

How to Operate the ToolKit (version 4-9-99)

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Specifying Inputs

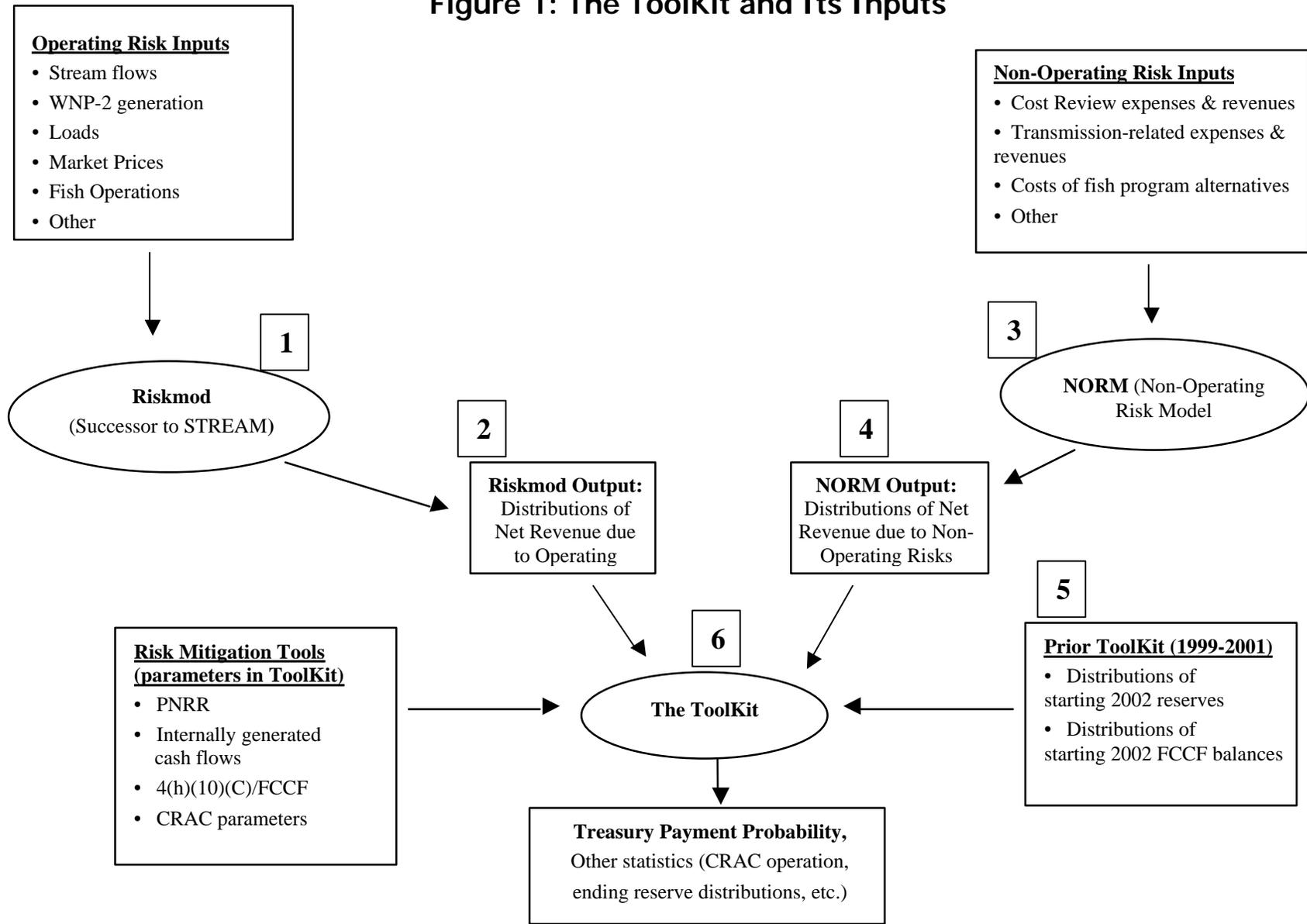
Study Title: This cell near the top can contain a descriptive phrase to identify the study. The phrase entered will be copied to the Reserves Graph if that option is turned on.

Net revenue distributions: If you want to assess the effects of a different distribution of operating and/or non-operating risks upon Treasury Payment Probability, you will have to change one or both of the following input files:

- Net revenue distribution incorporating operating risks (RISKMOD output)
- Net revenue variability due to non-operating risks (NORM output)

You will also need to make sure that you update both the ‘Internal Cash Flow’ and ‘Interest Credit Scheduled’ values to be consistent with the revised net revenue distributions. These files and values have been updated, and unless you know what you are doing you should not change these.

Figure 1: The ToolKit and Its Inputs



User Options

For the purposes of analysis, the user has available a number of policy testing and risk analysis options.

Starting reserves balance: Users have the option of specifying whether all the 3900¹ simulation games begin the rate period from a single point estimate of 2001 ending reserve balance ('Random St. Rsrv.' = false) or from 3900 distinct starting points resulting from a simulation of the current rate period ('Random St. Rsrv.' = true). If the former option is chosen, the user may specify the starting value ('St. Rsrv. Balance').

Starting FCCF balance: As with reserve balances, users have the option of specifying whether all the 3900 simulation games begin the rate period from a single point estimate of remaining FCCF funds ('Random St. FCCF' = false) or from 3900 distinct starting points resulting from a simulation of the current rate period ('Random St. FCCF' = true). If the former option is chosen, the user may specify the starting value, which should be less than \$325 million, the full original value of the Fund ('St. FCCF Balance').

Internal estimation of FCCF and 4(h)(10)(C) credits: FCCF and 4(h)(10)(C) credits may be estimated either in Riskmod or in the Toolkit. If these credits were accounted for in Riskmod, they should not be double-counted in Toolkit. If they were not accounted for in Riskmod, they must be dealt with in Toolkit. These switches determines whether the calculation is made in Toolkit ('Access FCCF?' and 'Access 4h10C?': true means use ToolKit to model these credits; false means it is modeled in Riskmod). The data files we are supplying at this time have the FCCF and 4(h)(10)(C) credits already calculated in the Riskmod run, so the ToolKit access switches should be set to FALSE.

Size Defined for "Small Deferrals": The ToolKit will count how many deferrals in each year were smaller than this value, and report it in the "Small" Deferrals' output section.

Fraction of Any CRAC or TxSurch that is received in the first year: Since CRAC and TxSurch revenues will not be available at the first of the year (they have to wait for the audit and public process), the user can specify what fraction of the CRAC or TxSurch will be received in the year in which it is calculated ('CRAC 1st-Year %'); the remainder is received in the next year except in the last year, when the next year would be outside the rate period. In this year, the annual cap is prorated to the firstyear percentage, and all of the revenue is received in the first year.

Debugging Level: This can be set to 1 or 2 to provide additional information on the run to aid in debugging ('Debug Level'); a value of 0 turns all debugging off.

¹ 3900 is the number of games in the full probabilistic mix runs. The user can run the ToolKit for fewer games if desired even if the inputs still have 3900 games. This will use a subset whose distributional characteristics might be quite different from the whole set, but it will run faster if you are testing something. The F&W Alternative-specific input files have only 300 games in them, and you must change the number of games parameter to reflect this or you will get overflow errors.

Provide data for a graph of reserves: if desired, data can be saved for a graph of ending reserve balances for 2001 through 2006 ('Reserves Graph?'). The graph will be in the worksheet named "RsrvsGrph".

Planned Net Revenues for Risk: This value is added to the iteration-specific net revenues for each of the years in the rate period in order that the Average Ending Balances over the 3900 games meet a probability standard, usually 88% ('Planned NR/Risk'). There are several columns in which PNRR values can be entered. In this version of the ToolKit they are named "Add'l Adjust. 1", "Add'l Adjust. 2", "Add'l PNRR 1", "Add'l PNRR 2", and "(extra column)". Any value in any of these columns will be treated as an amount of incremental revenue for the year matching that row. If you only enter values in one column, it doesn't make any difference which of the columns is used. If you enter values in more than one column, the sum of the values will be used. Negative values can be entered to represent decreases in cash flow. Often the user experiments with PNRR values until finding one that will cause the probability of Treasury Payment to match the target.

Another way to adjust the Planned Net Revenue for Risk is during the operation of the ToolKit – before it exits, it prompts the user to enter a change number for the PNRR "on the fly". The final net change is recorded in the 'On-the-Fly Adjustment' section of the output. If you are iterating to get to a specific TPP, the fastest way to do this is to type in a number and then press Enter twice (at the "Enter a cash flow adjustment to be applied to all years." prompt).

Cost Recovery Adjustment Clause Implementation

CRAC (also called Interim Rate Adjustment, or IRA) is one of the risk mitigation tools the Toolkit user may test during analysis. The user specifies

- Maximum amount that can be collected through this mechanism over the rate period ('CRAC Lim/Total');
- Annual cap on amount collected ('CRAC Lim/Year'); this amount can vary from year to year. Setting this to 0 disables the CRAC for that year. It is assumed that CRAC needed in a particular year will actually be collected over a year's time beginning around the next March to allow time for the auditing of the actual financial results and to allow a public process to verify that the CRAC is being implemented according to the description in the Final Rate Case.
- Threshold, or trigger level ('CRAC Threshold'); a number must be entered for each year in the 2002 - 06 rate period. The thresholds for different years can be different.

Transmission Surcharge Implementation: This operates in the same manner as CRAC (variables are named "TxSurch..."), except that there is only one value for the threshold that applies to all years. In the 1999 Rate Case Initial Proposal, BPA is not intending to assume that a Transmission Surcharge will be available.

Dividend Implementation: If ending year reserves rise above a certain amount, it is possible that BPA will dividend or rebate surplus funds to stakeholders not yet specified. The user specifies

- Trigger threshold – the end-of-year reserve value above which the dividend distribution mechanism will trigger ('Div Dist. Threshold'); can vary from year to year. Setting the Threshold to 0 in any year turns this feature off.

Adjustable CRAC: This option, controlled by a TRUE/FALSE switch on the main ToolKit page, causes the parameters of both the CRAC and the Dividend Distribution to be dependent on the F&W alternative, which is one of the input variables read in from the NORM file. If this switch is set to TRUE, then the parameters for CRAC and DivDist are over-ridden by the values in the "Adjustable CRAC" section at the bottom of the main ToolKit worksheet. The over-riding values are selected for each game by the F&W alternative. The 5-year set is used for each fiscal year in a game; then when the next game starts, the F&W alternative is again determined from the NORM input for use by all fiscal years in that game. As the ToolKit has been published, the adjustable parameters are set by formula based on the financial impacts of the F&W alternatives, but the user can change this, and use any basis he or she wants for creating the values to go in the Adjustable CRAC section.

Interpreting Outputs

Treasury Payment Probability: The percentage of 5-year simulations of revenue streams where no deferral of Treasury Payment occurs in any of the five years.

Annual Deferrals: This counts the number of simulations in which the ending reserve balance falls below \$50 million, which results in a deferral of that year's Treasury Payment.

Cumulative Deferrals: For each year, this counts the number of games in which at least one deferral has occurred during the rate period, not the number of deferrals.

Average Ending Balance: For each year of the rate period, the mean end-of-year reserve balance for the 3900 games.

Average Interest Credit: For each year of the rate period, the mean interest credit value for the 3900 games.

CRAC

- 'CRAC Accesses' – The number of games (out of 3900) in which end of year reserves fell below the threshold level and CRAC was triggered.
- 'Av. CRAC per Acc.' – Average CRAC revenue per CRAC access – This represents the average size of the CRAC when it is triggered. For each year CRAC revenues are collected, this value is the total revenues from CRAC divided by the number of accesses, not the full 3900 games.
- 'Av. CRAC per Year' – Average CRAC revenue per year – This represents the expected cost to the rate payer for having an CRAC as part of the rate package. For each year CRAC revenues are collected, this value is the total revenues from CRAC divided by the 3900 games.

- ‘CRAC An. Lim Rchd’ – The number of games (out of 3900) in which the annual limit on CRAC revenue was reached (provides information about how likely a larger annual limit is likely to be more powerful).
- ‘CRAC Tot. Lim Rchd’ – The number of games in which the rate period total limit on CRAC revenue was reached.

Transmission Surcharge: These values are calculated in exactly the same manner as those for CRAC.

Dividend Distribution

- ‘No. of DivDists’ - Number of Dividend Distributions – The number of games (out of 3900) in which end of year reserves exceeded the threshold level and dividends were available for distribution.
- ‘Ave DvD. per DvD.’ – Average amount of the dividend distribution per instance of distribution – This represents the average size a dividend when it is awarded. This value is the total excess revenues (end year balance minus threshold) divided by the number of games in which it triggers.
- ‘Ave DvD. per Year’ – Average amount of dividends distributed per year – This represents the expected size of the dividend to be distributed per year. This value is the total excess revenues (end year balance minus threshold) divided by the 3900 games.

Other Notes

Kinds of Studies Possible

We are providing files that allow you to run three types of ToolKit studies.

Full probabilistic mix

Uses 3900 games², equal probabilistic weighting of the 13 F&W alternatives, 10% chance of unadjusted schedule and 90% chance of adjusted schedule for the Snake drawdown alternatives (7, 8, 9, 12 & 13); BPA direct program uniformly random from \$100M to \$179M per year (five-year average figures). Use the NORM and Riskmod files that have the work “mix” in their names.

Conditional TPP specific F&W alternatives; BPA direct program random

Uses only 300³ games, each with a single F&W alternative, but the BPA Direct Program is random as in ‘Full probabilistic mix’. Use the Riskmod files with names containing specification of alternatives, such as “Alt2”, “Alt7a”, or “Alt7u”. The “a” and “u” indicate *adjusted* or *unadjusted* schedules. Use the NORM files with names containing specification of F&W alternatives, such as “Alt7aprob”, meaning Alternative 7, adjusted schedule, probabilistic BPA Direct Program.

² Set No. of Iterations (games) to 3900.

³ Set No. of Iterations (games) to 300.

Conditional TPP specific F&W alternatives; BPA direct program high for all F&W alternatives except #4, Expanded Transport (low option)

Uses only 300⁴ games, each with a single F&W alternative, with the BPA Direct Program at the full CBFWA level (five-year average of \$179M) for all F&W alternatives except #4, Expanded Transport (low option), which uses the current budget level (five-year average of \$100M). Use the Riskmod files with names containing specification of alternatives, such as “Alt2”, “Alt7a”, or “Alt7u”. The “a” and “u” indicate *adjusted* or *unadjusted* schedules. Use the NORM files with names containing specification of F&W alternatives, such as “Alt7aHi”, meaning Alternative 7, adjusted schedule, high level for the BPA Direct Program.

Possible Change to Excel’s Calculation Mode

The ToolKit sets Excel’s calculation mode to manual (for execution speed), then sets it back to its previous mode after it finishes. If it doesn’t finish, though, it won’t reset it, and you may find that Excel is not recalculating the way you expect it to, that is, it may not *be* recalculating *when* you expect it to. If this happens, go to the Tools menu and select Options/Calculation and click on the calculation mode you want.

Other Sources of Information

The vbaToolKit has a worksheet named “Notes, Dox” that contains miscellaneous information about how to operate the ToolKit.

Names of the 13 F&W Alternatives

Alt 1	In-River Migration (low option)
Alt 2	In-River Migration (high option) with CWA
Alt 3	Expanded Transport
Alt 4	Expanded Transport (low option)
Alt 5	Transportation Plus
Alt 6	Transportation Plus and CWA
Alt 7u	Two Snake River Dams to Natural River, Unadj. Sched.
Alt 7a	Two Snake River Dams to Natural River, Adj. Sched.
Alt 8u	Four Snake River Dams to Natural River, Unadj. Sched.
Alt 8a	Four Snake River Dams to Natural River, Adj. Sched.
Alt 9u	Snake River and JDA Dams to Natural River, Unadj. Sched.
Alt 9a	Snake River and JDA Dams to Natural River, Adj. Sched.
Alt 10	John Day Dam to Natural River
Alt 11	John Day Dam to Spillway Crest
Alt 12u	Snake R. Dams to Nat. River and JDA Dam to Spillway Crest, Unadj. Sched.
Alt 12a	Snake R. Dams to Nat. River and JDA Dam to Spillway Crest, Adj. Sched.
Alt 13u	Snake R. and JDA Dams to Nat. River (high option) plus CWA, Unadj. Sched.
Alt 13a	Snake R. and JDA Dams to Nat. River (high option) plus CWA, Adj. Sched.

⁴ Set No. of Iterations (games) to 300.