Cost-Effectiveness of Private Employer Ridesharing Programs: An Employer's Assessment

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The benefits derived from ridesharing are varied and accrue to a variety of individuals and groups. The beneficiaries may be classified into three general groups—employees, employers, and the community. The benefits that accrue to employers are not as well understood, but they are essential to the marketing of ridesharing in times of stable or declining energy prices. Although ridesharing can be accepted as good business practice and as an aid in enhancing the corporate image, to achieve employer support frequently a case needs to be established that ridesharing is not just public relations but returns distinct and tangible benefits to the employer. The objective of this paper is to document the costs and benefits available to private-sector employers through the operation of employer ridesharing programs. Special consideration was given to employers having a direct involvement in operating a corporate ridesharing program. An analysis of the responses from 160 private employers indicates a positive assessment of ridesharing's cost-effectiveness. Respondents were requested to provide specific monetary estimates of the benefits derived from their ridesharing programs. Although the employers did recognize and acknowledge the presence of benefits, most could not quantify the benefits. Most of the benefits cited were of an intangible nature—reduced absenteeism, enhanced corporate image, reduced employee tardiness, and so on. Many employers did not have a specific economic criterion on which to initiate corporate rideshare programs but were more concerned with employee and community benefits. Thus, it is clear that the data base necessary to generate cost-benefit analyses does not exist. Even though the benefits cannot be quantified, they are perceived by employers as being real and present.

The benefits derived from ridesharing are varied and accrue to a variety of individuals and groups. The beneficiaries may be classified into three general groups—employees, employers, and the community. Employee and community benefits have been well documented by numerous studies. The benefits that accrue to employers are not as well understood, but they are essential to the marketing of ridesharing in times of stable or declining energy prices. Although ridesharing can be accepted as good business practice and as an aid in enhancing the corporate image, to achieve employer support frequently a case needs to be established that ridesharing is not just public relations but returns distinct and tangible benefits to the employer. In supporting ridesharing, employers usually absorb some organizational and administrative costs. If the ridesharing program involves operating company-owned vans, the employer is assuming a financial risk in laying out the initial investment. Although actions can be taken to limit risk through abort clauses or leasing, the employer has still committed substantial organizational resources on behalf of ridesharing.

McIntyre and Maxwell (*1*), Commuter Transportation Services (*2*), and Dingle Associates (*3*) have identified the reasons why corporations have become involved in ridesharing and have undertaken the risks of vanpooling without any hopes of turning profits. These studies have indicated that some of the most direct advantages are to (a) reduce parking costs, (b) make parking space available for expansion, (c) reduce congestion, or (d) satisfy zoning or air pollution requirements. Some corporations have noted that ridesharing has favorable impacts on reducing employee tardiness, absenteeism, and turnover rates. Likewise, corporations have been able to retain existing employees through ridesharing. These tangible and intangible benefits must then be compared against program costs.

The objective of this paper is to document the costs and benefits available to private-sector employers through the operation of employer ridesharing programs. Special consideration was given to employers having a direct involvement in operating a corporate ridesharing program. The 1985 nationwide canvass of over 897 employers provided useful information from 230 employers (of which 160 were private) concerning

- Status of ridesharing activities at the employment site;
- Characteristics of the employer—size, location, ridesharing services provided, and so on;
- Parking benefits provided by the employer;
- Cost of ridesharing, parking, and transit incentive programs;
- Employer attitude toward ridesharing; and
- Cost-effectiveness of ridesharing.

DATA COLLECTION PROCEDURES AND CHARACTERISTICS OF RESPONDENTS

Ridesharing effectiveness was assessed through a mail survey of firms with current or past experience with ridesharing. Representatives of these firms were requested to identify the costs and benefits derived for operating the ridesharing pro-

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gram. Special emphasis was placed on corporate ridesharing programs because these employers have corporate resources directly at risk. No attempt was made to structure a scientific sample; rather, the survey attempted to gain insight concerning firms with ridesharing experience. Where a corporate representative was able to provide general estimates of benefits, a follow-up telephone call was instituted in an attempt to define the benefits in monetary terms. The results of the follow-up survey are reported in a case study analysis of 20 companies. Of the 160 respondents from the private sector, 19 were judged to have inactive ridesharing programs, whereas 141 were judged to have active ridesharing programs.

Inactive programs were defined as not having current ridesharing participation, participation limited to a rideshare matching service, or a limited employee-owned and operated vanpool program. Active programs were characterized by employers actively financing and supporting an employer-sponsored vanpool program, a large third-party or employee vanpool or carpool program, or a corporate transit incentive program.

Because the conclusions of this report are based on a sample of 160 employers, it is important to identify the characteristics of the employers responding.

Location

Employers were concentrated in three geographical locations—27.3 percent were in central business districts (CBDs); 25.9 percent were within the city limits, but not downtown; and 36.7 percent were in suburbs. Only 10.1 percent of the respondents were located in rural areas or small towns. Thirty-eight percent of the respondents were located in the Mid-Atlantic and Northeast region, followed by 17 percent in the Northwest and West Coast, 16 percent in the Midwest, 16 percent in the Southeast, and 13 percent in the Southwest.

Industry

The firms included in the survey came from a diversity of industry types (finance, 26 percent; manufacturing, 21 percent; engineering services and research technology, 17 percent; energy, 12 percent; and pharmaceutical, health, and hospitals, 9 percent).

Number of Employees

The survey was designed to obtain information on only one employment site, preferably the site with the greatest ridesharing activities. The distribution of private-sector employers (where n = 160) was noted as follows:

Employees	*Private-Sector Employers (%)*
0–500	25.7
501–1,000	12.6
1,001–2,500	31.8
2,501–5,000	20.0
>5,000	6.8
No response	3.1

The average number of employees per site was 3,000 for the urban and suburban locations and 1,350 for the small town and rural locations.

Parking Shortages

Over 33 percent of the employers indicated that they experienced parking shortages at their employment locations. A cross-tally with size of employer indicated that the parking shortage was most critical with the larger employers. Yet for all employment size classes, at least 20 percent of the respondents indicated parking problems. Only in the case of the CBD employers did the majority of respondents indicate parking problems. Interestingly, 32 percent of the employers in urban non-CBD areas and 18 percent of the employers in rural areas indicated experiencing parking shortages.

Mode Shares

Sixty-eight percent of employees arrived at work by driving alone, less than 1 percent used rail transit, 7.4 percent used bus transit, 16.7 percent used carpools, and 7.2 percent used vanpools. Bus and rail transit accounted for 17 percent of the workers in CBDs. In small town and rural locations, carpooling and vanpooling accounted for over 35 percent of the workers' daily trips to work. Carpooling and vanpooling together represented over 25 percent of the work trips made in suburban as well as CBD locations. Little variation was noted for mode split by size of employer. The percent traveling by vanpooling was higher than the national average, indicating the strong interest in ridesharing by the respondents.

EMPLOYER RIDESHARING AND PARKING COSTS

Assessing ridesharing's cost-effectiveness involves identifying program costs as well as benefits. Discussed in this section are the annual direct costs associated with operating a vanpool program, transit incentive program, or ridesharing matching service. Staff time to oversee and administer a ridesharing program is also reviewed. Because the provision of parking at the employment site is a form of employee transportation subsidy, these costs are also documented and will be compared with ridesharing costs.

Parking Costs

Work Site Parking Policies

Traditionally, it is well accepted that commuting is an individual's responsibility, not of concern to the employer. Yet free parking at the employment site is expected and can represent an extensive expenditure on behalf of the employees. Significantly, 78 percent of the employers participating in this survey provided free parking for their employees. An additional 10 percent charged employees for parking but not enough

TABLE 1 ESTIMATED COST TO EXPAND PARKING

Parking Expansion Cost per Space	No. of Responses	Percent of Responses
$0-$500	6	15.8
$501-$1,000	11	28.9
$1,001-$2,000	6	15.8
$2,001-$5,000	6	15.8
$5,001-$10,000	6	15.8
≥$10,000	3	7.9
	38	100.0

Average = $3,920 per space

to cover costs. Parking then is clearly an employee benefit or transportation subsidy provided by the employer.

All responding employers in rural areas and small towns provided parking at no charge or a partial charge to their employees. Correspondingly, fewer than half of the employers located in CBDs assessed no charge for parking. Over 25 percent of the CBD employers expected employees to cover the full costs of parking. Parking charges showed little variation by employer size. A smaller percentage of large firms (more than 2,500 employees) actually charged full costs for parking than did small firms, although the difference was only a few percentages. Over 50 percent of the employers experiencing parking shortages provided for free parking.

Employer Parking Costs

Employer parking costs varied extensively with the geographical location of the employer, type of parking (structure versus surface lot), and the actual cost items allocated to parking. Some employers indicated that estimates of parking costs were not available because parking costs were not segregated from building lease costs or could not be separated from different functions such as security, building maintenance, and so on. It can be expected that some survey respondents were not aware of the full costs of providing employee parking, including items such as lights, security, traffic control, taxes, land, or depreciation. Typical costs that were identified were yearly striping costs, surface cleaning, and pavement resurfacing every 2 to 3 years. In some climates snow removal was noted as a major expense. The average annual parking cost was estimated to be $64 per space. While modest on a per-space measure, parking can become quite expensive when applied to all the spaces provided. The aggregate free parking costs some large employers $150,000 to $200,000/year. Free parking or reduced cost parking can be considered an employee fringe benefit or subsidy.

For the 72 private firms providing complete data on parking costs, the average total annual financial commitment came to $112,000/year or $73.50 per employee. Over 18 percent of the private firms paid in excess of $200,000/year for employee parking and 11 percent paid over $250 per employee.

Cost of Expanding Parking

The cost to expand parking facilities is a major capital commitment borne by the employer. Thirty-eight respondents estimated the cost to increase the existing supply of parking, as noted by Table 1. The higher cost estimates are associated with constructing garages in areas of high land values such as the CBD. The lower costs are related to expanding surface lots where land has already been purchased. Reduction in parking or possibility of avoiding expanding parking are tangible benefits that an employer can receive from ridesharing. The concept of "free parking" is a misnomer, and "free parking" can represent a sizable annual expenditure for the employer.

Ridesharing Costs

Ridesharing costs can be stratified into a number of different cost categories, including carpool and vanpool operating subsidies, costs associated with administering a ridesharing program, and costs for a transit incentive or priority parking program.

Firms were requested to report the cost of staff time devoted to ridesharing activities. Although the ability to track all relevant activities and to provide a reliable cost estimate will vary between firms, expenditures will be influenced by the actual ridesharing activities provided. Ridesharing coordinators can provide assistance in promoting ridesharing, conducting matching surveys, distributing literature, and contacting individuals to help form ridesharing arrangements. In many communities the employer's rideshare activities are

supplemented by the support of a community ridesharing agency. In these cases the employer's costs can be quite minimal.

As the employer undertakes the responsibility of owning and operating vanpools, relieving the employees or a third party of this responsibility, the employer's administrative commitment becomes more extensive. Many employers operating large employer-based ridesharing programs required the retention of a full-time ridesharing coordinator.

Thirty-two firms with employee-owned or leased or third-party vanpool programs provided estimates of the annual costs involved in administering the ridesharing programs. A full 65 percent stated that there was no measurable staff time or that costs were minimal. The average annual cost for all firms reporting an administrative expense was $4.50 per employee or $3,000/year. From the above analysis it is clear ridesharing activities can be supported at the corporate level with little cost to the firm. As the firm assumes direct responsibility for ownership and operation of the vanpool program, the administrative costs become more substantial. Again, firms with just a few vans frequently report negligible administrative costs. When considering the experience of 58 firms operating employer-owned or leased vanpool programs, 33 percent still reported minimal administrative costs. The average cost was $889 per van per year or $23,000 per firm. These costs will be included as part of the costs to operate a vanpool program and will be discussed in more detail in the vanpool cost subsection.

Employer Vanpooling Costs

Vanpooling can become a major rideshare cost commitment for an employer. Because of the size and nature of these ridesharing activities, the cost estimates need to be discussed in more detail.

Firms providing employer vanpool programs have made a strong commitment to ridesharing. Sixty-seven private firms indicated that they were providing vanpool services for employers either by leasing the vehicles or by outright ownership of the vans. Unlike employee-owned and operated vanpools or third-party leases from an organization other than an employer, the employer is directly at risk for the financial success of the vanpool. In addition to assuming risk, the firm also may elect to subsidize the vanpool program as an employee-assistance benefit. The subsidy can be regulated by adjusting the fares. Any cost-effectiveness equation must consider the extent of the vanpool subsidy. However, through the collection of revenue it is possible for an employer to control the amount of subsidy. In fact, if vanpooling is successful, it is possible for the employer to collect adequate revenue to cover all direct costs and even to reimburse the employer for administrative costs associated with operating the ridesharing program. Although there may be free parking, there is no equivalent free vanpooling.

Vanpool costs include direct operating costs (fuel, maintenance, depreciation, insurance) but exclude administrative costs associated with the program. Another factor to consider on the revenue side of the equation is the availability of tax credits generated through ownership of the vehicles. Tax credits are a return to the firm and can be used to defray part of the expenses of operating the vanpool program. Fourteen percent of the respondents include dollar estimates for tax credits.

Employer Vanpooling Subsidy

Break-Even or Positive Return Programs

Of special interest were the 58 corporations included in the survey operating employer vanpool programs. These firms operated a total of 1,236 vans for an average of 23 vans per firm. Without considering administrative cost, 36 percent of the firms operating vanpool programs indicated that they set riders' fares adequate to cover all operating costs. Interestingly, an additional 5 percent used tax credits to cover operating costs. Twenty-one percent set rider fares high enough to provide a net positive return to the firm. Before including administrative costs, 50 percent of the vanpool programs were operating at a financial break-even point or better.

When administrative costs are included, assuming that all administrative costs are allocated against the vanpool program (excluding other program elements such as transit incentives or ridesharing matching), the number of break-even vanpool programs was reduced to 10. Four programs still realized revenues exceeding costs. Almost one-quarter of the programs then had no direct expenditures in operating employer vanpool programs. Any benefits received by these employers for operating the program will provide a very attractive cost-effectiveness ratio.

Subsidized Vanpool Programs

For the programs not able to break even or provide a positive return, the extent of the rideshare subsidy is of interest. Subsidy levels per van, with and without administrative costs, are shown in Table 2. In addition, total program subsidies are noted in Table 3. When administrative costs are not allocated to vanpooling, the average subsidy is $1,283/year per van. Administrative costs increase the subsidy by approximately $70/year per van. Significantly, even with administrative charges, 60 percent of the firms pay from nothing to less than $10,000/year to support ridesharing programs. The average cost per employee, based on total employment at the work site and not just those employees who vanpool, is only $12.35/year per employee. This per-employee expenditure is only one-sixth what employers spend for free parking per employee ($12.25 versus $73.50 per employee). Although not all employees participate in vanpooling, where such programs can substitute for providing additional "free" parking, they can be cost-effective to the employer. Vanpool commitments can be quite extensive, but program costs are a fraction of an employer's commitment to employee parking.

Assessment

Eighty-four percent of the firms believed ridesharing was cost-effective, and all but four acknowledged a benefit being derived

TABLE 2 ANNUAL SUBSIDY PER VAN FOR EMPLOYER VANPOOLS, SAMPLE OF 58 CORPORATIONS

Excluding Ridesharing Administrative Costs		Including All Ridesharing Administrative Costs	
Subsidy/Program (dollars)	Number of Responses	Subsidy/Program (dollars)	Number of Responses
1-99	0	1-99	1
100-499	6	100-499	11
500-999	7	500-999	10
1,000-1,999	6	1,000-1,999	11
2,000-2,999	4	2,000-2,999	7
3,000-3,999	2	3,000-3,999	1
≥4,000	0	≥4,000	3
None	33	None	14
	58		58
Average Subsidy per Van			
All Programs	$521		$973
Only Programs Subsidized	$1,209		$1,283
No. of Subsidized Programs	25		44

from the firm's involvement in ridesharing. The major benefits identified for the vanpools were as follows:

Benefit	*Percent of Respondents Mentioning*
Good public relations	70
Reduced absenteeism	59
Reduced tardiness	53
Retained valued employees	40

The four firms acknowledging no benefits at all had encountered adverse economic conditions or had recently merged, requiring a reduction in employment.

RIDESHARING COST-EFFECTIVENESS AND BENEFITS

Cost-Effectiveness

The bottom-line question asked of the 141 active private employers with active ridesharing programs was, "Do you feel that your ridesharing and/or priority parking programs are cost-effective?" Fifty-seven percent of the private firms operating active ridesharing programs indicated ridesharing was definitely cost-effective, with an additional 17 percent indicating ridesharing was marginally cost-effective. Only 7 percent responded negatively, and 18 percent stated they did not know. By comparison, 57 percent of the private firms not actively engaged in ridesharing did not know, which could be expected as they had no experience with this form of transportation service. It is impressive that firms with active ridesharing programs thought ridesharing was cost-effective at a ratio of almost 3 to 1 over firms with inactive programs, highlighting the need for those experiencing benefits to communicate the positive attributes of ridesharing to other employers. Responses indicated an overwhelming positive attitude toward ridesharing by private firms with active ridesharing programs.

Benefits

Respondents were requested to indicate if their firms experienced benefits associated with ridesharing. Although the extent of benefits was sought as a dollar value estimate, a positive or negative reply was also requested. Sixty-eight of the private firms responded positively to one or more benefit categories.

TABLE 3 ANNUAL SUBSIDY PER RIDESHARE PROGRAM FOR EMPLOYER VANPOOLS, SAMPLE OF 58 CORPORATIONS

Excluding Ridesharing Administrative Costs		Including All Ridesharing Administrative Costs	
Subsidy/Program (dollars)	Number of Responses	Subsidy/Program (dollars)	Number of Responses
1-4,999	11	1-4,999	14
5,000-9,999	6	5,000-9,999	7
10,000-49,999	5	10,000-49,999	19
50,000-99,999	1	50,000-99,999	1
100,000-199,999	2	100,000-199,999	1
≥200,000	0	≥200,000	2
None	33	None	14
	58		58
Average Subsidy per Program			
All Programs	$14,732		$30,095
Only Programs Subsidized	$34,046		$39,671
No. of Subsidized Programs	25		44

Noted in order are positive responses from private employers operating ridesharing programs.

Benefit	*Percent Noting Favorable Response*
Reduces employee tardiness	49.6
Improves public relations	48.9
Reduces absenteeism	36.2
Helps retain valued employees	29.8
Reduces need to construct parking	22.7
Permits other use of previous parking area	14.2

The intangible benefits prevail with emphasis on tardiness, public relations, and absenteeism. Site-specific benefits were valued less than benefits that can be appreciated by a firm regardless of its site location. Although only one benefit category was selected by over 50 percent of the respondents, the diversity of benefits indicates a broad satisfaction with ridesharing.

CASE STUDIES

Although the respondents to the original survey were requested to provide quantitative estimates of the benefits derived from operating corporate ridesharing programs, few were able to comply. Follow-up telephone contacts were made with 20 employers in order to convert general estimates of benefits into annual monetary values. The follow-up contacts concentrated on private employers who were operating employer vanpool programs.

Generally, the individuals contacted felt the estimated benefits derived from vanpooling were real and tangible values, but they had difficulty in converting benefits into monetary values. In many cases, situations and amplifications were cited to demonstrate that the benefits were actually received. One particular problem is defining monetary benefits derived from reduced absenteeism, tardiness, and employee turnovers. Through conversations, attempts were made to estimate these intangible benefits through an analysis of person-hours saved, under the assumption that the employer suffers a negative consequence if a worker is either late or absent. These estimated benefits are clearly separated from the stated benefits in the ensuing sections of this paper. Absenteeism and tardiness were costed at $5/hr in wages and were based on a 2,000-hr work year per employee. The percent reduction attributed to vanpooling was then applied to the yearly person-hours representing the vanpooling segment of the work force. Tardiness was defined to represent 15 min late. Although approximate, these procedures should reflect the general magnitude of benefits received from corporate rideshare programs and allow comparisons with program costs.

TABLE 4 SUMMARY OF BENEFIT-COST RATIOS, LARGE VANPOOL PROGRAMS 1 THROUGH 4

	1	2	3	4
Employees	12,700	2,200	7,000	14,000
Number of Vanpools	115	20	92	54
Number of Employees	990	180	1,120	518
Reason for Initiating Vanpooling	Need to reduce parking to permit expansion	Need to retain trained employees with a relocation	Energy conservation, and relocation to new site and wanted to retain employees	Lack of transit and improve air quality
Is Ridesharing Cost-Effective?	Definitely	Definitely	Definitely	Definitely
Extent of Benefits				
Reduced Absenteeism	NA --	Yes 10% $180,000[b]	Yes 7.5% $840,000[b]	Yes 15%[a] $2,331,000
Reduced Need to Construct New Parking	Yes $900,000/yr[c]	No	Yes $250,000/yr	No NA
Help Retain Valued Employees	No	Yes NA	Yes NA[d]	Yes NA[e]
Reduced Employee Tardiness	Yes 10% $30,937[b]	Yes 5% $2,812[b]	Yes 7.5% $26,250[b]	Yes 20% $338,500
Permitted Utilization of Previous Parking Area for Other Activity	Yes	No NA	No	No $300,000
Improved Public Relations	NA	Yes NA	Yes NA	NA
Other	--	--	Relieves stress on employees	Employees arrive early
Dollar Value of Benefits Stated/Year	$900,000	NA	$250,000	$2,719,500
Dollar Value of Benefits Estimated/Year	$930,937	$182,812	$1,116,250	--
Vanpool Program Costs per Year (Net Cost)	$77,000	$3,179	$55,100[f]	$220,000
Stated Benefit-Cost Ratio	11.7	NA	4.5[f]	12.4
Estimated Benefit-Cost Ratio	12.1	57.1	20.3[f]	12.4
Aggregated Direct Benefits	$920,000	NA	$194,900	$2,499,500

[a]Estimate of absenteeism and tardiness based on 1976 study. Actual hourly salary of $15-$18/hour.

[b]Estimated value based on percent of vanpoolers at $5/hour and 250 work days per year. Absenteeism assumed 8 hours per work day; tardiness assumed 15 minutes per worker.

[c]Allowed construction of new building on property originally designed for added parking.

[d]Estimated cost to train a new employee is $10,000 per year.

[e]Actual cases have been cited where employees have been offered jobs elsewhere, even at increases in salary, but because of vanpool programs they have stayed with the corporation.

[f]Less tax credit; actually there are no costs to employer.

Estimate of Benefits

Tables 4 through 8 provide a summary of the data and resulting benefit-cost ratios calculated for the 20 employers. Direct benefit-cost ratios are separated from estimated benefit-cost ratios where percent reductions in tardiness and absenteeism were converted to monetary values. Most clearly defined as a benefit from ridesharing was the ability of an employer to use vanpooling to avoid constructing additional parking spaces. This benefit is stated with a high degree of accuracy and confidence. Firms that went through a process of relocation found vanpooling to be valuable in retaining employees. Employee training costs were stated to be in the range of $10,000 per employee. It was suggested by a number of employers that retaining employees is a major contribution offered by vanpooling, which is frequently overlooked. Although only one firm had made a formal study of reduced absenteeism and tardiness attributed to vanpooling, most of the 20 employers reported reductions in absenteeism and tardiness in the range of 5 to 10 percent. Although these benefits are intangible, the respondents felt the benefits were real and had confidence in the percent reduction figure based on actual observations. Only a few employers placed an economic value on improved public relations, although many felt the vanpool program reflected favorably on the corporation. The footnotes to Tables 4 through 8 record comments made during the telephone conversations.

The 20 case studies can be separated into large programs—those with more than eight vans per program—and smaller programs. Of the 12 large programs included in the sample, 10 indicated that the vanpool program was definitely cost-effective. One program involving 37 vans initiated because of relocation to a new site was assessed as not being cost-effective. In fact this program did not achieve sufficient stated benefits to cover costs. However, when estimates were included for absenteeism and tardiness, the program did achieve a positive benefit-cost ratio. The one marginal response involved a program receiving a stream of benefits at no cost for operating the vanpool program.

Representatives for four of the smaller programs stated ridesharing was definitely cost-effective, whereas three programs were assessed as being either marginal or not cost-effective. One response was not provided. The representative of a program involving four vans stated that ridesharing was cost-effective but did not achieve a stated or estimated benefit-cost ratio exceeding 1. Similarly, one of the programs involving four vans and initiated as a program for energy conservation was not cost-effective. An analysis of the stated and estimated benefit-cost ratios verified this contention. The other two small programs for which marginal assessments were stated both had positive benefit-cost ratios. The limited sample indicates that large programs have a closer assessment of the role of an employer vanpool program and the returns it provides for the company. Although small programs are seen as less cost-effective than large ones, cost-effectiveness obviously depends on local circumstances surrounding the program.

Benefit-Cost Ratios

As noted in Table 9, out of the 20 case studies, 14 respondents judged their corporate vanpool programs to be definitely cost-effective. Three smaller programs were felt to be marginally cost-effective, whereas one large and one small program (less than six vans) were evaluated as not being cost-effective. The negative assessments reflected corporations in the energy sector, which had suffered major contractions in employment. Three programs were defined as having a benefit-cost ratio of less than 1, while four programs realized a flow of benefits with the vanpools operating at break-even cost. In all cases these benefit-cost ratios were derived from estimates provided directly by the respondents. When estimates of reductions of tardiness and absenteeism are included, the benefit-cost ratios become more favorable. Only in two cases did the benefit-cost ratio not exceed 1. Both of these programs would be characterized as having a strong management commitment to ridesharing with a substantial employer subsidy. However, because of reduced employment, it has been increasingly difficult for the vanpool program to operate.

The 20 case studies indicate that corporate vanpooling programs can generate benefits exceeding costs. Attractive returns are received by many corporations sponsoring vanpooling programs. It is clear that there are a variety of problems and opportunities stimulating interest in corporate vanpooling.

CONCLUSION

An analysis of the responses from 160 private employers indicates a positive assessment of ridesharing's cost-effectiveness. Respondents were requested to provide specific monetary estimates of the benefits derived from their ridesharing programs. Although the employers did recognize and acknowledge the presence of benefits, most could not quantify the benefits. Most of the benefits cited were of an intangible nature—reduced absenteeism, enhanced corporate image, reduced employee tardiness, and so on. Many employers did not have a specific economic criterion on which to initiate corporate rideshare programs but were more concerned with employee and community benefits. Thus it is clear that the data base necessary to generate cost-benefit analyses does not exist. Even though the benefits cannot be quantified, they are perceived by employers as being real and present.

An important finding is that even in cases where employers took on major commitments for operating corporate vanpooling programs and administrative charges were excluded, 56 percent of the firms were able to operate these programs at a financial break-even point or better. Fares and available tax credits were used effectively by private employers to cover all operating expenditures of corporate vanpool programs. Any positive return in the form of benefits can then provide an effective benefit-cost ratio. This finding needs to be communicated to a maximum number of employers. Even with all rideshare administrative costs being applied against the vanpool program, 25 of the programs will still be able to break even or return a profit.

Free parking is accepted as an employee benefit. Unfortunately, free parking can consume extensive corporate resources. Many employers are not aware of the full cost of providing free parking. Ridesharing, especially corporate vanpooling, can be provided at a fraction of the cost of expanding parking. Thus, vanpooling can be used to avoid the capital and operating costs of expanding parking capacity. In general,

TABLE 5 SUMMARY OF BENEFIT-COST RATIOS, LARGE VANPOOL PROGRAMS 5 THROUGH 8

	5	6	7	8
Employees	3,000	3,500	6,000	200
Number of Vanpools	25	70	54	8
Number of Employees	240	525	750	80
Reason for Initiating Vanpooling	Employee benefit	Employee benefit	Energy conservation	Relocation to new site
Is Ridesharing Cost-Effective?	Definitely	Definitely	Definitely	Definitely
Extent of Benefits				
Reduced Absenteeism	NA	NA	Yes 2% $13,650	Yes 5% $40,000[a]
Reduced Need to Construct New Parking	Yes $50,000	Yes $25,000	No	No
Help Retain Valued Employees	NA	NA	Yes	No
Reduced Employee Tardiness	NA	NA	Yes 2% $1,000	Yes 10% $2,500[a]
Permitted Utilization of Previous Parking Area for Other Activity	NA	NA	No	No
Improved Public Relations	NA	NA	Yes	No
Other	---	Rent out vans during day = $20,000		
Dollar Value of Benefits Stated/Year	$50,000	$45,000[b]	$14,650	---
Dollar Value of Benefits Estimated/Year	---	---	---	$42,500
Vanpool Program Costs per Year (Net Cost)	$17,000	$20,000	Breakeven	$ 2,000
Stated Benefit-Cost Ratio	2.9	2.3	Benefits no cost to employer	---
Estimated Benefit-Cost Ratio	2.9[c]	2.3[c]	NA	21.2
Aggregated Direct Benefits	$33,000	$25,000	NA	NA

[a]Estimated value based on percent of vanpoolers at $5/hour and 250 work days per year. Absenteeism assumed 8 hours per work day; tardiness assumed 15 minutes per worker.

[b]Actual corporate study noted a $100,000 profit from vanpooling in 1985.

[c]Same as stated benefit-cost ratio.

TABLE 6 SUMMARY OF BENEFIT-COST RATIOS, LARGE VANPOOL PROGRAMS 9 THROUGH 12

	9	10	11	12
Employees	1,300	2,000	16,000	4,800
Number of Vanpools	8	38	37	24
Number of Employees	70	400	385	240
Reason for Initiating Vanpooling	Energy conservation	Avoid expanding parking	Relocation to new site	Energy conservation
Is Ridesharing Cost-Effective?	Marginal	Definitely	No	Definitely
Extent of Benefits				
Reduced Absenteeism	No --	Yes 5% $280,000	Yes 25% $962,500[a]	Yes 2% $48,000[a]
Reduced Need to Construct New Parking	No	Yes $146,000	No	NA
Help Retain Valued Employees	No	Yes NA	Yes $100,000	NA
Reduced Employee Tardiness	Yes 5% $1,093[a]	Yes 5% $70,000[a]	Yes 22% $26,468[a]	NA 5% $3,750[a]
Permitted Utilization of Previous Parking Area for Other Activity	No	Yes NA	No	Yes $300,000
Improved Public Relations	No	Yes[b]	No	Yes NA
Other	--	Increases labor market for firm; less stress on employees	Expand recruitment after relocation and maintain employees	
Dollar Value of Benefits Stated/Year	--	$426,560	$100,000	$300,000
Dollar Value of Benefits Estimated/Year	$1,093	$496,560	$1,088,968	$351,750
Vanpool Program Costs per Year (Net Cost)	+	$3,300	$150,946	$24,800
Stated Benefit-Cost Ratio	Benefits at no cost to employer	>100	<1	12.1
Estimated Benefit-Cost Ratio		>100	7.2	14.2
Aggregated Direct Benefits	NA	$423,260	Negative	$275,200

[a]Estimated value based on percent of vanpoolers at $5 per hour and 250 work days per year. Absenteeism assumed 8 hours per work day; tardiness assumed 15 minutes per worker.

[b]Positive public relations was felt to be worth millions of dollars to this company over the past four years. The program received extensive coverage in the national press.

TABLE 7 SUMMARY OF BENEFIT-COST RATIOS, SMALL VANPOOL PROGRAMS 13 THROUGH 16

	13	14	15	16
Employees	250	700	1,000	3,100
Number of Vanpools	4	2	5	4
Number of Employees	30	21	50	62
Reason for Initiating Vanpooling	Energy conservation	Employee assistance program	Energy conservation	Legal requirement
Is Ridesharing Cost-Effective?	No	Marginal	Definitely	Definitely
Extent of Benefits				
Reduced Absenteeism	No	Yes 1% $2,100*	Yes 5% $25,100*	Yes 1% $6,200*
Reduced Need to Construct New Parking	No		NA	No
Help Retain Valued Employees	No	Yes	NA	No
Reduced Employee Tardiness	Yes 10% $938*	Yes 4% $262*	Yes 5% $781*	Yes 5% $969*
Permitted Utilization of Previous Parking Area for Other Activity	No	No	NA	No
Improved Public Relations	Yes $2,000	Yes $2,000	NA	Yes
Other				
Dollar Value of Benefits Stated/Year	$2,000	$2,000	--	NA
Dollar Value of Benefits Estimated/Year	$2,937	$4,362	$25,781	$7,169
Vanpool Program Costs per Year (Net Cost)	$11,500	$300	$2,000	Break-even
Stated Benefit-Cost Ratio	<1	6.7	--	--
Estimated Benefit-Cost Ratio	<1	14.5	12.8	<1
Aggregated Direct Benefits	Negative	$1,700	NA	Negative

*Estimated value based on percent of vanpoolers at $5/hour and 250 work days per year. Absenteeism assumed 8 hours per work day; tardiness assumed 15 minutes per worker.

TABLE 8 SUMMARY OF BENEFIT-COST RATIOS, SMALL VANPOOL PROGRAMS 17 THROUGH 20

	17	18	19	20
Employees	70	180	110	165
Number of Vanpools	1	1	2	1
Number of Employees	9	8	25	15
Reason for Initiating Vanpooling	Relocation to new site	Relocation to new site	Relocation to new site	Lack of transit and to improve air quality
Is Ridesharing Cost-Effective?	Marginal	NA	Definitely	Definitely
Extent of Benefits				
Reduced Absenteeism	Yes 3% $2,700[a]	No	No	Yes 20% $30,000[b]
Reduced Need to Construct New Parking	No	No	No	NA
Help Retain Valued Employees	Yes $5,000	Yes $30,000	Yes $3,000	Yes $27,500/yr.[c]
Reduced Employee Tardiness	Yes 5% $141[a]	No	Yes 20% $1,562[a]	Yes 20% $7,500
Permitted Utilization of Previous Parking Area for Other Activity	No	No	No	NA
Improved Public Relations	No	No	Yes	Yes
Other				
Dollar Value of Benefits Stated/Year	$5,000	$30,000	$3,000	$27,500
Dollar Value of Benefits Estimated/Year	$7,841	--	$4,563	$65,000
Vanpool Program Costs per Year (Net Cost)	$4,000	Break-even	Break-even	$300[d]
Stated Benefit-Cost Ratio	1.3	Benefits at no cost to employer	Benefits at no cost to employer	91.6[d] >100[d]
Estimated Benefit-Cost Ratio	2.0			
Aggregated Direct Benefits	$1,000	$30,000	$3,000	$27,250

[a]Estimated value based on percent of vanpoolers at $5/hour and 250 work days per year. Absenteeism assumed 8 hours per work day; tardiness assumed 15 minutes per worker.

[b]A 10 percent absenteeism per shift means 60-62 people would be off; thus the production line could not function.

[c]Retaining one person saves this corporation $11,000-$12,000 in training costs.

[d]Less tax credit; actually no costs to employer.

TABLE 9 SUMMARY OF BENEFIT-COST RATIOS

	Number of Programs	Benefit-Cost Ratios: Based on Monetary Values Stated by Respondents	Benefit-Cost Ratios: Estimated Values
Cost-Effective			
Definitely	14		
Marginal	3		
No	2		
Not Available	1		
Benefit-Cost Ratios			
Less Than or Equal to 1		2	2
Greater Than 1 and Less Than or Equal to 10		5	4
Greater Than 10 and Less Than or Equal to 20		3	6
Greater Than 20		2	4
Benefits Received at No Direct Program Cost to Employer		4	4
Not Applicable		4	0

ridesharing was perceived by private employers as providing a stream of positive returns to the corporation.

ACKNOWLEDGMENTS

This research was funded by the Transportation Energy Group, Oak Ridge National Laboratory, U.S. Department of Energy, through Martin Marietta Energy Systems.

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The views and opinions expressed are those of the author and not necessarily those of Martin Marietta Energy Systems, Oak Ridge National Laboratory, or the U.S. Department of Energy.

Publication of this paper sponsored by Committee on Ridesharing.