



Center for Advanced Decision Support for
Water and Environmental Systems (CADSWES)

UNIVERSITY OF COLORADO **BOULDER**

Licensing, Releases, Software Maintenance

2026 RiverWare User Group Meeting

Presenter: The RiverWare Team

Major RiverWare Activities at CADSWES

- Software development (R&D)
- Basin Specific modeling and sponsor support
- Software Maintenance and Releases
- Help Desk – User Support Hours
- Training/ Tech Transfer - formal classes, online materials
- Support of licensing for Venture Partners

Licensing

- RiverWare is the Intellectual Property of the University of Colorado
- Licensed by University Venture Partners under agreement with sponsoring agencies
- CADSWES assists with licensee communications and payments on behalf of VP
- Upcoming enhancements: Activation Pro licensing that does not require machine information to generate license files

Help Desk Support

Provided to licensees through purchased support hours

Sponsors have User Support funding in their contracts

All support questions should be sent to:

riverware-support@colorado.edu

Multiple support staff receive email and most appropriate or available person can respond.

Types of support:

- “How to” use the software to accomplish your modeling objectives
- Analyzing problems
- Interpreting results



Software Development (R&D)

Goal: deliver professional quality software applications that meet users' needs

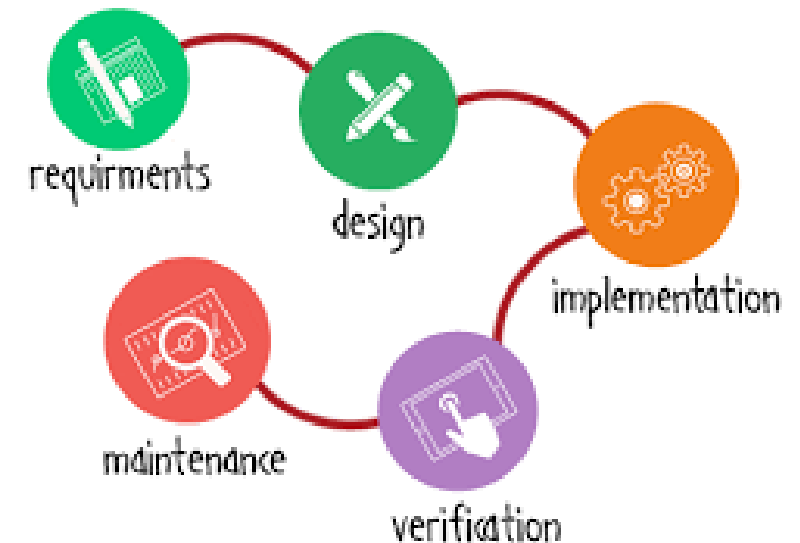
R&D Team: water resources engineers, operations research analyst, professional software developers

Support Team: software configuration management, hardware and software maintenance, licensing, releases

Process

- Requirements analysis and documentation
- High level design document/ Estimates
- Detailed designs for sponsor review
- Implementation and testing
- Pre-release or snapshots for testing
- Feedback from sponsors, further testing
- Final release, user documentation, regression tests

Funded typically by Sponsors, sometimes by others under contract agreements (all users have access to all development)



Basin Specific Modeling/Reviews

CADSWES focuses on R&D and Tech Transfer but assists with applications when necessary (funded by users or sponsors under contracts or user support funds). Examples:

- Models that use new RiverWare software features/functionality
- Applications or special studies that benefit from expertise not yet developed in agencies or with consultants
- Model reviews, performance analysis

We encourage in-house expertise and use of consultants; this benefits all users and CADSWES

Software Maintenance and Releases

- **Keeping the software upgraded** for new versions of compilers, operating systems, platforms and third-party software libraries
(Qt (with WebKit), Qwt, CPLEX, Concert, GDAL/OGR, Reprise, Oracle, Tcl, netCDF, Google Protocol Buffers, QuaZIP, Java Runtime Environment)
- **Issue tracking and fixing**
 - Maintain issue tracking application (Jira online)
 - Critical issues fixed immediately for next patch release
 - Non-critical issues deferred to next major release or later
- **Minor enhancements, refactoring, modernizing GUI**
- **Maintaining Development and Builds Environments:**
Microsoft Visual Studio, Source control (Git and Git Extensions) GitHub Actions, Regression tests, modelcomp

Software Maintenance and Releases

- **Releases**

Major releases: RiverWare 9.7 – usually 2 per year

Patch releases: RiverWare 9.7.1 – as needed

Generated from last full release with fixes and minor enhancements, possible doc updates; Tested and verified (usually without a prerelease)

- **Installation and Licensing**

Installshield updates, license software updates, issue licenses, maintain online payment web pages, maintain user databases, send quotes, invoices, renewal notices

- **Maintain download Web sites, upload ftp site, user support tracking tools**

- **Ongoing improvements for cyber security compliance**

includes compliance with new Secure Software Development Framework under Exec Order 14028-4e; established by NIST and mandated by OMB; Static code analysis

Funded by sponsors and license fees (by MOU agreement with CU, BOR, TVA, USACE)

Feedback and Open Mic

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Feedback and Open Mic

- Tell us about other applications or new projects
- Questions on any topic presented early
- Unmet modeling or processing needs
- Usability issues
- Requests for enhancements
- Anything else you would like to share

