Generalizing/modifying simulation & accounting methods to allow daily or monthly timestep. | Completed June 2013 |
| CADSWES | Input data aggregation methods. | Completed June 2013 |
| Tetra Tech | Review of CADSWES work listed above. | Completed August 2014 |
| Tetra Tech | Getting a monthly timestep URGWOM model to run in Rulebased mode with the URGWOM rule set. | Completed August 2014 |
| Tetra Tech | Sorting URGWOM policy (functions and rules) according to timestep dependence. | Ongoing |
| ?? | Incorporating CADSWES timestep generalizing changes to URGWOM initialization rules into current set. | Just recognized |
| ?? | Creation of a set of monthly shallow gw parameters that allow gw objects to run at a monthly timestep without instability or oscillations. | Just recognized |
| ?? | Create a monthly timestep ruleset, or generalize URGWOM rule set to work for either timestep | Started |

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# CADSWES Development

- Object Level Accounting Methodology Changes
- RiverWare enhancements
  - Run Control Parameters dialog box:
  - Data aggregation. **Last, sum,** or **average** depending on unit.
  - Specific functions changed as necessary to be more general.
- Generalization of URGWOM Initialization Rules
  - New initialization rule and data object to improve initial seepage
- Changes to URGWOM methods or data
- Initial Conditions after Timestep Switch
- Other
  - Monthly specific gw parameter need outlined.
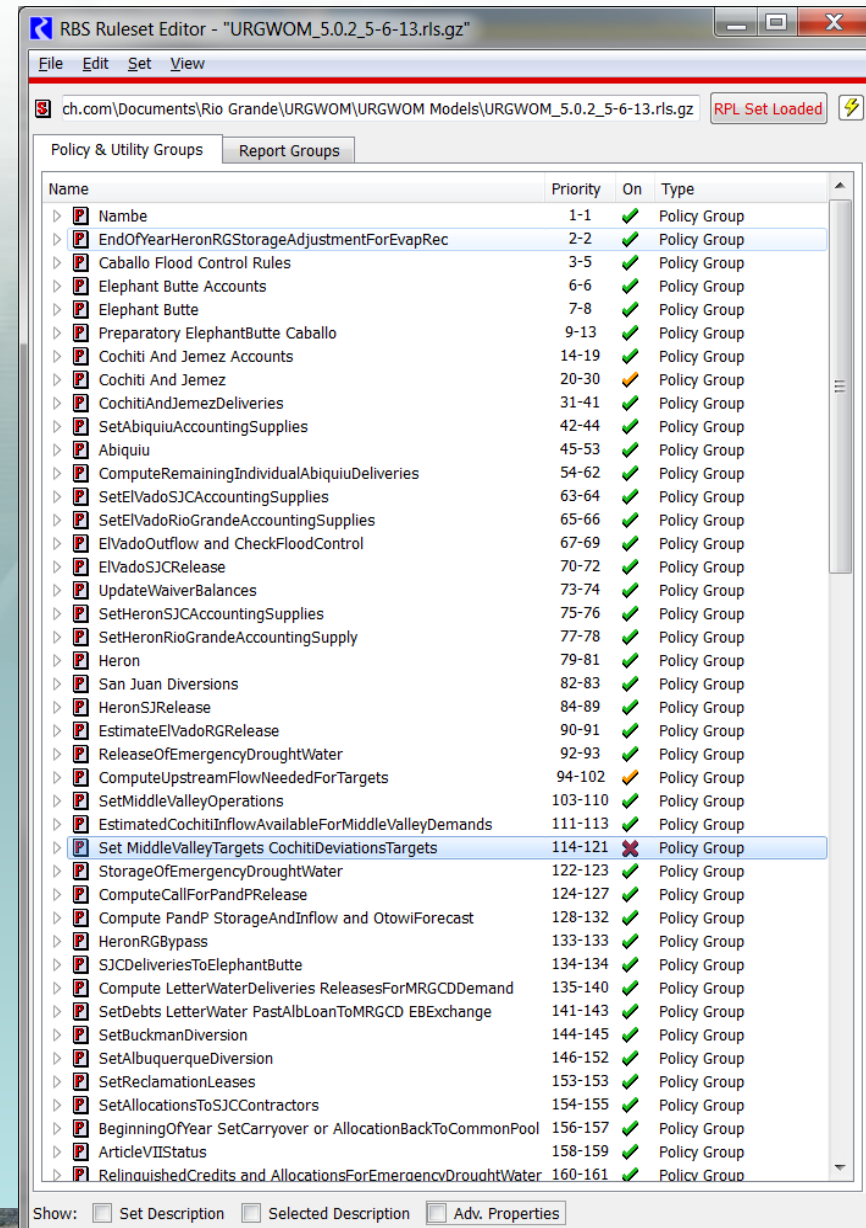
Courtesy Tetra Tech

# Tech Team Recommendations

- ~~Merge initialization rule changes made by CADSWES into most recent URGWOM model. (Done)~~
- Develop a set of groundwater parameters for the monthly model that yields consistent behavior to daily model.
- Look into setting gw parameters, and lag times using initialization rules, or scripts.
- Fund CADSWES to allow data aggregation default method (last, sum, average) to be over ridden on a case by case basis.
- Replace table series slots requiring initial values with series slots, or add table series slot initial conditions to initial conditions DMI's.
- ~~Change the Date Range Table Slot for Reach GainLoss calculation.  Season 1 (January) needs to end on day 31 rather than 30.~~

Courtesy Tetra Tech
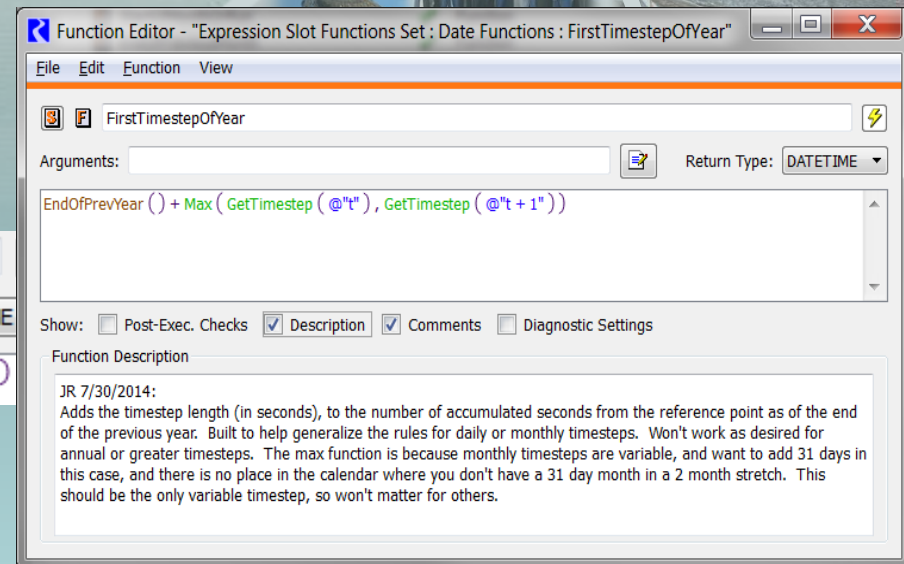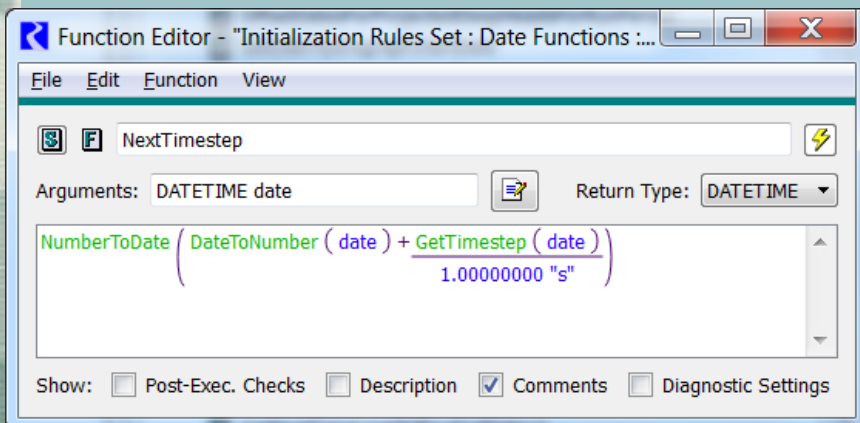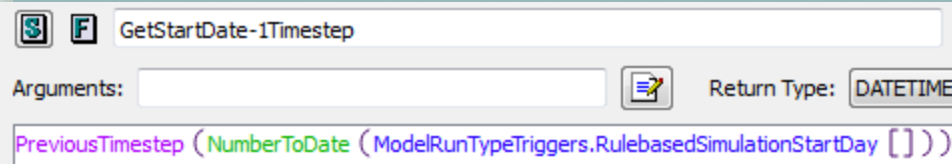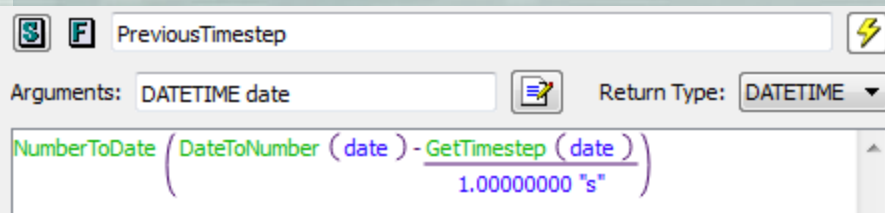
# Monthly rulebased simulations in URGWOM

- The monthly URGWOM test model can be driven by rules, without runtime errors by turning off the Set MiddleValleyTargets CochitiDeviationsTargets Policy Group

- Current work is beginning the processes necessary to either redo the URGWOM rule set to work for either timestep (ideal), or to create a separate monthly timestep rule set.

Courtesy Tetra Tech

# Daily or Monthly Model Rules Changes

- New Functions (some developed by CADSWES or Tetra Tech)
  - Date references now generic and can be used for daily or monthly timestep models

# CO Portion Model: Background

- Test RiverWare model developed in 2013 by Boroughs H & H

- Used to improve forecast flows at the Lobatos gage for long-term planning studies and Annual Operating Plan (AOP) simulations

- Boroughs H & H recommended improvements; CADSWES reviewed and recommended improvements

- Ultimately CO model will be combined with URGWOM

Courtesy Tetra Tech
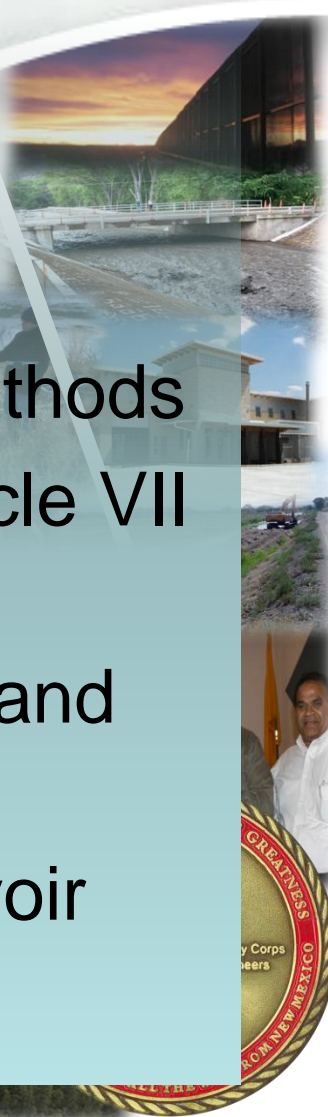
# Colorado Portion Improvements: Tasks

Improvement Tasks

1. Accounting Model Layout

2. Ruleset Improvement and Descriptions

3. Review Existing Compact Calculation Methods

4. Coordinate with CDWR to determine Article VII operations of Platoro

5. Consider Alternatives for Combining CO and NM models

6. Add Rio Grande and Santa Maria Reservoir

Courtesy Tetra Tech

# CO Portion: Accounting Model

- Test Accounting model was not correctly setting return flow supplies
- CADSWES recommended changing to individual water user objects to remove complexity of aggregated water users
- Changes completed as recommended
- To simplify view, objects added to object clusters
- Colors added to improve aesthetic, usability
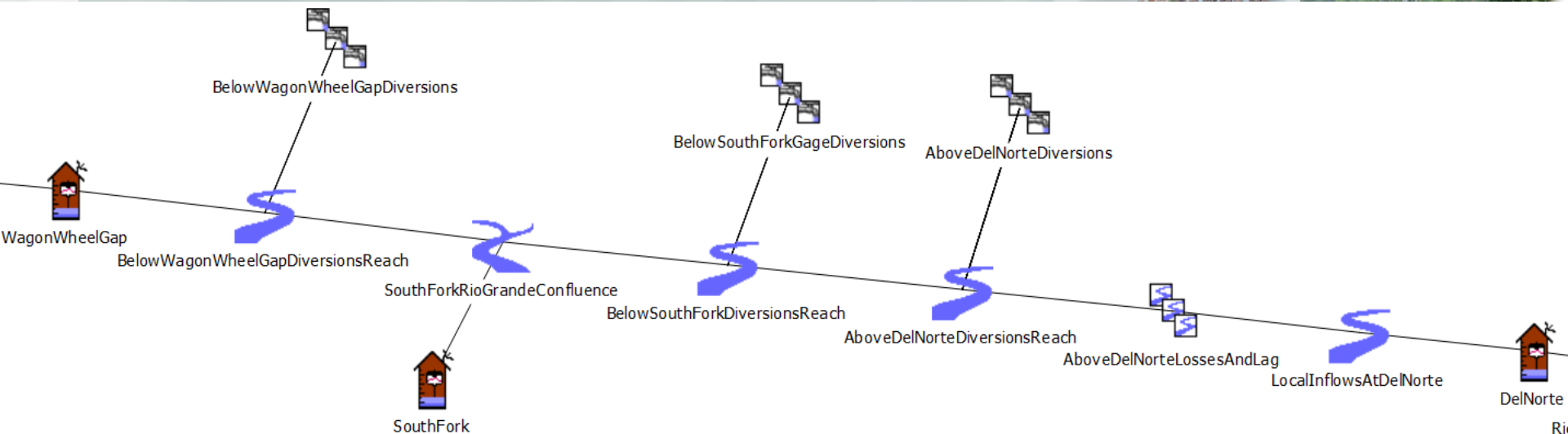- Changes increase model flexibility

Courtesy Tetra Tech

# Colorado Portion: Physical Model - Before

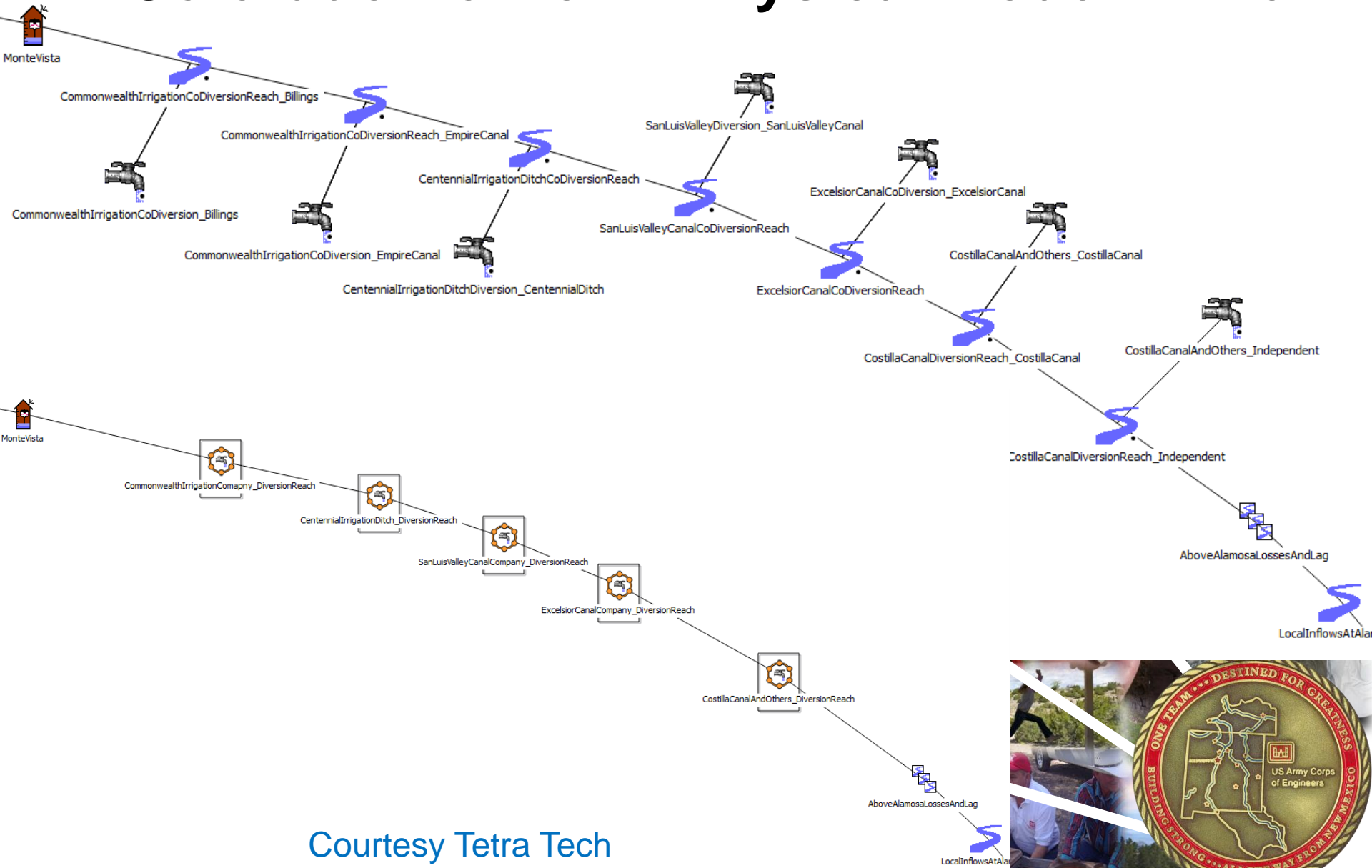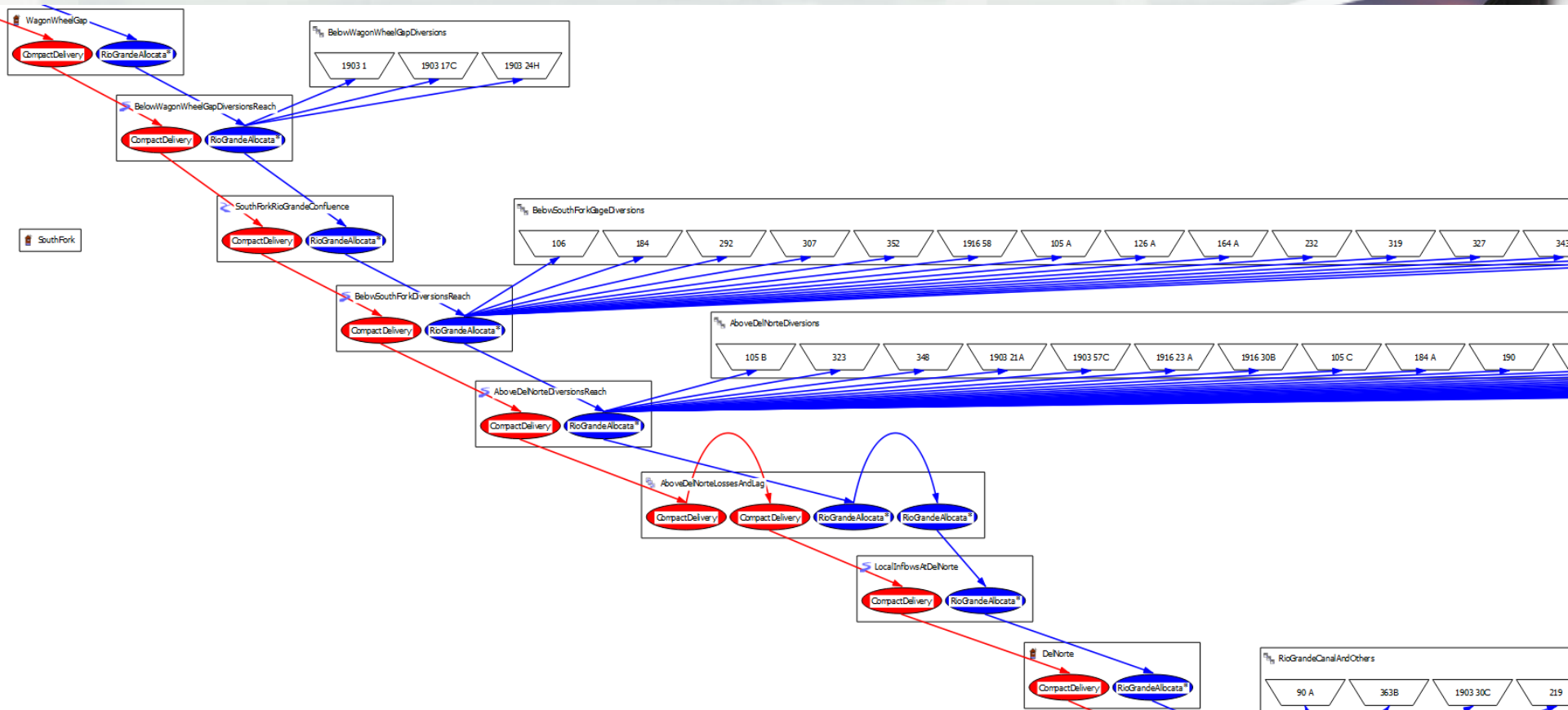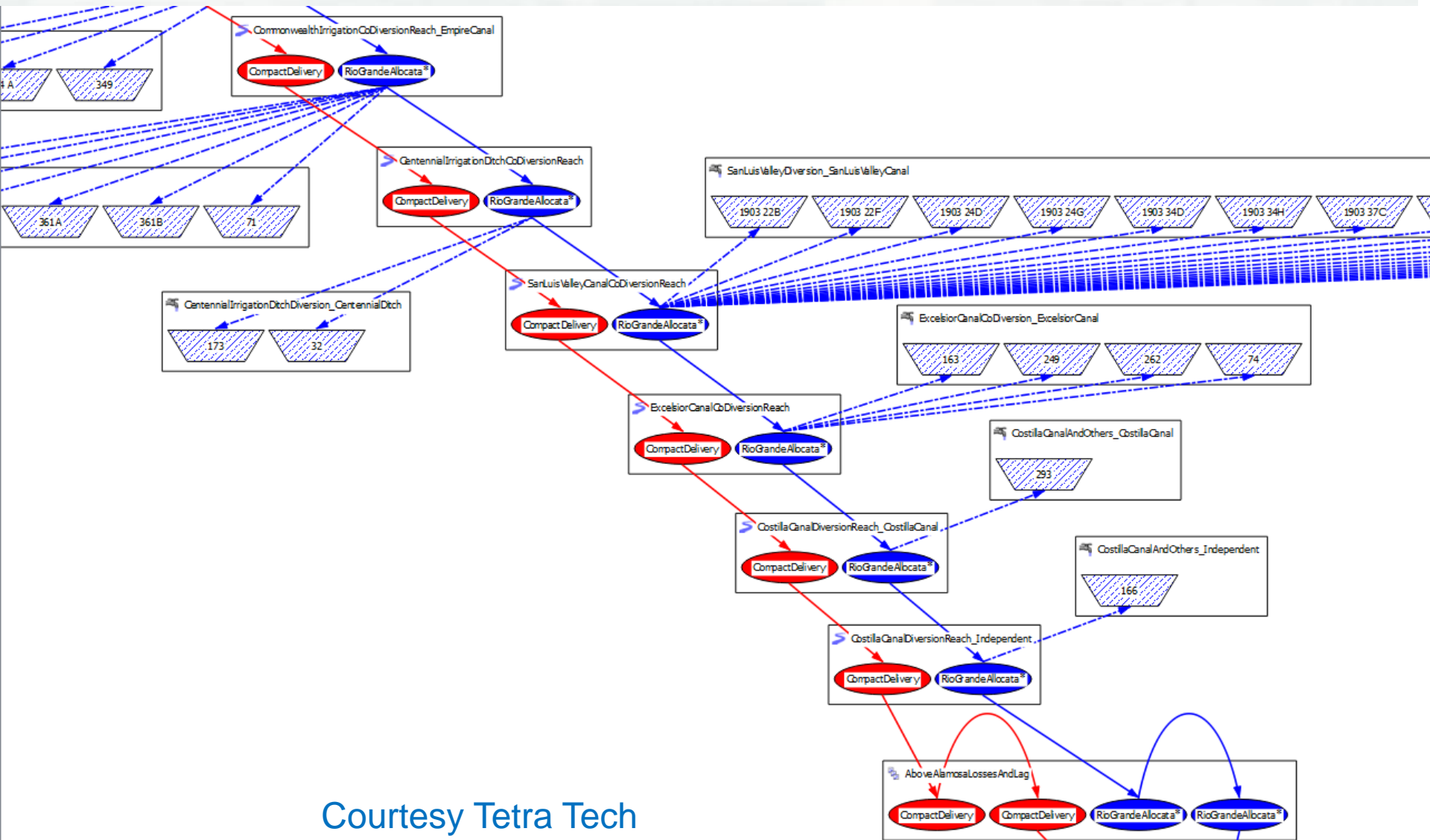# Colorado Portion: Physical Model - After



Courtesy Tetra Tech

# Colorado Portion: Accounting Model - Before

# Colorado Portion: Accounting Model - After



Courtesy Tetra Tech

# CO Portion Model: Tasks Completed

Ruleset Descriptions and Changes

- Draft descriptions added for all rules
- Needed rule changes made after because of accounting model improvements

Rio Grande & Santa Maria Reservoirs

- Technical Team decided not to add because they will not contribute anything significant to model

Accounting Model Layout Improvements

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Courtesy Tetra Tech

# CO Portion Model: Remaining Tasks

Review Existing Compact Calculation Methods
- Work has started
- Will check the accuracy of current methods against the Compact and historical flows

Coord. w/ CDWR to determine Article VII ops at Platoro
- Have initiated communication & met w/ CDWR at Platoro

Consider Alternatives for Combining CO and NM models
- Work has not started, final activity

- All work will be shared with Technical Team in a report

Courtesy Tetra Tech

• Questions?

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