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Note: The Transportation Research Board does not endorse products or manufacturers. Trade and manufacturers' names appear in this paper because they are considered essential to its object.

Procurement of Small Transit Vehicles

MARC CUTLER

Two aspects of the procurement process for small transit vehicles are described: financing and the bid process. The following financing sources are discussed: (a) federal transportation programs, (b) the Farmers Home Administration, (c) leasing, (d) private financing, (e) non-transportation-specific federal programs, and (f) coordination of vehicles secured from different sources. Although all potential sources of federal funds are generally becoming increasingly limited, there are a number of alternatives to federal transportation programs. In addition, new, creative financing methods are being developed in the private sector. Given today's funding realities, coordination of existing programs and vehicles is essential. Federal procurement requirements are described, and the bid process is followed through from advertisement, preparation of bid documents, and prebid conference to evaluation of bids. Suggestions for contract provisions in such areas as warranty, delivery, inspection, life-cycle costing, and the timing of the process are provided.

The traditional sources of financing for transit vehicles are federal transportation capital assistance programs, which pay 80 percent of vehicle cost. The three principal programs are Sections 3, 16b2, and 18 of the Urban Mass Transportation Act of 1964, as amended.

Sections 3 and 16b2 are administered by the Urban Mass Transportation Administration (UMTA). Section 3 is oriented primarily toward urban public transit systems but, depending on the availability of funding, is an option for any region. Section 16b2 provides handicapped-accessible vehicles to private, nonprofit organizations (PNPs) for the provision of transportation services to the elderly and the handicapped. Section 3 grants may be applied for directly by transit authorities; Section 16b2 is administered by the states.

Section 18 is administered by the Federal Highway Administration (FHWA). It provides capital, operating, and administrative assistance to transportation services in federal-aid nonurbanized areas. Services may be geared toward the provision of transportation for the elderly and the handicapped but must contain a "public transportation" component. Section 18 provides 80 percent reimbursement for capital and administrative projects and 50 percent reimbursement for operating projects.

Section 18 is administered through a state agency. The state may make grants to public or private transportation providers and establish criteria for the distribution of funds within the state. Unlike the UMTA programs, Section 18 is a combined capital, operating, and administrative program. It is the responsibility of the state agency that administers the program to determine the proper mix among the three types of projects.

In all three programs, the 20 percent "matching" share must be provided in hard cash through a combination of state, local, or private funds. Funds to operate vehicles granted through Sections 3 and 18 may be obtained through Section 5 for urban areas and Section 18 for rural areas. There is no provision for federal operating funds for Section 16b2 vehicles.

The Reagan Administration has indicated a commitment to the continued provision of capital assistance (particularly buses). The Administration has proposed gradually phasing out operating assistance to urban areas between FY 1983 and FY 1985 and making Section 18 a "capital-only" program in FY 1983. This could pose a serious problem for many rural areas that have met their capital needs in recent years but require continued operating assistance for the provision of service in low-density, high-mileage areas.

FARMERS HOME ADMINISTRATION

The Farmers Home Administration (FMHA) provides low-interest capital loans to public agencies or nonprofit corporations in rural areas. Its current interest rate is 5 percent, although this is likely to increase in FY 1982. Vehicle loans are generally made for a term of 15 years on buses and a shorter term on smaller vehicles. Agencies may use FMHA loans to finance an entire project, thereby foregoing the use of a federal grant, or to raise the 20 percent "local match". There is no minimum down payment requirement, but obviously a larger down payment increases the chances of receiving the loan.

FMHA operates on a cost-reimbursement basis. The agency or corporation must first purchase the vehicle with its own funds. FMHA requires the collateral of a general-obligation bond from a public agency, and the following collateral from a nonprofit corporation: (a) a promissory note, (b) assignment of income (accounts receivable), and (c) a lien on the vehicle.

The lien requirement can pose a problem where the U.S. Department of Transportation (DOT) also requires a lien, as in the Section 16b2 program. This

problem was resolved in Massachusetts, although the project did not ultimately come to fruition for other reasons. Mount Grace Transportation Corporation, a private, nonprofit transportation provider, was the recipient of seven Section 16b2 vehicles. The local match was to be raised through FMHA. Initially, both FMHA and UMTA insisted on being the first lien holder on each of the seven vehicles. A compromise was reached whereby UMTA agreed to permit FMHA to be the first lien holder on two of the seven vehicles. This satisfied FMHA's interest in protecting its 20 percent contribution to the overall project.

These funds are available through the Community Facilities Loan Program, which is administered by FMHA district offices located in rural areas of the states. Eligibility for a loan can usually be determined within 45 days of the receipt of a preapplication. Funding approval can be obtained within one week of the determination of eligibility, depending on the availability of funding.

The budget for the Community Facilities Loan Program is slated for a 50 percent reduction in FY 1982. Priority is generally given to rescue and public safety vehicles (such as fire trucks) and to public agencies over nonprofit corporations. However, given the anticipated budgetary constraints, preference will in the future be given to smaller-scale projects, such as vehicles, to avoid using up a district's entire allocation for one large project, such as a community center. FMHA prefers to provide loans for vehicles with a relatively long life and thus would give priority to buses over vans, for example. Applicants for FMHA loans must meet the usual federal assurances regarding nondiscrimination and equal employment opportunity.

LEASING

There are a number of reasons why a transportation provider may prefer to lease rather than purchase a vehicle. Leasing increases operating costs and decreases capital costs. If a system cannot raise sufficient capital funds to purchase a vehicle, leasing is a viable option. Leasing may be appropriate for a system that is unsure of its permanence or unsure of its future design. Leasing permits the system to maintain flexibility and avoid a heavy investment in capital equipment that may not be needed in another year. Leasing can also be used as a stopgap measure if vehicles must be obtained quickly or while a system is proceeding through the federal grant process, which can often take several years.

The principal disadvantage of leasing is that it costs more over the long run. For example, the lease of seven vehicles at $6000 each would cost a system $42 000/year for 10 years (assuming the lease cost remains constant). The purchase of the same vehicles would cost $39 434/year, assuming 10 percent annual finance charge and a $1000 salvage value (1).

Another disadvantage of leasing is that leases are typically short term (5 years or less) and will require renegotiation whereas payment costs for a purchased vehicle are constant over the life of the vehicle. However, the short-term nature of a lease can be used to a system's advantage if it is able to trade in the vehicle for a newer model at the termination of each lease period. Thus, although a short-term lease permits a more rapid fleet turnover, it also results in more frequent cost increases. A short-term lease may in general cost more than a long-term lease due to the need of the leasing company to charge off depreciation in a shorter time period.

Most leases are set on a fixed-mileage basis beyond which the system must pay additional per-mile charges. The fixed mileage can be surprisingly low (1500 miles/month, for example), and a system should thoroughly investigate these terms and its anticipated vehicle mileage.

Systems that lease should take advantage of full-service contracts in which the leasing company handles maintenance, insurance, licensing, and other administrative chores. A prime advantage of leasing is this ability to "export" administrative burdens. However, the system should carefully analyze the contracts regarding these services, particularly insurance, to ascertain that the contracts are adequate for the system's needs.

Ultimately, for standardization, continuity, and cost, the core of a system's fleet should be owned. Leasing is useful for the marginal portions of a fleet and as a stopgap measure. A new system, in order to get under way, may have no alternative but to lease a large portion of its fleet. An established system, however, should plan its vehicle acquisitions in a systematic fashion to enable it to gradually replace portions of the fleet and to anticipate the time constraints of the federal grant process.

PRIVATE FINANCING

The traditional method of private financing is, of course, through banks. Although loans for automobiles are financed well below the prime interest rate, loans for commercial vehicles typically exceed the prime. For example, most private intercity bus companies in Massachusetts, as well as Caravan, the state's third-party vanpooling corporation, pay from 1 to 3 percent in excess of prime for their vehicles.

There are, of course, a number of factors that go into determining a loan rate. A public authority, particularly one with secure federal grants, can probably borrow at a considerably lower rate than a private entity. If a public authority has the power to bond with the "full faith and credit" of the state behind it, it traditionally could borrow at a rate far below that available in the private sector. In recent months, this gap has narrowed considerably due to lack of investor confidence in the bond market. The state of Massachusetts, for example, has seen bonding rates increase from 8 to 14 percent in a little more than a year.

For private entities, the rate will depend on the size, viability, and solvency of the company and perhaps whether it operates under contract to a public authority. It may be possible to obtain lower rates from a local bank that has a sense of community pride and an interest in assisting in the provision of essential community services.

A relatively new method of private financing has developed in recent years that involves the use of investment brokers. The purchase of a relatively "long-lived" vehicle can serve as a tax shelter for wealthy individuals, who, operating through a broker, then lease the vehicle to a transportation provider. Because of the tax break received by these individuals, through an initial 10 percent investment tax credit and the annual depreciation of the vehicle, they are able to charge a lease rate substantially below either the standard lease rate or the monthly payments on a purchased vehicle. At the end of the lease term, the vehicle can be rolled over into another lease or sold outright. By using this method, one Massachusetts intercity bus carrier was able to reduce its effective interest rate by 8 percent in comparison with what the carrier would have been paying if the vehicle had been purchased and financed through a bank loan.

The Economic Recovery Tax Act of 1981 has created a potentially dramatic new method of vehicle financing for public transportation authorities. This Act establishes a tax-sheltered "safe harbor" for the lease of "mass commuting vehicles", defined as "any bus, subway car, rail car, or similar equipment... which is leased to a mass transit system wholly owned by one or more governmental units...which is used by such system in providing mass commuting services." In order to obtain the tax advantages that these lease arrangements will create, profitable corporations are likely to be eager to enter into agreements with transit authorities for the purchase of equipment.

OTHER FEDERAL AID PROGRAMS

There are 114 programs within 11 federal departments that provide transportation operating or capital assistance. Most of these programs are operated by the U.S. Department of Health and Human Services (1, Figures 13-22). In reality, many of these programs are facing funding constraints themselves and in recent years have turned over many of their transportation functions to Section 18 recipients. Reversing this process may prove difficult. Most of these programs concentrate on the provision of operating assistance through client reimbursement.

In addition to "social service" programs, it is also possible to finance vehicles outright through Community Development Block Grants (CDBGs). The CDBG program is administered by the U.S. Department of Housing and Urban Development and is funded through municipalities. In a recent development, the administration of CDBG grants for communities with less than 50 000 people has been shifted to the states.

COORDINATION

In the past few years, a number of federal programs have often poured funds and vehicles into an area with little coordination. In the coming era of fiscal constraint, more effective coordination of existing services can replace outright expansion as a means of providing more services or, at the least, maintaining what exists.

Prior to the initiation of Section 18, the Section 16b2 program was a principal source of vehicles for the provision of demand-responsive services for the elderly and the handicapped in rural areas. Section 18 funds have flowed primarily to public authorities, and in many instances these authorities have come to view the Section 16b2 PNPs as unwanted competitors rather than as an additional source of vehicles and services. This type of attitude will be unaffordable in the next few years, and coordination among recipients of federal assistance will be essential.

Many social service agencies still provide transportation reimbursement to clients. Through the use of vendor codes and service contracts, transportation providers can tap into this source of funding and obtain reimbursement for services provided. This type of funding will not flow naturally to transportation providers but must be aggressively pursued.

VEHICLE PROCUREMENT

Requesting Bids

Federal regulations regarding bid solicitation for federally subsidized purchases are fairly general and rely heavily on local and state procedures. These requirements are detailed in Office of Management and Budget (OMB) circulars A-102, A-104, and A-110. For Section 3 grants only, UMTA has more extensive regulations, which are contained in its External Operating Manual Section III-C. For all contracts in excess of $2500, UMTA will make a prebid analysis and review. No additional requirements beyond standard federal procedure and local laws and regulations are imposed on the Sections 16b2 and 18 programs.

Basically, federal regulations require that "all procurement transactions...shall be conducted in a manner that provides maximum open and free competition" (2). Bids must be awarded on the basis of a "firm fixed-price contract" to the "responsible bidder whose bid, conforming to the invitation for bids, is lowest" (2). Factors in determining whether a bidder is "responsible" include integrity, compliance with public policy, record of past performances, and financial and technical resources. "Any or all bids may be rejected when there are sound documented business reasons in the best interest of the program" (2).

All grantees must have written selection procedures that provide, at a minimum, the following components (2): (a) procedures for solicitation of offers, (b) technical specifications, and (c) a description of all contract requirements. Under the third requirement, the following standard UMTA assurance should be included in all bid documents:

1. Advertisement and/or invitation to bid--(a) Equal employment opportunity, (b) statement of financial assistance, and (c) ineligible bidders;
2. Standard contract clauses--(a) Contract changes, (b) interest of members of Congress, (c) prohibited interests, (d) equal employment opportunity, (e) air pollution, (f) motor-vehicle safety and pollution, (g) cost of living, and (h) minority business enterprises; and
3. Required contract provisions--(a) Contract period, (b) termination of contract, (c) nonrestrictive clauses, and (d) maximum compensation.

In addition, the "buy American" requirement (discussed later in this paper) should be included.

If a contract is in excess of $10 000, bid solicitation must take place in one of the following three ways: (a) competitive sealed bids, (b) competitive negotiation (if order is not suitable for formal advertisement), or (c) noncompetitive negotiation (typically if there is only one supplier) (2). Since most vehicle procurement will take place under the competitive sealed bid method, the remainder of this paper concentrates on this process.

Federal regulations require that, for competitive sealed bids, formal advertisements be posted. Such advertisements must allow sufficient time for potential bidders to respond. As the outline of bid requirements given above indicates, advertisements must specify the following three points: (a) Suppliers will be required to certify that they are not on the U.S. Comptroller General's list of ineligible contractors, (b) suppliers must comply with all equal employment opportunity laws and regulations, and (c) the contract is subject to a financial assistance agreement between the project sponsor and DOT (2).

In general, advertisements may be mailed directly to suppliers and printed in newspapers and/or trade journals. Generally, a much better response will be obtained by mailing bids and specifications directly to suppliers. To that end, agencies should maintain updated lists of suppliers.

After the receipt of statements of interest from bidders, technical specifications and other contract provisions (called "front-end documents") should be

mailed to bidders. This can be done in conjunction with an invitation to attend a prebid conference, as explained below.

Technical specifications can take the form of drawings and/or phrases. If there are several recipients for a single order, it is helpful to have a committee of recipients participate with the lead agency in developing specifications. Specifications can take the form of specific design standards or desired performance levels. It is generally preferable to use performance levels because this permits potential bidders more flexibility in design and thus increases the number of bidders. When design specifications are used, they should be written as minimum standards or as a range. Nevertheless, they should not be drawn too loosely.

Front-end documents should contain the following: (a) instructions to bidders, (b) general provisions, (c) bond forms, and (d) bidders' proposals. Instructions to bidders should contain details of the bid process, qualifications of bidders, data required, and procedures for requesting clarifications.

General provisions include information on factors that the agency desires to use in the evaluation of the contract and the determination of "responsive" bids. In addition to the basic federal requirements detailed earlier, this section should also include general state requirements and specific items that are of concern to the agency, which typically include payment, delivery, inspection, and warranty. These are often items of contention, and the agency should clearly specify in the bid documents what will be required. The evaluation of those items is discussed later.

Other useful provisions for inclusion are the following (3):

1. The recipient will be held blameless for any liability that results from the manufacture of the vehicle.
2. The best engineering design and material must be used to ensure maximum vehicle strength and reliability for the maximum possible operational life.
3. The availability of parts should be guaranteed for a predetermined number of years.
4. Optional items (radio, air conditioning, etc.) to be included in the bid price for the determination of the lowest bid should be made explicit.
5. All vehicles to be delivered to specific recipients should be identical.

There are three types of bonds that may be required of a bidder. A bid bond (around $5000) guarantees that a bidder will sign a contract if he or she wins the award. A performance bond guarantees that the bidder will complete the project. A payment bond, somewhat less common, guarantees that a bidder will supply all labor and materials to be used in the project.

The final portion of the bid contract should contain forms for the bidder's proposal. Figure 1 (3) shows a checklist format for the bidder's proposal. The bidder should not, however, simply check each item but describe them specifically. It is also a good idea to include a form for the calculation of life-cycle costs (explained further later in this paper).

A key element in the bid process is the prebid conference. If an agency permits about 45 days from mailing of the bid documents to the bid opening, the prebid conference should take place about 24 days prior to opening. It should be clearly stated that the intent of the conference is informational and for clarification purposes only and that no specification changes will be agreed to at the conference.

The agency should grant bidders one week following the conference to submit formal requests for changes, clarifications, and "approval equals" in the specifications. Several days later (and two weeks prior to bid opening), the agency should send one addendum to the specifications to all bidders. Avoiding several addenda helps to simplify the process.

Upon receipt of the addendum, bidders have one week to appeal. It is a good idea to have an agency that is one step superior to the recipient agency review appeals (i.e., regional recipient to state, state to UMTA). In the case of DOT, this is not required unless a violation of federal law or agency procedures is alleged. The bid process should be closed seven days before the bid opening. This time sequence is summarized below:

Days to Bid Opening	Action
45	Mail bid documents to interested parties
24	Preaward conference
17	Deadline for change requests
14	Mail addendum
7	Deadline for appeal, process closes

Figure 1. Sample checklist for bidder's proposal.

NOTE: This sheet lists in the same order items described in the Specifications. **Please check** if what is offered is **in exact compliance** with the Specifications. Where possible, give exact dimensions and/or description.

General Dimensions____
Suspension____
Steering____
Brakes____
Wheels____
Tires____
Fuel Capacity____
Engine____
Air Pollution____
Transmission____
Drive Shaft____
Electrical System____
Body____
Passenger Door and Stepwell____
Floor____
Emergency Exits____
Gauges____
Destination Sign(s)____
Bumpers____

Mirrors____
Exterior Lighting____
Interior____
Grab Rails/Stanchions____
Interior Lighting____
Heating____
Ventilators____
Windshield____
Windows____
Hardware and Equipment____
Seats____
(include drawings of interior layout)
Lift____
Wheelchair Restraint System____
(include detailed description)
Options:
(1) Air Conditioning____
(2) AM/FM Radio____

INCLUDE ONE COPY OF EACH WITH BID:

1. $5000 Bid Bond (made out to the EOTC).
2. Written guarantee of availability of replacement parts (C-2).
3. Designation of local representative (C-3).
4. Certification that equipment will meet state and federal requirements.
5. Supply a detailed Maintenance and Inspection Schedule (see C-5).
6. State in writing that the vehicles to be supplied will meet the specifications in all respects (see D-7).

An important element to consider in the bid process is timing. For most minibus and van manufacturers, the period from March to September is an "in-between" time in which prior-year models may be becoming scarce and the new models are not on-line yet. This is likely to mean higher prices and longer delivery times. The administering agency should investigate the cycle of the relevant manufacturers. In general, bids should be requested in the fall for a winter delivery or in the winter for an early spring delivery. Vans generally take 3-4 months for delivery, minibuses 4-6 months, and small transit buses 12 months.

One proposal for reducing vehicle cost and delivery time is consortium purchasing. The California Department of Transportation has attempted to organize a consortium among several states. A problem with this approach is that different state bid laws must be reconciled and most states are required by law to make their own final decision on a purchase. Since many states require that a third party such as a state purchasing agent manage the entire process for a transportation agency, chances for cross-state cooperation and flexibility are reduced. Such a party will typically be most concerned with adhering to the letter of an individual state's laws and procedures.

It may be more feasible to pursue intrastate consortiums among PNPs or transit authorities.

Awarding Bids

As mentioned, there are a number of factors that an agency should include in its bid documents regarding desired performance in specific areas. One such area is delivery time. A stated maximum delivery time should be included, and the bidder should be required to indicate a proposed delivery date. The cost of delivery to the ultimate recipient should be made part of the bid price, to be used in determining the low bid.

The warranty represents another problem, particularly for modified vans and body-on-chassis vehicles, which may have several manufacturers. It is recommended that one supplier be responsible for all warranty work. It may not be practical, however, to have one of the actual manufacturers perform warranty work because of the distance involved. A solution to this problem is to require that the manufacturer sign an agreement with a local dealer that assigns all warranty work to that dealer.

Vehicle inspection can be another difficult area. In some cases, a vehicle may have to pass a third-party inspection by a public utility authority or the like. Acceptance of the vehicle should be subject to passing that inspection. In any case, the recipient will want to ensure that the vehicle meets specifications and has no apparent defects. The bid document should provide for a period of time in which the recipient can examine the vehicle pending full payment. Fifteen days or so is a typical time frame. The recipient should make a bulk payment (80 percent) on receipt of the vehicle and a cursory inspection but withhold the balance pending the full inspection. Manufacturers do not generally like this process, but it is essential for the protection of the recipient. The balance withheld should be large enough to ensure that the manufacturer has an incentive to perform needed repairs. (In general, recipients should be "tough" in inspecting the first vehicles of a large shipment. Defects not rejected in those vehicles will likely be repeated in the rest.) These requirements should be clearly stated in the bid document.

Since determination of "responsible" bidder may include consideration of technical capability, the agency should require that it be permitted to make an on-site inspection of the facility prior to the bid award. A key element to investigate is the availability of spare parts for all components as well as the general condition of the facility.

Life-Cycle Costing

Although agencies are required by federal regulation (and most state regulations) to accept the "lowest responsible bid", this bid may be determined on the basis of life-cycle costs rather than initial purchase price. Since May 1980, UMTA has required that life-cycle costs be included in the evaluation that leads to the determination of a low bid.

The method for evaluating life-cycle costs is flexible and left to the discretion of the recipient. OMB defines life-cycle cost as "the sum total of the direct, indirect, recurring, non-recurring, and other related costs incurred, or estimated to be incurred, in the design, development, production, operation, maintenance, and support of a major system over its anticipated useful life" (4).

The basic factors that should be considered in evaluation of life-cycle costs are (a) purchase price, (b) operating costs, (c) productivity (availability of vehicle for service), (d) useful life, and (e) salvage value. In using life-cycle costs, it is particularly important to use general performance standards rather than detailed specifications, since the purpose of life-cycle costs is precisely to evaluate different methods of achieving the same service levels. It is also particularly important to use life-cycle costs in the procurement of small transit vehicles, an area in which there are many manufacturers and rapidly evolving technology (4).

Nevertheless, life-cycle cost has disadvantages that should not be underestimated when the process is initiated. The evaluation procedure will be more costly and time-consuming than a straight low-bid method. Insufficient data may exist for new products, and smaller manufacturers may be excluded due to an inability to produce the required data. Finally, the end result may produce very small differences between products so that the decision will not be clear-cut and may prove controversial (4).

One way to reduce the problem of insufficient data is for the authority to acquire and test vehicles prior to the issuance of performance specifications. This will enable the authority to publish specifications based on actual vehicle performance in the service area. It will also create a data base for the vehicles actually tested. Most important, specifications will be developed based on the actual conditions under which the vehicles will operate. The performance of small transit vehicles can vary greatly depending on level of service, geography, and climate. Manufacturers who participate in pretests also gain valuable knowledge of design weaknesses that they can correct prior to the actual bidding process (4).

Only the vehicles that meet an initial performance specification should be acquired for testing. The "rules" of the test should be carefully spelled out in a request for proposals for test vehicles. For statistical reliability, three test vehicles should be acquired and operated for one year. The success of the test depends on close cooperation between the transit authority and the manufacturer and the publication of all data and results so that future bidders can profit from the experience (4).

After the completion of the vehicle tests, amended performance specifications can be developed and published. These specifications should state

that life-cycle costs will be the basis for the award, the data sources that will be used (tests, manufacturer's data, experience in other systems, etc.), and how the results will be evaluated. It should be stated that, within a certain percentage range (usually 2 percent) of costs, the results will be considered inconclusive and other factors (purchase price, reliability, and capacity) will be determining (4).

The life-cycle-cost analysis itself should determine the following: (a) projected annual operating costs over the expected life of the vehicle, (b) estimated salvage or residual value, and (c) productivity or availability ratio.

Annual operating cost consists of maintenance costs (labor and parts) and commodity costs (fuel, oil, and tires). Maintenance costs are typically high during the break-in period, then lower significantly, and level off before beginning a gradual rise. Comparisons should be made on the basis of trend lines that display these tendencies (4).

The salvage value equals the fair market value of the vehicle at the end of its useful life to the operator. When one compares many vehicles, it can be expected that some will have a useful life longer than the time period used as the basis for analysis. In such cases, the residual value to the operator of this extra time period should be calculated.

Vehicle productivity can be measured by the availability of a specific vehicle for service--in other words, how often it is "down" for scheduled maintenance or unscheduled repair and thus unavailable for service. Productivity can also be measured by the number of vehicles (fleet size) necessary to maintain a certain level of service. For example, how many spares are necessary to enable the operator to meet peak-period demand 90 percent of the time?

Finally, future costs must be adjusted for inflation and discounted to net present value. To determine the discount rate, the interest rate on U.S. Treasury notes of a duration equal to the useful life of the vehicle should be used. The annual inflation rates for the various parts and commodities can be determined from the Monthly Labor Review, codes 05-7 and 14-1, published by the U.S. Bureau of Labor Statistics (4).

"Buy American"

Preference must be given to domestic manufacturers if the vehicle is obtained through a federal grant and the amount of the order exceeds $500 000. Bidders should be notified of this provision in the bid document. According to the Code of Federal Regulations (49 CFR 660.11-32), a waiver of this requirement may be obtained under the following circumstances:

1. If the requirement is "inconsistent" with the public interest,
2. If the requirement will impose an "unreasonable cost",
3. If supplies to be used in the manufacture are unavailable in the United States, and
4. If the inclusion of domestic material will increase the cost by more than 10 percent.

If only a single bid is received, the administering agency must conduct a price analysis, comparing the bid received with bids received elsewhere on orders of similar quantity and specification. This analysis must be conducted by qualified auditors or a price analyst. The federal government can assist an agency in carrying out this task through the Defense Contract Audit Agency.

There are no federal requirements regarding preference for local purchases. In fact, an agency cannot make a local purchase in contravention of federal law and regulations. Obviously, a local purchase often has a strong political attraction and can even be required by state law. This can result in a state-federal conflict. An executive order of the Governor of Massachusetts requires that contracts be awarded to a Massachusetts bidder if the bidder's price is within 5 percent of a low bid submitted by a non-Massachusetts company. This provision conflicts with federal low-bid requirements, and UMTA refused to approve an attempt to award a contract on this basis. The state purchasing agent eventually relented.

If delivery cost is included in the purchase price for the purpose of determining low bid, it may be possible to provide a nonexplicit advantage to in-state contractors.

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