REVIEW OF TSPIRS AND FY 1998 CHANGES

Most of the information presented in this report was compiled by the Timber Sale Program Information Reporting System (TSPIRS). Accordingly, it is appropriate to briefly describe its origin, structure, and objectives.

Review of TSPIRS

TSPIRS was developed in response to Congressional direction contained in the Conference Committee Report on the 1985 Interior Appropriations Bill. The impetus for this direction was concern over "below-cost" sales, and the desire to have better information on the benefits and costs of selling national forest timber. The system was "pilot-tested" during FY's 1987 and 1988, and was officially implemented in FY 1989. It consists of three parts, each of which is described below.

The Financial Account

The TSPIRS financial account displays the revenues, expenses, and resultant net revenues (i.e., revenues minus expenses) associated with the harvesting of national forest timber in a given year -- doing so in an annual financial statement format. It was jointly developed by the Forest Service and General Accounting Office (GAO).

Separate financial accounts are developed by forest, region, and for the Forest Service as a whole. Additionally, at each administrative level, revenues, expenses, and net revenues are separately reported for three distinct components of the overall sales program. These components are:

- **Timber Commodity Purpose Sales** -- This component includes sales being made primarily to supply timber in response to society's demand for wood.

- **Forest Stewardship Purpose Sales** -- This component includes sales being made primarily to help achieve desired ecological conditions and/or to attain some non-timber resource objective that requires manipulating the existing vegetation -- e.g., improving forest health or reducing forest fuels.

- **Personal Use Purpose Sales** -- This component includes sales being made primarily to supply firewood, Christmas trees, and other miscellaneous forest products to individuals for their own consumption.

The revenues that are recognized in the financial account include actual stumpage receipts, purchaser road credits used to pay for harvested timber,[1] purchaser deposits for such things as road maintenance and brush disposal -- called associated charges, and any interest or penalty payments that are assessed.

The expenses that are recognized in the financial account fall into four broad categories:

- **Direct Timber Sale Expenses** -- Included are the costs of such activities as sale preparation and harvest administration.

- **Direct Timber Program Expenses** -- Included are the costs of such activities as transportation planning, conducting silvicultural examinations, and reforesting cutover areas.

- **Indirect Timber Sale Expenses** -- The primary thing included here is the cost of dealing with appeals and litigation.

- **Indirect Timber Program Expenses** -- Included are any costs of a "general administration" nature -- i.e., the portion of line management and program support costs that is properly chargeable to the timber program.

To better match annual sale-related revenues to annual sale-related expenses, expenses that are long-term investments -- i.e., expenses that will benefit future sale-related activities as well as those being conducted in the reporting year -- are placed into one of three pools and are redistributed back to a particular year based on pre-established formulas. This method of accounting is called "accrual" accounting, and it differs from "obligations-based" or "cash-flow" accounting.

TSPIRS recognizes three cost pools. These are:

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[1] Purchaser road credits are earned as timber purchasers complete construction and/or reconstruction of Forest Service mandated roads. The work must be performed to standards established by the Forest Service, and the amount of credit earned is governed by cost estimates developed by agency engineers. These estimates reflect the costs that an operator of average efficiency would incur to perform the desired work. As part of the President's FY 1998 Budget Request, the Administration proposed phasing-out the use of purchaser road credits. Congress concurred with this request, and starting in FY 1999 purchaser credits will no longer be used. Purchasers with unused credits, however, will be allowed to redeem them. In appraising future sales the Forest Service must estimate the associated road construction costs and include this amount in calculating the 25 percent receipt-shares due states and counties.

- **Sale Activity Pool** -- This pool includes those costs directly associated with the preparation of timber sales. The costs placed in it are expensed using the ratio of volume harvested to volume harvested plus volume under contract.

- **Growth Activity Pool** -- This pool includes those costs associated with growing timber over an entire rotation. The costs placed in it are expensed using the ratio of volume harvested to the total growing stock volume on suitable lands.

- **Depreciation Pool** -- This pool includes those costs associated with roads and facilities. The costs placed in it are depreciated over predetermined periods of time set to approximate each asset's anticipated useful live.

The method that TSPIRS uses to "pool" certain costs and subsequently "write-them-off" in later years is consistent with Federal government accounting standards as prescribed by such authoritative bodies as the Federal Accounting Standards Advisory Board (FASAB).

Over the years, considerable debate has surrounded the question of whether or not the 25 percent of timber sale receipts that must, by law, be returned to the states and counties for use in supporting local schools and roads -- i.e., "payments to states" -- should be counted as a timber program cost.[2] Some argue that since the original intent of these payments was to substitute for the property taxes that private landowners would pay, they should be treated as a cost. The Forest Service, however, has consistently maintained that these payments are not a program cost, but a redistribution of income that occurs outside the agency's normal financial activity. Accordingly, while payments to states for FY 1998 are documented in this report, they are not treated as a timber program cost.

The Economic Account

The TSPIRS economic account displays the long-term benefits and costs expected to result from a given year's timber harvesting activities. The account's information complements the data in the financial account in three ways:

- by considering future effects, not just immediate effects;

- by recognizing effects on all resource values, not just timber-related effects; and

- by examining "economic" effects, not just "financial" effects.

All of the preceding differences merit brief clarification. Concerning the first distinction, the basic idea is that the financial account uses a single year as its frame of reference -- i.e., the year during which the timber harvesting operations being evaluated were actually

[2] Payments were originally authorized through legislation enacted on May 23, 1908. (Ch. 192, 35 Stat. 251, as amended; 16 U.S.C. 500, 16 U.S.C. 553, 31 U.S.C. 534)

conducted -- while the economic account considers a timeframe that is infinite in length. Concerning the second distinction, the basic idea is that the financial account documents only timber program effects, while the economic account considers how timber harvesting affects all resource programs -- i.e., recreation, wildlife, fisheries, grazing, soils, and water. Finally, concerning the third distinction, the basic idea is that the financial account examines only actual receipts and expenditures, while the economic account, where appropriate, uses state-of-the-art non-market analysis techniques to quantify relevant resource effects that cannot be evaluated by other means.

The economic account is constructed by performing what is called a “with-and-without” analysis. Initially, relevant resource effects are estimated under the assumption that a particular year’s timber harvesting operations are indeed conducted. Next, these same resource effects are estimated using the assumption that no timber harvesting occurred. Lastly, the marginal or incremental output changes attributable to timber harvesting are evaluated. These output changes may be immediate or delayed (i.e., experienced now or experienced later). Additionally, the changes may be either positive (e.g., increased recreation and decreased sedimentation) or negative (e.g., decreased recreation and increased sedimentation). Once the relevant output effects have been expressed in physical terms -- e.g., animal unit months (AUM’s) in the case of grazing, or visitor-days (RVD’s) in the case of recreation -- they are re-expressed as monetary equivalents. The unit values employed to make these conversions are taken from the best available information sources which may be site-specific research studies, values used in RPA planning, or values set-forth in forest plans.

To facilitate making direct comparisons between monetary values occurring at different points in time, the economic account discounts the values of all anticipated output changes, positive as well as negative, back to the desired base year using a 4 percent real rate of interest. The present value of the negative output changes is then deducted from the present value of the positive output changes to determine the present value of the benefits. As a last step, the present value of any costs, including road costs, that will have to be incurred to realize the projected benefits is subtracted from the present value of the benefits themselves to derive two “present net value” (PNV) figures -- one that considers timber resource effects only, and one that considers effects on all resources, including timber.

Conceptually, when the PNV, considering all resource effects, is positive, it indicates that, at the assumed rate of interest, the timber harvesting investments that were made during the year in question were economically justified, because the present value of the expected long-term benefits exceeded the present value of the expected long-term costs. This fact illustrates one of the complexities of the below-cost sale controversy -- namely, that of selecting the criteria by which to determine if a below-cost situation exists. It is not uncommon for forests to have a negative net revenue in the financial account of TSPIRS and yet have a positive PNV in the economic account.

The Employment, Income, and Program Level Account

The TSPIRS employment, income, and program level account displays the employment, income, and Federal income tax benefits attributable to a given year's timber harvesting activities -- and also documents certain key timber program accomplishments. Like the financial account, its frame of reference is a single year -- this being the year in which the harvesting operations being reported upon were actually conducted. Despite this similarity, however, the information contained in the account compliments the data presented in the other accounts of TSPIRS in two ways:

- by recognizing certain important social and economic impacts not captured in the other accounts; and

- by providing a more complete description of timber program accomplishments.

Because of these differences, inclusion of the account strengthens TSPIRS and enables the reporting system, in the aggregate, to more fully portray the "net public benefit" that results from each year's forest management program.

The employment and income figures shown in the account are developed using IMPLAN or some other suitable input-output model, and the implied Federal income tax changes are computed as a percentage of the estimated income effects. While the last measure may require no explanation, some clarification of the other measures seems appropriate.

The account's employment figures depict the average number of full- and part-time employees using National Income and Product Account conventions. Additionally, they indicate not only the "direct" employment attributable to the national forest timber program, but also any relevant "indirect" and "induced" employment effects. Direct effects capture the initial economic consequences that result from some Forest Service action -- e.g., additional sawmill production stimulated by national forest timber sales. Indirect effects capture the additional economic consequences that occur as supplying industries respond to the changed input requirements of the directly impacted industries -- e.g., increased purchases of fuel, trucks, and equipment by sawmills so they can process national forest timber. Finally, induced effects capture the added economic consequences that result from adjustments in household spending that are attributable to changes in either the original industries or their suppliers -- e.g., increased purchases by any new workers hired by sawmills or their suppliers because of the processing of national forest timber.

The account's income figures indicate what is called "total regional factor income," and they consist of essentially three things. These are:

- **Employee Compensation** -- This part includes wages and salaries, and supplements to wages and salaries (e.g., employer contributions to employee health benefit and retirement plans).

- **Proprietor's Income** -- This part includes the income of sole proprietorships, partnerships, and tax-exempt cooperatives.

- **Other Factor Income** -- This part includes such things as rental income, interest and dividend earnings, and corporate profits.

As with employment, the income figures reported in TSPIRS as being attributable to the forest management program include the direct, indirect, and induced effects. The Federal income tax consequences are determined by taking 15 percent of the estimated income figures.

The program accomplishments that are reported fall into two broad categories – direct and indirect. Direct program accomplishments are outputs or outcomes that are clearly attributable to the forest management program. Besides the three measures typically stressed – i.e., volume offered, volume sold and awarded, and volume harvested – this category includes data on the area of land impacted by harvesting activities; the volume of free use firewood produced; the number of Christmas trees cut; the value of other "non-convertible products" produced (e.g., cones, boughs, and ferns); the area of land regenerated through planting, seeding, or by natural means; the area of land on which timber stand improvement activities were conducted (e.g., release, weeding, pruning, and precommercial thinning); and the mileage of timber access roads constructed and/or reconstructed using either appropriated funds or purchaser road credits. Indirect program accomplishments are outputs or outcomes normally associated with other resource programs but which can be attributed to the forest management program in that the activities are conducted using funds collected from timber purchasers – e.g., acres of soil and water improvements, acres of terrestrial wildlife habitat improved, and miles of stream habitat improved.

FY 1998 Changes

In FY 1998, for the second year in a row, a significant change was made in the way TSPIRS handles "road prism" costs. These are the costs, including excavation costs, that the Forest Service incurs to construct the roadbeds that are an integral part of all timber access roads.

In the absence of explicit Federal accounting standards, to the extent possible the agency originally built TSPIRS around generally accepted accounting principles applicable to the private sector. Consistent with these principles, since road prisms were deemed to be an integral part of the underlying land and to have an infinite useful life, the agency used to capitalize these costs into the land values reported in its financial statements. Other road-related costs, again consistent with industry standards, were initially depreciated over the growth cycle of the timber being harvested. The agency soon discovered, however, that this second convention did not work well for its road costs. The Forest Service is a land conservation agency, not a private timber growing business; the factors it considers in deciding when to harvest timber differ from those of a private business. The lengthy periods of time over which it commonly grows trees may, under normal industry standards, cause its non-prism road costs to be depreciated over unrealistically long intervals of time – in some cases more than 200 years. To remedy this situation the agency contracted with an independent certified public accounting (CPA) firm to offer recommendations about how it should handle its road-related costs.[3] The end-result was the procedures the agency used prior to FY 1997. These procedures entailed recognizing four categories of road costs – prism, surface, culverts, and bridges. Prism costs, consistent with prior agency practice, were to be capitalized into the agency's financial statements. Other road component costs were to be depreciated over specified schedules – i.e., surface = 10 years, culverts = 30 years, and bridges = 50 years.

In more recent years, new accounting standards specifically applicable to federal agencies like the Forest Service have been under development. The body charged with formulating and recommending these standards is the Federal Accounting Standards Advisory Board (FASAB). FASAB's recommendations, once approved by the Office of Management and Budget (OMB) and the General Accounting Office (GAO), become the Federal Government's official accounting standards and are issued as Statements of Federal Financial Accounting Standards (SFFAS).

SFFAS Number 6 – *Accounting for Plant, Property, and Equipment* – contains the standards federal agencies are to use for road accounting. In reviewing these new standards pursuant to preparing its FY 1997 TSPIRS Report, the Forest Service concluded that they mandated annual expensing as opposed to capitalization of road prism costs. Implementation of this accounting change necessitated recognizing an additional $51.4 million in timber-related road costs in FY 1997. Largely because of these increased costs, TSPIRS reported a loss of -$89 million in FY 1997 – a much larger loss than the -$15 million loss reported in FY 1996.

Following release of the FY 1997 TSPIRS Report, Senator Frank H. Murkowski, Chairman of the Senate Committee on Energy and Natural Resources, asked the General Accounting Office (GAO) to assess whether or not the Forest Service had correctly applied the new federal accounting standards applicable to road prism costs. The GAO, after consulting with FASAB, concluded that the agency had erred – and that in the case of federal lands being used for business-type activities such as timber production, road prism costs should have been depreciated over the period of time the roadbeds were expected to be useful in accessing timber.[4] After a period of negotiation between the agency and GAO, it was mutually agreed that, on balance, a depreciable life be 50 years would be appropriate for most national forest road prisms. Accordingly, this is the practice that was followed in preparing the FY 1998 TSPIRS Report.

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[3] Brown & Company; 1989; Evaluation of Timber Sale Program Information Reporting System (TSPIRS). Report of Contract No. 53-3187-9-01 (SBA 3-88-2-2928); 43p. plus appendixes.
[4] See: General Accounting Office; 1999; *FOREST SERVICE: Accounting Treatment of Roadbed Costs*; GAO/AIMD-99-44R; 13p. plus appendices.

The change in the agency's handling of road prism costs has important implications for the comparability of the financial results presented in different TSPIRS reports. Specifically, absent restatements of prior year results, the total expenditure and net revenue figures contained in this year's report cannot be directly compared to those presented in prior year's reports. In this regard, while SFFAS No. 6 does not mandate restatement of prior year's figures, this report does contain some restated expenditure and net revenue data. This has been done as a convenience to readers, and to provide a valid basis for explicitly showing the financial effects of this latest road prism accounting change.