

# Development of Incentive Contracts for Transit Management

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## ABSTRACT

Contract management is a widely used practice within the transit industry. Incentive contracts, however, are infrequently used to procure these services. The considerations in combining the two practices are discussed. The result is an incentive-fee arrangement with a private firm for the management of a local transit system. The basic concept being presented is that the management company's fee can be related to the performance of the transit organization. There are many beneficial features of this approach. First, it conveys to the contractor a sense of the transit agency's priorities for improvement. Second, it provides an incentive and rewards the management company financially for its success. And third, it can lead to an overall improvement in the productivity of the transit system. The process that a transit agency could follow in establishing an incentive program with an eligible contract management firm is presented. The options and key considerations that may arise during each step of the process are discussed. By following this guidance, the local agency should be able to synthesize these decisions and considerations systematically into a contract document for obtaining contract management services.

The development of an incentive contract appropriate to the local situation can be illustrated as a sequential process, shown in Figure 1. The first step is the decision to explore incentive-clause opportunities for existing or future contractual arrangements. Next, the local agency personnel should define what they wish to achieve through the incentive clauses. These objectives then lead the way to the detailed definition of the incentive clause. Key elements are the performance indicators against which fees will be determined, payment programs, and contract types. All of these decisions are brought together into the final bid or contract document.

The process for developing an incentive contract for transit management is discussed. Each step is defined in a separate section. Throughout the discussion, the terms "incentive clause" and "incentive contract" are used interchangeably. The common concept being developed is a performance-related payment program around which a new contract is drafted.

## DECIDE TO PURSUE INCENTIVE CLAUSE

The nature of incentive contracts and their previous applications are discussed. A review of these funda-

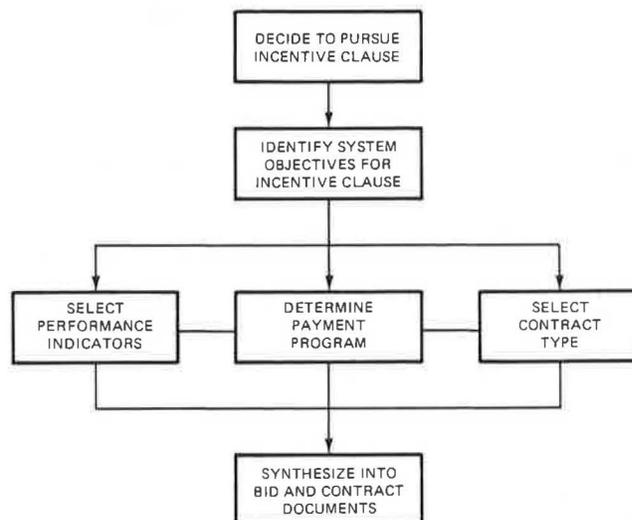


FIGURE 1 Framework for developing incentive contracts.

mental aspects of incentive contracts should enable the local transit agency to make the decision whether to pursue such an arrangement.

First, what is an incentive contract? Essentially, it is a legal agreement for services in which some or all of the fee or profit paid to the contractor is awarded according to performance against preestablished standards. In early applications, these standards reflected budgets and schedules for producing hardware such as ships and airplanes. The use described here would tie payment to the transit system's performance as measured by an indicator of efficiency or effectiveness.

The most commonly used contract for government services is the cost-plus-fixed-fee (CPFF) arrangement in which the contractor is awarded a set fee and reimbursed for costs incurred regardless of the outcome. The incentive contract concept refutes this. The fee is not paid automatically; rather, it must be earned by achieving contractually specified performance levels.

The fundamental principle of the incentive contract is that the profit motive is the driving force in business and that it can be tapped to achieve better performance results. It assumes that the contractor's motivation will vary with the presence or absence of incentive clauses through which additional profit can be made. Contract terms ensure that superior performance is rewarded with high profits, mediocre performance by average profits, and poor performance by low profits or even penalties.

Second, when might an incentive contract be applicable for transit management? There are many reasons why an organization might wish to convert from a fixed-fee to an incentive-fee contract for transit management. The two most prominent situations are when one area of the system is declining in performance and needs special attention or when

overall performance of the contractor is undistinguished. In the former situation, a particular problem might be approaching crisis proportions (e.g., operator absenteeism or vehicle reliability) and public awareness of the problem is leading to heightened scrutiny. In this situation, the incentive fee would be appropriate to focus management's attention on resolving the problem. The incentive program might only be in effect until the decline in performance was arrested. In the latter scenario, the transit system may have a very general description of responsibilities for its contractor. Although the contractor may be complying with its terms, the performance may be average and the agency may expect more outstanding results, particularly where there is a competitive market for the contract. In this case, the incentive contract would establish more clearly defined requirements for the contractor in line with agency objectives for performance improvements.

Third, what is the experience in the transit industry? Incentive contracts have been used for a number of services and cut across many modes. Selected examples are discussed here for commuter rail services, small transit systems providing fixed-route or demand-responsive services, and airport ground transportation services:

1. Commuter rail: A common clause in several commuter rail agreements in Boston, Chicago, and Philadelphia relates to on-time performance; both bonuses and penalties have been prescribed for performance above or below the specified threshold. Other areas for incentives relate to consist size to assure an adequate number of cars and frequency of cleaning cars and stations.

2. Small transit systems: Service in local communities is often provided by a contractor according to a fixed-unit cost (e.g., rate per hour or mile of service). This rate can be adjusted upward or downward against performance thresholds in one or more areas. Incentive contract clauses at several small systems in California have focused on on-time performance, completed trips, working air conditioners, preventive maintenance intervals, missed trips, and passenger loads.

3. Airport ground transportation: One example of an incentive clause for this type of service focuses on the extent to which public operating assistance could be reduced by private operation of the bus routes to the Dallas-Fort Worth regional airport. The service is expected to turn a profit in several years, relieving the local communities of any responsibilities.

Productivity improvements were the major objective for incentive provisions in the examples just discussed, although a wide array of operating factors have been targets for incentive arrangements. The decision about which areas on which to focus usually was based on operational deficiencies that delineated the critical areas in need of improvement. This process of problem identification leading to incentive remedies results in clearly defined and realistic objectives. This is the next step in the process.

#### IDENTIFY SYSTEM OBJECTIVES FOR INCENTIVE CLAUSE

The key question to be answered at this point is, "What do we want to accomplish?" The organization should identify those critical areas of its operation where extra effort is needed on the part of management company personnel. If the agency believes that the extra effort would warrant potential in-

creases in the management company's fees, it could choose the incentive-contract approach. A clause targeted to the priority area would be incorporated into the agreement for management services.

Virtually every transit system has established a set of goals and objectives, which provide the starting point in the development of incentive contracts. Priority goals and objectives suggest the areas where the incentive contract should concentrate and can assist in the subsequent identification of appropriate performance indicators by which to measure the achievement of these objectives.

As an example of how this process might evolve into the beginnings of an incentive contract, a goal of improving cost efficiency might be stipulated. This could be clarified further to the functional area where efficiency was lagging, such as the maintenance of revenue vehicles. This maintenance efficiency could be measured with a number of different performance indicators, including the maintenance cost per vehicle mile or vehicle miles per mechanical road call. This last item, the performance indicator, becomes the key measure to be employed in determining incentive payments. However, it is important to note that this selection of indicators should be preceded by the identification of incentive-contract objectives.

In opting for the incentive-clause remedy, the agency should be able to define the desired result that the contractor is expected to achieve. These objectives should be defined clearly and concisely. Similarly, the objective should be realistic. In order for the contractor to be motivated to expend the necessary extra efforts, the reward must be perceived as worthwhile and achievable.

#### SELECT PERFORMANCE INDICATORS

Three major elements make up the incentive arrangement: the performance indicator, payment mechanism, and contract type. Performance indicators are used by transit organizations to evaluate performance and to determine how the entire agency or particular functional area is performing relative to stated objectives. In the development of incentive contracts, performance indicators are used to gauge the contribution of a contract management firm to producing transit service efficiently and ensuring that service is supplied effectively. The extent to which financial rewards or penalties are imposed is measured through performance indicators.

Performance indicators are made up of statistics that reflect the three key factors in transit service delivery:

1. Input: To produce a specific level of transit service, the manager must tap the system's resources. These resources are the input statistics and include the labor hours, vehicles, fuel, and other resources required to produce service.

2. Output: the quantity of service produced is output. Examples of service output statistics include miles and hours of service. Output is the area where transit management has the greatest amount of control and authority. Hours and miles of service provided reflect the system's operating plan as well as the efficiency with which it schedules and operates its resources.

3. Consumption: The amount of service that the public uses reflects the effectiveness of the transit system. Examples of service consumption statistics include passengers and passenger miles. The consumption rate of transit services is affected by many variables and external factors, many of which are beyond the transit manager's control.

The interrelationship among these statistics serves to define different classifications of performance indicators. This can be illustrated if each type of statistic is considered as the side of a triangle, such as the one shown in Figure 2 (1). The intersecting points of the triangle are the statistics used to measure an objective. The relationship of

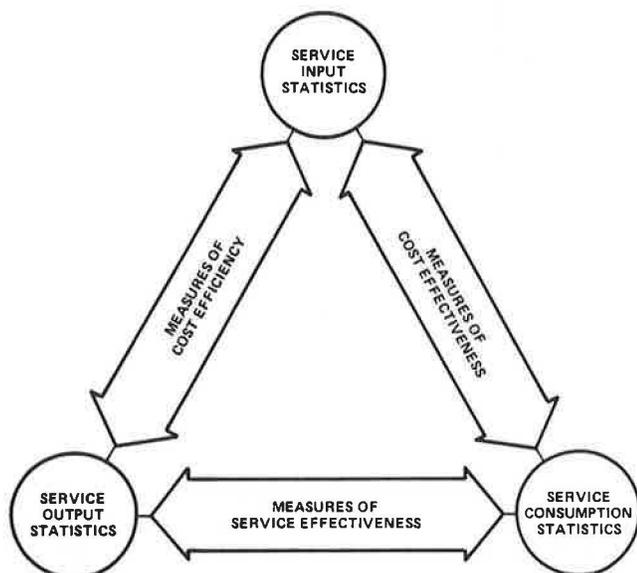


FIGURE 2 Relationship of statistics and indicators.

any two statistics, for example, service input and service output, results in one of the classifications of performance indicators. For this process, the following three categories of performance indicators can be developed:

- Cost efficiency: how well labor, capital, and fuel (input) are used to produce service (output);
- Cost-effectiveness: the relationship of input costs of labor, capital, and fuel to the consumption of service by the public; and
- Service effectiveness: the relationship of the level of service provided to the amount of service utilized or consumed.

Although many indicators can be used to identify a transit system's strengths and weaknesses, some are more appropriate than others for incorporation in an incentive contract. Because the transit management company's performance against these indicators will determine the size of its fee or profit, it is important that several limiting factors be recognized. Five considerations in choosing among indicators include the extent to which

1. The manager will be responsible for performance and can be held accountable for results,
2. The manager will have the authority to make necessary changes to improve performance,
3. The manager has control over internal and external factors that influence results,
4. The performance indicator is easy to understand, and
5. The data to quantify performance are readily available.

The extent of accountability, authority, and

control that a manager is given will vary from system to system. In general, as the preceding discussion has described, the manager is best able to determine service output levels. Service input levels also are controllable, though the manager must work within constraints such as labor contract provisions. Service consumption, however, can be affected drastically by many factors beyond a manager's purview, such as gasoline availability or the unemployment rate. Therefore, it is recommended that agencies select performance indicators that measure cost-efficiency--the relationship of input and output--and avoid effectiveness-related indicators for the purpose of an incentive clause, at least in the initial contract years.

#### DETERMINE PAYMENT PROGRAM

The next step in the process is to relate performance level to payment to the contractor. The amount of the incentive payment can be calculated in several ways. It can be the only amount the management company receives or it can be an amount in addition to a preestablished fee. Also, the payment program can incorporate penalties as well as rewards.

Five possible options for payment programs are described as follows:

1. Unit rate: The contractor receives a bonus point periodically. Sample applications would be a bonus of 2 cents per revenue mile for trips operating on time and a \$1,000 monthly bonus for exceeding a particular performance threshold.
2. One-time bonus: A single reward is made for achieving a threshold performance. Most likely this would occur at the end of the contract year after results have been evaluated. This approach places paramount importance on reaching one numerical goal. Also, it can be readily adapted to a bonus pool for all employees who might have contributed to the manager's success.
3. Incremental amount: A sliding scale is established to reflect the relative ease of achieving certain levels of improvement. This step-function relationship between payment and performance is illustrated in Figure 3 for the indicator average mileage interval between road calls. In this example, a contractor could increase the percentage of fee received from 2.5 to 10 percent if the performance is improved from 1,500 to 2,500 miles between mechanical road calls. Any improvement below this level would reduce the fee awarded accordingly.
4. Proportional amount: Contractors receive a specified percentage increase in fee matched to the percentage increase in performance. Many proportional payment options can be developed; Figure 4 shows four.
5. Fee pool: A total amount of funds would be set aside as the maximum available for incentive payments. A schedule for reviewing performance and awarding a portion of the pool would be established simultaneously. Funds would be awarded in whole or in part (or not at all) for exemplary performance during the contract period. These payments traditionally complement a base fee that is paid automatically as compensation for the company.

Each payment program option has advantages and disadvantages. Distinguishing characteristics are the relationship between payment and performance, funding limitations, and the ability to penalize as well as reward the contractor. It is important to note that both parties to the incentive contract (the transit agency and the management company) may hold differing perceptions of these advantages and disadvantages.

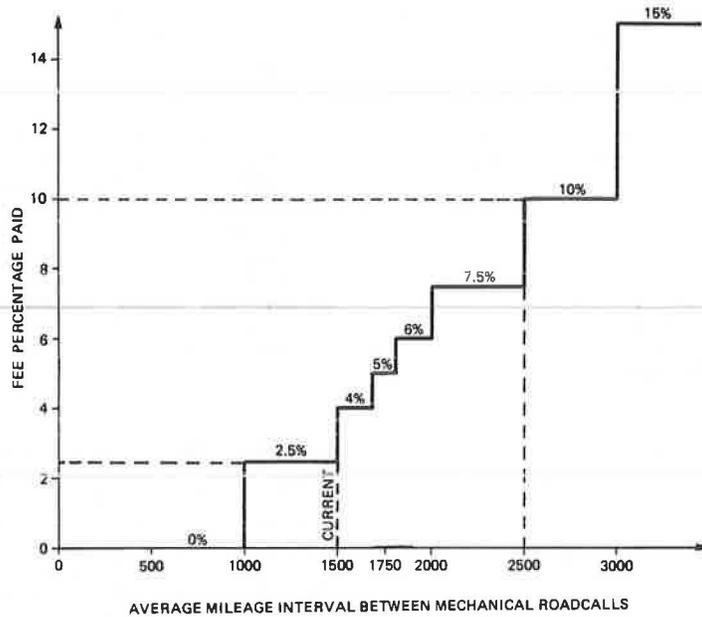


FIGURE 3 Incremental-payment method.

SELECT CONTRACT TYPE

The indicator and payment program must be incorporated into a contract document. There are four general contract types commonly used by government agencies, two of which are used most often in the transit industry. They are the CPFF, mentioned earlier, and the firm fixed price (FFP). The former would provide the transit management company with a budget for operating the transit system on top of which a fixed fee would be earned by the company. The CPFF contract has the fewest incentives; costs are reimbursed and fees are paid regardless of

performance results. The fixed-price contract is often derived on the basis of unit cost; the contractor is reimbursed so much per unit of service delivered, often measured by revenue mile or revenue hour. The company's profit is one element of this unit cost. If the company can trim costs and operate at less than the unit cost, these savings represent additional profit. However, if costs rise beyond the unit rate, the company is still obligated to operate at the contractual rate and thus incurs a loss.

Two other types of contracts involve incentive fees and award fees. The incentive fee in its traditional form is a bonus for savings. Any costs saved

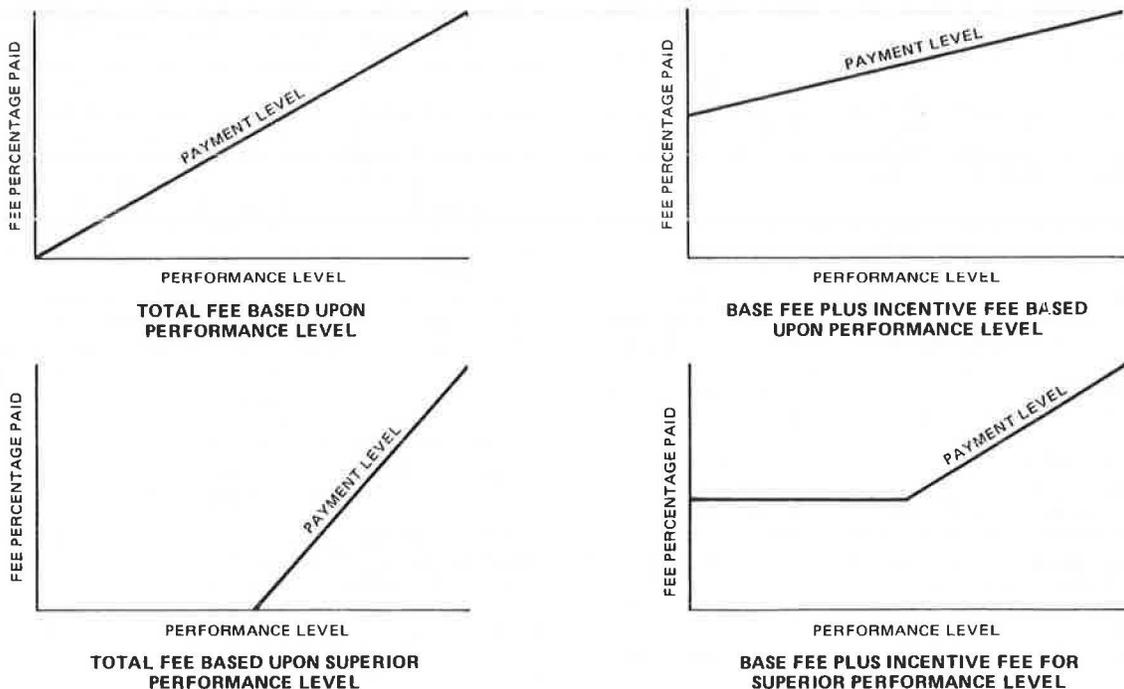


FIGURE 4 Proportional-fee payment methods.

under the target cost are shared by the contractor and procuring agency according to a predetermined sharing formula. This could be applicable to a sliding-scale fee arrangement tied to the extent of improvement in the priority area. The latter contract splits the fee into guaranteed and awarded amounts. A set percentage is paid automatically to the contractor to reimburse fixed costs and guarantee a return on investment. The balance is awarded as an incentive if a review panel determines that excellent performance has been achieved in specified

areas. The review process is defined in the contract document.

The various contract types exist because there are a variety of procurement situations. One type of contract may be appropriate for developing new technology, whereas another is best suited for procuring office supplies. Key considerations are the amount of risk to be taken by both parties, the extent of uncertainties regarding costs and technical elements, and the amount of administrative oversight required. The CPFF contract, for example,

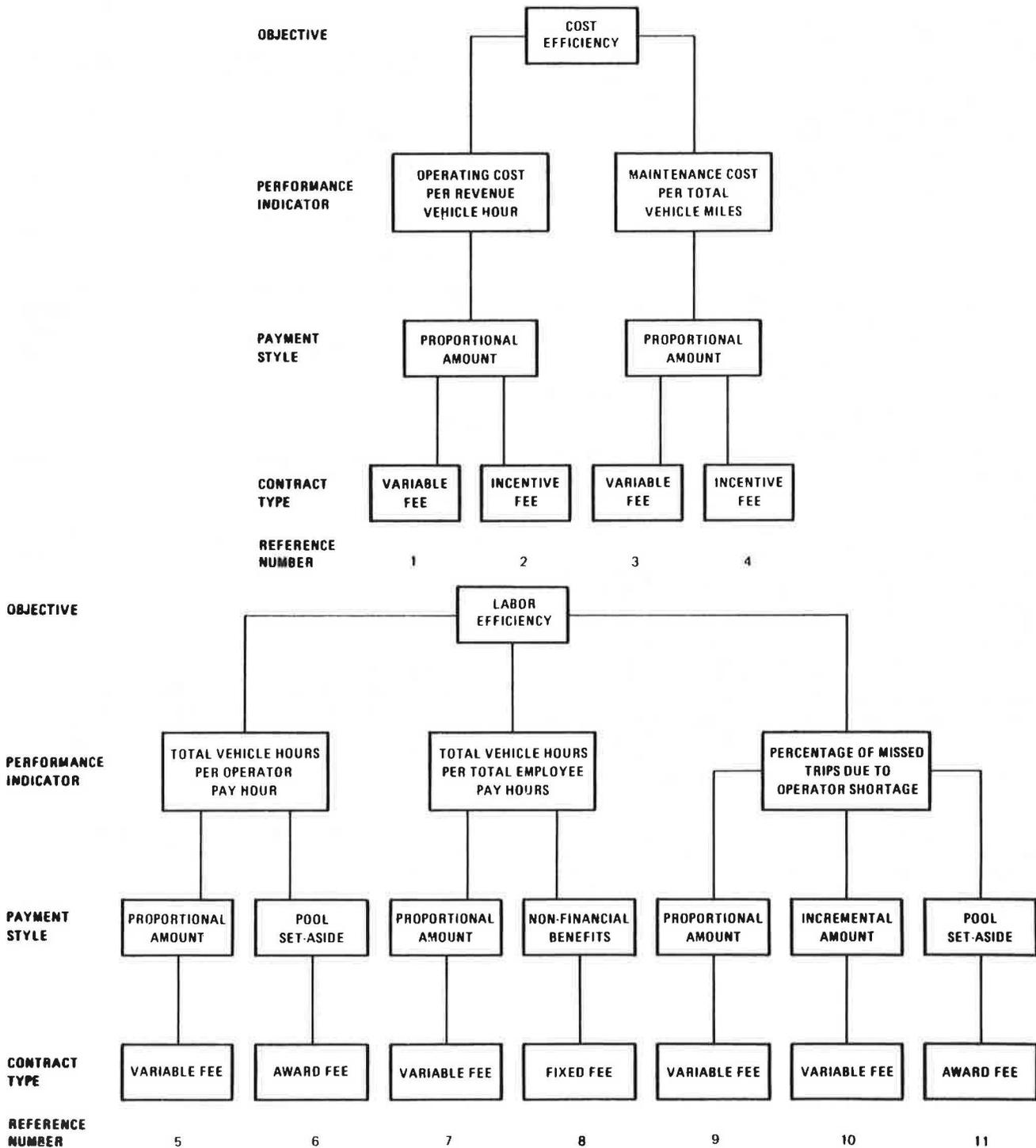


FIGURE 5 Synthesis of the incentive-contract program elements.

is appropriate when a specific level of effort is required but there are high technical and cost uncertainties. The award-fee (CPAF) contract is appropriate in similar circumstances but when there is a desire for improved performance in selected areas. These areas may, in fact, be measurable through qualitative rather than quantitative means. The incentive-fee contracts are appropriate if contractor initiative is essential for a successful outcome. These contracts would be used when some uncertainties existed yet confidence was high that performance could be achieved. Finally, the FFP contract is appropriate for situations with few unknowns; the basis for performance is known and technical and cost uncertainties are low.

An incentive-type contract is a useful device that should be employed in appropriate situations. Of itself, it possesses no inherent qualities that assure success. Rather, it is useful when a determination has been made that there is a specific need for better-than-minimum performance. The anticipated benefits ought to exceed the costs that could be paid out as additional profit or incurred internally for additional contract administration.

#### SYNTHESIZE INTO BID AND CONTRACT DOCUMENTS

The preceding activities lead to the final step wherein the incentive-contract document is made final. The synthesis of the incentive-contract program places the overall objective (e.g., labor efficiency) as paramount. Contract and payment types become secondary and support the definition of objective and appropriate performance indicator. In this approach, then, the objective and focus of the contract arrangement are defined first, a performance indicator is chosen second, and the contract type and payment style are selected last. The result, shown in Figure 5, is a diagram led by the efficiency objective. The next choice is among the improvement areas. In this illustration, the choice for the agency to focus on is either cost or labor efficiency. For each focus area, several performance indicators can be applied. For example, cost efficiency could be measured through the operating cost per vehicle hour and the maintenance cost per vehicle mile. Each indicator could be used with several different payment styles. Gradual changes in performance may be best reinforced through a proportional payment style (a linear relationship between payment and performance), although incremental amounts, a pool set aside, and other payment styles may be suitable in certain circumstances. A contract type corresponds to each payment style. The proportional amount would be arranged through a variable- or incentive-fee contract; the pool set-aside payment would require an award-fee contract. The upshot of this approach is the definition of each incentive-contract alternative by following a particular vertical line on the diagram. A total of 11 various contract alternatives are shown in this example.

At this point, the agency should have a clear understanding of its objectives and should have defined an incentive program that complements these objectives. Should the agency choose to proceed with an incentive contract, it would conduct several implementation tasks, including the following:

1. Identify baseline performance and expected levels of improvement;
2. Establish administrative procedures for data collection and contract monitoring;
3. Finalize payment clauses for the contract to define criteria, amount, and schedule; and
4. Solicit bids and negotiate and execute the contract.

In preparing for an incentive program, the agency is offered the following cautions:

1. Consider only those performance areas over which the management team has control,
2. Set standards that are achievable,
3. Use indicators that are easy to understand and require minimal data collection, and
4. Assure that the incentive program does not result in a shift in attention away from overall system management.

In summary, the successful incentive program is one in which the benefits to the system in improved productivity and responsiveness exceed the additional expenses for management company fees and administrative costs.

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