AHPS
Advanced Hydrologic Prediction Service
POTENTIAL PRODUCTS AND SERVICES

HIC/MIC Conference
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Salt Lake City

Dave Brandon – HIC
Colorado Basin River Forecast Center
AHPS
ESP- Ensemble Streamflow Prediction
Based On Probability & Statistics

“The importance of a statistical average?”

“Then there is the man who drowned crossing a stream with an average depth of six inches.”

-- W.I.E. Gates
Probability

“It is a truth very certain, when it is not in our power to determine what is precise, we ought to follow what is most probable.”

Variation on a quote by: 
-Rene Descartes
AHPS
POTENTIAL PRODUCTS AND SERVICES

1. Common Suite of Products

2. Customized User Products
   Build Their Own From ESPADP

3. Futuristic Products Built
   From the Database
AHPS COMMON SUITE OF PRODUCTS

1. Prototype/Proposal by the Central Region
   Deterministic Stage and Forecast Hydrograph
   Probabilistic Forecasts - Text and Graphic
   (Examples will be shown on following slides)
   RFCs can add local enhancements in addition to a common suite of products.

2. Details yet to be determined by National Team (Gregg Rishel)
AHPS
COMMON SUITE OF PRODUCTS
1 Week Chances of Exceeding River Levels on the GREEN–WARREN BRIDGE

Latitude: 43.0  Longitude: 110.1
This is a conditional simulation based on the current conditions as of 6/5/2002.

Exceedance Probability
- 10 – 25%
- 25 – 50%
- 50 – 75%
- 75 – 95%
- >= 90%
Chances of Exceeding River Levels on the GREEN–WARREN BRIDGE at Latitude: 43.0 Longitude: 110.1
This is a conditional simulation based on the current conditions as of 6/5/2002.
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CUSTOMIZED USER PRODUCTS

1. Thousands of Potential Combinations
   10 Data Types
   3 Model Sources
   5 Probability Distributions
   4 Weighting Schemes
   4 Data Intervals
   4 Plot Options
   3 Table Options

2. Provide Users Ability to Produce
   Customized Forecasts/Presentations
AHPS

BUILD YOUR OWN AHPS/ESP PRODUCT

Developed by Steve Shumate-DOH
Compute Statistics From Traces in the Window
ESP Expected Value of GREEN–WARREN BRIDGE
Latitude: 43.0  Longitude: 110.1
This is a conditional simulation based on the current conditions as of 6/5/2002.
# ESP Forecast Information

# Analysis Period: 5/6/2002 24 - 12/6/2002 24 (MST)
# Forecast Parameters: River Flow (Max) - (CFSD)
# Forecast Interval: 1 Month
# Forecast Point:

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AHPS
FUTURISTIC PRODUCTS AND SERVICES

1. Store Component Pieces of an ESP Forecast
   In a Relational Database in Lieu of Images

2. Pull Pieces out and Create
   New Products

(Examples will follow)
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EXAMPLE 1: FUTURE PRODUCT

Scenario 2

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Possible river level
forecasted 7 days from now

River Channel
AHPS
EXAMPLE 2: FUTURE PRODUCT
AHPS
EXAMPLE 3: FUTURE PRODUCT

WBRW4 Observed/Simulated Hydrograph
The current time is: 05/07/16 23 GMT.

**Canned Example**
Short Term Probabilistic Forecasts
- 50% Exceedence Level
- 25% & 75% Exceedance Levels
- 10% & 90% Exceedance Levels
Status of Improved Cooperation Between the RFC and WFO

Indicative of the following quote:

“We love you guys (CBRFC)!”
-- Lawrence Dunn