

continuously in its depreciable assets while replacement costs escalated annually at the economy-wide rate of inflation.¹⁴

7. Amtrak's APT system should allocate capital charges for train and other equipment among individual trains and routes by using the same basis employed by RPS. The APT development effort should also include a basis for allocating capital charges for fixed-asset groups between the NTS and Amtrak's ancillary business lines and among individual routes within the NTS. Capital charges for fixed assets utilized by the NTS should be allocated to individual routes in a manner consistent with the allocation of expenses for operating and maintaining those assets.

Capital charges for asset groups including train equipment (ACC¹⁵ 50, 60, and 70), should continue to be allocated to individual trains, using utilization statistics for specific locomotive and car types, as previously done within RPS. The new APT system rules for allocating operating and maintenance expenses, associated with ROW and structures such as stations, bridges, and communication and power systems, should be used a guide for developing capital charge allocation rules for these asset groups.¹⁶ The new methodology should identify asset locations and allocate the capital charge to those trains, routes, and ancillary businesses served at those locations.

Track-section identifiers and other location information in Amtrak's asset data systems can be used to assign each asset to the route or routes that it serves. For assets serving multiple routes, reasonable allocation statistics for distributing their costs would also need to be identified, although the statistics used to allocate operating and maintenance expenses for those facilities will provide useful guidance.

¹⁴ Development of a composite rate-of-return requirement for Amtrak that attempts to reflect its actual historical or expected future mix of Government-grant and market-rate financing is not recommended. Although Amtrak has acquired much of its long-lived assets using investment capital provided by the Federal and State Governments and has financed investments in other property by borrowing at commercial rates, the specific mix of these financing sources has varied dramatically over its recent history. To reflect this variation, such a composite return would need to vary from year to year, causing the annualized equivalent cost of each of Amtrak's assets calculated with use of this composite rate to appear to change each year. Such a calculation would also require detailed tracking of the sources of capital used to acquire each of Amtrak's assets to allow the relative weights of the Government- and debt-financed components of total investment to be determined each year. Another approach would be to impute a required return on government capital investments in Amtrak but to apply that rate only to the portion of investment financed by Government grants. The resulting dollar estimate of required returns on Government investment in Amtrak would then be added to each year's actual interest payments, thus resulting in an estimate of Amtrak's total required return on investment for that year. Although this approach might be computationally more practical than determining a composite rate of return each year, it would also result in significant year-to-year variation in Amtrak's estimated capital costs because of historical variation in the composition of financing sources for new investment in Amtrak.

¹⁵ Asset Category Code.

¹⁶ For example, some station operating expenses, such as ticketing, cleaning, and utilities, are allocated to trains making shared use of a station on the basis of passenger boardings and alightings for each train. This method may also be useful for allocating station-related capital expenses, such as depreciation of structures and station facilities. For simplicity, the desire is to use similar allocation rules for capital and operating expenses associated with the same asset category (stations, track, and structures).

RPS's current system for disaggregating depreciation and interest expenses for train equipment into subgroups corresponding to individual locomotive and car models, which allows it to allocate capital expenses for each subgroup only to trains that utilize that model, offers some precedent for this approach.

8. Amtrak should establish a "disposition period" for each asset group used in its depreciation system. Up to the end of that period, the capital charges associated with assets in each group would be assumed to be completely (100 percent) fixed, but after that time they would be assumed to be fully (100 percent) avoidable.

The duration of the disposition period established for each asset group should reflect a reasonable time horizon in which unused assets in that group could be sold, transferred to other train services or other business lines, or disposed of otherwise.¹⁷ By considering factors such as the existence of active resale markets or the transferability of assets such as rolling stock among Amtrak routes or business lines, it should be possible to develop realistic estimates of the time period in which different types of assets could be redeployed or sold. Groups containing similar types of assets could be assigned the same disposition period; for example, different periods could be established for broad categories such as train equipment, right-of-way (ROW) preparation (grading, tunneling), roadway structures (bridges, fences, etc.), track structures, train-servicing facilities, and power-distribution systems. Each of these categories could include multiple groups used in Amtrak's depreciation system.

Disposition periods for train and other equipment would presumably be reasonably short (2-3 years), and equipment-related capital costs might be considered avoidable at the level of individual trains or routes within a lesser time horizon depending on whether or not opportunities to reassign equipment to other services existed. At the other extreme, disposition periods for ROW assets, such as grading, tunneling, or bridges, as well as for many road and track assets, such as power and communication systems, signals, and track, would be expected to be quite long in recognition of their immobility and extremely limited alternative uses, so that capital costs associated with these assets would in effect be considered fixed over any time horizon. Passenger and train-servicing stations, maintenance and other buildings, and machinery would be expected to have intermediate disposition periods.

Disposition periods for specific asset categories can be proposed collaboratively by Volpe Center analysts and Amtrak staff but need to be mutually acceptable. The

¹⁷ For example, the Uniform Rail Costing System (URCS) used by the Surface Transportation Board for guidance in rate-regulation cases treats as variable with an individual railroad's service output, during an intermediate time period, all depreciation and return-on-investment allowances for rail rolling stock, computer equipment, and motor vehicles not used for rail-line maintenance, plus half of those same cost elements for rail lines and all other physical property. A simplified application of this principle to Amtrak would be to assume that capital costs for all equipment-asset groups were fully avoidable within 1-2 years at the level of individual trains or routes while capital costs associated with all other asset groups were fixed at the route level as long as service on that route continued.

New York	Pennsylvanian	57
New York	Carolinian	66
New York	Piedmont	67
Oakland	California Zephyr	27
Oakland	Coast Starlight	34
Oakland	Capitol Corridor	37
Oakland	San Joaquin	39
Omaha	California Zephyr	27
Philadelphia	Vermont	4
Philadelphia	Northeast Regional	5
Philadelphia	Keystone Service	14
Philadelphia	Pennsylvanian	57
Pittsburgh	Capitol Limited	26
Pittsburgh	Pennsylvanian	57
Pontiac	The Wolverine	22
Portland	The Downeaster	9
Portland	Empire Builder	25
Portland	Coast Starlight	34
Portland	Cascades	36
Quincy	Illinois Zephyr	24
Raleigh	Silver Star	16
Raleigh	Silver Meteor	19
Raleigh	Palmetto	48
Raleigh	Carolinian	66
Raleigh	Piedmont	67
Richmond	Northeast Regional	5
Richmond	Silver Star	16
Richmond	Silver Meteor	19
Richmond	Palmetto	48
Richmond	Carolinian	66
Richmond	Piedmont	67
Sacramento	California Zephyr	27
Sacramento	Coast Starlight	34
Sacramento	Capitol Corridor	37
Sacramento	San Joaquin	39
Salt Lake City	California Zephyr	27
San Antonio	Texas Eagle	32
San Antonio	Sunset Limited	33
San Diego	Pacific Surfliner	35
San Francisco	Caltrain Peninsula	N/A
San Jose	Coast Starlight	34
San Jose	Capitol Corridor	37
San Jose	Caltrain Peninsula	N/A
San Louis Obispo	Coast Starlight	34
San Louis Obispo	Pacific Surfliner	35
Sanford	Auto Train	63
Seattle	Empire Builder	25
Seattle	Coast Starlight	34

Shelby	Empire Builder	25
Sparks	California Zephyr	27
Spokane	Empire Builder	25
Springfield	Vermont	4
Springfield	Northeast Regional	5
Springfield	Lake Shore Limited	45
St. Cloud	Empire Builder	25
St. Louis	Chicago-St. Louis	20
St. Louis	Texas Eagle	32
St. Louis	Missouri Routes	56
Toledo	Capitol Limited	26
Toledo	Lake Shore Limited	45
VRE	VRE Commuter	N/A
Washington	Acela Express	1
Washington	Vermont	4
Washington	Northeast Regional	5
Washington	Silver Star	16
Washington	Cardinal	18
Washington	Silver Meteor	19
Washington	Capitol Limited	26
Washington	Palmetto	48
Washington	Crescent	52
Washington	Carolinian	66
Washington	Piedmont	67
Washington	VRE Commuter	N/A

Table G-2. OBS Crew Bases

OBS Crew Base	Route Name	Route #
Boston	Acela Express	1
Boston	Regional	5
Chicago	Lincoln Service	20
Chicago	Hiawatha Service	21
Chicago	Wolverine Service	22
Chicago	Saluki	23
Chicago	Illini	23
Chicago	Illinois Zephyr	24
Chicago	Carl Sandburg	24
Chicago	Empire Builder	25
Chicago	California Zephyr	27
Chicago	Texas Eagle	32
Chicago	Blue Water	41
Chicago	Lake Shore Limited	45
Chicago	Kansas City Mule	56
Chicago	Ann Rutledge	56
Chicago	St. Louis Mule	56
Chicago	Pere Marquette	65
Ft. Worth	Heartland Flyer	29
Jacksonville	Silver Star	16
Jacksonville	Silver Meteor	19
Lorton	Auto Train	63
Los Angeles	Southwest Chief	28
Los Angeles	Texas Eagle	32
Los Angeles	Sunset Limited	33
Los Angeles	Coast Starlight	34
Los Angeles	Pacific Surfliner	35
Miami	Silver Star	16
Miami	Silver Meteor	19
New Orleans	City of New Orleans	30
New Orleans	Crescent	52
New York	Acela Express	1
New York	Ethan Allen Express	3
New York	Regional	5
New York	Maple Leaf	7
New York	Empire Service	15
New York	Cardinal	18
New York	Adirondack	40
New York	Lake Shore Limited	45
New York	Palmetto	48
New York	Crescent	52
New York	Pennsylvanian	57
Oakland	Pacific Surfliner	35
Oakland	Capitol Corridor	37
Oakland	San Joaquin	39

1. **Activity-related costs** consist of costs that are closely associated with a specific activity and are expected to vary with the amount or scale of that activity. A measure of the relevant level activity is used to allocate such costs unless they are directly linked to the activity by the accounting system.
2. **General administrative and corporate-level support costs** are composed of costs that are fixed or very loosely related to the overall scale of the enterprise, but, for practical purposes, do not vary with levels of activity or output as measured by statistics such as TBD or TTM. These general administrative and support costs are allocated to trains or other outputs based on the outputs' overall contribution to the size of the enterprise as reflected by the total of their activity-related direct and indirect (allocated) costs. A Total Activity Cost (TAC) statistic is constructed and used for this purpose.

Definition of the New TAC Statistic

The TAC statistic for a train or other output should reflect the size or scale of a particular output relative to the total for all Amtrak outputs. A cost-based measure rather than a revenue-based measure is preferred and will include all of the closely associated costs of producing the output, both direct and indirect (allocated). All general administrative and support costs will be excluded that are not closely associated with the output since those costs are, in contrast, the costs that the TAC statistic will be used to allocate. This approach avoids computational circularity errors.

TAC is defined as the sum of all costs allocated by any other statistic or process, such as costs *not* allocated by TAC. This approach is consistent with the general principle that a statistic should reflect the size of a particular output relative to the total output for the enterprise. TAC is the sum of all activity-driven costs, direct and indirect, irrespective of their APT Customer (Business) type, Family, ResCen, Function, Account, or Location classifications.

The general rule defined above for what to include in the TAC statistic provides a simple solution for allocating G&A costs to certain Amtrak "customers" that are included in the G&A Family because their ResCens are classified in this family, such as certain ResCens that focus on real estate and commuter business operations. Costs will be allocated to these customers in a "first round" allocation either directly or by some activity-based allocation process. The sum of the first round¹⁹ costs will be the customers' TAC. Their TAC values will be used to allocate a portion of other G&A costs to them. This method similarly applies to other non-NTS customers such as freight railroads and commercial customers.

The use of this decision rule also will apply to other (non-G&A) Families, Subfamilies, or even costs within a Subfamily that are activity-driven and allocated and that do not use

¹⁹ Where other intermediate rounds or their equivalent are used, their allocated costs would also be included in TAC and thus "used" to allocate costs in the final allocation round.

TAC in their allocation. If regional police costs are allocated without use of TAC, these allocated costs become part of each output's TAC, whereas certain national police costs will be allocated using TAC and thus will not be included in the calculation of TAC. Likewise, if some or all of utility costs can be closely associated with and allocated to specific outputs based on their location or linkage to a ResCen, these allocated costs will be part of TAC.

In developing the procedures for calculating TAC in APT, the issue of whether the APT capital charge should be included in TAC was considered. The decision was that capital charges, which are closely associated with a product or service and allocated to them, should be included in the TAC for that product or service. Several reasons exist for this decision:

1. It is consistent with the general principle of including all costs in TAC that reflect the size or scale of the product or service.
2. A key distinction between capital and other costs of production is that the former occur less frequently than normal monthly or annual reporting time periods and hence they must be smoothed out to identify the portion attributable to the shorter reporting time period. This is what the APT capital charge accomplishes and is the general principle behind the GAAP treatment of depreciation. The APT capital charge is intended to convert "lumpy" capital expenses to periodic expenses, which can then be added together with other costs to achieve a measure of total resources used.
3. The Cost Accounting Standards section of the Federal Acquisition Regulations (48 CFR 9404.410) provides that "...the cost input base used to allocate the G&A expense pool shall include all significant elements of that cost input which represent the total activity of the business unit...the determination of which cost input base best represents the total activity of a business unit must be judged on the basis of the circumstances of each business unit...a total cost input base is generally acceptable...." It goes on to give the following illustration: "...during a cost accounting period (business) Unit D acquires and uses a small building...the depreciation taken on the building would be part of the total cost input base (for Unit D)...." This guidance directly supports a definition of TAC in APT that includes a capital charge.
4. In the FY2006 DOT Appropriations Act, the Secretary of Transportation is directed to determine Amtrak's NEC capital and maintenance costs attributable to commuter rail operations. This again confirms the view that capital and operating costs be given equal treatment in estimating the costs of a specific service.

As noted in the third reason above, in analogous Federal Government contexts where full cost allocation to different sectors of an enterprise is required, it appears that it is an accepted practice to include depreciation within the total of operating costs used as a base for distributing general and administrative expenses.²⁰ This and other regulatory and

²⁰ As explained elsewhere, Amtrak, FRA and Volpe have agreed for purposes of APT to expand the representation of capital cost to a specially constructed charge embodying both the consumption of capital

costs already included some G&A expenses via the Capital Charge, for purposes of allocating G&A expenses, the effect of capital had already been taken into account and excluding the capital charge from TAC would be appropriate. In considering this issue it was established that "capitalizing" a portion of G&A expenses into capital costs is inconsistent with GAAP, and in fact, Amtrak does not take such an approach.

Concept and Use of the Customer Activity Expense (CAE) Statistic

In most cases in APT a close association exists between activity and cost levels, and an activity statistic such as TBD or TTM is used to allocate the costs to customers.²³ In some cases, however, costs are not closely associated with a customer and are often viewed as fixed. In these latter cases, specific activity-based statistics are not appropriate for cost allocation. Instead, a different approach is required. These costs are often in the G&A area²⁴ and the generally accepted approach is to allocate them based on the size or scale of the various "outputs" of the enterprise. A typical approach is to develop and employ a comprehensive cost-based measure of scale for this purpose, although a revenue-based measure is sometimes used.

Initially, the assumption was that all G&A costs should be allocated uniformly across the entire enterprise to all customers. Examination of the specific costs in the G&A family revealed, however, that some costs should be assigned directly to a single customer, some allocated to a subset of customers, and some allocated to all customers. The APT G&A Family is divided into Subfamilies in part to reflect these different allocation cases. The five G&A Subfamilies are described in Table 1. The Police, Security, and Environmental/Safety (PSE) Subfamilies are included in Table 1 because they share the G&A Family characteristics and also require use of a general activity statistic to allocate their costs.

²³ The term "customer" refers to the "cost object" in APT, such as the entity to which the costs are being allocated. If Amtrak's only business were the operation of the NTS, then the only cost objects would be trains. However, because Amtrak has other customers for whom it provides "outputs," usually in the form of services, a more general term is required. APT uses the convention of reporting its cost allocations to the NTS and other "Customers" or "Business Types." There are five other categories or types of customers, namely, freight railroads that operate over its trackage (Freight), commercial tenants or users of its infrastructure (Commercial), parties for whom it performs maintenance or other work under reimbursable agreements (Reimbursable), commuter railroads for whom it serves as the operator (Commuter Operations), and commuter railroads that operate over its trackage (Commuter Access).

²⁴ This is referred to in APT as the G&A Family (#600). The Police, Security, and Environmental/Safety Family (#900) is separate but shares the characteristics of G&A and thus is covered by this discussion.

Table H-1. APT G&A and PSE Subfamily Structures

APT Subfamily Number	Subfamily Name	Description
601	Corporate Administration	Amtrak's president and other high level managerial and administrative staff. Costs are allocated to all customers.
602	Centralized Services	Amtrak's corporate services such as automated technologies, payroll, procurement, and human resources. Costs are allocated to all customers.
603	Qualified Managerial and Services	Corporate managerial and administrative services whose activities are focused on a subset of customers. Costs are allocated to a subset of customers.
604	Direct Customer	Corporate managerial and administrative services whose activities are focused on a single customer. Costs are assigned directly to a single customer.
605	Subsidiary Companies	Consolidated costs are either directly assigned or allocated to customers using activity statistics.
901	Police	A mix of ResCens with either national or regional focus. National ResCens cover the entire enterprise whereas regional ResCens are geographically focused. National costs are allocated to all customers and regional costs are allocated to customers in the relevant region.
902	Security, Strategy and Special Operations	Provides planning and capital support for a broad range of security matters corporate-wide. Costs are allocated to all customers.
903	Environmental & Safety	Provides policy and planning oversight on environmental compliance, health, and safety matters corporate-wide. Costs are allocated to all customers.

In APT, Amtrak's general and administrative costs incurred in managing or supporting activities related to only a subset of the Amtrak business, such as a subset of customer types, are in Subfamily 603, Qualified Managerial and Services, and in the Police Family. One example consists of the expenses associated with ResCen 0732 (Chief Corridor Development). The expenses only benefit some customers (in particular, they only affect customers in the NTS, Commuter Access, Freight, and Commercial categories, but not the Reimbursable or Commuter Operations categories). This ResCen is in the G&A Family because its costs do not vary with activity levels among the benefiting customers and are general management or administrative in nature.

Like expenses in the other G&A Subfamilies, expenses in the Qualified Managerial and Services Subfamily and some Police expenses are high-level management expenses that are not closely associated with Amtrak customers, and therefore, specific activity-based statistics are not appropriate for their cost allocation. Because they do not support the entire enterprise they are not considered corporate-wide G&A and therefore need to be included in the base for calculating TAC, which is ultimately used to allocate corporate-wide G&A expenses.

Because these expenses, after they are allocated, are included in each customer's TAC, they must be allocated among customers before the computation of TAC. For this reason they cannot be allocated using TAC. Instead a similar statistic, Customer Activity Expense (CAE) is defined and computed to allocate G&A-type expenses that are not allocated to all customers, such as expenses allocated to only a subset of customers.

Definition of the New CAE Statistic

The CAE statistic is similar to TAC. Both are non-activity statistics that are used to allocate G&A-type expenses because activity statistics would be unfeasible or inappropriate. Like TAC, the CAE statistic for a customer should reflect the size or scale of the particular customer relative to the total for all Amtrak customers to whom the costs are to be allocated, and like TAC, a cost-based measure will be used. It should include all of the closely associated costs of producing the output or product, both direct and indirect (allocated).

CAE will exclude all general administrative and support costs that are to be allocated to all Amtrak customer types. The costs allocated enterprise-wide are in Subfamilies 601 and 602 and are allocated using TAC after allocations are made using CAE.

CAE is defined as the sum of all costs allocated by a process or statistic not involving (i.e., before computation of) the CAE or TAC statistics. This approach is consistent with the general principle that CAE should reflect the size of a particular output or product relative to the total for the enterprise up to the point at which CAE-allocated costs are calculated. It is the sum of all activity-driven costs, direct and indirect, irrespective of their APT Customer (Business) type, Family, ResCen, Function, Account, or Location classifications. CAE will include any G&A costs directly assigned to a single customer, such as Subfamily 604, and costs in the Subsidiary Subfamily (#605) that are allocated using activity-based statistics.

In developing the procedures for calculating TAC in APT, the issue of whether the APT capital charge should be included in TAC was considered. It was decided that capital charges that are closely associated with a customer and allocated to them be included in the TAC for that customer. Accounting guidance and principles provide precedents for this treatment and it is consistent with the underlying purpose of the TAC, namely to provide a measure of a customer's total cost before the use of TAC for allocating G&A costs.

Because the CAE statistic and its purpose and use are so similar to those described above for the TAC statistic, it is appropriate to include the capital charge in CAE for the same reasons noted in the TAC definition. Specifically, both are used in allocating similar G&A-type costs that are not closely associated with a train or other output and are often viewed as fixed relative to activity levels. For these reasons, a comprehensive cost measure that reflects the relative size of the customer to which the G&A costs are to be allocated is desired. The only distinction between TAC and CAE is that the former is used in allocating G&A costs to all customers whereas the latter is used in cases where such costs are allocated to only a subset of customers. Thus, defining them similarly and including the capital charge in both is appropriate.