University: Utah State University

Name of University Researcher Preparing Report: David Tarboton

NWS Office: CBRFC (Colorado Basin River Forecast Center)

Name of NWS Researcher Preparing Report: Bill Reed

Partners or Cooperative Project: Cooperative Project UCAR Award No.: S02-32800

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SECTION 1: PROJECT OBJECTIVES AND ACCOMPLISHMENTS

1..1 **This project comprised the development of an online module on the scientific aspects of the rainfall runoff processes. The module is now complete and available online.**

The module developed includes:

- **A complete workbook (159 pages) on Rainfall Runoff Processes serving as the textbook for the module available online in PDF format.**
- **Streaming video and slide presentations.**
- **Visualizations and computer animations to convey key concepts.**
- **Powerpoint presentations.**
- **Online quizzes serving as exercises where the user needs to respond to multiple choice questions or enter numeric answers to problems.**
- **An online final test.**

This module is designed to provide a comprehensive and quantitative understanding of infiltration and runoff generation processes. The module should take about 6-15 hours to complete depending on a students quantitative background and a priori knowledge in this area. This module is targeted at students with a scientific or engineering background such professionals with a college degree in science or engineering, or seniors or graduate students in a hydrologic science or engineering program. No prior knowledge on Rainfall Runoff Processes is required.

The computer files for the module have been downloaded by the NWS, but to my knowledge not yet installed on the NWS COMET training modules website. The module is available on the following Utah State University website: http://moose.cee.usu.edu/rrp.

SECTION 2: SUMMARY OF UNIVERSITY/NWS/DOT EXCHANGES

2.1 **There have been other exchanges as a result of this project.**

SECTION 3: PRESENTATIONS AND PUBLICATIONS

3.1 **A presentation based upon this work has been submitted to the AGU Fall meeting, 2003:**

Tarboton, D., C. Bandaragoda, Y. Kaheil, M. Zachry and W. Reed, (2003), "An Online Module on Rainfall Runoff Processes," Submitted for presentation AGU Fall Meeting, San Francisco.

SECTION 4: SUMMARY OF BENEFITS AND PROBLEMS ENCOUNTERED

4.1 **This project was completed behind schedule. The main reason for the delay was my (University PI Tarboton) other commitments and insufficient time to devote to this project. The project is now complete and we are satisfied with the outcome. The partially complete draft workbook was used in the Utah State University Physical Hydrology class fall 2002. The interaction with students on the material resulted in revisions that improved the clarity of some of the presentation. Online education is growing in importance at USU and nationally. This material will be beneficial to USU in future hydrology course offerings.**

4.2 **The module developed will improve the appreciation and understanding of rainfall runoff processes that lead indirectly to improved river forecasts in the CBRFC office and elsewhere in the NWS. The relationship established with the Utah Water Research Faculty (UWRL) may lead to other opportunities for collaboration.**

As stated above by the academic partner, the project is now complete, and I am very pleased with the quality and utility of the delivered items. It is my understanding that the materials will be shortly placed on the web server at our NWS Training Center and thereby, available to all NWS employees.