GPAT

Graphical Policy Analysis Tool

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Outline

- Purpose of GPAT
- Version 2.0 and demonstration
- Potential Enhancements

Comparing Potential Policies

Complex Models = Complex Output

- Multiple Slots of Interest
  - Stakeholders
- Time
- Multiple Runs: policies, hydrologic scenarios, water years, etc.

Four Dimensional Space

Purpose of GPAT

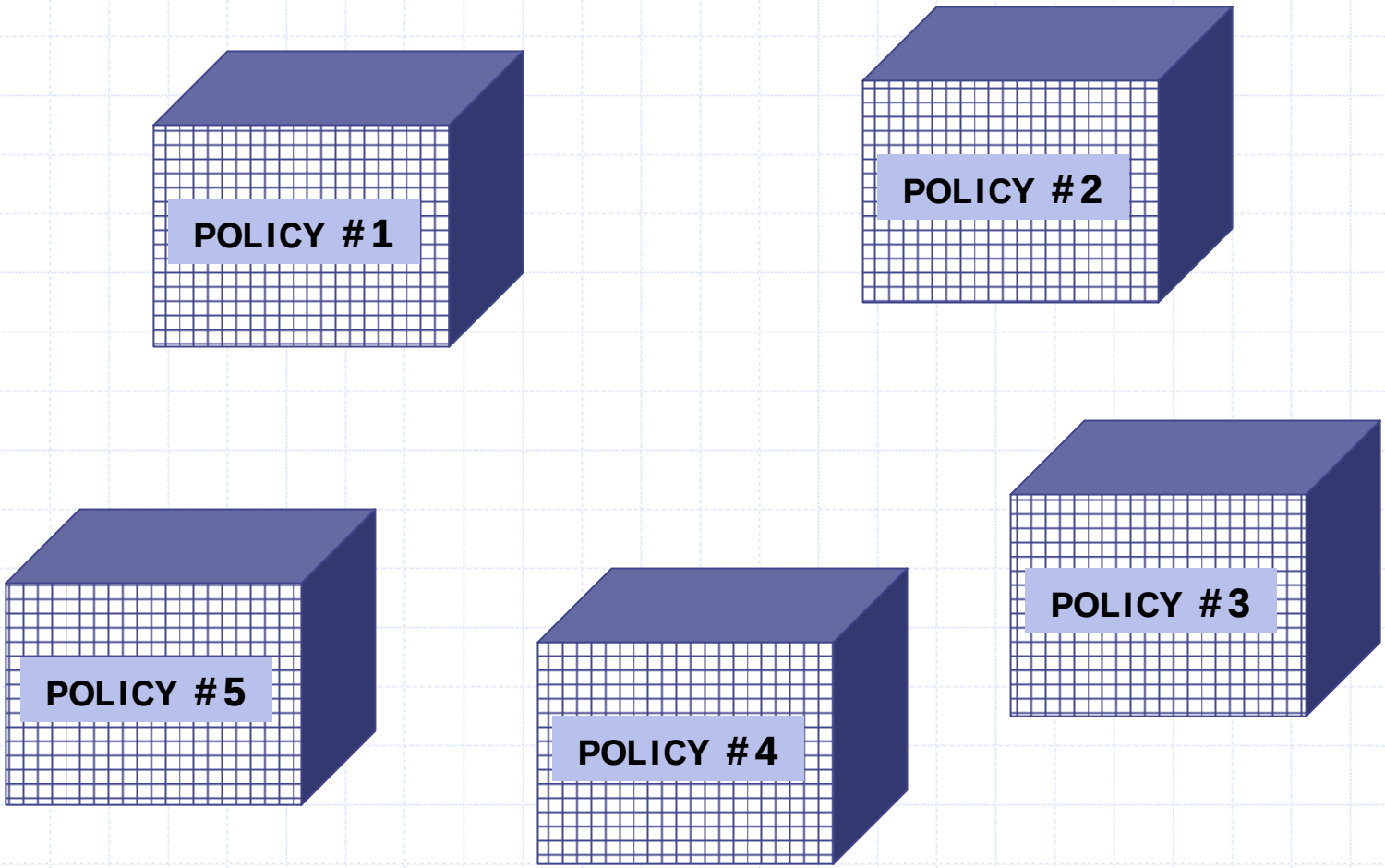
- Dynamically explore data
- Automate statistics and graphing
- Share data and analysis with stakeholders

➔ Currently implemented in Excel as a Visual Basic Add-in.

Splitter and ExcelWriter

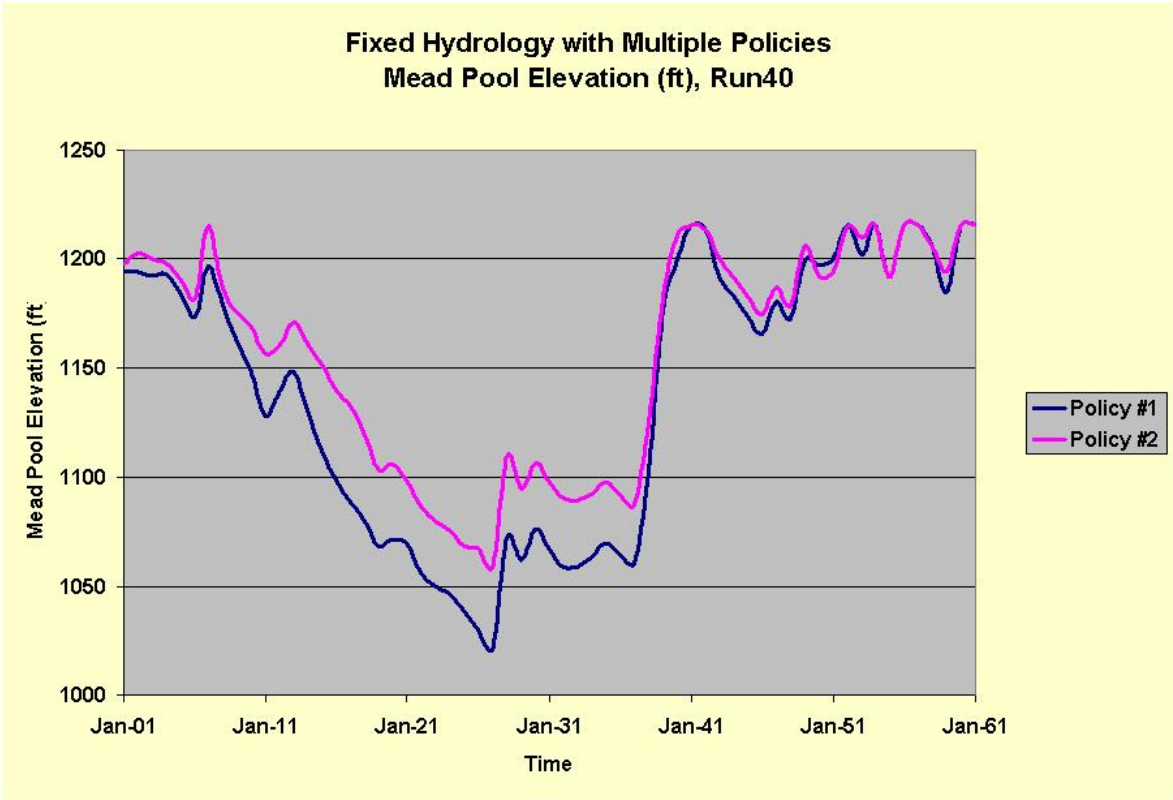
- Write RiverWare Outputs into Spreadsheet Format

How to Compare Policies???



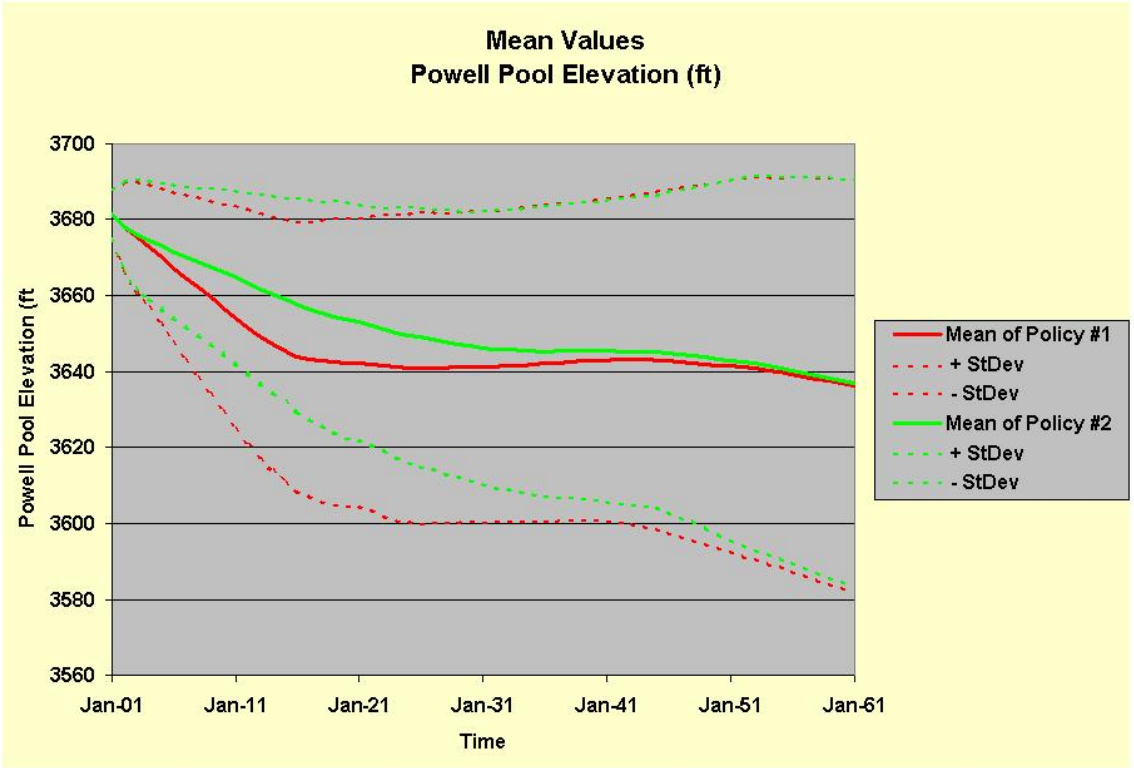
One run, Alt. policies

- I want to compare individual slot values over time for a common hydrology



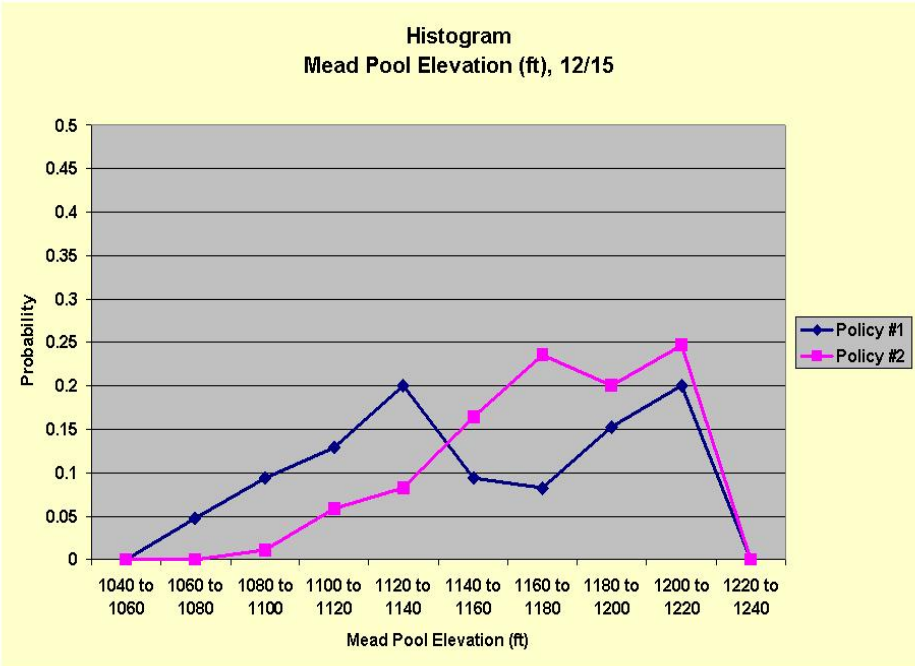
Statistic(runs), Alt. policies

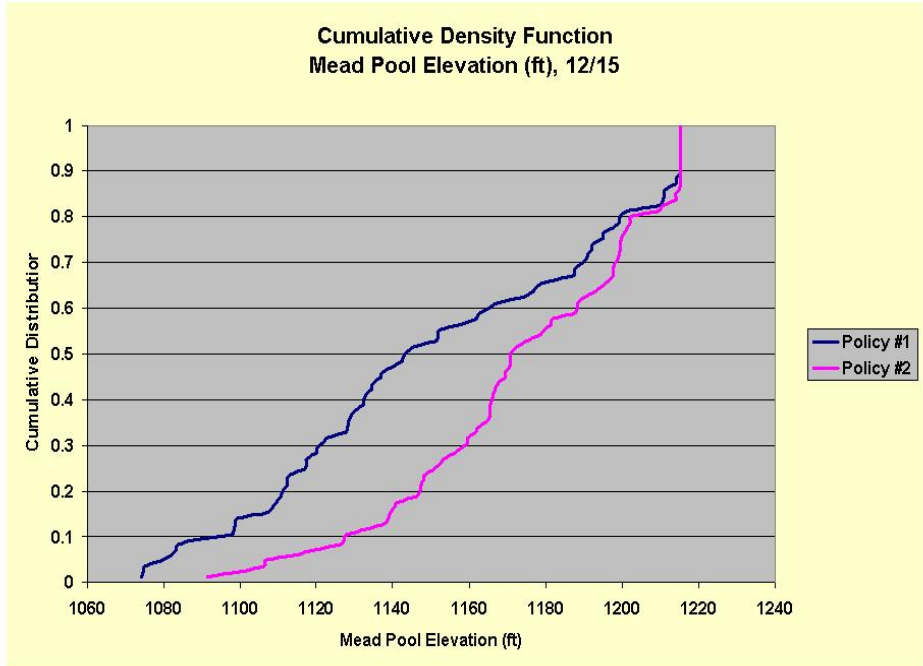
- I want to compare the statistics of all hydrologic scenarios over time
  - Mean, Minimum, Maximum, Standard Deviation



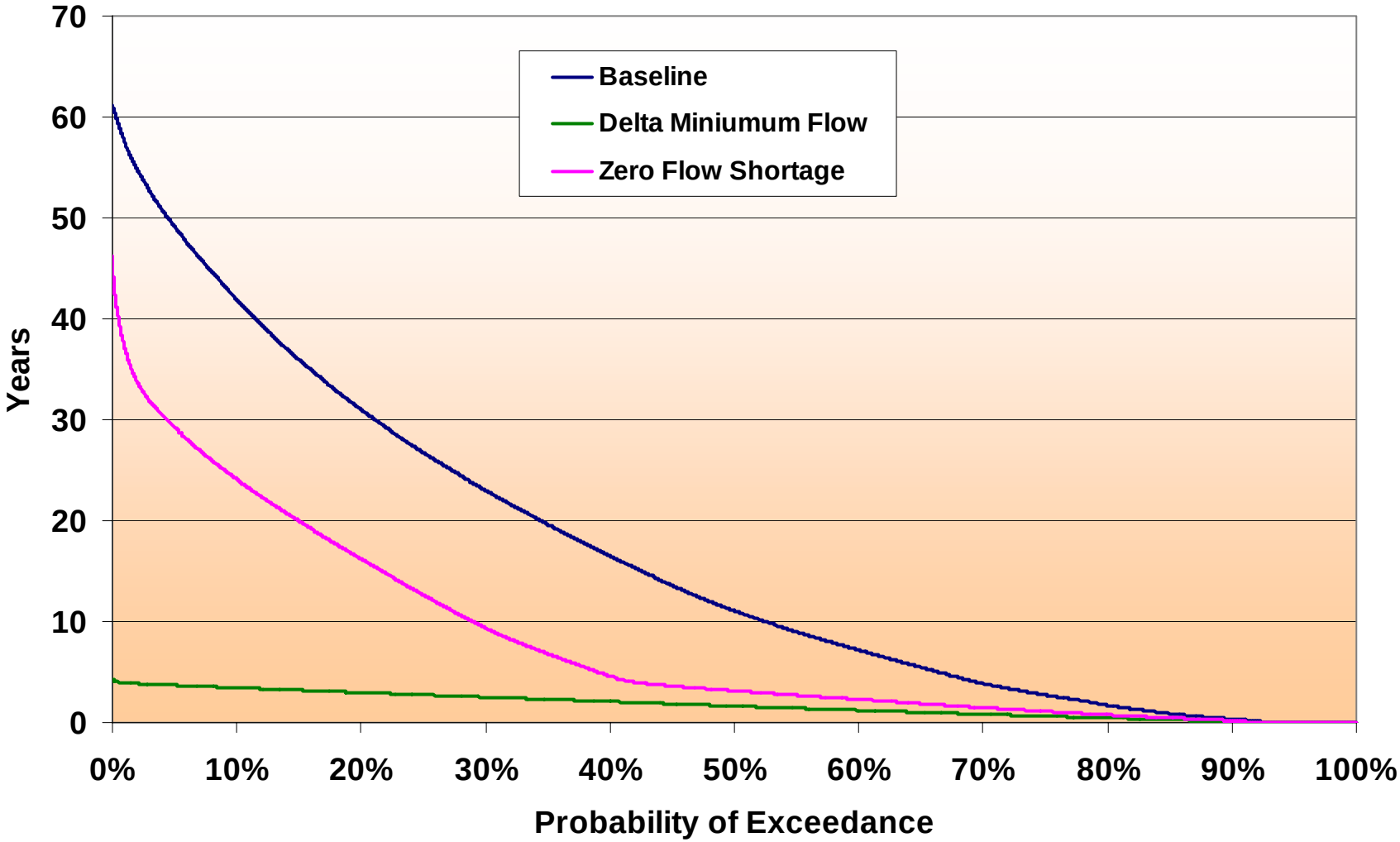
Distribution(runs), Alt. policies

- How do the probabilistic distributions of slot values compare at one point in time? PDF (Histogram) , CDF



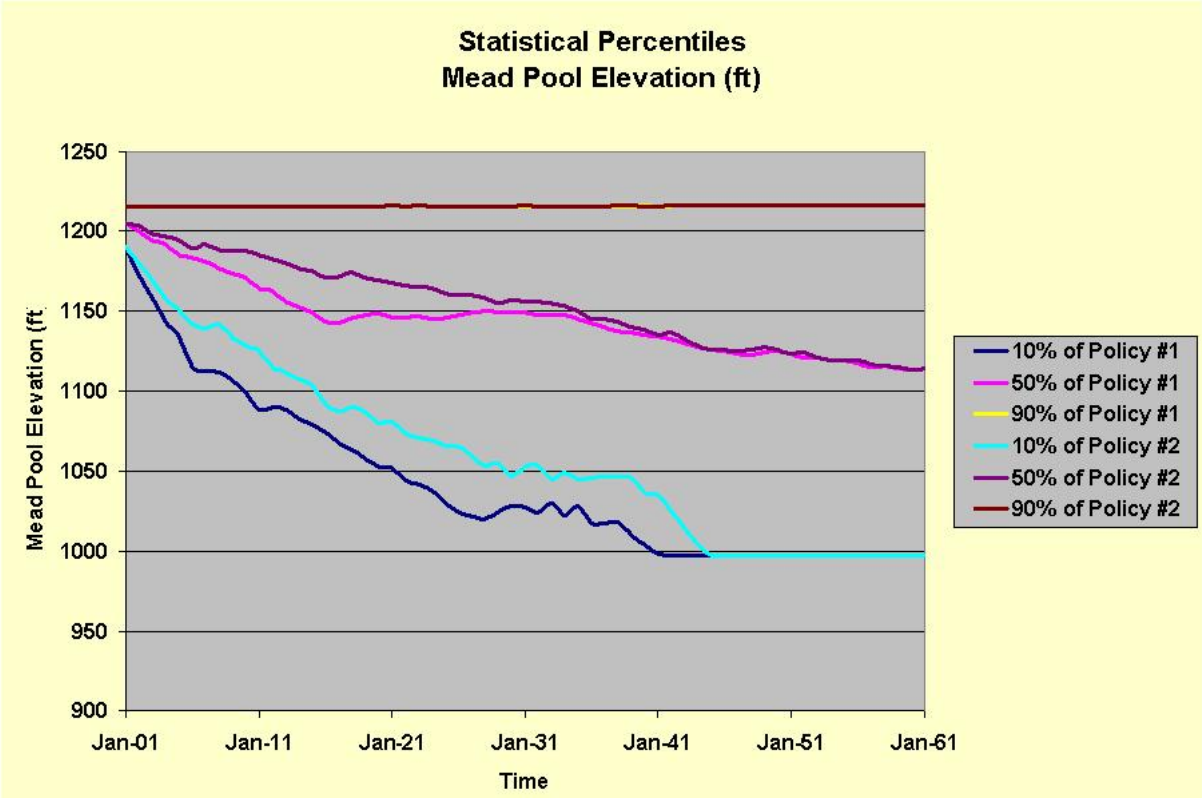


Cumulative Distribution Function - Length of time since a 260 kaf flood event for the Colorado Delta



Percentiles(runs), Alt. policies

- What will the slot values be over time that correspond to a particular percentile of occurrence?



Exceedance Probability

- What is the probability of a slot variable exceeding or not exceeding a certain value through time?
- What is the probability of a slot variable falling within a specified range through time?
- What is the probability of a binary occurrence?
  - Flood release, shortage, surplus, equalization flags

Version 2.0

- On the RiverWare web site (soon)
- New, Tabbed GUI interface
- Alternative workbook orientations
- Removed the hardwiring of “Policies” and “Hydrologic Scenarios”.
  - Workbook dimensions
  - Choose to graph individually or to treat as a statistical sample
- Aggregation and Summary statistics (ver. 1.3)
- Used this FY’s funding

Potential Major Enhancements

- Non-spreadsheet GPAT
  - Row/column limitation
  - Performance
- Sampling the data by time
- Series Transformations
- Binary Events
- Graph and Analysis Specification

Potential Minor Enhancements

- Access ExcelWriter from GPAT
- Omit graph or spreadsheet
- Background for percentile ranges
- Reverse CDF
- Prepend historical values
- Alternative percentile definitions

Simplify the RiverWare to GPAT Process.

Current Process:

- RiverWare generates a large rdf file for each run.
- “Splitter”converts to smaller rdf files.
  - Also, calls ExcelWriter
- ExcelWriter converts rdf files to Excel workbooks.
- GPAT reads multiple workbooks.