

# Effective Utilization of Manpower and Innovative Approaches in the Work Force at San Diego Trolley

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For over a decade, San Diego Trolley, Inc., has operated and maintained one of the most successful light rail transit (LRT) systems in the world. Although the primary attention with respect to success has focused on low-cost implementation and application of proven technology, the real success has been the ability to recover an average of 95 percent of operating costs from fare-box revenue since service began. From the onset management implemented a series of broad-based job descriptions and maximized the use of contract labor for the purpose of retaining tight control over operating expenses. With initial success realized, the staff expanded this concept by coordinating with the San Diego County Probation Department and the California State Department of Corrections to initiate an innovative program of using persons assigned to "community services" by local courts and trusty prisoners to perform limited maintenance functions on the system. The broad range of manpower and other innovative approaches have enabled San Diego Trolley to attain financial objectives, which have resulted in maintaining a consistently high farebox recovery ratio.

In mid-1980, the Metropolitan Transit Development Board (MTDB) was nearing completion of the initial light rail transit (LRT) line along the South Bay corridor. This first segment extended some 16 mi and connected downtown San Diego with the community of San Ysidro at the United States/Mexico border.

As construction proceeded, the next significant decision for MTDB was who would operate the system. This would ultimately be one of the most significant decisions for the agency, and one that would have the most dramatic effect on the operating system in subsequent years. The decision was not an easy one as San Diego Transit Corporation was the predominant transit operating agency in the region at the time, albeit exclusively bus oriented, and was owned by the city of San Diego.

Because MTDB was essentially an agency created by the California state legislature and there were no existing laws mandating a regional transit operator, a number of interesting options were possible for the LRT operation. One option was to obtain a contract operator for the system; another was to create an operating entity as a wholly owned subsidiary of MTDB.

The first option was explored but was quickly rejected in deference to the second option when all preliminary bids were found to be nonresponsive to the required insurance elements contained in the bid package.

## CORPORATE HISTORY

San Diego Trolley, Inc. (SDTI), a California nonprofit public benefit corporation, was formed in August 1980. Almost immediately thereafter, MTDB hired key staff for SDTI and developed what would ultimately become the foundation of a "philosophy for conducting operations." Because the entire project had applied a philosophy of using proven technology and low-cost implementation, it seemed appropriate to extend this to the operating entity as well.

## Initial Staffing Plans

Perhaps the single most significant aspect of the new corporation was its ability to start with a "clean slate." The philosophy that applied included using a private business approach to an otherwise public enterprise. The objective was to create a lean organization in terms of staffing and to develop a scope of work within various job descriptions that would allow complete flexibility in assignment and generalized work tasks as opposed to descriptions that traditionally have narrow focus.

The net effect of this plan resulted in maximum flexibility for SDTI in terms of intra- and interdepartmental employee assignments. Furthermore broad job descriptions allowed the agency to keep the number of staff in the hourly category to an absolute minimum.

Expanding this philosophy further, it was determined by board action, that part-time employees would be incorporated into the employment structure and, to the extent possible, outside contractors should perform certain work assignments. Because SDTI was not encumbered with existing job descriptions that may have been overly restrictive as a result of negotiated union contracts, many of these initial plans were considered innovative at the time.

## Job Classifications

In terms of job classifications a number of unique elements were applied. Unlike most traditional transit systems, SDTI used generalized terms (e.g., electromechanic, service person, lineman, etc.). These classifications provided enough flexibility to allow varied assignments without restriction. In the position of electromechanic, the classification provided the

option of assigning an employee to electronic duties as well as mechanical activities without restriction. In the employment classification associated with light rail vehicle (LRV) maintenance, descriptions even required LRV operation for maintenance purposes within yard limits.

The category of service person likewise provided management with flexibility of assigning employees to a wide range of functions that associated with varied "service." Even the term "train operator," which represented a modest departure from titles associated with persons responsible for train operations, provided flexibility. In this category all employees were required to perform revenue service operation as well as yard service.

Furthermore each job description contained words to the effect that employees would be required to "perform such other work as required" by supervision. This provision allowed flexibility such that unusual or unanticipated tasks could be assigned to existing personnel without limitations normally associated with narrow job descriptions.

### Part-Time Employment Classifications

This classification allowed SDTI to determine selectively to what degree part-time employees could be integrated with the employment structure. Employees in this classification typically receive only limited benefits including pro rata share of vacation and holiday benefits and uniform allowance, but no hospitalization or other benefits that customarily cost 25 to 35 percent of an employee's wage. This has resulted in SDTI incorporating a varying number of employees for partial work assignments (usually less than 30 hr per week) with 22 percent of the hourly work force in this category (Table 1).

### Contract or Temporary Labor

The board of directors also established a policy to encourage staff to maximize the use of outside contract services and temporary employees. In the contract category, the board anticipated that use of outside contractors could best be applied to seasonal work tasks and specialized work (e.g., security, LRV body repair, etc.). The temporary classification could best be used by SDTI if it were necessary to develop occasional work for limited periods in which it would be more cost-effective to hire personnel, as opposed to the substantial effort associated with advertising contract work. Personnel in this category are hired for periods not to exceed 6 months.

TABLE 1 San Diego Trolley, Inc. Personnel Report, January 1992

	Actual	Authorized	Vacancies
Summary Totals			
Total Company	290	270	(20)
Total Hourly	238	218	(20)
Full-Time	181	171	(10)
Part-Time	57	47	(10)

Note: The greatest percentage of part-time employees are in the classification of train operator, slightly over 50%.

### Labor Organization Considerations

SDTI operated for more than 5 years without an employee labor union. This provided an opportunity to carry out board policy that may have otherwise been restricted by a labor contract. In addition many of the unique employment categories sustained 5 years of policy, which established considerable precedent in terms of how business was conducted at the trolley.

The first labor agreement at SDTI was in effect on September 1, 1986. The agreement was between SDTI and the International Brotherhood of Electrical Workers (IBEW), Local 465, and covered all hourly employees. Although the IBEW was concerned about the use of contract labor and other unique categories, the union was successful only in setting certain limitations on the percentage of the work force that was part-time. This was primarily because negotiators focused their attention on finalizing an agreement as opposed to the considerable delays that would have resulted had they attempted to dismantle the involvement of private contractors involved with the day-to-day operation.

This situation has, over the years, been considered by many to be one of the primary reasons why SDTI has been able to keep operating costs down and to continue to incorporate unique employment categories into the regular operation of the system. Unlike other transit agencies, SDTI had flexibility that was a tremendous advantage for management in applying innovative options in the work force.

### EXPANSION REQUIRES MORE EMPLOYMENT INNOVATION

Throughout the mid-1980s the trolley experienced considerable growth and expansion. The first extension was a 4-mi segment to Euclid Avenue in East San Diego in March 1986. The next was a further extension of the Euclid Line some 12 mi to El Cajon in June 1989. Before long the entire system had grown to a 34-mi LRT network incorporating two routes (Figure 1).

As the system grew, it became apparent that the expanded infrastructure would require substantially more maintenance activity in a wide range of categories and thus an expanded work force to perform these functions. This situation allowed SDTI to expand on the innovative employment categories that had been incorporated into the operating plan since revenue service began. However, because the management group at SDTI was sensitive to the potential negative effects on operating costs if the staff was expanded fully to accommodate the growth that was experienced, new opportunities were explored.

### Creatively Expanding the Work Force

With limits placed on the operating budget, SDTI management began to explore ways to expand the available work force yet keep costs to a minimum.

In considering other options, it was observed that the California Department of Transportation (Caltrans) had for many years augmented its work force by using individuals convicted

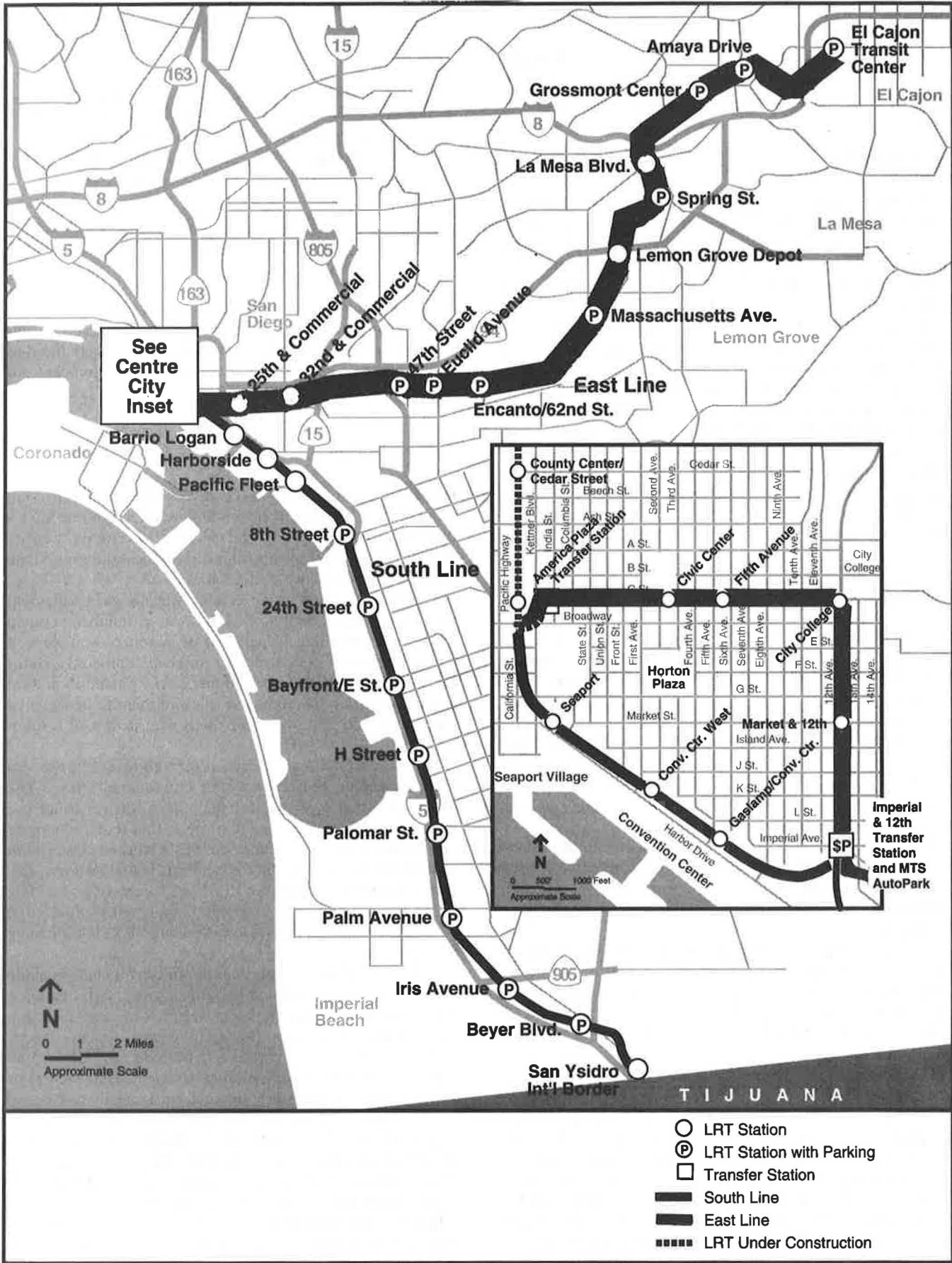


FIGURE 1 The San Diego Trolley south and east lines.

of minor traffic offenses and other infractions. SDTI implemented a successful pilot program with a local court that assigned a small work group to the trolley on a daily basis.

### Local Court Workers

Under the arrangement with the South Bay Municipal Court, a small work force of 10 to 15 persons who had been convicted of minor offenses but could not pay the fine assessed were offered the chance to be assigned by the court to "community service" with the trolley as an alternative to serving a jail sentence.

The court-assigned workers report to the main SDTI maintenance facility each weekday morning. Under the general supervision of one of several facility supervisors, the workers are assigned to perform a wide range of light-duty work. These assignments typically include picking up debris at the main yard site, sweeping the shop, cleaning nearby stations, and so forth.

The amount of time an individual works at SDTI in this category depends on the court-assessed service time. It varies depending upon the offense but usually represents 24 to 40 hours.

### San Diego County Probation Work Force

With the success of the original pilot program SDTI took the concept one step further. Management contacted the county of San Diego Probation Department and soon learned that an existing program was in place similar to SDTI's arrangement with the South Bay Municipal Court. This county program, however, involved persons who were assessed community service hours but who were also involved more serious offenses (e.g., child support violations, petty theft, vandalism, etc.) and thus required close monitoring and direct on-site supervision by a probation officer.

This represented a departure from the original pilot program as it required SDTI to compensate the county for costs associated with transportation of the workers to the site and supervision (the probation officer) for time they were performing service.

Despite these costs, it was still considered advantageous as the crew in this category was capable of performing more substantial work assignments and could be assigned to remote locations on the system. Because the advantages appeared to outweigh the disadvantages, the program was implemented on a trial basis.

The probation department worked closely with SDTI in terms of scheduling work and developing assignments. This resulted in a project list that represented several routine assignments (e.g., washing stations, weed abatement, etc.) and several small projects, including landscape improvements.

To date this program has been considered very successful. It has resulted in a daily work force (weekdays and weekends) of a minimum of 20 persons to a maximum of 50. Overall the comparable cost to SDTI would far exceed the annual amount incurred for a work force of equal size (Table 2).

Based on the comparison in Table 2, the probation work plan provides SDTI with a work force that is comparable to

TABLE 2 Annual Cost Comparison

Probation Plan	SDTI Comparable Cost
Monthly Cost = \$9,000.	Annual Work Hours = 73,000
Aver. Daily Work Force = 25	*Full Time Equivalent = 35
Annual Cost = \$108,000.	**Annual Cost = \$977,412.
Annual Work Hours = 73,000	Cost/Hr/Empl. = \$9.59
Est. Cost/Hr/Worker = \$1.48.Hr.	

\* Assumes 2080 annual hours  
\*\* Assumes 40% fringe benefits

35 full-time equivalent employees. The annual cost to SDTI for the plan represents only 10 percent of the cost for comparable services provided by employees if they were hired as replacements. This is clearly the single most significant advantage from programs such as these.

### State Prison Plan

In the latter part of 1989, SDTI was approached by representatives from the R. J. Donovan State Correction Facility located near the South Line. The facility is a maximum security prison and houses criminals from various locations around the state who were convicted of felonies of all types.

The plan proposed by corrections officials was to augment SDTI's existing regular work force with a number of small teams (not exceeding 12 persons) of prisoners who were in the final stages of their sentences and had attained the status of trusty. Prisoners that attained this special classification were permitted certain freedoms that allowed them to be assigned office duty and otherwise be trusted with increased responsibility.

This plan would require each 12-person team of prisoners to be closely supervised by a state correctional officer. The other advantage was the fact that these trusties could use power tools and be assigned to projects that required a more substantial labor effort. Therefore SDTI worked closely with administration personnel at the state prison to develop a project list that included small construction projects (e.g., building retaining walls and more substantial landscaping efforts) and other labor-intensive tasks, such as waxing LRVs and cleaning the interiors.

The cost to SDTI was more substantial and included paying the full cost of the correctional officer's salary, providing a communication device (radio or telephone), and paying a nominal amount as an hourly wage for each prisoner assigned. (A portion of this hourly wage is allocated to the Crime Victims Fund, which is a local attempt to compensate victims of serious crimes with cash disbursements on a case-by-case basis.)

The program was implemented and SDTI currently has four 12-person teams. Because the work effort is more substantial, SDTI finds that there is considerable savings in terms of eliminating the use of outside contractors and other highly paid employees in new or higher-wage categories.

In some of the project work, the prison crew performs small construction-related tasks that had never been done before or required outside contract labor. Still others, such as LRV cleaning and waxing, had previously been performed by an outside contractor. In both cases it is easy to determine direct



**TABLE 3 Cost and Other Comparisons**

State Prison Plan	Contractor Plan
Aver. Mthly Billing = \$20,110.	Aver. Mthly Billing = \$32,340.
Aver. No. of Workers = 32	Aver. No. Workers = 12
Aver. Pay/Hour = \$4.36	Aver. Pay/Hour = Unknown
Annual Cost = \$241,320.	Annual Cost = \$388,080.

**Special Note:** The average comparable wage in this category for an SDTI employee is \$11.62/Hr. If SDTI were to hire 32 employees for comparable work per the Prison Plan the annual cost exclusive of fringe benefits is \$773,427.

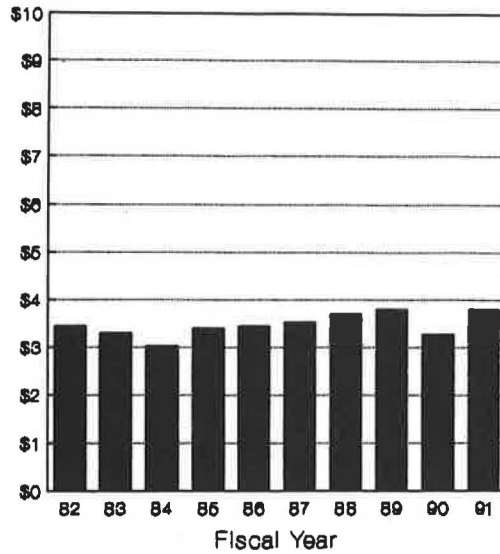
cost benefits to SDTI either by determining the hourly cost per worker or, as in the case of vehicle cleaning, a comparison with the previous contractor (Table 3).

**HAVE THESE PLANS REALLY BENEFITED SDTI?**

Based on experience to date, it is apparent that SDTI benefits significantly in terms of lowering operating costs and keeping the staff to a minimum. Figure 2 displays a breakdown, by category, of the SDTI annual budget. The personnel category is a modest 43.8 percent of the total budget. Also, 14.1 percent of the budget represents outside contractor participation, which is high by industry standards.

**Other Factors**

A number of cost-related categories measure the efficiency of an operating system. Two of these categories are cost per vehicle mile (CPVM) and the other is farebox recovery rate (FBRR). SDTI has, over the course of the past decade, retained an extremely low CPVM (Figure 3), averaging just \$3.50. In the FBRR category, SDTI has maintained a 10-year average of recovering almost 90 percent of its operating costs



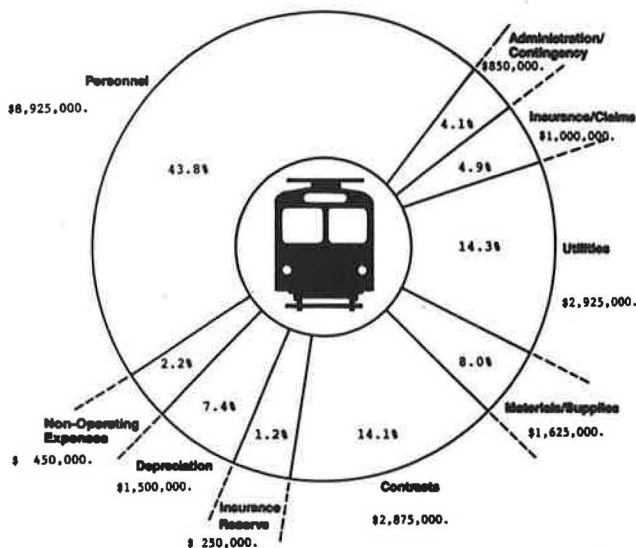
**FIGURE 3 Cost per car mile, FY 82-FY 91.**

from farebox revenue (Figure 4). Still other figures are equally impressive in support of the SDTI operating philosophy.

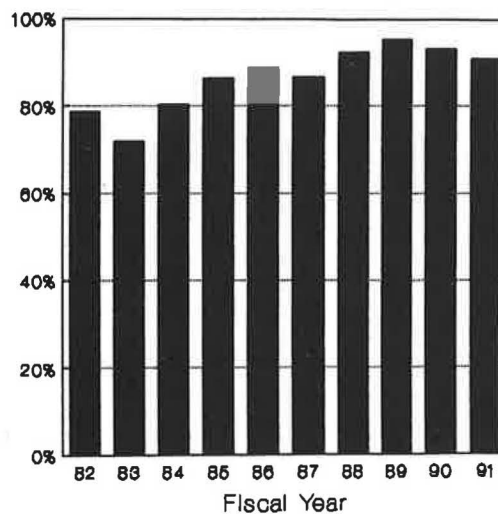
**WHAT IS THE DOWN SIDE?**

The programs initiated by SDTI provide an opportunity for increasing the work force and generating cost savings to an operating agency, but the potential for problems also exists if not adequately addressed.

Unlike regular employees, workers assigned to perform services because they are required to by local courts, probation agencies, or correctional facilities are clearly not highly motivated. Accordingly their activity and performance must be closely monitored to ensure compliance with safe practices



**FIGURE 2 SDTI projected FY 92 operational expenses.**



**FIGURE 4 Annual farebox recovery rate, FY 82-FY 91.**

and to provide oversight relative to the task assigned. In both cases, SDTI has had incidences in which participants in the program generated problems and appeared unwilling to work in a diligent manner.

The effect of these programs on regular agency employees must also be taken into account. Initially a number of employees expressed concern for their safety and security when they were performing work near individuals who were part of the prison assignment program. To date, however, no incidents involving agency employees have compromised their safety or security. Initially an occasional comment was made that was considered inappropriate, but the matter was handled by prison authorities and the individual was removed from the program immediately. Participants are advised in advance that any conduct that is inappropriate will result in a disciplinary hearing and will, in most cases, involve extended sentences.

Despite these factors, the isolated problems are not considered significant to the extent that the programs should not be continued. As with any program, a start-up phase requires corrective action and follow-up as situations present themselves.

## CONCLUSIONS

It is clear that one of the most significant factors that enabled San Diego Trolley to achieve its objectives was the fact that the corporation was newly created. The "clean slate" allowed management complete latitude in terms of formulating policy

and initiating a series of internal procedures that continue to pay large dividends today (1).

The organization, from the onset, was not encumbered by restrictive policies of an existing transit agency or limitations that were part of a labor contract. The management team established precedent and was allowed to be creative in developing unique solutions to some of the elements that have generated increased costs for transit agencies over the years.

Overall, however, it may be concluded that many of the elements applied at SDTI can potentially be duplicated at other transit agencies provided that labor contracts do not restrict using outside contractors and that state and local authorities incorporate community service or work release programs in their sentencing guidelines. Such guidelines empower authorities to initiate programs on the local level for the benefit of relieving jail overcrowding and providing an opportunity to have individuals exposed to responsible employment in the work force that they might not otherwise experience.

The more ambitious of these plans (i.e., that using state prison workers) remains relatively new and will require additional evaluation as the program matures to determine if the integrity and cost savings can withstand the test of time.

## REFERENCE

1. *Comprehensive Annual Performance Report*. North American Transit Research Group, Dec. 1991.

**PART 4**  
**Design and Engineering**